ADELPHI STREET, SALFORD

Greater Manchester

Archaeological Building Survey and Excavation

Oxford Archaeology North

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Vermont Developments Ltd

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CONTENTS

SUMMARY

Vermont Developments has proposed to redevelop the site of the former Farmer Norton Engineering Works, located on the west side of Adelphi Street and overlooking the river Irwell in Salford, Greater Manchester (NGR SJ 8251 9897). The development proposals allowed for the demolition of all extant buildings on the site, followed by extensive ground works, including basement car parking. An archaeological desk-based assessment, undertaken by Wardell Armstrong (2006), identified some potential for buried remains of archaeological interest to survive on the site, namely an early nineteenth-century dye works, associated industrial structures, and workers' housing. In addition, one of the extant buildings, stylistically of a *c* 1860 date, was considered to be of archaeological importance.

In order to secure archaeological interests, Salford City Council, acting on the advice of the Greater Manchester Archaeological Unit, attached a condition to the planning consent, which required an appropriate level of archaeological recording in advance of development. In the first instance, a Level II-type survey of the extant building was required, which was to be followed by a programme of evaluation trenching. This was to comprise the excavation of six targeted trial trenches across the site, which were intended to assess the extent, nature and preservation of buried remains on the site. In accordance with this recommendation, Oxford Archaeology North (OA North) was commissioned by Vermont Developments to carry out the specified programme of archaeological works.

The evaluation confirmed that well-preserved buried remains of the former dye works and associated workers' housing, all dating to the early nineteenth century, survived *in-situ*. Following consultation with the Assistant County Archaeologist for Greater Manchester and the Salford Conservation Officer, it was recommended that two parts of the site were subject to further archaeological excavation to provide a detailed mitigation record of the buried structures in advance of their ultimate destruction. The excavation was targeted on the remains of the workers' housing along the eastern and southern edges of the site, and the dye house along the western side of the site. The excavation was carried out by OA North in July 2007, and was followed by an archaeological watching brief that monitored earth-moving works across ancillary elements of the former dye works.

The excavation of the workers' houses furnished valuable evidence for the nature of cellar dwellings in Salford during the early nineteenth century, and yielded a regionally significant assemblage of clay tobacco pipe fragments, which included manufacturing waste and kiln debris. The investigation of the dye works was targeted upon the principal processing areas, and revealed well-preserved remains associated with various stages of natural and synthetic dye processing.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Paul Roberts and Ian Constatine, of Vermont Developments Ltd, for commissioning and supporting the project. Thanks are also expressed to Paul Edwards of Manchester Tippers for considerable assistance and logistical support during the demolition and site clearance work. OA North is also grateful to Norman Redhead, the Greater Manchester County Archaeologist, for advice and guidance. Special thanks are due to Joe Martin, the Salford Conservation Officer, for his support and assistance with the documentary research. Thanks are also expressed to Dr David Higgins for his work on the clay tobacco pipes recovered from the excavation.

The building investigation was carried out by Karl Taylor and Adam Waite. The programme of initial archaeological evaluation was directed by Chris Wild, who was also responsible for the further detailed excavation of Bury's Court; the excavation of the Adelphi Dye Works was undertaken subsequently by Sean McPhillips, who also carried out the watching brief. The report was written by Sean McPhillips, Chris Wild and Chris Ridings, and the illustrations were prepared by Marie Rowland. The clay tobacco pipes were assessed by Dr David Higgins, and all other finds classes were examined by Rebeka Pressler and Sean McPhillips. The palaeo-environmental assessment was carried out by Sandra Bonsall and Elizabeth Huckerby. The report was edited by Ian Miller, who was also responsible for project management.

The project was funded entirely by Vermont Developments Ltd.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

1.1.1 Vermont Developments has submitted a planning application for a mixed commercial and residential development on land adjacent to the river Irwell in Salford, Greater Manchester. Throughout most of the nineteenth century, the application site was occupied by a dye works and associated workers' housing, representing key elements of the industrial development of the area.

1.1.2 The proposed development allows for the construction of four ground floor commercial units, a total of 220 residential units within a 22 storey block, and associated landscaped piazza and basement car parking. In order to secure archaeological interests, Salford City Council, acting on advice provided by the Greater Manchester Archaeological Unit, attached a condition to planning consent that required an appropriate programme of archaeological investigation to be carried out in advance of development. In the first instance, an archaeological desk-based assessment of the application site was required, which concluded that the site had some potential to contain buried remains of archaeological significance (Wardell Armstrong 2006). In order to test this conclusion, it was recommended that a programme of archaeological evaluation was implemented in advance of development. The assessment also recommended that an inspection of the extant buildings on the site should be carried out, and any of historical interest should be subject to an archaeological survey prior to demolition. In accordance with these recommendations, a detailed specification for the required programme of archaeological works was devised by the Assistant County Archaeologist for Greater Manchester (*Appendix 1*).

1.1.3 In May 2007, Oxford Archaeology North (OA North) was commissioned by Vermont Developments to undertake the specified programme of works. In the first instance, an archaeological survey of an extant building along the northern boundary of the site was carried out. The building had originally formed part of the dye works, although its intended function was unknown. Following the completion of the survey, the building was demolished and the entire site was cleared of modern concrete surfacing, allowing the archaeological evaluation to be carried out. The evaluation confirmed that parts of the site contained *in-situ* buried remains of archaeological significance, which would be destroyed during the course of the proposed development. Following consultation with the Assistant County Archaeologist for Greater Manchester, it was recommended that a programme of further excavation was implemented to provide a detailed mitigation record of the buried remains in advance of their ultimate destruction. Two areas of the site were targeted for detailed excavation: a block of former workers' housing across the centre of the site, and part of the dye works adjacent to the river Irwell. In addition, an evaluation trench placed along the northern boundary of the site was extended to provide further evidence for the surveyed building, and to fully investigate any remains of the former houses on Walker Street.

1.2 LOCATION, GEOLOGY AND TOPOGRAPHY

1.2.1 The study area is located a short distance to the north-east of Salford city centre, and some 2km to the north-west of Manchester city centre, Greater Manchester (Fig 1). It comprises a plot of land centred on NGR SJ 8251 9897, situated between the eastern bank of a large meander on the river Irwell and Adelphi Street (Plate 1).

1.2.2 The solid geology of the area consists of Chester Pebble Beds of the Sherwood Sandstone Group, which is overlain by a drift deposit of Pleistocene boulder clays of glacial origin (Countryside Commission 1998, 125).

1.2.3 Topographically, the Manchester Conurbation, as a region, lies within an undulating lowland basin, bounded by the Pennine uplands to the east and north. The region comprises the Mersey river valley, which is dominated by its heavily meandering river within a broad flood plain (*ibid*). The topography of the present study area, however, was formed largely by the river Irwell. The southern part of the site lies at a height of approximately 35m above Ordnance Datum (aOD), and slopes down to a height of *c* 27m aOD to the north, reflecting the trend of the natural topography.

Plate 1: Aerial view of the study area prior to development

2. METHODOLOGY

2.1 BUILDING SURVEY

2.1.1 The structure subject to the building survey was situated along the northern edge of the study area, forming the northern boundary of the site. The building was empty at the time of survey, and was in a reasonable condition.

2.1.2 The building survey conformed to RCHME Level II-type guidelines, and was carried out in accordance with the Project Brief (*Appendix 1*). This was adhered to in full, which was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA), and generally accepted best practice.

2.1.3 ***Descriptive Record:*** written records using *pro-forma* record sheets were made of all principal elements of the building, both internal and external, as well as any features of historical, architectural and industrial significance or pertaining to its past or present use and function. Particular attention was paid to the relationships between areas of the building where its development or any alterations could be observed. These records were essentially descriptive, although interpretation was carried out on site as required. The written record was intended to describe the plan, form and function of the building, and aimed to elucidate its development and use.

2.1.4 ***Instrument Survey:*** in the absence of any 'as existing' drawings, plans of the building were generated. These were produced in order to show the form and location of structural features and/or features of historical, architectural and industrial interest. Survey detail was generated using a reflectorless electronic distance measurer (REDM). The REDM is capable of measuring distances to a point of detail by reflection from the wall surface, and does not need a prism to be placed. The instrument used was a Leica T1010 theodolite coupled to a Disto electronic distance meter (EDM). The Disto emits a viable laser beam, which can be visually guided around points of detail. The digital survey data was captured within a portable computer running TheoLT software, which allows the survey to be directly inserted into AutoCAD software for the production of final drawings. Where necessary, these drawings were manually enhanced using hand survey techniques. The hand-annotated field drawings were digitised using AutoCAD to produce the final drawings.

2.1.5 ***Photographic Survey:*** a photographic archive of the building was compiled, consisting of both general and detailed interior photographs, which were captured using both digital and colour slide 35mm formats. General photographs of the exterior elevations were also taken in digital and 35mm format.

2.2 EVALUATION TRENCHING

2.2.1 Following on from the demolition and clearance of the derelict buildings and removal of modern concrete surfacing, six evaluation trenches were excavated across the site (Fig 2). The uppermost levels of overburden/demolition material were removed by a machine fitted with a toothless ditching bucket, to the top of the first significant archaeological level.

2.2.2 Machine excavation was then used to define carefully the extent of any surviving foundations and other remains within each of the trenches. Thereafter, structural remains were cleaned manually to define their extent, nature, form and, where possible, date. All information identified in the course of the site works was recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology of English Heritage, with sufficient pictorial record (plans, sections and both black and white and colour photographs, the latter in 35mm and digital format) to identify and illustrate individual features.

2.2.3 All structures encountered during the course of the excavation were recorded three-dimensionally by EDM tacheometry using a total station linked to a pen computer data logger, the accuracy of detail generation being appropriate for a 1:20 output. The resultant digital plan was enhanced by manual survey on site using AutoCAD within the pen computer, whilst selected components of the works were hand-drawn at a scale of 1:20. The positions of the evaluation trenches were located with respect to surrounding landscape features, and were also recorded using the total station.

2.3 EXCAVATION

2.3.1 Following on from the evaluation, and the Assistant County Archaeologist's recommendation for further work, an updated project design was submitted in advance of targeted excavation. The academic objectives of this programme of work were redefined thus:

- to examine in more detail the extent and character of the remains associated with Adelphi Dye Works, in order to provide an understanding of the sequence of the dye process;
- to expose and record the buried remains of workers' housing along Bury's Court, and identify any evidence for phasing.

2.4 FINDS

2.4.1 ***Artefacts:*** all finds recovered were bagged and recorded by context number, processed and stored according to current standard practice based on guidelines set by the Institute of Field Archaeologists.

2.4.2 ***Sampling:*** few of the deposits or structures excavated during the excavation were deemed appropriate for palaeo-environmental or technological sampling, and thus only one sample was subject to formal assessment.

2.5 ARCHIVE

2.5.1 ***Archive:*** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991) and a synthesis will be submitted to the Greater Manchester SMR, which is maintained by the Greater Manchester Archaeological Unit.

2.5.2 Following completion of all recording and post-excavation work, including final publication, OA North will deposit the project archive (paper, magnetic and plastic media) with the receiving museum, and a full copy of the record archive with the Greater Manchester Archaeological Unit. The archive will be provided in the English Heritage Centre for Archaeology format.

2.5.3 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

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3. HISTORICAL BACKGROUND

3.1 INTRODUCTION

3.1.1 A summary historical overview of Salford has been compiled from primary and secondary sources in order to place the results obtained from the archaeological investigation into a wider context. The principal sources of information consulted were historical and modern maps of the study area, although published and unpublished secondary sources were also reviewed.

3.2 HISTORICAL BACKGROUND

3.2.1 ***Prehistoric and Roman Periods:*** firm archaeological evidence for human activity in Salford during the prehistoric period is lacking, although worked flints have been discovered on the gravel terraces in the vicinity of Ordsall Lane and Albert Park. However, the Salford floodplain would probably have comprised a broad expanse of marshland, which may not have been particularly attractive for prehistoric settlement. Archaeological evidence for Roman activity is similarly lacking, despite the considerable Roman remains excavated in Manchester, on the opposite side of the river Irwell. These were focused on the Roman fort that was established in Castlefield during the late first century (Bryant 1986).

3.2.2 ***Medieval Period:*** whilst the origins of the manor of Salford are uncertain, it is known to have been in existence by the time of the Domesday Survey of 1086, when it formed the principal centre of administration for the region, referred to as the Hundred of Salford (Tupling 1962, 115). In 1399, Salford came to the Crown as part of the Duchy of Lancaster, and the Queen today retains the distinction of being the Lady of the Royal Manor of Salford (Kidd 1996, 13). The manor was extensive, with estimates putting it at over 360 acres, although exactly what the manor consisted of remains largely unknown, including the precise location of the manorial hall, although this is thought to have been situated towards Victoria Bridge and Gravel Lane. Within the manor, the town of Salford became established and was granted market status by Henry III in 1228, and became a free borough by 1231 (Frangopulo 1962).

3.2.3 ***Post-medieval and Industrial Periods:*** the prosperity of Salford during the post-medieval period was given a significant boost by the development of the textile industries, both woollen and later cotton. The town's textile tradition was based upon weaving and finishing, using the relatively pure water of the river Irwell for bleaching (Williams with Farnie 1992, 22).

3.2.4 The river Irwell became a major transport route after 1734, when the Mersey and Irwell Navigation was completed. This new navigation formed an efficient link to the expanding port of Liverpool and enabled sea-going vessels to sail up the Irwell into Manchester and Salford (Nevell 2004, 31). Wharfage facilities for boats of up to 50 tons were provided by a quay established on the Manchester side of the river by Edward Byrom, a wealthy fustian dealer and

one of the proprietors of the Mersey Irwell Navigation Company. The quay was built in 1735 at the bottom of what in that year became Quay Street, strategically located to carry much of the town's trade, with a river frontage of 136 yards (George and Brumhead 2002, 22). In 1755, the Navigation Company opened a quay on the opposite side of the Irwell, with the intention of securing the Salford trade (Nevell 2004, 31).

3.2.5 The river Irwell also had considerable potential to power waterwheels, providing an opportunity for entrepreneurs to invest in the mechanical spinning machinery that was introduced during the 1770s and establish cotton mills (Little 2007, 12-6). Hence, in 1782, James Ackers, Jonathan Beever and Joseph Ramsbottom established Bank Mill, and William Douglas built a mill beside the Irwell at Pendleton in Salford, representing two of the earliest water-powered cotton-spinning mills in Lancashire (Aspin 2003, 453). A weir across the river Irwell a short distance to the south-west of the present study area, depicted on William Green's map of 1794 (Fig 2), formed part of the water-management system for Bank Mill. Green's map also shows the eastern bank of the Irwell in its early stages of industrial development.

3.2.6 Adelphi Street became a focus for the textile finishing industries, and a concentration of dye works became established around the present study area during the first half of the nineteenth century. During this period, the dyeing process utilised natural dyes, and involved intense preparation of both cloth and yarn, which necessitated large amounts of power and water (Nevell *et al* 2003, 93-4). The requirement for water made riverside locations a favourable choice for dye works, and clusters were established along the rivers Irwell, Irk and Medlock, from where complex systems of leats were frequently built to channel water to the works. Dye works contained numerous vats and washing machines, which were usually set into the floor and housed in long thin buildings of either one or two storeys (*ibid*). The industry made rapid technological progress during the second half of the nineteenth century, with increased mechanisation and, most significantly, the introduction of synthetic dyes produced from coal-tar derivatives. Manchester emerged as an important centre for the development of synthetic dye production, forming a distinct branch of the wider chemical industry (Ashmore 1969, 135).

3.2.7 Another important industry that developed as a direct result of the textile trade was engineering, in which Manchester and Salford played leading roles. The origins of the engineering industry can be traced to the 1780s, when a new type of iron foundry emerged, casting machine parts and constructing engines to standards of strength and accuracy beyond the resources of earlier craftsmen (Ashmore 1969, 83). Initially, growth was driven by an increasing demand for textile machinery, the engines to power them, and the components of buildings to house them. Of particular relevance to the present study area was the firm of James Farmer & Co (known latterly as Sir James Farmer Norton & Co Ltd), who manufactured steam engines and machinery for the textile-finishing trades from the late nineteenth century at Adelphi Ironworks in Salford (Ashmore 1982, 135). In the late 1930s, this firm purchased the present study area (*section 3.3.14 below*).

3.3 DEVELOPMENT OF THE STUDY AREA

3.3.1 The earliest detailed maps of the study area are those produced by Charles Laurent in 1793 and William Green in 1794 (Plate 2). These both depict the study area to have been largely undeveloped land owned by either the Earl of Derby or Holland Ackers Esq. A large complex of buildings on the bank of the river immediately to the south of the study area comprises Bank Mill, one of the earliest water-powered cotton factories in the area, which was established by the firm of Ackers, Beever & Co in 1782 (Aspin 2003, 453). The address of Bank Mill is given in trade directories as Broken Bank in Salford. These directories also list at the same address Ackers, Beever & Co as logwood-grinders (*eg* Scholes 1794, 1), a raw material used in the manufacture of dye, thus representing the early appearance of the factory-based textile-finishing trades in the area. Green's map also depicts a dye works to the north of the present study area, seemingly one of the first to have been established in this part of Salford.

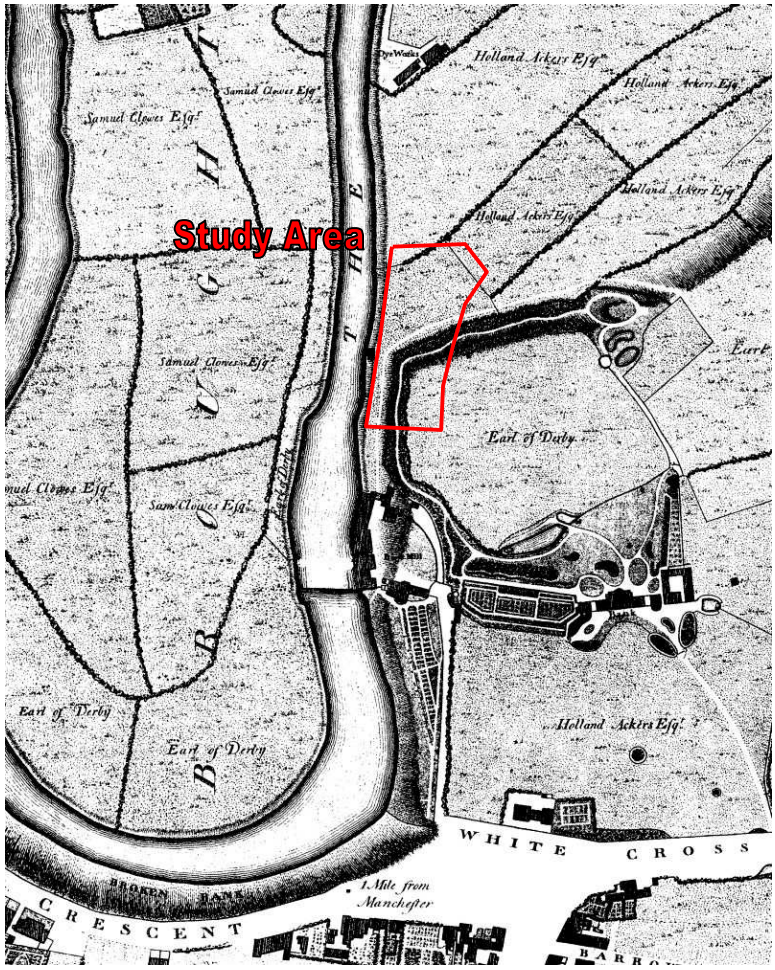

Plate 2: Extract from William Green's map of 1794

3.3.2 It seems that industrial buildings had been erected within the study area by 1820, as shown on Pigot's map of that year (Plate 3); this is the first map to depict Adelphi Street. The area certainly emerged as an important focus for factory-based dyeing, printing and finishing of cotton and silk goods during the 1820s, and trade directories for this period list several cotton merchants, printers and dyers on Adelphi Street and Blackburn Street to the east of the site boundary (*eg* Pigot 1828). Several dyers are listed at Adelphi Grove in a trade directory for 1821-2, and whilst Isaac Bury is not mentioned, it is interesting to note that a Thomas Bury is entered as a dyer at the nearby Middleton's Court in Salford (Pigot and Dean 1822, 246).

Plate 3: Extract from Pigot's map of 1820, showing the initial development of the study area

3.3.3 By 1831, the study area had undergone substantial development, as shown on Bancks & Co's *Map of Manchester and Salford* (Fig 3). This provides the earliest detailed map of the dye works, and depicts the site as having comprised several buildings. These included a long, narrow, rectangular building located along the eastern bank of the river Irwell, which probably formed the principal processing area within the dye works, and a reservoir immediately to the east. A range of buildings arranged around a courtyard is also shown to the south-east, comprising structures of varying dimensions, suggesting mixed residential and commercial use; this group of buildings is marked on subsequent historical maps as Bury's Court (Fig 4). It seems likely that the buildings forming the northern side of the courtyard were part of the dye works, whilst those to the south represented workers' housing. Another group of workers' housing is shown at the northern end of the site, comprising two parallel rows of five buildings. This group of buildings is referred to subsequently as Brierley's Court (Fig 4).

3.3.4 It is not recorded who owned the dye works at this date. However, in 1841 it was reported in the *Manchester Guardian* that dye works and buildings in Adelphi, Salford, were let to Mr Isaac Bury. This is confirmed by entries in a trade directory for 1841, which list Isaac Bury as a dyer in Adelphi, Salford; Thomas Bury is also listed at the same address (Pigot and Slater 1841).

3.3.5 The First Edition Ordnance Survey map of 1848 records no major changes to the configuration of the buildings within the study area, although the dye works is marked as 'Adelphi Sizing Works' (Fig 4). The detail of the map permits the identification of several buildings. It seems likely that the main processing area was within the rectilinear building adjacent to the river, which contained 'dye tubs' and several 'boilers'.

3.3.6 Isaac Bury of the Adelphi Dye Works is documented to have been one of Heinrich Caro's clients during the mid-nineteenth century. Caro, a German

colourist based in Manchester, introduced Bury to mauve paste in the 1860s whilst working in sales and marketing for Roberts, Dale & Co, a chemical firm in Manchester (Reinhardt and Travis 2000). Caro had built his reputation on his ability as a colourist and was significant in the development of synthesizing indigo dye, based on the discovery by William Perkin in 1856. Caro managed to marry coal tar dye stuffs rosaniline (magenta) and rosolic acid, from which other colours were derived (Homburg, Travis and Schroter 1998). Whilst working for Roberts, Dale & Co, he developed phenyline brown (also known as Manchester brown), Martius yellow and induline (*ibid*).

3.3.7 The *Salford Weekly News* records an incident in 1865, which gives an indication of the processes taking place at the Adelphi Dye Works at the time. The paper records that a fire broke out in the early hours of the morning at the premises of Isaac Bury, dyer and finisher. The fire started in an area of the works occupied by the drying cylinders, and was due to the 'spontaneous combustion of a quantity of goods piled in a corner'. The damage was valued at £500, as the fire broke through the roof and evidently caused considerable damage.

3.3.8 There is no record of the fire having spread to Brierley's Court, although these houses are shown on the Ordnance Survey map of 1892 to have been replaced by a large industrial building, which formed the northern edge of the study area (Fig 5). The dye works to the north of the study area is labelled as 'Adelphi Dye Works', suggesting that it also formed part of Isaac Bury's works. Significantly, the map shows Adelphi Street to have been realigned, which necessitated the in-filling of a large reservoir immediately to the east of the study area. This also allowed several new houses to be built in the north-eastern corner of the study area together with a new road, Walker Street, which provided access to the dye works to the north. The 1908 Ordnance Survey map shows that further modifications to the site had been carried out. In particular, the reservoir located centrally within the site had been largely in-filled and built over, leaving only a small reservoir adjacent to Adelphi Street. Several new structures are shown to have been erected in the northern part of the site, including one against the south elevation of the building along the northern boundary of the study area (Plate 4).

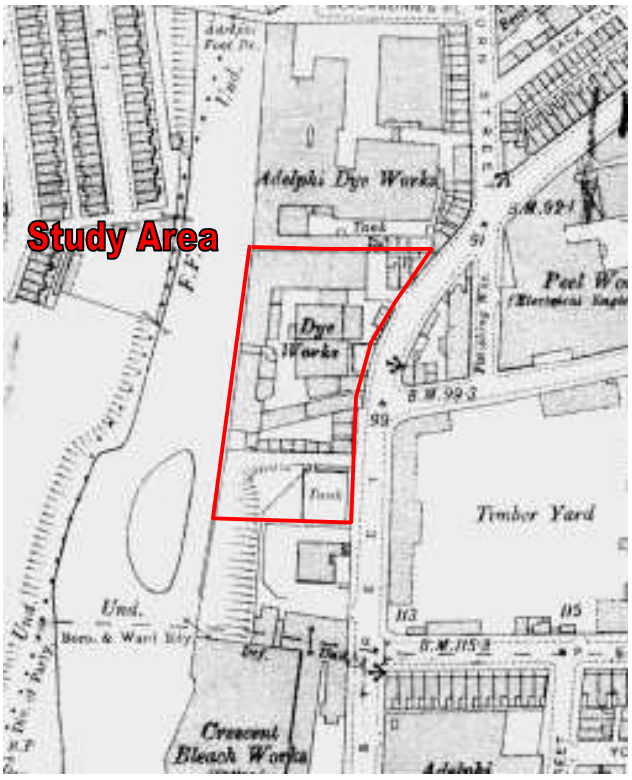

Plate 4: Extract from the Ordnance Survey map of 1908

3.3.9 The Ordnance Survey map of 1922 shows that the layout of the works had changed very little since the map of 1909. In November 1924, however, an application to the County Borough of Salford was made to build an electricity transformer house at the Adelphi Dye Works (BCP 3860A). An accompanying block plan shows that this new building was to be erected immediately to the north of the reservoir, adjacent to Adelphi Street. The transformer house was to be built 'in accordance with the requirements of the Corporation Electricity Department', and comprised a single brick-built structure that was 16' high with a concrete floor (*ibid*). The cost of erecting the transformer house were estaimated at £300. Interestingly, the owner of the site at this time is recorded as Messrs Hugh Cawley & Co, implying that Isaac Bury had relocated entirely to the adjacent site to the north. The installation of the transformer house suggests that the works' power requirements were provided by electricity, which presumably rendered any steam engines redundant.

3.3.10 An aerial photograph of the 1930s records the Irwell corridor. The whole of the area had become heavily industrialised and the application site is shown as a congested site, with the rectilinear building perched on the banks of the river. A number of chimneys are recorded within the site. These are principally located in the east and are presumably associated with the boiler houses depicted on the earlier mapping.

3.3.11 The site is shown in detail on the Ordnance Survey map of 1933 (Fig 6), which depicts a layout that is largely the same as that shown on the 1908 map. Notably, however, the workers' housing forming the southern and eastern sides of Bury's Court appear to have been demolished.

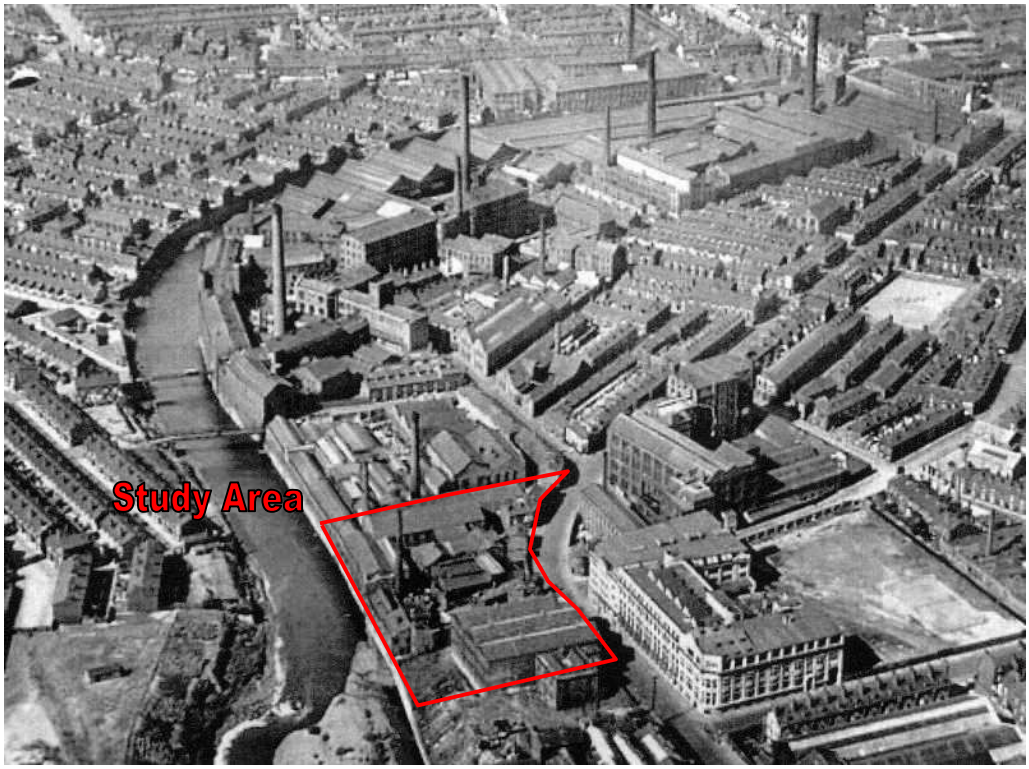

Plate 5: Aerial view of the Adelphi Street area in the 1930s

3.3.12 By 1938, the buildings within the present study area had been purchased by Sir James Farmer Norton & Co Ltd. In that year, Farmer Norton submitted a proposal to install 'sanitary accommodation' within the eastern part of the building along the northern edge of the study area (BCP 705). The building is described as a 'warehouse', and the new facilities comprised four water closets intended to serve 80 male employees in the 'pattern shop and foundry'. The estimated cost of this refurbishment was £170 (*ibid*).

3.3.13 Isaac Bury Ltd evidently retained their ownership of their works to the north, as a plan deposited with Salford Building and Development Committee in November 1940 shows the location of two new air-raid shelters (BCP 1850). One of these was located immediately to the north of the houses on Walker Street, and the second was situated immediately to the west of the houses fronting onto Blackburn Street, within the Adelphi Dyeing and Finishing Works; neither of these shelters were located within the present study area.

3.3.14 The 1949 Ordnance Survey map marks the site as the 'Adelphi Iron Works (Engineering)', and indicates some remodelling of the buildings within the study area relative to the 1933 Ordnance Survey map. The buildings in the centre of the site, in the location of the former reservoir, had been demolished and the rectilinear structure which was located on the western boundary of the study area had seemingly been replaced by a larger, wider building. The buildings in the northern part of the site appear to have been unchanged. The two domestic buildings were still present at this time on the eastern side of Walker Street.

3.3.15 Observation of modern Ordnance Survey mapping dating to 1956, 1980 and 1989 records little change within the boundary of the study area following the production of the 1949 map. Isaac Bury's Adelphi Dyeing and Finishing Works, situated immediately to the north of the study area, closed in 1961 and had been demolished by 1989, and replaced by new housing.

3.4 DYE HOUSES, MACHINERY AND PROCESSES

3.4.1 In the early nineteenth century, the internal layout of a typical dye house was of careful design. The building was usually built solidly of stone or brick, with high roofs in order to keep the building warm in the winter and cool in the summer. It normally contained equipment and machinery that required a large steam engine to power, including rolling, cutting, drying, brushing, and raising machinery driven by cotton driving ropes and belts. A useful description of a typical mid-nineteenth-century dye works is provided by Barfoot (1840):

> 'The Dyer's Machinery is very simple, and so are the operations; but the management of the colouring requires much skill. When the colours are to be fixed upon cloth which has gone through the printing machine, the pieces are first passed through a number of rollers, in a stone cistern filled with cow dung and hot water, to take away the printer's colouring. After this they are well washed in a Dash-wheel, tied four together and put into a Dyeing Cistern filled with water and the dye stuff required, such as Madder for red, or lilacs, Indigo for blues, &c. the pieces are rinsed in cold water and put again into the Dash-wheel. The dye is thus fixed in the pattern given by the machine, and as the rest of the cloth is slightly tinted, it is washed in hot water and bran, and put into a cistern of bleaching liquid. It is next passed between two squeezers, and dried by the drying machine.'

3.4.2 The depths of the vats varied, although it was important there was sufficient room to contain the sediment collected from each working (Partridge 1823). There were three different ways of heating the vat liquors: turning it over into a furnace and, when heated to boiling, returning it into the vat; by having part of the vat made of metal and passing a flue around it; heating it by steam (*ibid*). Archaeological evidence suggests that steam methods were probably used at the Adelphi Dye Works.

3.4.3 ***Natural dyes:*** natural colouring dyes such as black, yellow, and green, indigo required a fixative, or mordant, to fix the colour to the yarn or cloth. In the 1840s, the dye-making industry was in the hands of the extractors of natural colorants merchants and dyers. The French were particularly successful, and their improved production methods for madder were investigated and imitated by the Dutch (Morris and Travis 1992).

3.4.4 Most blue and purple colours were derived from indigo, obtained either from woad or from the indigo plant, although some other sources (*eg* shellfish and lichens) were also used. Reds were often anthraquinone derivatives obtained from plants or insects, and yellows were almost always flavonoid derivatives obtained from a variety of plant species. Most other colours were produced by over-dyeing; greens, for instance, were obtained by over-dyeing a blue with a yellow dye (Ferreira, Hulme, McNab and Quye 2004).

3.4.5 New sources of dyes were investigated from the 1840s. Justus Liebig and Friednch Wohler in Giessen had investigated murexide, a purple product obtained from snake excrement, although in the late 1830s its potential as a dyestuff was not immediately apparent (Morris and Travis 1992). During the

1850s, French colourists and dye-producers, especially Depoully in Paris, managed to surmount the difficulties of making murexide from abundant South American guano, and of applying it to natural fibres, and it was adopted in Britain, France and Germany.

3.4.6 The advent of coal-tar colouring brought about the change in the use of colouring matters from the dye house to the laboratory. Nitration of phenol from coal tar yielded yellow picric acid that was a useful dye for over three decades from around 1850. Yellow and orange coal-tar dyes split into four groups: neutrals; basics; acids; and adjectives. The introduction of purple synthesised artificially from coal tar by William Perkin in 1856, who forged a major impact in the future process of dyes. Its introduction revolutionised the world of both dye-making and fashion (Garfield 2001).

3.4.7 ***Synthetic dyes:*** the manufacture of natural dyes continued into the twentieth century alongside the production of synthetic dyes (Simon 1996). Textile finishing and processing companies were eager to take advantage in the development of dye technology. The production of synthetic dyes derived from coal tar distilled in a gas works, which provided the hydrocarbons used in the manufacturing process (Homburg, Travis, and Schroter 1998). Changes in patent legislation at the end of the nineteenth century brought an increase in the levies demanded from the products of German and Swiss manufacturers (Reed 1989). Of the 600 patents for coal tar dyes awarded to foreigners between 1891 and 1895, none were worked by British owned firms *(ibid*). Efforts made by Ivan Levinstein, a German dye-maker established in Manchester, brought about changes in the British patent law in 1907, which hastened German firms to make substantial investments in Britain for the manufacturer of dyes. This led to a German company Hoechst building a new plant for indigo dyeing at Ellesmere Port in 1907, which was sufficient to supply the entire British market for indigo (Homburg, Travis, and Schroter 1998). In spite of years of campaigning by Ivan Levinstein, Britain entered the 1914 war with a textile industry heavily dependent on German dyestuffs. Government efforts to restore this imbalance led eventually to a merger of Levinsteins Ltd with other British producers to form the British Dyestuffs Corporation. Further developments in the laboratory during the twentieth century included the introduction of reactive dyes, disperse dyes, azo dyeing and sulphur dyes. Some of these dyes were probably used at Adelphi Dye Works.

3.4.8 ***Cotton dyeing:*** traditionally, cotton fibres were known not to take on colouring matters without the aid of mordants, although dyes have been invented that could be fixed directly onto the cloth at once, known as ‘direct colours’. This form of dyeing was practised more extensively throughout the late nineteenth century, but necessitated numerous machines and thus required ample space (Murphy 1911).

3.4.9 The term direct dye application stemmed from some dyestuff having to be either fermented, as in the case of some natural dye, or chemically reduced, as in the case of synthetic vat and sulphur dyes, before being applied. This rendered the dye soluble so that it could be absorbed by the fibre. Direct dyes are a class of dyes largely for dyeing cotton, which can be used cold, although

when used on wool has to be pre-boiled in a bath. These are water soluble and can be applied directly to the fibre from an aqueous solution. Most other classes of synthetic dye, other than vat and sulphur dyes, were also applied in this way. The term may also be applied to dyeing without the use of mordants to fix the dye once it is applied. Acid dyeing was a technique commonly used by wool dyers, which was effectively a direct dye procedure. The colour is treated with chemicals in a pre-boiled container containing colours such as blacks and reds.

3.4.10 *Additions to the bath*: Glaubers salt or common salt is always added to the bath during the application of direct colour. The salt ensures more level dyeing and ensures the bath to be exhausted more nearly. Blue, red and yellow dyes require temperature of 170 degrees within a container taking 500 gallons of water. After the water is exhausted, more colour is added, and then the cloth is pit through a bath of hot potash and copper sulphate to colour fast (Murphy 1911).

3.4.11 *Mordanting and dyeing cottons*: sometimes it is necessary to run the cloth through a mordant prior to the application of the dye. In most cases the fixing is done after the dye has been put through the cloth (Murphy 1911). The mordanting of cotton intending to be dyed with basic colours general practise treat material for an hour in hot tannin, then the material is wrung out in an antimony compound for fixing the tannin, washed then dried (*Textile Mercury* 1911).

3.4.12 Mordant dyes require a fixing agent, which improves the fastness of the dye against water, light and perspiration. The choice of mordant is very important, as different mordants can change the final colour significantly. Most natural dyes are mordant dyes and there is therefore a large literature base describing dyeing techniques. The most important mordant dyes are the synthetic mordant dyes, or chrome dyes, used for wool; these comprise some 30% of dyes used for wool, and are especially useful for black and navy shades. The mordant, potassium dichromate, is applied as an after-treatment. Mordants were often required to alter the hue and intensity of natural dyes and improve their colour fastness. Chromium salts were until recently used extensively in dyeing wool with synthetic mordant dyes. These were used for economical high colour fastness dark shades, such as black and navy. Environmental concern has now restricted their use and they have been replaced with reactive and metal complex dyes which need no mordant (Ferreira, Hulme, McNab and Quye 2004).

3.4.13 ***Dye house machinery:*** during the early application of synthetic dyes in the mid-nineteenth century, there was no change in the type of applicable knowledge and practical know how in terms of the machinery used. The type of machinery pertinent to the dyeing process included heated vessels and vats for mixing dyes, dye becks, and jiggers used to agitate and fix the dyes onto the cloth, padding machines and mangles to saturate the cloth. Other machinery included cutting, drying, brushing, and raising apparatus. An indication of the use of such machinery can be gained from contemporary descriptions, such as the published account of a visitor to William Mortimer's Cleaning and Dyeing works in Plymouth in 1888:

> 'The first department we were taken to was the dyeing-house, which contains over thirty large vats. These are principally of wood, but where acids are used, the vessels are of copper. The water is boiled by a steam pipe running into the vat. Here also is a machine for extracting the dye from logwood, etc. After the goods have remained in the vats long enough they are placed in one of the numerous drying-rooms. Dyed stuffs must be dried quickly or the colours will "run," therefore a very high temperature is required, and this is produced by large coke stoves. After being made quite dry the goods are taken to the finishing-rooms. This is a very important department, for, as most of us know that when a piece of silk or velvet has been dipped in water, the gloss is lost, therefore to make the article like new it is necessary to get the facing back again. This is done by placing the article on a frame, on each side of which is a row of fine steel pins. The piece of silk is thus stretched very tightly upon the frame, and then runs into its place in a box, which is heated by steam pipes, and by this process a fine gloss is obtained and all "puckering" prevented. Velvet is a very difficult article to deal with, a room being specially set apart for this class of goods. The fabric is put on a frame as before described, and heat is applied to the under-surface by means of steam and gas stoves, travelling on tramways which is essential for raising the pile, as when new'. (Anon 1888).

3.4.14 A summary of the principal machines employed in a dye works is provided by Murphy (1911):

- *Dye vessels:* the dye was contained in huge dish or bowl shaped vessels, set in brickwork. Prior to the introduction of steam, these were heated by means of a fire underneath, generating evenly distributed heat around the vessel. Vessels were made latterly from iron or wood, square in shape, and heated by steam, which was carried into the vessels by a pipe down one corner of the vessel and along the side at the bottom. The pipe was perforated with holes to aid distribution (*Textile Mercury* 1911). Vats that are used for agitating liquors of a corrosive nature, such as copperas, are usually constructed of or slate, although wooden vessels served quite well.
- *Dye becks:* dye becks were little more than vats with mechanical fittings to help keep the cloth or yarn in motion. Spiral dye becks comprised a series of rollers arranged inside the cistern so that the materials being dyed were kept in constant circulation among the colour.
- *Jiggers*: the jigger was a simple form of spiral beck roller fitted inside the bath, two at the bottom and two at the sides, while rollers on the head of the bath led in and brought out the pieces.
- *Padding machines:* the object of the machine was to saturate the cloth with dye, but not to let it steep. A large dipping roller ran into the bath with a pair of heavy squeezing rollers above. The cloth was led round the dipping rollers and pressed free of liquor between the upper rollers, and passed out through them.
- *Mangles:* similar to the mechanism of the padding machine, although the difference was that the cylinders were hollow and steam heated.

3.4.15 ***Drying room:*** a typical drying room was long in comparison to its width and height. It was air heated by steam pipe entering the room at one end, entering a condenser. In order to minimise the length of air travel, both the heating chamber filled with steam piping and the cooling chamber filled with condenser piping in conjunction, laid directly under the drying chamber.

4. BUILDING INVESTIGATION RESULTS

4.1 ARRANGEMENT OF THE BUILDING

4.1.1 The building that was subject to an archaeological survey formed the northern boundary of the study area. Stylistically, the building dated to the 1860s, and it is first depicted cartographically on the Ordnance Survey map of 1892 (Fig 5). It comprised a two-storey structure of a rectangular plan, the long axis of which lay on an east/west orientation (Plate 6). For the purposes of the building investigation the elevations will be described with respect to their cardinal orientation.

Plate 6: South-facing elevation of the building

4.1.2 The ground floor of the building was divided into three rooms (Fig 7), and the first floor was a single open space (Fig 8). It was approximately 13.5m wide (44 feet) by 31.5m (103 feet) long, and had 11 bays. The building extended originally further to the west, as the west gable wall cut through the western bay at an oblique angle, and was clearly of later construction than the rest of the structure; this is corroborated by historical mapping, which shows the western end of the building extending to the bank of the river Irwell. Access to and from the first floor was via a straight flight of wooden stairs, which was situated within Bay **9** (from the west), adjacent to an internal partition (Fig 7).

4.2 FABRIC

4.2.1 Almost the entire building was constructed from hand-made brick, average size 0.22m x 0.11m x 0.07m (8 ½ inches x 4 inches x 2 ¾ inches), which was laid as a 'four to one' English Garden Wall bond (EGW). Lime mortar was present throughout, with some minor areas of patching and repair in cement; the north elevation was entirely cement rendered. Nearly all of the window and door apertures were either fully or partially blocked with cinder block, and some of the dividing walls on the ground floor were of cinder block construction. All of the window sills were sandstone.

4.2.2 The west wall of the building was of concrete-framed construction, with machine-made brick panels laid in stretcher bond. It originally contained steel-framed windows, which were partially blocked subsequently.

4.2.3 All the roof trusses were of timber (pitch pine) construction, with wrought iron straps and bolts. Each end of the truss rested on sandstone pads. The roof covering comprised corrugated asbestos sheets with plastic corrugated roof lights. The first floor was of all timber construction, and the ground floor was concrete. Large sandstone blocks were present in the diving wall on the ground floor, and were associated with large cast-iron primary transmission bearing boxes (Fig 9).

4.3 EXTERIOR DETAILS

4.3.1 ***The South Elevation*:** this formed the main elevation, and also provided the principal access point into the building. This was through a large, steel shuttered doorway located at the east end of the ground floor, whilst a smaller partially blocked doorway was present at the east end of the elevation (Plate 7). The only other form of access was provided by a small flight of stairs from the adjacent shed to the east. The blocked doorway appeared to have replaced an earlier door to its immediate right, which had also been blocked with brick. In addition, on the first floor, there are three loading bay doorway with projecting sandstone sills and flush lintels. These were arranged as large double doors to the centre of the elevation, with a further pair of ancillary doors at the west extent and towards the east end of the elevation. Only the central and east doors were still open apertures, as the western loading door has been in-filled with cinder block.

Plate 7: Entrance arrangement at the eastern end of the ground floor

4.3.2 There were five windows on the first floor, all of which were blocked with cinder block, whilst the ground floor contained five blocked windows which

were all blocked externally with brick and cinder block. Despite the blocking in the majority of these windows, all appeared to have originally been nine-light top-hung ventilator casements featuring segmental arched heads, flat brick rubber voussoirs, and slightly projecting sandstone sills (Plate 8).

Plate 8: Detail of the windows and loading door on the first floor of the south elevation

4.3.3 ***The North Elevation:*** the rear elevation of the building was covered in a thick cement render, which masked most of the brickwork, although some areas of the underlying hand-made brick were exposed. In light of this spartan appearance, the most significant features of the elevation were four timber protruding beams, which acted as the key load-bearing members of the first floor.

4.3.4 ***The East Elevation:*** the elevation was exposed as bare hand-made brickwork, with dense vegetation masking the northern half of the façade. The casement windows of the ground and first floors were comparable with those observed on the front (south) elevation, although the larger casement on the ground floor appeared to have been shortened. To the immediate right of this casement was a small fixed-light window with projecting stone sill and a plain timber lintel instead of the more decorative voussoirs featured elsewhere. Additionally, there was a ventilation hatch beneath the gable, which was covered with iron slats.

4.3.5 The only other features of note were located towards the south-east corner of the elevation, including the factory bell at first floor level, and a red painted iron plate that marked the internal position of the stop valve for the sprinkler system. A manufacturers stamp on this plate indicated that the sprinkler system had been installed by Mather & Platt Ltd, probably during the early twentieth century.

4.3.6 ***The West Elevation:*** this elevation was aligned obliquely to the rest of the building, and was largely masked by the adjacent derelict shed. Despite the presence of this modern shed, it was clear that the elevation differed in material from the other elevations. Whereas these elevations were built of hand-made bricks, the west elevation was evidently a later addition and was constructed from a concrete framework, in-filled with machine-made bricks.

4.4 INTERIOR DETAILS

4.4.1 ***Ground floor:*** the principal room on the ground floor was nine bays long from east to west, and was constructed from hand-made bricks and lime mortar, laid in a four to one English Garden Wall bond, with bullnose detail on the aperture surrounds. Similarly, bullnose detail had been added to the brick piers, which were inset with sandstone pads to support the machine-cut beams of the ceiling.

Plate 9: View looking north-east across the ground floor, with the cinder block wall to the left

4.4.2 A partition of cinder blocks had been partially built immediately adjacent to the north elevation, but its intended function remains uncertain (Plate 9). A pair of cut RSJs towards the east end of the wall suggested that it may have featured as some kind of support or rear wall for a modern loading bay constructed from RSJ beams and stanchions. Certainly it position at the base of the entrance ramp would appear to support this. A further partition of timber screened the first floor stairs, which were located towards the east end of the building.

4.4.3 Of particular interest was the dividing wall that was located towards the east end of the building (Plates 10 - 12). The wall originally featured a pair of doorways with segmental brick voussoirs, seemingly leading into an engine house beyond, but these had been blocked with machine-made bricks (Fig 9). Evidence for a former engine house was provided by the presence of two large

cast-iron primary transmission boxes, and two smaller bearing boxes towards the centre and north of the wall. The more central bearing box had a groove worn into the surrounding brickwork, presumably representing the friction from a belt pulley on a lineshaft (Plate 12). All of the cast-iron casings were in-filled with brick or cinder block.

Plate 10: Detail of the dividing wall at the east end of the building

Plate 11: Detail of a primary transmission bearing box, in-filled with brick

Plate 12: Detail of the in-filled central bearing-box, showing friction groove

4.4.4 The floor, including the brick-built ramp at the east end of the building, was laid to concrete, whilst the floorboards of the first floor comprised the ceiling. This was supported by machine-cut beams mounted upon cast-iron columns towards their centre. The columns were slightly offset to the south, presumably in order to carry a lineshaft, which had been attached to the bracket on the south side of each post (Plate 13). One of the columns (supporting beam 4) had been removed, and an RSJ spanning Bays **4** and **5** has been inserted to compensate. Alterations had also been made to the joists in the northern half of Bays **3**-**7**, and on the south side of the ceiling, in and around Bay **7**. Access to the ground floor was via a steel-shuttered door at the east end of the south elevation, whilst a set of stairs and door on the west elevation originally led in to the adjacent shed. All of the casement windows on the south elevation were blocked on their interiors with plasterboard and brick, whilst three steel-framed windows on the west elevation were in-filled with cinder block.

Plate 13: Detail of lineshaft bracket housing

4.4.5 ***First floor:*** as on the ground floor, the main build of the first floor was of hand-made brick and lime mortar, which had been repaired throughout with patches of cement render. The distinctive west elevation was again concrete with machine-cut bricks laid in a stretcher bond, whilst a small matchboard partition had been inserted at that end of the building in order to create a small office area. The floor comprised timber floorboards measuring 0.23m (9 inches) wide, overlaid with a bitumen surface up to 0.02m deep, which unfortunately masked the presence of any beds or scarring from machinery.

Plate 14: General view looking east across the first floor

4.4.6 The roof was laid with corrugated asbestos concrete and corrugated perspex skylights resting upon a frame of nine machine-cut queen-post and king-tie trusses (Plate 14). These were fixed with bolted straps (Plate 15) and all were supported by a single cast-iron column to their centre (Fig 10), with the exception of the ninth truss (Fig 8). In addition, brick piers and sandstone pads provided support at the north and south walls. Of the nine trusses, three (2-3 and 9) had Baltic timber marks on the western faces of their tie-beams, and a further three (2-4) had probable Baltic timber marks on their eastern faces.

4.4.7 At least four trusses were also observed to have probable carpenters' marks on the upper reaches of the queen posts, whilst all had bolt-holes and slots relating to the original lineshaft hangers, which corresponded to the bearing box on the east elevation. In addition, three of the trusses (3, 5 and 7) supported heaters and associated copper piping, attached with L-shaped brackets, whilst a further five supported the pipes of the sprinkler system.

Plate 15: Detail of the bolted straps on the tie-beams

4.4.8 On the eastern gable wall, there were three top-hung ventilator casements with timber lintels and brick sills, which were partially in-filled with cinder blocks, whilst a further five comparable casements were located on the south elevation. In addition, there were three casements on the west elevation, but only the central window, featuring a steel frame and concrete sill, remained unblocked. In addition, there were three loading bay doorways on the south elevation comprising a pair of smaller ancillary doorways to either end of the elevation, and a larger double doorway to the centre of the elevation. The smaller doors were of matchboard design, with timber frames and slightly projecting sandstone sills. The larger central door no longer had any doors, but from the rails at its base and at lintel height, these appeared to have originally been sliding doors. At the south-east corner of the building, there was a diaphragm for the sprinkler system, again bearing the makers' mark 'Mather & Platt, Engineers Ltd'. This appeared to be of an early twentieth-century date, and had clearly been inserted as an addition to the building. Further along the elevation, there was the bearing box made by Carters of Salford. This bearing box was not directly in line with the scars of the former lineshaft on the north section of the trusses, suggesting an additional gearing system had been employed between the box and the ninth truss.

Plate 16: Sprinkler system diaphragm

4.4.9 ***Former engine house:*** the bearing boxes built into the partition implied that the east end of the building had originally housed a steam engine; this was corroborated by excavation (*Section 4.5 below*). The engine had been removed subsequently, and the room was partitioned with brick and plasterboard into two separate shower and toilet facilities in 1938 (BCP 705). In keeping with their most recent function, both rooms had ceramic tiled walls and floors that masked the original fabric. Additionally, the ceiling of the north room was obscured by modern plasterboard sheeting, although the south room retained its original ceiling of floorboards supported by a pair of east/west-aligned stop-chamfered beams. Of particular interest on this ceiling were the pipes housed within a timber covering, which were fed through the south external wall and were therefore likely to have originated in the now demolished boiler house that lay somewhere to the south of the building.

4.4.10 Also of note was the pressure gauge and valve for the sprinkler system on the ground floor (Plate 17). This survived fully intact, and stood on the south-east corner of the south room. There were three casements on the east wall, but only two of these were visible as the third had been blocked and tiled over. The two remaining windows had been in-filled with cinder blocks, but the bullnose brick surrounds and the timber frames and sills were still discernible. Of the two doors, the more northerly was a modern, plain door and architrave within the partition, whilst the door to the south appeared to have been blocked with brick, but had been reopened immediately prior to the survey.

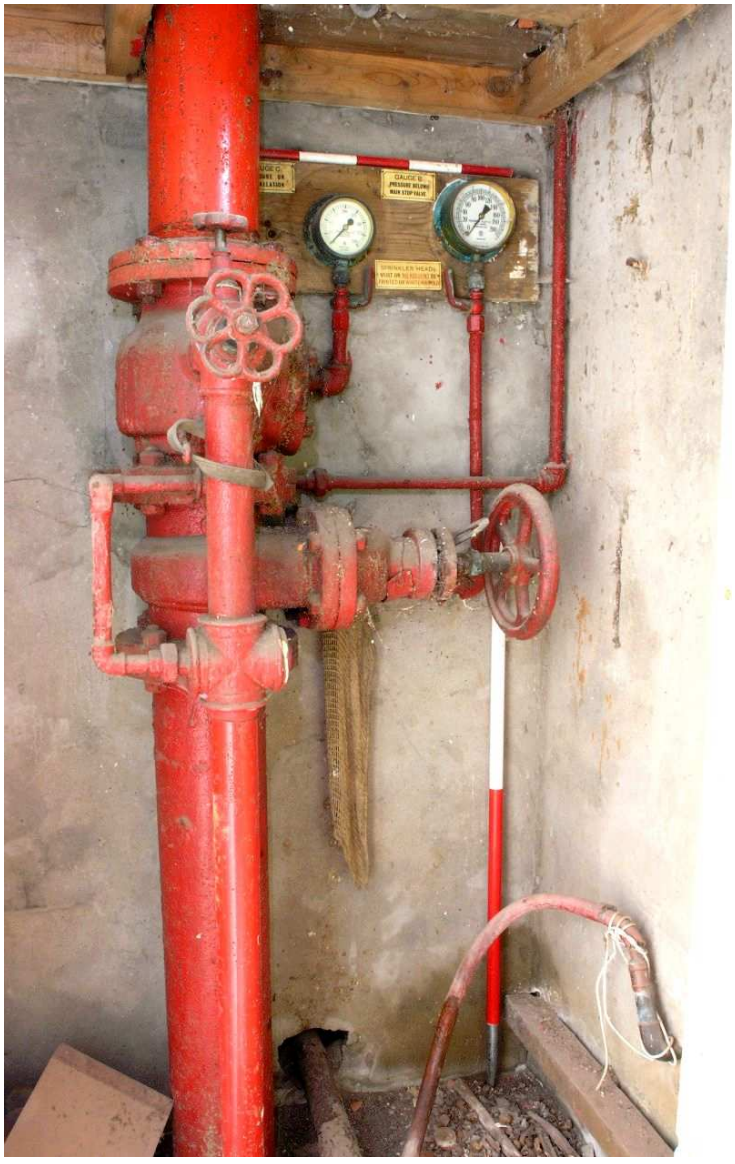

Plate 17: The gauge and valve for the sprinkler system

4.5 EXCAVATION RESULTS (AREA B)

4.5.1 The presence and position of the former engine house was confirmed by excavation. Initially, following demolition, an evaluation trench (Trench 6) was placed across the eastern end of the building, and a larger area (Area B) was excavated subsequently to establish the full dimensions of the engine room. This confirmed that the engine room measured 15m long by 4.60 wide, and was aligned north/south across the eastern end of the building, adjacent to Walker Street.

4.5.2 The engine room comprised four contiguous walls (***601***, ***603***, ***610***, and ***611***) which varied in width, although the eastern (***610***) and western (***603***) walls generally measured 0.6m wide (Fig 11). The walls comprised hand-made bricks, set in a lime-based mortar and laid in an English Garden Wall bond. The northern wall (***601***) measured 0.8m wide, but incorporated an extra skin along the southern face, representing a later addition. The component bricks in this addition were bonded with grey mortar, in contrast to the lime-based mortar used in the original fabric.

4.5.3 The floor of the engine room was composed largely of concrete, although the position of the engine was represented by a stone ashlar foundation bed (***602***), which measured 4.35m long, 1.8m wide, and 0.6m thick (Plate 18). The southern end of foundation ***602*** abutted wall ***611***, although a 1.08m void separated the western side of the foundation from wall ***603***, suggesting this to have been the position of the engine's flywheel. Foundation ***602*** contained two rows of *in-situ* circular threaded rods, spaced 0.88m apart and measuring 40mm in diameter, representing the engine's tie-down rods. A rectangular depression at the southern end of foundation ***602***, measuring 1.67m long by 0.88m wide, represented the position of the southern end of the engine. This contained another four metal tie-down rods embedded within each corner.

Plate 18: The excavated remains of the engine foundation

4.5.4 Located at the south-western corner of the room was an upright, free standing transmission bearing box (***612***), identified during the building survey. It was 1.79m wide, and survived to a height of 1.40m, above a concrete plinth. Its eastern face contained a semi-ovular shaped window measuring 1.26m wide and 0.73m high, which had been in-filled latterly with brick.

4.5.5 ***Northern external wall 601:*** during the archaeological watching brief that monitored the ground-reduction works associated with the development in the northern part of the site, the remains of a flue were observed built into the foundations of the north wall of the building at a depth of 0.8m beneath the concrete floor surface. The flue comprised two eight course high piers set 2.1m apart, each measuring 0.35m thick with external skins of hand-made brick. The space in-between the piers was filled with a mixture of hand-made and refractory bricks that contained a 1.1m wide channel in the middle. Another two flues were located to the immediate east, seemingly providing conduits for waste gases from different parts of the dye works. These smaller flues each measured no more than 0.8m wide, and were separated by narrow single-skin refractory walls. It seems probable that these flues linked to a chimney situated directly to the north of the site within the adjacent Adelphi Dyeing and Finishing Works, shown on historical mapping (*eg* Fig 6). There was no evidence to suggest that any of the flues were associated directly with the surveyed building.

4.6 DISCUSSION

4.6.1 ***Phase One:*** cartographic sources indicate that the building was erected in a single phase during the second half of the nineteenth century on the site of Brierley's Court, perhaps as a result of the documented fire at the dye works in 1865; no physical remains of Brierley's Court survived, nor the later nineteenth-century properties on the eastern side of Walker Street. The historical mapping also suggests that the original building was larger than its present dimensions, with an L-shaped structure depicted, whilst an adjacent structure attached previously to the north elevation may account for the cement render and the protruding beams on the elevation.

4.6.2 Internally, the building was arranged in its final format, with the engine house located in what was latterly the shower and toilet facilities at the eastern end of the building. The configuration of the excavation ashlar foundation bed (***602***) suggests that a small horizontal steam engine had been installed in the building. Such engines were commonly employed in small workshops during the second half of the nineteenth century, but there were numerous design variations to meet the demands of different process (Watkins 1994, 110).

4.6.3 The engine had seemingly powered one if not two lineshafts on the ground floor, whilst a belt mechanism probably fed a lineshaft attached to the trusses on the north side of the first floor. Unfortunately, the bitumen surface on this upper floor obscured any evidence of any machine mounts or scarring, although it is probable that the south side of the first floor was kept free of machinery, and acted as a storage and loading area, hence the presence of the three bay doors.

4.6.4 The survey provided no physical evidence for the boiler house, but the presence of steam pipes projecting from the south-east corner suggest that it stood originally to the south of the building. The Ordnance Survey map of 1892 shows two contiguous rectangular structures aligned east/west a short

distance to the south of the engine room, and it seems possible that these represented elements of the steam-raising plant.

4.6.5 ***Phase Two:*** the Ordnance Survey map of 1908 shows the putative steam-raising plant structures to have been replaced by a larger building. Two smaller structures in the position of the electric transformer house in the north-eastern corner of the dye works are also shown on the 1909 map. It is tempting to suggest that these represented a change from steam to electric drive at the works, although firm evidence is lacking. Indeed, this would represent an early application of electric drive to a factory (*Cotton Factory Times*, 31 January 1908). Nevertheless, it is clear from the surveyed fabric and the available documentary sources that the building was remodelled during the early twentieth century, presumably representing a change in function. This remodelling also included the addition of a rectangular structure against the south-facing elevation. This is marked on the 1933 Ordnance Survey map as a covered entrance, the position of which corresponds to the loading doors on the first floor of the surveyed building. It seems possible that the addition of this structure resulted in the blocking of the windows in the south-facing elevation.

4.6.6 ***Phase Three:*** documentary evidence has shown that the building was acquired by James Farmer & Co in order to expand his engineering business to the south-east on Adelphi Street during the late 1930s. During this period, the structures running parallel to the river Irwell were demolished, and the west elevation of the surveyed building was rebuilt subsequently in concrete and brick. It was also during this period (1938) that the former engine house was converted into toilets and shower facilities. The building was described at this time as a 'warehouse', and the new facilities were intended for employees in the 'pattern shop' (BCP 705).

Plate 19: Cross-section of the building during demolition, looking east

5. EXCAVATION RESULTS (AREAS A AND C)

5.1 ADELPHI DYE WORKS

5.1.1 The Adelphi Dye Works was investigated initially via four evaluation trenches (Trenches 3, 4, 5 and 6), which were placed across the south-western and north-eastern parts of the former works (Fig 2). Significant and well-preserved buried remains pertaining to at least five phases of development were revealed in the trenches. The structural remains represented the key elements of the dyeing process, including dye mixing, fixing, washing and drying, and spanned the period of technological transition from the use of natural dyes to chemically processed dyes during the mid- to late nineteenth century. Several vats and tubs containing dyes and chemical residues were exposed, together with a flagged floor (***148***) at the southern end of the site, which had possibly been associated with the drying of newly dyed cloth. Other remains included the foundations of a steam engine at the northern end of the dyeing room, a chimney, and a boiler room. In addition, a thick layer of clay (***115***) along the eastern side of the site represented the probable location of a reservoir shown on historical mapping. Further remains pertaining to the later nineteenth-century development of the dye works were represented by modifications to the flues at the northern end of the boiler room, and the remains of ancillary buildings built over the former reservoir in the eastern part of the site. The foundations of the engine house within the building at the northern limit of the works (Area B; *Section 4, above*) also belong to this period. The twentieth-century use of the site as an iron foundry/engineering works was represented by rows of concrete stanchions, and the well-preserved remains of an air-raid shelter.

Plate 20: View of the excavated remains, looking north

5.1.2 The results of the evaluation, excavation and subsequent watching brief have been combined and presented in chronological phase order. Two areas (Areas A and B) of the dye works were investigated across the southern, western and northern parts of the site. In total, the areas excavated across the southern and western part of the works (Area A) measured 28m by 20m, and 17m by 10m along the northern part of the works (Area B). The results obtained from Area B are presented in *Section 4.5*, as they inform the conclusions of the building survey. The excavated stratigraphic sequence revealed in Area A has been divided into five chronological phases:

- ***Phase 1:*** represents the construction of the Adelphi Dye Works in the early part of the nineteenth century, as shown on Pigot's map of 1820. Structural remains that could be attributed firmly to this period were scarce, although elements of the works' external walls survived.
- ***Phase 2:*** represents an expansion of the dye works under the ownership of Isaac Bury along the northern part of the site up to the mid-nineteenth century, as shown on the Ordnance Survey map of 1848 (Fig 4). At this time the works was almost certainly using natural dyes, although evidence of these was not readily apparent. However, structural remains that may have been used to process these dyes survived across the western side of the works within room ***135***. Other remains associated with the expansion of the works include the external walls of the reservoirs, the dye processing area, a courtyard, and remnants of the boilers.
- ***Phase 3:*** represents the technological improvements achieved in the dye-processing industry during the second half of the nineteenth century, when synthetic dyes were revolutionising the dyeing process. Modifications to the site during this period included the erection of a larger structure along the northern boundary of the site replacing workers' houses, and the in-filling of the reservoir across the eastern side of the site. Remains associated with these developments included the synthetic dye mixing stage contained within area ***145***, and within some of the vats within room ***135***. Other significant structural changes included the installation of a chimney (***143***), modifications to the boiler flues (***195***), and external wall ***138***.
- ***Phase 4:*** represents further activity during the early to mid-twentieth century, including the in-filling of the reservoirs at the northern and eastern sides of the site. During this period, Adelphi Street was realigned and a large structure was constructed over the eastern reservoir. The archaeological remains from this period include modifications to walls ***138*** and ***601***, and the construction of a room (***142***) sealing an earlier boiler foundation.
- ***Phase 5:*** represents the period when the site was owned by James Farmer & Co, who purchased the works in 1938. Physical remains from this late period that featured in the archaeological record included those representing the remodelling of buildings throughout the mid-twentieth century.

5.2 PHASE 1

5.2.1 The earliest remains encountered during the excavation included the remnants of an L-shaped range of buildings, which were represented by an external wall (***138***) that was cut into the natural clay geology (***149***). The position of this building corresponded to a structure depicted along the southern part of the site on Pigot's map of 1820 (*Section 3.3.2, above*), seemingly representing the earliest format of the dye works. Elements of the reservoir in the centre of the study area, which is also depicted on Pigot's map, were also revealed. No archaeological remains of an earlier date were encountered during the excavation, although a considerable quantity of clay tobacco pipe fragments dating to the early nineteenth century was recovered from the excavation of Bury's Court (Area C; *Section 5.7, below*).

5.2.2 Wall ***138*** represented the only surviving element of the external wall pertaining to the southern range. The excavated remains of the wall measured 21m long by 0.45m wide (Fig 12). It comprised hand-made bricks, each measuring 230mm by 110mm by 70mm, bonded with lime mortar flecked with charcoal. The upper courses of the wall, however, comprised machine-pressed bricks, representing a major remodelling of the building (*Phase 3, below*).

5.2.3 A brick wall (***176***) was exposed within Trench 3. It was of two-bricks width, and appeared to correspond to the position of the south wall of a small reservoir that was located in the eastern part of the dye works complex until the early twentieth century.

5.3 PHASE 2

5.3.1 An expansion of the works during the second quarter of the nineteenth century was represented by structural remains that were excavated across the northern and eastern side of the site. These pertained to the northern external wall (***601***) of the principal works' building and the reservoirs, shown on Bancks & Co's map of 1831 and the 1848 Ordnance Survey map. In addition, physical remains of internal features and external surfaces pertaining to structures shown on the 1848 map were exposed.

5.3.2 ***External walls:*** evidence for the nineteenth-century dye works was revealed initially within Trench 3, during the programme of evaluation trenching. The stratigraphy exposed within the trench comprised a deep deposit (typically 1.5m) of demolition rubble, overlying a 0.4m thick deposit of fuel waste above a mid-brown plastic clay, which continued below the level of the water table, and seemingly represented the natural geology. Two features were cut into this layer. The northern of these was a brick wall (***174***), of a two-brick thickness (0.45m), constructed of mould-thrown brick and bonded in pale grey lime mortar. At its western end (1.15m) the wall narrowed to a single-brick thickness. The wall, which survived to a height of six courses, was located 6.6m from the northern end of the dwellings exposed further south in Trench 2, and was aligned approximately north-east/south-west. The position of this

wall corresponded to the north external wall of the southern range of buildings shown on historical mapping from 1831.

5.3.3 The rear wall (***187***) of the range of buildings that had formed the boundary between the dye works and Bury's Court was exposed for a maximum distance of 6m during the watching brief. The wall was aligned north-east/south-west, and measured 0.42m wide. In total, 14 courses of bricks survived, providing a height of approximately 3m above a flagged floor. A flight of six stone steps (Plate 21), rising up from the flagstone floor to the level of Bury's Court, was exposed at the western end of wall ***187***. The top step was revealed at a depth of 0.25m beneath the modern ground surface. A void at the base of the steps probably housed at least three more steps, although these had evidently been destroyed during demolition. The steps were abutted along their eastern and western sides with two brick walls, comprising machine-cut bricks married with white cement mortar, clearly representing later additions. The northern face of the wall was heavily sooted, although traces of whitewash were observed beneath the soot. A vertical recess within the wall was filled with traces of purple dye, suggesting proximity to the processing area.

*Plate 21: Steps rising above wall (**187**) to Bury's Court*

5.3.4 ***Reservoir wall:*** remains of a substantial wall (***608***), located in excavation Area B within the north-eastern corner of the site (Fig 9), represented the western wall of the large reservoir that had been built on the eastern side of Adelphi Street, shown on historical mapping (Figs 3 and 4). Wall ***608*** was aligned north/south, and comprised worked sandstone blocks, each measuring 0.5m wide, that formed the internal and external elevations, in-filled with brick rubble. It was exposed for a total length of 5m, and was excavated to a depth of 0.9m although the east-facing (internal) elevation, although the base of the reservoir was not revealed.

5.3.5 ***Dye mixing area 145:*** the area comprised a substantial brick foundation, which measured 5.7m by 2.5m and survived to a height of 0.8m (Plate 22). During the watching brief, a 4.5m long north/south-aligned machine-cut section through the foundations provided evidence for the structural phasing of the dye mixing area. The earliest remains encountered included the vestiges of four dye tubs, which overlay a stone plinth foundation across the eastern side of the dye mixing area. The plinth was laid above a course of stone slabs, measuring 0.15m thick, which were aligned north/south. This seemingly represented part of the original working surface for the preparation of the dyes.

Plate 22: Dye mixing area and external courtyard, looking west

5.3.6 The western side of the mixing area contained thick deposits of fixing mordants, sealed beneath wooden battering. The mordant residues comprised black, red and cream clay, extending to a depth of 1.2m, and overlying the natural clay geology. The wooden battering comprised four oak planks laid horizontally, each measuring 1.2m long. These were situated along the eastern side of a drain, and possibly represented an old dye vat. The backfill surrounding the wooden battering contained degraded fragments of dyed cloth.

5.3.7 The foundation beneath the brick platform along the northern side of the mixing area was 1m deep and 1m wide from the inside edge of wall ***138***. This platform was probably part of the original working floor. The drain was seemingly a later addition, and truncated the western side of the wooden vat, although further evidence for the vat was represented by a single fragment of a wooden plank aligned east/west to the south of the existing drain. This plank was attached to a 1.5m long east/west-aligned brick wall extending from wall ***138***, and measuring two bricks thick, located at the south-western corner of the mixing area. The southern face of the wall contained an arch that was splashed

with orange dye along its upper course, which had been effectively blocked by the wooden plank. It is possible that the arch represented a former drain through wall ***138***.

5.3.8 ***Courtyard 144/203:*** a surface of cobble setts (***144***) and a flagged floor (***203***) were exposed across the eastern side of the excavated area, which represented part of the external courtyard to the east of the main processing building. Surface ***144*** comprised sub-rectangular granite setts, each measuring on average 300mm by 200mm by 90mm, and were laid haphazardly along the eastern limit of flagged floor ***203***. The setts were exposed across an area measuring 5m by 3m, although for the most part survived in patches, and had seemingly been partially destroyed as part of the installation of the later road surface ***147*** *(Phase 3 below*). Floor ***203*** comprised flagstones of varying dimensions, which were similarly laid haphazardly (Plate 22). The eastern part of the floor had been destroyed by the insertion of concrete stanchions during the twentieth century (*Phase 5 below*).

5.3.9 ***Engine room 136:*** the footprint of a room measuring some 3.1m by 2.75m was revealed in the north-western corner of Area A (Fig 12). This contained the foundations for a steam engine, which had almost certainly been intended to power machinery used in the dye wash room (***135***), located directly to the south. The engine foundations comprised two 2m long, north/south-aligned stone walls (***191*** west and ***192*** east respectively), set 1.5m apart, which abutted the northern wall (***186***) of wash room ***135*** (Plate 23). A large stone block overlay the northern limit of the stone walls, and whilst this was not *in-situ*, it was likely to have been part of the original layout of the room. The block overlay an east/west-aligned brick wall forming the northern end of the room.

Plate 23: The foundations for a steam engine adjacent to the wash room, looking south-east

5.3.10 The original phase of the room was represented by a vertical iron rod, secured into wall ***191***, which probably formed a means of restraining an engine to its foundations. This iron tie-rod was square in section, suggesting it to be of an early nineteenth-century date. Other physical evidence for an engine was provided by the remains of a large rectangular yellow sandstone block, measuring 0.35m deep, which was aligned east/west across the natural clay between walls ***191*** and ***192***. The upper surface of the block contained three holes, which were similarly identified as housing for iron tie-rods. A brick-lined culvert surviving beneath walls ***191*** and ***192*** probably supplied the engine with a source of water for condensing purposes (Plate 24).

*Plate 24: West wall of engine room **136**, showing the northern brick wall and sandstone block*

5.3.11 Tentative evidence for the installation of a larger engine subsequently was suggested by an apparent remodelling of the upper section of wall ***186***, with an area of brick in-filling observed across the wall. A stone foundation block, measuring 1.4m by 0.6m and 0.64m thick, was built into the upper part of the wall, and contained the vestiges of iron circular tie-rods and associated sockets in its upper surface. These fittings were contained within a shallow rectangular-shaped recess, measuring 0.9m by 0.35m, which contained two 0.07m diameter holes spaced 0.6m apart.

5.3.12 Two recesses within the southern part of the eastern and western stone beds possibly represented the location of an engine flywheel. The recess on the eastern bed measured 1.20m wide and 0.6m long across the width of the block and 0.25m deep, although the recess on the western side of the pit was less distinct. Directly north of these recesses were two holes, which probably represented rod supports for apparatus above the pit.

5.3.13 ***Dye wash room 135:*** the western side of the site was dominated by remains of a rectangular-shaped room, which measured 24m by 4.4m, and was situated immediately to the west wall ***138***. The floor of the room was exposed at a depth of 2.5m beneath the upper surviving brick course of the southern external wall. Approximately three quarters of the room was exposed, with the remaining part extending beyond the excavated area. This room contained the remains of dye vats (***137*** and ***153***) and a dye tub (***156***), and an associated trough (***157***), channel (***139***), metal pipes and drains, and brick and stone slab surfaces (***158*** and ***159***). These features were all laid above a stone flagged floor (***140***), representing the working area between the washing and fixing stages of the process. The surviving fabric provided evidence for at least two phases of cloth dyeing, dye washing, and fixing processes. A later development of the room was represented by the remains of an iron rail, which overlay many of the structures along the eastern side of the room, and a randomly laid brick surface. The brick surface covered approximately 70% of the floor area, and represented the abandonment of vats ***153*** across the eastern side of the room.

*Plate 25: Dye wash room **135**, looking south-west*

5.3.14 *Dye vats*: the remains of at least five dye vats were located along the eastern side of the room (***137***, ***153*** and ***156***), and a single vat along the western side, representing various stages of the dyeing, fixing and washing processes. Traces of at least three different dyes were identified.

5.3.15 A well-preserved slate-lined dye vat (***137***), containing a yellow dye sediment (***155***), was exposed at the northern end of the room, close to the western face

of wall ***138***. Vat ***137*** measured 1.74m^2, with a maximum depth of 1.68 beneath the floor surface. Each side of the vat was lined with large slate slabs, each measuring 50mm thick, indicating that the vat had been intended to contain corrosive chemicals. Several metal pipes of varying sizes passed through the vat. The vat was supported along its southern edge by a 1m wide east/west-aligned brick wall, composed of hand-made bricks bonded with a lime-based cement mortar. The wall was four-bricks thick, with two strings of stretchers laid side-on and overlain by a string of stretchers and half-edged bricks. However, the wall did not abut wall ***138***, as the gap between both walls was filled with clay and fuel waste. During the watching brief, wall ***138*** was exposed behind the slate vat to a depth of 25 courses, providing a height of approximately 3m. The entire vat was backfilled with fuel waste, which had seemingly been deposited during the mid-twentieth century.

*Plate 26: Dye vat **137** after the removal of yellow dye sediment*

5.3.16 A row of three iron vats (***153***), each measuring 1.3m by 1.1m and containing residues of yellow or orange dyes, were exposed beneath brick surface ***158***. Each vat had a maximum depth of 0.8m, and were sunk into a concave-shaped brick base. Two of the vats were bordered along their southern sides with 0.20m wide channels, which sloped towards channel ***139***. Whilst no pipes survived within the vats, it seems likely that they were served by the pipe running through slate-lined vat ***137***, and by an east/west-aligned pipe running beneath the flag floor across channel ***139***. The southern vat retained riveted plates along its eastern and southern sides, suggesting that it had been repaired at some point. The base of the southern vat was in-filled with three courses of mortared bricks, which were coated with orange dye (***154***) on their underside. The base of the southern vat was laid above a thin layer of wood, which in turn sealed a stone slab, overlying the natural clay. The base of the middle vat was

lined with two courses of evenly laid brick. A section of a working area providing access to the southernmost vat comprised a 2m long by 1.2m wide levelled stone slab (***159***) and horizontal wooden supports. The slab and supports were 0.07m thick, with one course visible laid above a two-brick thick wide base. The base extended to a depth in excess of 1m beneath the southern edge of the vats. A cast-iron pipe measuring 0.10m in diameter extended east/west beneath the stone surface from the mixing area, feeding directly into channel ***139***. The pipe was fixed at the eastern end by a 0.05m thick flanged collar. The presence of the pipe suggests that the dyes in the vats were steam heated.

*Plate 27: Dye vats **153** after the removal of brick surface **158***

5.3.17 A square-shaped structure at the western edge of the excavated area probably represented the remains of another dye vat. The top of the channel was level with the timber overlying channel ***139***, set 0.20m north of the structure, thus forming a sub-surface structure beneath working floor ***140***. The vat was 1.2m long and 1.2m high, and comprised thin stone slabs along its southern and northern sides, which were lined with clay that was stained with yellow dye.

5.3.18 The southern part of the iron vats was bordered with a rectangular stone slab ***159***, butted along its southern edge with wood. The slab measured 1.8m by 0.90m, and was 0.06m thick. The wood and the slab collectively provided an even working surface between the dye wash and fixing areas. The remains of a stone-lined sink, situated directly south of slab ***159***, was also probably associated with the fixing process. The sink measured 3m by 1.5m and was 0.3m deep beneath slab ***159***, overlain by a wooden drain and plank. Another stone slab (***160***), situated 2.1m to the south of ***159***, bordered a wood and stone-flagged surface which provided access to the apparatus overlying the sinks.

This surface was in turn bordered by a 0.19m thick stone slab that contained holes plugged with lead. The slabs were laid above mixed clay and dye mordant debris measuring up to 0.26m thick above a stone floor. The floor was in turn bordered along it western edge by cast iron that stretched between each slab. The stone floor was overlain in the centre with a wooden trough measuring 1.3m long by 0.4m wide and 0.14m high, with a wide U-shaped profile. The trough was hewn from a single piece of oak fixed with metal. It is possible that this area was used to fix the dye onto the cloth.

5.3.19 The western face of wall ***138*** retained several rectangular sockets at a height of 0.74m above the floor, and spaced between 0.35m and 0.48m apart. Three of the sockets were localised above the cloth dyeing vats at the northern end of the wall, and a further three in the central area of the wall. It is possible that the sockets provided housings for a wooden floor above the dye vats. Other features within the wall included several metal pipes and drains. A drain from the mixing area entered the fixing area of the room at the southern end of the wall (Plate 28). The drain was 0.45m wide and 0.36m high, and situated at a height of 0.17m above a wood-lined stone tub (***156***).

*Plate 28: Drain within wall **138** connecting the dye mixing area to room **135***

5.3.20 A rectangular wood-lined tub (***156***), aligned north/south, lay to the south of stone base ***160*** at the southern end of the room. The tub measured 1.6m by 1.1m and was 0.34m deep above a stone base, and was partitioned with planks and divided by a centrally positioned east/west oriented wooden drain measuring 1.02m long by 0.12m wide, situated above the tub. The base of the structure sealed large amounts of purple dye residue, suggesting that this area of the works was originally used to fix rather than wash. Although there was no evidence of purple dye across the other structures, other than remnants

above the floor next to the works' southern external wall. This would suggest that the slabs were probably used as foundations of apparatus that hung cloth over the sink and tubs. Further remains of the fixing area were exposed during the watching brief, which revealed a further two slabs beneath slab ***159*** and ***160*** separated by clay.

*Plate 29: Wood-lined tub **156***

5.3.21 *Floor **140**:* the stone-flagged floor comprised small, thin rectangular slabs, square capping stones, and large rectangular flagstones. The upper surface of the flagstones retained residues of metal and friction scars from machinery. Further evidence of machinery was provided by a series of small rectangular holes, many with *in-situ* iron bolt attachment, metal studs and wooden inserts. These features were identified mainly across many of the flags to the immediate west of channel ***139***. Traces of metallic concretions (***152***) were observed beneath the flags close to tub ***160***.

5.3.22 *Channel **139**:* an open brick-lined drainage channel (***139***) was located across the centre of the room, bordering the cloth vats in the east, and bounded in the west by the flagged floor ***140***. It was aligned north/south for a distance of 14.6m, although the northern end returned sharply to the west for a distance of 3m. This section was capped with wooden planks in order to gain access to the north-western part of the room. The channel had an internal width of 0.5m between single-skin brick retaining walls, curving to the west. Large amounts of slate and stone flags were recovered during the channel's excavation, suggesting that the feature may have been capped with this material. The southern end of the channel was seemingly sealed beneath the flagged floor, although a metal drain aligned at the southern end of the room, exposed beneath the flags, possibly connected to the channel. The base of the channel

undulated somewhat although it generally sloped slightly downwards to the north, reaching a maximum depth of 0.66m beneath the flagged floor. It appeared to be made entirely of brick, although much of it was heavily worn and degraded from exposure to corrosive waste. However, the surviving bricks measured on average 200mm by 110mm by 75mm, concreted across the base. Various pipes were observed running west/west into and through the channel, at various heights. A stone block projecting from the eastern wall of the channel appeared to be a later intrusion that possibly blocked an earlier channel deriving from the dye mixing area, thus relating to probable rearrangement of the vats and tubs in the vicinity. Other features in the channel include several rectangular-shaped voids or sockets that were spaced at 1.6m intervals along the western wall. The voids varied in size although each were located at a depth of 0.2m beneath the floor, above the base of the channel. The voids extended west beneath the flagged floor, suggesting that they may have been used to drain excess liquid overflowing from the channel. The channel was largely filled with cream-coloured sediment (***151***) caked across its base, that was probably formed from residues of fixing mordants. The southern end of the channel was sealed beneath capping stones. The fill at the southern end of the channel, however, contained large amounts of blue dye.

*Plate 30: Channel **139** within the floor **140** of the dye room*

5.3.23 ***Drains:*** immediately to the south of wall ***174*** was a brick drain (***175***), 0.42m wide with a broken slate capping, which turned at a right-angle into the building 0.6m from the western section of the evaluation trench. A similar distance from the return of the drain it appeared to cut a perpendicular drain of similar, but more ragged construction, which it possibly replaced as the main sub-surface drain for this part of the structure.

5.3.24 ***Drying area 148:*** an extensive flagged floor (similar to floor ***140*** within room ***135***) across the southern part of the site represented part of the drying area. The area was bordered in the north-east by the dye mixing area ***145***, and in the north-west by the dye wash room ***135***. It is possible that the floor continued further east and may have originally been housed within the north-east/south-west-aligned building attached to the southern end of the main works, as shown on the 1848 Ordnance Survey map. The floor contained an east/west-aligned brick-lined drain (***185***) capped with timber, and a north/south-aligned stone-lined trough (***184***), both filled partially with splashes of dye residue. The entire area measured 11m east/west by 5m north/south, which included the remains of small engine beds (***161*** and ***182***) located along the eastern side of the room. The flagstones were laid on a bedding layer of fuel waste, which in turn overlaid the natural geology (***149***).

*Plate 31: Floor **148** of drying area, looking west*

5.3.25 Drain ***185*** was exposed for a distance of 4m, and comprised two-course high brick walls capped with flagstones and iron grids. Stone trough ***185*** was formed by a 0.45m wide north/south-aligned channel along the southern side of drain ***185***. It comprised 0.23m wide walls of stone and lined with brick. The northern end of the bottom was blocked with brick, although a small opening measuring a half brick size was retained in this area, maybe as a means to control the amount of water entering the structure.

5.3.26 A stone machine bed (***204***) was located within the flagged floor along the eastern limit of the room. The block measured 1.2m by 0.5m, with the surface level with the flagged floor. It was bordered along its eastern side by an evenly laid brick surface, which with the stone bed collectively provided a base for a small machine. The surface abutted the western foundation of a brick wall

(***183***), which provided the external wall of the drying area. The surface and the bed were in turn bordered in the south by drain ***185***.

5.3.27 Another stone machine bed (***161***), set above a flagstone floor (***202***), was located in the south-eastern corner of the works, directly east of the drying area. The machine bed measured 1.6m long by 0.72m wide, and retained four circular metal ties across the surface at each corner. Several flags surrounding the bed also retained holes, marks and friction scars, providing likely evidence of machinery legs that may have provided a base of apparatus that aided in drying newly dyed fabric. The floor and machine bed were bordered along their western edge by wall ***183***, which separated the structures from the drying area floor ***148.*** The wall was observed along a north/south alignment for a distance of 4.1m in length and measured 0.34m wide. It survived to a height of 0.75m above floor ***148*** with its upper course level with the machine bed. No other wall was observed along the northern side of the machine bed, suggesting that it was a free standing feature, although the northern edge of the floor had been disturbed by the installation of a modern service trench, which had possibly obliterated any evidence of another wall.

*Plate 32: Machine bed **161** within floor **202***

5.3.28 ***Boiler room 141:*** several boilers within the western side of the works are shown on the 1848 Ordnance Survey map (Fig 4). The remains encountered during the excavation corresponded to the position of the easternmost boiler marked on the map. The boiler room contained the well-preserved remains of the boiler pit, with *in-situ* remains of mounting blocks situated on the boiler seating walls (Plate 33). In total, 20 boiler mounts, each measuring 0.28m by 0.25m, survived along the western seating wall, although only seven survived in the east. The seating walls were 0.7m wide, and survived to a height of 0.88m above the pit floor.

5.3.29 The boiler room was aligned north/south, with the flame end and charging platform positioned at the southern end of the pit, and two flues located at the

northern end. The brick surface within the pit was convex with a chamfered edge along its border in order to aid in cleaning. The flame end of the boiler measured 1.2m^2, and retained metal strips along its northern limit. The metal strip was in turn bordered with a one-skin wide refractory wall which appeared to be a later modification. The charging platform comprised six rectangular flagstones that were set within a surface of cobbles. The flue and wall along the northern part of the pit had seemingly been modified. This was likely to have been contemporary with the changes made to the chimney flues and reduction of boilers. The wall had been added to an extension of a flue to the east of the pit. The entire pit was filled with ash, fuel waste, several seating mounts and brick debris associated with recent demolition of the works.

Plate 33: Remains of boiler foundation ***141***

5.3.30 ***Floors:*** the concrete entrance to the air-raid shelter (*Phase 5, below*) was constructed above the floor of the earlier dye works basement (***178***). This floor of large flagstones with occasional brick patches continued beyond the limit of excavation to the west and north, and butted the external wall of the principal building (***138/179***), partly exposed in the east section of the trench (Plate 34). This was of two-brick thickness (0.45m), surviving up to 12 courses above the floor level, and contained a cellar-light (***180***) at the exposed southern end. This was (1.52m) wide, with a brick sill, and possibly had the wall of the cellar-light butting its southern jamb. An iron rod projected through the wall at sill level, suggesting that it may have had a timber sill above the extant brick one. A further bar, situated 1.67m to the north, and positioned slightly higher up the wall-face, was most probably associated, and would suggest that a machine was fixed to the wall in this position. This was further supported by an eye-bolt attached to the floor, 0.30m from the wall, to the north of the window. This appeared to be the north-eastern attachment bolt of a group of four,

positioned around a drain hole, 0.15m in diameter, cut into the centre of a very large flagstone (***181***), which was wider than the evaluation trench (Plate 34). This may have represented part of washing machine, the drain running into a void below the floor, presumably into a culvert which would almost certainly have discharged into the river Irwell, less than 10m to the west.

5.3.31 Evidence for a further large machine base (***182***) was revealed in the floor, immediately to the north within Trench 5. This comprised two dressed sandstone blocks, flush with the floor, either side of an area of smaller flags, with a drain cut into the central flag, presumably leading into a similar, or possibly the same culvert as that to the south. The eastern block was 0.23m wide and ran parallel to wall ***179***, beyond the eastern section of the trench. It had a vertical bolt protruding from it, opposite a cut-off bolt in a similar block positioned 1.45m to the west. This block had brick in-fill on its outer side, and was 1.83m long.

*Plate 34: Floor **178** in Trench 5*

5.4 PHASE 3

5.4.1 Remains from the second half of the nineteenth century included a new building along the northern part of the works (*Section 4*, *above*), residues of the synthetic dye process and associated mixing area ***145***, modifications to the external wall ***138***, and a road surface (***147***). In addition, the remains of Walker Street (***605***) were located in the northern path of the site (Fig 11).

5.4.2 ***Dye mixing area 145:*** a substantial brick foundation measuring 5.7m by 2.5m, and surviving to a height of 0.8m, was located close to the position of the tubs marked on the 1848 Ordnance Survey map. The foundation was defined by two brick walls extending east/west across the northern and southern sides of the structure, and a short north-west/south-east-aligned wall along the eastern side. The eastern side of the structure was truncated by a concrete-filled water main, which had destroyed part of the room's external walls and internal features. The southern and northern walls were three-brick skins wide, with a blue whitewash adhered to their internal face. The wall comprised hand-made brick, each measuring an average of 210mm by 90mm by 120mm, bonded with a dark grey-black mortar, indicative of late nineteenth-century construction. A small internal section formed by a screen wall was located within the northern end of the room. Remains of a threshold that had provided access into the mixing room were suggested by a gap along the eastern external wall. Other internal features include a stone block serving as a short partition, parallel with a dye channel.

*Plate 35: The later phase of the dye mixing area **145**, looking north*

5.4.3 A brick-lined, timber-capped channel lay across the western side of dye mixing area ***145***, continuing to the west in the direction of wash room ***135***. At its southern end, the channel was replaced by an iron pipe, which seemingly received liquid from the mixing area and carried it to the dyeing area. However, the channel at some point was blocked with stone masonry, suggesting the channel was abandoned in favour of the pipe. The base of the channel contained a build up of a cream-coloured powdery substance. The channel was in-filled with fuel waste, and then capped with three oak planks.

5.4.4 The entire room would have probably been used in the mixing of the dye from disparate compounds into a usable product. The channels may have drained excess water or liquid created during these processes. The physical remains pertaining to the mixing of dyes included a stone hollow (***150***). It measured 0.90m in diameter, and survived to a height of 0.20m. In addition, two plywood tubs (***146***) situated within the eastern part of the room, probably pertained to the room's later use. Their position outside the mixing area was perhaps due to safety issues, or the need to keep the mixtures pure, prior to another process. One of the tubs retained a metal lid. The remains of a further two containers (***193***) were identified directly east of the wooden tubs, although these had degraded badly, suggesting they may have been discarded after use. The degraded containers were contained within a concreted dump of charcoal, friable silt and waste chemical residue of varying colours. The dump overlay a cobbled surface (***144***), representing a yard area directly west of the later road surface (***147***). This suggests that the waste material was removed from the site via the road.

*Plate 36: Remains of containers along the eastern side of the mixing area **145***

5.4.5 However, additional cobble sets were in turn laid above 0.2m thick concrete at the northern end of the brick platform base, suggesting these sets were possibly re-laid during the raising of the platform. The concrete in turn sealed fuel waste and clay, with no evidence of the stone plinth foundation. The bricks along the western side of the foundation were bonded with dark grey mortar with lime inclusion; these were laid above compacted fuel waste.

5.4.6 The later phase of the room was represented by a concrete-filled pipe, which had been inserted above the stone plinth, cutting the eastern side of the room. The concrete possible filled another north/south-aligned, brick-lined channel in the northern side of the room, although this channel had seemingly been replaced by a ceramic water pipe.

5.4.7 ***Chimney 143:*** a circular structure along the western side of the site represented the remains of a chimney shown on the 1892 Ordnance Survey map. An area of brickwork, roughly rectangular in shape, was located across the northern part of the main excavation area (Area A) attached to the eastern side of wall ***138***, which suggested the likely location of the chimney base. The remains were formed by a substantial wall at the southern end (***194***) containing a surface area of brick and two partition walls which were bordered at the northern end by a 1.5m long, three-skin wide wall (***198***). The size of the foundation measured approximately 6.3m by 2.1m. The structure was bordered in the east by a complex array of flues ***195***, which demonstrated several phases of use by means of blocking and diverting the alignments of several channels.

*Plate 37: Foundations of the chimney **143** and flues **195***

5.4.8 Machine-made bricks were exposed at the northern end of wall ***138***, where it had been re-pointed with cement mortar during the installation of the chimney.

Two parallel east/west-aligned walls (***194*** and ***196***), set 1.1m apart, lay close to the southern end of a flue terminal. Each wall abutted the eastern brick wall (***199***) of room ***142***. The gap between the walls formed a deep pit that was filled with large amounts of fuel waste. The southern wall (***194***) survived to a depth of six courses along the south-facing elevation above the concrete floor within room ***142***, and nine courses along its northern face with a stepped foundation. The northern wall (***196***) survived to a similar height of 0.75m. Each wall was abutted along their inside edges by two internal parallel brick walls (***200*** and ***201***) aligned north/south. Wall ***201*** butted wall ***199***, a three-skin wide wall forming the eastern wall of room ***142***. Wall ***199*** possibly also formed the western wall of the former boiler room, as shown on the 1848 Ordnance Survey map. Wall ***201*** survived to a height of 0.75m, and measured 0.5m wide with a two-brick stepped foundation. Wall ***200*** probably represented part of a brick foundation. Its southern edge ran beneath the southern wall, suggesting an earlier construction phase.

5.4.9 An oval iron plate was attached to the eastern face of wall ***138*** within the chimney pit. It measured 0.73m by 0.25m and 0.03m thick positioned at an oblique 80 degree angle. The front part of the plate was raised with a stylised rim across the centre. The base of the plate was positioned 0.4m above wall ***200***. The northern wall (***196***) of the chimney pit sealed mortared rubble, which stretched 0.5m across the gap between the walls. Further remains of walls were observed within the brickwork along the western side of the flue. Wall ***197*** butted the western part of wall ***196***, and was aligned north/south for a distance of 1.52m. The wall was 0.46m wide and two courses deep, and comprised wire-cut brick bonded with lime mortar, with its upper surface concreted with iron residue. Another remnant of a north/south-aligned wall was observed north of wall ***197***, following an identical alignment. The wall measured 1m long, butting wall ***198***, and comprising three-brick skins wide. It is probable that the wall represented the northern section of wall ***197***, which at some point had been truncated across its centre.

5.4.10 ***Walker Street:*** a cobbled surface (***605***) spread over an area measuring 6m by 5m represented a short street that is depicted on the 1892 Ordnance Survey map. The surface consisted of sub-rectangular granite setts, each measuring 270mm by 130mm by 130mm, laid with their longer axis aligned west/east (Fig 11). They were bordered in the east by two near complete kerb stones (***607***), measuring 0.24m by 0.14m. These were abutted by the remains of a pavement (***606***) that comprised rectangular flags of various sizes. No remains of the former housing shown on historical mapping to have existed along the eastern side of the street was encountered during the excavation.

5.4.11 ***Surface 147:*** a north/south-aligned cobbled surface along the eastern side of Area A. The surface survived over a distance of 12m, and was 3m wide, although sections had been destroyed by the insertion of concrete stanchions. The component setts were laid regularly across a slight camber with each set measuring 250mm by 120mm by 100m. This surface partially overlay the eastern side of surface ***144***.

5.5 PHASE 4

5.5.1 Physical remains dating to the early twentieth century included the western wall (***189***) of a building overlying the southern reservoir. In addition, several internal modifications to the works were noted. Room ***142*** overlaid the location of a former boiler shown on earlier historical maps. Other remains pertaining to this period included remodelled boiler flues (***195***).

5.5.2 A substantial wall (***189***), measuring 1m wide and aligned north/south along the eastern edge of the excavated area (Plate 38), probably represented the western external wall of a building shown on the 1908 Ordnance Survey map.

*Plate 38: The west wall (**189**) of a building overlying the reservoir in the centre of the site*

5.5.3 ***Room 142:*** this north/south-aligned room was located along the eastern side of wall ***138***, situated between the boiler room (***141***) in the east, and the chimney (***143***) attached to its northern wall, and in the south by the dye mixing area ***145***. The room measured 5.5m by 2m. The configuration of the room does not appear on any historical map, although it is likely it sealed an earlier boiler house, shown on the 1848 and the 1892 Ordnance Survey maps.

5.5.4 Little evidence of the earlier boiler room survived, although modifications to the wall ***138*** clearly represented reconstruction. Wall ***138*** had extra four skins attached to its eastern elevation at the southern part of the room, over a distance of 2m. This new addition comprised hand- and machine-made bricks bonded with lime-based mortar. Another wall measuring 1.5m long was attached to the north of the added section, and comprised a stack of bricks which was used to block three inter-spaced square drain channels passing through wall ***138***. Both of these added sections related to functions associated with the later development of the works, and may have provided support for machinery operating within the wet room. Evidence of another boiler pit was represented by short east/west-aligned refractory brick walls sealed by a

modified section of wall ***138***, although this east/west-aligned wall was also sealed by the supporting wall for a brick arched roofed flue located at the southern end of the boiler pit. The metal pipe observed across the flame end of boiler pit ***141*** continued west across the base of the 'wet room', and passed through wall ***138***. The pipe was contained beneath a purpose-built brick arch supported by two-skin wide retaining walls. The remains of a flagstone floor were exposed to immediately to the south of the arch, which possibly represented part of the charging platform for the old boiler. The surface was observed for a distance of 1m^2 although much of it was obscured by the modified section of wall ***138***. Further areas of rebuild were noted along the south-eastern face in the upper brick work foundation of the dye mixing area (***145***).

*Plate 39: Room **142**, looking north*

5.5.5 The room contained a sloping concrete floor (Plate 39), which lay at a depth of 0.8m below the top of wall ***138*** at the southern end, rising to 0.4m at the northern end of the room. It contained a 0.10m wide by 0.08m deep groove, oriented north/south across the centre of the floor, serving as a drainage channel. No evidence of an earlier floor was encountered.

5.5.6 Evidence for machinery used in the room was suggested by two heavy 0.5m wide iron shutters which were found lying amongst rubble in-fill. Other remains included two small square-shaped brick foundations, each measuring 0.34m^2 and set 2m apart, located along the eastern side of the room. In addition, a circular cast-iron fixing plate for a drive shaft survived along the mid section of the room across the eastern face of wall ***138***.

5.5.7 ***Flue modifications:*** the layout of the boilers was remodelled, resulting in the modification of the flues ***195*** across the northern part of Area A. This was represented by the insertion of a stepped platform which served to block a flue extending from one of the redundant boilers. The platform measured 1.60m

long by 1.40m wide and 1.1m high, and was constructed from mixture of machine-cut and re-used hand-made brick married with ash rich mortar. It was bordered along its eastern side with curving courses of three brick steps, which were bonded with cement mortar. The stepped platform was removed during the watching brief, exposing a curvi-linear chamber measuring 1.07m long and 0.8m wide, which had been blocked at its eastern end at the point where the flue gradually changed direction to the north. An opening within the flue's southern retaining wall represented a channel deriving from one of the original boilers. The flue walls were constructed from hand-made, wire-cut brick measuring two brick skins in width with a single skin of refractory brick attached to the southern wall. The flue floor comprised half-sized orange and yellow brick that sloped gradually east/west. This modification to the flues suggested that several channels that were connected previously to the boilers had been blocked to enable greater efficiency.

5.6 PHASE 5

5.6.1 The later development of the works included the erection of several walls and footings, which were encountered across the eastern side of the excavated area. These structures were associated collectively with the use of the site as an iron and engineering works, operated by James Farmer & Co. Other structures from this period included a World War II air-raid shelter, which was exposed along the western side of the former dye works.

5.6.2 For the most part, the engineering works seemingly incorporated many of the existing buildings, although several new walls were constructed across the eastern side of the site. These comprised a north/south-aligned wall (***188***), which survived to a height of 0.5m and was excavated for a distance of 8m. It retained residues of blue paint/lime wash along its western face, and was abutted along its western side by a rectangular-shaped room (***190***) that measured 1m by 4.5m. The walls of the structure comprised machine-cut bricks, and had a single-skin wide wall in the south, which widened to two skins in the north. The northern section of the room had been partitioned by a two-skin wide wall that sub-divided the room forming a small chamber, measuring 1.3m^2, which probably represented a manhole. It was lined along its internal and external western side with two north/south aligned cast-iron water pipes.

5.6.3 ***Concrete stanchions:*** a row of five concrete stanchions were exposed across the eastern part of the site. These stanchions had provided roof support for a large building that had formed part of the engineering works.

5.6.4 ***Air-raid shelter:*** the well-preserved remains of a World War II air-raid or bomb shelter (***177***) were exposed in evaluation Trench 5, which was excavated along the western edge of the site (Fig 2). The shelter measured 7.46 by 2.74m (24'6" by 9'), and appeared to have comprised four bays and, given the position of cleats within the floor at the mid-point, seemingly had additional bracing, or possibly a division, between the northern and southern halves (Fig 13). No evidence for timber purlins was observed.

5.6.5 The shelter had channel-section rails, as used in the Anderson Shelters, supporting the 26-gauge curved corrugated sheeting, the rails raised on a 0.30m wide and 64mm high concrete plinth. The southern end of the shelter was formed of vertical corrugated sheets, supported by three T-section vertical members. Remarkably, these survived almost undamaged, showing the half-round profile (more typical of the Anderson Hut than the bulging Nissen Hut), with a maximum internal height of 1.83m (6'). Positioned centrally immediately to the north of the south wall was the eastern stile and lowest four rungs of an eight-rung, 0.3m (1') wide steel ladder (Plate 40).

Plate 40: Remains of the southern part of the air-raid shelter, looking south

5.6.6 At the northern end of the shelter was an L-shaped concrete structure, 2.44m (8') long, and returning to the west beyond the limit of excavation (Plate 41). This formed an entrance into the shelter, presumably from ground level above, to the west, and was contemporary with the shelter, as the concrete adjoining the corrugated panels was imprinted with their corrugations, demonstrating that it had not set when the panels were placed into position. It was presumably constructed to give a more blast-proof entrance to the shelter, and was constructed in a typical 'trench-dug' style, of concrete poured into wooden shuttering to produce side-walls, topped with concrete slab. The framing of a heavy steel internal door also survived at its southern end. Two unbonded walls extended south into the shelter, either side of the doorway, for a distance of up to 1.6m. Both comprised mould-thrown, refractory and frogged bricks, and almost certainly post-dated the structure's use as an air-raid shelter. They appeared to be broadly contemporary with the unbonded brick blocking of the lower part of the doorway to the north.

Plate 41: The northern end of the air-raid shelter, showing the concrete entrance

5.6.7 The size of the shelter would suggest that it was not large enough to accommodate the entire workforce of the factory, and it seems possible that it was constructed as a public shelter, perhaps intended for the use of the population occupying the terraced housing in the area. These would have been unsuitable for personal Anderson Shelters, which were more suited to rural and sub-urban environments.

5.6.8 The shelter was of mixed construction, stylistically somewhere between a Nissen Hut and an Anderson Shelter. The Nissan Hut were invented in 1915, and were used for over half a century for various types of military structures (Francis 1996). They comprised concrete bases with corrugated iron sheeting bolted onto steel T-section frames, forming bays of 1.83m (6') length. It is possible that the shelter, which was significantly narrower than the standard 4.88m, 7.32m or 9.14m (16', 24' or 30') span, was modified in its design akin to that of the domestic Anderson Shelter. These were invented in 1938, as a direct response to the threat of war, and were distributed throughout the country from 1939, until a shortage of steel forced production to be stopped in 1941. The Anderson Shelter comprised 14 sheets of corrugated iron, forming a shell 1.8m (6') high, 1.4m' (4½) wide and 2m (6½') long.

5.7 BURY'S COURT (AREA C)

5.7.1 The initial investigation of the structures around Bury's Court comprised two evaluation trenches (Trenches 1 and 2), arranged to form an L-shape (Fig 2). Each trench measured approximately 25m by 1.6m, and revealed well-preserved elements of structures along both the southern and eastern sides of Bury's Court, which are first depicted on Pigot's map of 1820. Following a meeting on site with the Assistant County Archaeologist, the Salford Conservation Officer, and representatives of Vermont Development, the evaluation trenches across this part of the study area were extended into larger single excavation trench (Area C), measuring approximately 20m by 30m, and comprising the maximum feasible area across the footprint of the Bury's Court properties (Plate 42). The excavation revealed the well-preserved remains of three distinct dwelling types, all of which appear to have comprised single-room dwellings. These appeared to have been constructed in two phases, the latter overlying the waste tip of a nearby clay pipe manufactory.

Plate 42: Overview of the excavated remains of Bury's Court, looking west

5.7.2 The majority of the site was overlain with recent demolition debris, crushed to hardcore consistency. This overlay a slab of concrete (***100***), typically between 0.10 and 0.15m thick, which represented the floor of a late twentieth-century shed formerly in this location. This overlay a deposit of demolition debris (***101***) comprising large quantities of broken brick, slate, timber, tile, and mortar rubble, within a dark brown silty-clay matrix, which was clearly of twentieth-century origin.

5.7.3 The remains of five structures fronting an east/west-aligned road on the southern side of Bury's Court survived *in-situ* (Rooms **1**-**6**), with three further structures surviving along the eastern side of the court (Rooms **7** and **8**, with

an intervening passageway), forming the back parts of properties constructed on the Adelphi Street frontage (Fig 14). The structures continued beyond the western limit of excavation, suggesting that the three properties shown on nineteenth-century mapping beyond the excavation area may also have survived to some extent. All appear to relate to domestic structures, with the exception of one that apparently represented a privy. Remains of the courtyard itself were also revealed, and the associated passageways along the eastern side.

5.7.4 ***Room 1:*** this represented the western structure within the excavation area (Fig 14), although the front and rear walls of the building (***102*** and ***104***) continued to the west, demonstrating that the adjacent structure was of a contemporary build. The southern wall (***102***) was the most extant within the structure, surviving up to seven courses (0.56m) above floor level and eight below (0.66m), suggesting either a substantial foundation, or a repositioning of the floor level. It was of one-and-a-half bricks thickness, in a rough approximation of English Garden Wall bond which becomes even more irregular below floor level, supporting the possibility of a relatively deep foundation. The bricks were of mould-thrown construction, typically measuring 229mm by 111mm by 64mm), many of which had large pebble inclusions and exhibited drying marks of grass or straw on one surface. They were bonded in pale greyish mortar containing lime and charcoal inclusions, typical of buildings in the region prior to the late nineteenth century. The eastern wall of the room (***105***), which was of a single-skin thickness, was keyed into wall ***102***, and constructed of the same materials, also being keyed into the back wall of the structure (***104***), which returned in both an easterly and westerly direction. This was of similar materials, constructed to a full-brick thickness, most probably in English Garden Wall bond, but not surviving to sufficient height to identify more than one course of header bricks. As with wall ***102***, it continued beyond the western limit of excavation, forming the rear wall of the dwellings to the west.

5.7.5 The western wall of Room **1** (***103***) was keyed into wall ***104***, but had a butt joint to the front wall (***102***), most probably representing a repair or slight rebuild, as it appeared contemporary with the other walls of the room. It differed from the other cross-wall (***105***), however, in that it widened to a full-brick thickness below floor level, offset 51mm on the internal face to support the floor. The floor had comprised sandstone flags, although only fragments survived within the main part of the room. However, the eastern side of the room retained a 0.76m (2'6") width of flagstones, bounded for the majority of its western side by a single-skin brick wall (***126***). The wall was 2.92m (9'7") long, constructed of similar materials to those in the other walls, but surviving only to floor level. It stopped short of the external walls at either end, by approximately 0.76m (2'6"). The passage it created appeared to have formed a staircase, accessed from the courtyard to the immediate north, a few fragmentary flagstones of which survived around what was presumably a doorway at the eastern end of wall ***104*** within Room **1**. The staircase appeared to have housed a straight stair, presumably flagstone, with a door into Room **1** from at its northern end. The space beyond the southern extent of wall ***126*** probably related to a doorway into the under-stair space. The flagstone floor of

the passage was bedded on a mixture of pulverised mortar and fuel ash, up to 0.1m thick, and contained patches of brick and mortar repair, with one of the flagstones towards the southern end apparently having been re-laid over a lead pipe, which cut both walls ***126*** and ***103***. This was probably the same lead pipe associated with the privies to the east, suggesting that it also cut through walls ***105*** to ***108*** to the east, demonstrating a modernisation of the dwellings.

5.7.6 On the internal face of the southern wall (***102***) were the remains of a central fireplace (***124***). This was 1.52m wide and comprised two brick piers, each one brick in width, projecting a similar distance into the room on the western side, but cut flush with the wall-face on the eastern side of the fireplace. The western pier continued below floor level, presumably to the base of the foundation, but physical evidence from the eastern side of the feature, where the pier had been removed, suggested that it was not keyed into the external wall below this level. Within the fireplace and above floor level, wall ***102*** was reduced in thickness to only a single skin, allowing the cheeks to project less far into the small room. Loose brick blocking, returning the wall to full thickness within the hearth, demonstrated a later remodelling.

5.7.7 The central area of Room **1** was devoid of flooring, comprising a thick layer of fuel ash and debris overlying re-deposited dirty orangey plastic clay (***127***), presumably used to make an approximately level building platform, in turn overlying natural mid-brown plastic clay. Towards the western side of the room this sloped markedly, below the limit of excavation, and probably representing the edge of a natural slope down towards the river Irwell to the west, the intervening area also having been built up subsequently to provide a level building platform.

*Plate 43: View of the foundations of Bury's Court, looking south-east, featuring Room **4***

5.7.8 ***Room 2:*** this room formed a continuation of Room **1**, and comprised the central of three identically sized structures shown on the Ordnance Survey map of 1848 (Fig 14). The front and rear walls were continuations of those from the west (***104*** and ***102***), with both cross-walls (***105*** and ***106***) being of only a single-skin thickness, giving the structure the same basic layout as Room **1**, and also with what appeared to be a staircase along its eastern side. Unlike the majority of walls within the structures, a clearly defined cut (***157***) for the west wall of Room **2** (***105***) was revealed. It was typically 0.16m wide, steep-sided, and filled with brick fragments, fuel waste, and clay pipe fragments, being indistinguishable from the make-up layer observed below the surviving elements of the flagstone floor (***158***), which also survived above the natural clay across the majority of the room. This indicated that the floors were contemporary with the initial construction of the houses, and that the numerous fragments of clay pipes recovered from within Rooms **2** and **3** were deposited prior to the construction of the dwellings. Two areas of floor survived within the main part of the room; a small area of approximately 1 by 0.3m, to the immediate west of the fireplace (***159***), and two flagstones, each *c* 0.61m by 0.45m (2' by 1'6") abutting the probable staircase (***160***). Its stair-wall survived only at the northern end, where it returned to butt the east wall (***106***). The stub of a similar return survived to the south, in a similar position to the end of the stair-wall in Room **1**, suggesting the position of larders/stores beneath the floor. The floor within the staircase was repaired with a thin concrete skim, which sloped to the north, being *c* 0.1m lower at its northern end than the surviving fragment of the floor within the main part of the room.

5.7.9 The fireplace (***159***) was well-preserved, and comprised two distinct constructional phases, with the earlier having two brick piers, each keyed into the front wall (***102***) above floor level. It was narrowed subsequently on both sides by 1½ bricks (0.35m), leaving a central hearth only 0.36m (14") wide, suitable for an ash-box below a range. The remodelling was undertaken in a black sooty mortar, typical of the end of the nineteenth and early twentieth centuries, a period when ranges became popular (OA North 2006). Elements of the floor survived within the base of the hearth, with several fragments of metalwork, presumably relating to the later range recovered from the vicinity.

*Plate 44: View of the fireplace within Room **2***

5.7.10 ***Room 3:*** this room formed the eastern end what appeared to be a single construction of Rooms **1**, **2** and **3**. The eastern wall (***107***) was the external wall of the block of dwellings, and was of full-brick thickness, keyed into the rear wall (***102***), which also continued further to the east, suggesting that these structures were of contemporary construction. At its northern end, wall ***107*** returned to the west as wall ***104***, projecting beyond the smaller structures to the east (Fig 14).

5.7.11 At a distance of 1.3m from its return into wall ***107***, wall ***104*** had a gap, 0.76m wide, in-filled with an edge-set flagstone, possibly representing a crude threshold, although not aligned with the northern end of what was presumably a further stair passage (***132***) along the eastern wall. The western wall of this differed slightly from those in Rooms **1** and **2**, in that it continued to within 0.3m of the front wall (***104***), although this only survived to below floor level, meaning that a doorway into the main room would still have been plausible. Only at its southern end did it return to abut the east wall (***107***), immediately to the north of which a 0.3m wide drain of 018m depth had been inserted into the stone floor, with brick in-filling of the floor on its northern side. It had a rough, unbonded brick base, laid in the same fuel waste matrix observed below the surviving elements of the flagstone floor (***131***). It housed a junction spur in a lead water supply pipe, which was continuous across Room **3**, and appeared to have once continued through Rooms **2** and **1** to the west. The lower spur passed through wall ***107*** into the privies within Room **4**, whilst the other rose vertically and had been cut, although presumably serviced Room **3**. The remainder of the stair passage comprised cracked sandstone flags, which slumped slightly to the north, similar to the re-laid floor within the stair passage of Room **2**.

*Plate 45: View of Room **3**, looking north*

5.7.12 The fireplace (***130***), keyed into the rear wall (***102***) above floor level, was relatively poorly preserved, surviving to a maximum height of five courses (0.39m). It was similar in both original construction and subsequent remodelling to that in Room **2** (***159***). The surrounding floor was very well-preserved, comprising an area of approximately 2.43m by 0.61m, typically comprising flagstones 0.61m (2') long, but also containing a 1.25m long hearthstone in front of the fireplace. This was overlain by the broken remains of a sandstone surround for the hearth that had presumably fallen during the demolition of the property. This was well-dressed, comprising part of the beaded eastern jamb and the single-piece mantle fronting with curved angle cut-out for the reduced width of the jamb. This represented the uncommon survival of decorative fixtures rarely observed during such excavations. Another small area of flooring, comprising two flagstones, survived in the south-eastern corner of the room.

5.7.13 ***Room 4:*** this is shown on the Ordnance Survey map of 1848 (Fig 4) as a rather complex and irregularly shaped structure of at least two storeys, the first storey apparently projecting beyond the ground floor on the northern side and with passages into the ground floor down both the eastern and western sides. Excavation of the below-ground remains of the structure revealed it to be a privy block at ground floor level, presumably with a dwelling above. The southern wall of 1½ bricks width was a continuation of wall ***102***, suggesting a contemporary construction, abutting the southern return of wall ***111*** at the eastern end of Room **5**, demonstrating that it was of a different date.

5.7.14 The block comprised a rectangular structure, 3.76m by 3.12m (12' by 10'3"), with a passageway either side leading from the courtyard to the north to the rear wall (***102***). It was of brick construction, using similar materials to the dwellings to the west, comprising walls of full-brick thickness, surviving to two courses in height. The north wall of the structure (***109***) had a 2.13m wide central opening, containing two threshold flagstones, at the same level as the floor within the internal chamber they serviced. This comprised a rectangular room, with internal dimensions of 2.69m by 1.14m), bounded on its southern side by a wall of full-brick thickness (***112***), keyed into both the east (***111***) and west (***108***) walls of the building. The room had a flagstone floor, comprising two rows which sloped from the east and west towards the centre of the room. This suggested that the floor had been laid with drainage in mind, and had perhaps served as a washroom adjoining the privies to the immediate south. These comprised four chambers, each measuring 1.30m by 0.74m internally, divided by brick partitions. The east/west-aligned partition (***113***) was also of a full-brick thickness, and was abutted on both faces by single-skin north/south-aligned walls, which also abutted walls ***102*** and ***112***. All the chambers were filled with fuel waste, to a depth of 0.71m, above roughly laid brick floors. The central, east/west-aligned wall (***113***) contained segmentally arched apertures of the full depth below floor level, whilst the northern wall had similar sized, but flat linteled apertures. These chambers almost certainly represented ash-closets, with the large openings allowing drainage down the slope into the natural geology below the courtyard to the north. All were modified subsequently, presumably during the twentieth century, with the insertion of ceramic pipe drainage, which would have served flushing toilets.

5.7.15 The passages either side of the closets afforded access into each individual closet, which were arranged back-to-back, facing outwards. Both passages sloped from north to south, with the courtyard level to the north being lower than both street level to the south, and the floors within the dwellings. Both had flagstone floors, which were continuous into the rear chambers. The eastern passage had a rough brick cross-wall immediately to the north of a broken flagstone at the southern end of the passage, probably representing the base of a small step to a small 'landing' outside the closet. In the western passage, the threshold step was positioned 0.10m higher than the passage level, further suggesting that the rear closets were set slightly higher. The western passage also continued beyond the southern extent of Room **4**, for an area of approximately 2.4m², representing the largest survival of the surface of the courtyard of Bury's Court. It comprised similar flagstones to those within the dwellings, and those surviving were poorly levelled and generally cracked.

*Plate 46: View of closets within Room **4***

5.7.16 ***Room 5:*** this represented a different phase of construction to the buildings to the west. It is shown as a continuous part of the building to the east, fronting Adelphi Street on the Bancks & Co's map of 1831 (Fig 3), but excavation revealed that it was a later construction, abutted onto the western face of the external wall. The new structure was constructed of similar mould-thrown bricks, bonded in a slightly more yellowish pale lime mortar than that utilised during the construction of the dwellings to the west. The external wall (***111***) was of only a single-brick thickness, in English Garden Wall bond, and was continuous around the south, west and northern sides of the structure, abutting the west face of Room **6** (***116***) to the east. The structure was of a more rectangular shape than the other dwellings, being less deep along its north/south axis, having internal dimensions of approximately 3.66m by 3.20m (12' by 10'6"). As with Rooms **1** to **3**, there was a probable staircase along the internal face of the east wall, the west, single-skin wall of which appeared to butt the south wall (***111***), and terminated 0.66m from the north

wall (***111***), presumably forming a door into the main room. A brick cross-wall within the passage, situated 1.52m from the south elevation, probably represented the footing of the stairs, the flagstones of the floor to the south being covered in a thin concrete skin, similar to that observed within Room **2**. To the north, the flagstones extended to the north wall, sloping quite sharply. Only one flagstone from the floor of the main part of the room survived, in the south-west corner, above a compacted fuel waste levelling layer sealing dirty, plastic clay levelling.

5.7.17 The remains of the base of a fireplace also survived, positioned on the western wall, unlike those in the dwellings to the west, where the fireplaces were positioned against the back, southern, wall. It was of similar construction, comprising two brick piers of a full-brick thickness, but differed in that they projected further into the room (0.36m), as the external wall did not reduce in section to accommodate the flue. The feature was also significantly narrower than those in Rooms **1** to **3**, having an internal width of only 0.91m (3'). There was also no evidence for it having been remodelled, with one of the internal flagstones surviving *in-situ* in the southern part of the original hearth aperture.

*Plate 47: View of the northern side of Room **5***

5.7.18 ***Room 6:*** this formed the rear cellar of a property fronting Adelphi Street. The cellar was relatively well-preserved, surviving to a height of 2.1m, although the south-west corner was partly destroyed by a concrete and brick pier of late twentieth-century date. The room measured 4.57m by 4.11m (15' by 13'6"), and constructed of mould-thrown brick, typically 229mm by 111mm by 70mm), slightly thicker than those used in the dwellings to the west, but not of any significant or diagnostically different overall size. The walls were of single-brick thickness, with the exception of the partition to the front cellar (***118***), which was only a single-skin wall, all bonded in pale grey lime mortar, in what appeared to be an attempt at English Garden Wall bond, but also incorporating many broken half bricks. All retained elements of internal wall

plaster, which comprised up to 13mm of greyish-brown rough lime plaster with sand and charcoal inclusions, patches of which were covered in several layers of wash/paint, the upper being pale blue. Patches of brickwork were also directly painted in a similar colour. The southern wall (***117***) continued beyond the limit of excavation to the east, into the front cellar of the property, returning north at its western end, where it was abutted by Room **5**.

5.7.19 The western return of the wall housed a fireplace (***133***), 0.76m (2'6") from the south wall. This was remarkably well-preserved, and was of a different construction than those to the west. The original hearth aperture was 0.91m (3') wide, similar to that in Room **5**, but flanked by 0.45m wide brick piers of single-skin hollow construction with the overall width of the chimney breast being 1.82m (6'), wider than those within Rooms **1** to **3**. The original aperture also had a double row of header bricks forming a segmental arch, the apex of which was 1.21m (4') above the flagstone floor (***114***). This aperture was narrowed at the base by 0.23m on either side with brick piers, forming the sides of a fire-basket. The piers were faced with decorative cast-iron plates, each with embossed elliptical motifs. Both piers were also capped with cast-iron plates, that on the southern side being covered subsequently with a further episode of remodelling, suggesting the flue had been narrowed.

*Plate 48: View of the fireplace within Room **6***

5.7.20 Immediately to the north of the chimney breast, which projected 0.36m into the room, was a relatively large window (***164***), providing a modicum of light from the southern end of a passage running northwards (***163***). The window was 1.21m (4') wide, rebated on the inner face, and surviving to 0.91m in height (Plate 49), although there was no evidence for a lintel, which would presumably have been positioned at wall-head height. The internal sill was brick, although this may have been overlain by a timber board. The aperture had been damaged during subsequent in-filling of the passage, which did not have any apparent related blocking of the window, suggesting that the passage

was either in-filled concurrently with the abandonment of the cellar, or that a temporary blocking, for example a timber board, had been used.

*Plate 49: View of the window above the wash stand in Room **6***

5.7.21 The northern jamb of the window formed both the return of wall ***117***, and also the western jamb of a doorway (***165***) within the north wall (***121***). The door was 0.98m (3'2") wide, blocked with a single skin of full and broken bricks, flush with its northern face. These were of similar dimensions and mortar to those used in the construction of the building, suggesting a relatively early date of blocking. The flagstone floor continued from Room **6**, under the blocking wall, with one large flagstone forming a threshold, containing a socket for the original timber-frame jamb on its eastern side. The doorway was also blocked internally by a wash-stand (***166***) that projected in front of the western side of the aperture (Fig 14). This comprised two brick piers, of a single-skin thickness, and loosely mortared, supporting a broken flagstone, positioned 0.45m above floor level, below the window. A 0.3m² ceramic drain, positioned immediately to the south, inserted into the flagstone floor, was presumably contemporary, suggesting a late nineteenth- or early twentieth-century date.

5.7.22 The north wall of Room **6** (***121***) continued east, beyond the limit of excavation, into the front cellar of the property. It was slightly ragged in its face in the position of a doorway at its junction with the east wall of Room **6** (***118***), suggesting that the door architrave was cut into it following initial construction of the wall, which was of a single build within the two cellars. This may, however, only represent a very short time-scale, or possibly a replacement doorframe, rather than the insertion of the doorway at the northern end of wall ***118***. The south jamb of the doorway also appeared to

form part of the original construction of wall ***118***, suggesting that the doorway was an original feature, connecting the front and rear cellars of the building. The wall was only a single-skin thick, and excavation of a small section through the doorway into the front cellar revealed a chimney breast and flue (***134***) on its eastern side. This appeared to be of a similar construction and size to that in the west elevation of Room **6** (***133***), although the front wall of the chimney breast and the fireplace itself had been destroyed during the demolition of the structure.

5.7.23 The south wall of the cellar was devoid of features, with the exception of four irregular, small sockets within the western part of the wall, spaced along an alignment of approximately 45º. Possible associated scars within the wall plaster, which appeared to be on a similar alignment, further suggested the possibility that the features represented the insertion of a staircase, loosely keyed into the wall, affording access from the first floor into the cellar.

5.7.24 To the north of Room **6** was a passageway (***162***), 1.07m (3'6") wide, formed on its southern and northern sides by the external, full-brick thickness walls of Rooms **6** and **7** (Fig 14). The passage is shown as an open ginnel on Bancks & Co's map of 1831 (Fig 3), but it is depicted as a ground level passage below a continuous structure above on the more detailed Ordnance Survey map of 1848 (Fig 4). Floor level within the passage was established at the eastern end of the excavation area, where it was blocked by a single-skin cross wall, constructed in similar materials to those of the passage itself, and almost certainly of contemporary date to the blocking of the door at the western end of the passage into Room **6**.

5.7.25 At its western end, the passage originally joined a contemporary north/south-aligned return, affording access from the courtyard to the west. At its southern end, the passage terminated at the southern jamb of window ***164***, whilst at the north it terminated in a straight stair (***167***), of four sandstone steps on brick risers, elevating it to the level of the courtyard (Plate 50). This stair is clearly depicted on the Ordnance Survey map of 1848, which also appears to show a passage through the properties fronting Adelphi Street at ground floor level (Fig 4). The only surviving evidence for this passage were two flat cast-iron beams, of 6mm (¼") section, and 57mm (2¼") width, which carried a wall supporting the landing of the ground floor passage over the junction of the two below, at cellar level. At some point, possibly after the in-filling of the lower passage, the bars had failed structurally, and had bowed significantly under the stress of pressure from above. A further stair is depicted on the Ordnance Survey map of 1848 at the northern end of the passage (Fig 4), and evidence from the excavation suggested that this was oriented in the same direction, with the northern end at ground level. The buried remains within this part of the site had been largely destroyed during the twentieth century, but a two-course high brick wall (***167***) across the passageway, immediately to the south of its extant northern end, appeared to represent the riser of the bottom step of the stair.

*Plate 50: View of stairs **167** along the northern end of the back passage in Room **6***

5.7.26 Both lower passages (***162*** and ***163***) were in-filled, with a rough flagstone floor laid over that running along the eastern side of the courtyard, affording access to the rear of Room **5**. The material within the backfill of the passages was indistinguishable from that elsewhere, suggesting a late date, most probably contemporary with the conversion of the site into workshops in the mid-twentieth century.

5.7.27 ***Room 7:*** this formed the rear cellar of a further property fronting Adelphi Street, and was of roughly similar size. As in Room ***6***, what appeared to be a contemporary door aperture afforded access into the front cellar at the north end of the east wall (***119***). This single-skin wall was poorly preserved, with no evidence surviving for a fireplace on its western side. The position of the fireplace within Room **7** differed from that in Room **6**, in that it was positioned on the southern, rather than the western, wall. This suggested that there was a central window in the western elevation, providing light from the passage, as with Room **6**, and occupying the space that might otherwise have housed the chimney breast. This central section of the west elevation was also poorly

preserved, further suggesting the position of a window, which would have been more prone to initial collapse during the demolition of the structures. Immediately to the south lay a blocked doorway into the passage, which was blocked with a single-skin brick wall on its external face, although it was only 0.86m wide, significantly narrower than that in Room **6**. The doorway accessed the north/south-aligned passage, approximately 0.76m to the south of the extant stair.

*Plate 51: View of Room **7***

5.7.28 The fireplace (***169***), positioned centrally on the south wall, was of similar construction to that in Room **6**, although less well-preserved, comprising two hollow brick piers of single-skin thickness. These were 0.45m wide, and projected 0.36m into the room. The external wall to passage ***162*** was reduced to a single-skin in thickness around the back of the hearth, to maximise its size without compromising that of the room. As with the other fireplaces within the dwellings, it had been modified significantly, with the whole of the original aperture partly in-filled. A slate course appeared to have been inserted 0.66m above floor level, capping the hearth. The flue appeared to have been re-routed on the western side into the western pier, which was expanded by one brick's width. The area below the capping appeared to have been reduced in size to fit a back-boiler, with part of the blocking extending beyond the front of the original hearth, suggesting that a new frontage was erected at this time. To the west of the fireplace, a three-course high single-skin wall (***170***), abutting and perpendicular to the south wall, appeared to represent the base of a wash-stand, although no evidence for an associated pier survived. It appeared to have been similar to that in Room **6**, and would have almost completely concealed the blocked doorway into the passage to the west. Interestingly, the extant eastern pier for the wash-stand was positioned in an area where the floor did not survive, but continued below the level of where the floor would have been, suggesting that it was already absent at the time of the construction of the wash-stand. The survival of the floor elsewhere within the room was

sporadic, generally being confined to the perimeter, with a few, more central broken examples. Much of the make-up/levelling layer of boiler ash and ferrous waste survived, with a compact upper surface above a depth of typically 0.1m. This overlay mid-brown plastic clay, similar to that observed elsewhere, although most probably natural. An almost central 0.3m² ceramic drain cover set within the make-up of the floor was almost certainly crushed into the layer following demolition of the structure. Several broken flags, presumably from the ground floor, overlay those *in-situ* within Room **7**, suggesting that the cellar was empty, and thus probably in use, at the time of demolition. They also partially overlay part of the floor that were missing flagstones, also suggesting that the cellar floor was incomplete prior to demolition.

*Plate 52: Fireplace within Room **7***

5.7.29 Against the northern wall (***123***), which was also of only a single-skin thickness, were the remains of a stair (***171***), communicating between the cellar and ground floor. It was better preserved than those in Rooms **1** to **4**, surviving to three steps in height, rising from east to west. Each step comprised a two-course high brick riser, below a flagstone tread with a slightly projecting nose, similar to that extant within the passage to the west. Each step abutted the north elevation, with the sandstone treads projecting through the south wall of the stair, which was open-string, presumably to allow maximum light into the stairwell, as well as saving on materials. This method of stair construction was typical of the period in the area, with almost identical examples observed during the excavation of cellar dwellings of a broadly contemporary date in Piccadilly Place, Manchester (OA North 2006).

5.7.30 ***Room 8:*** this was the northern of the dwellings fronting Adelphi Street. Its northern extent is shown on all early mapping (*eg* Bancks & Co 1831; Ordnance Survey 1848) as being constructed on an angle, perpendicular to, and presumably abutting, a large range of buildings erected along the lower side of a significant change in ground level. Significant truncation of this part of the site, presumably during the demolition of structures along the lower part of the site, had completely removed the north wall, and any relationships between the two ranges of buildings.

5.7.31 The single-skin east wall (***120***) survived to the greatest length (3.7m), and was devoid of features, although there was a possibility that its northern terminus was the position of a door jamb of a door into the front cellar, as observed in Rooms **6** and **7**. This suggestion is based on the vertical alignment of the ends of the surviving brickwork, although the frequent use of broken brick throughout the wall fabric made this a frequent occurrence over several courses. At its southern end the wall was keyed into the dividing wall to Room **7** (***123***), also of single-skin construction.

5.7.32 At its western end, the wall curved markedly to the south before abutting the west wall (***117***), which was of a full brick thickness, constructed in English Garden Wall bond. This curvature of the wall appeared to be a consequence of its poor quality of construction, rather than any specific architectural aim, the remainder of the wall also shown to be far from straight when viewed from either end.

5.7.33 The central fireplace (***128***) within the southern wall appeared to be keyed into it, and comprised several phases. The original fireplace appeared to be identical to that in Room **7**, comprising 0.45m wide hollow brick piers of single-skin thickness, projected 0.36m into the room. The lower part of a thin sandstone surround survived *in-situ* at the base of the eastern pier, and was presumably similar in style to the broken, but more complete example revealed in Room **3**. The hearth was in-filled subsequently by a brick's width (0.23m) either side for the insertion of a fire-basket, similar to that in Room **6**, but far more ornately decorated, with pyramidal embossed studs within geometric designs, flanked by fluting. Panels atop either side-piece contained a figure, which appeared to have a cherubic head, and the body of a beast with a tail, and possibly wings, laying in a couchant pose. The most likely figure is a Greek Sphinx, popular in nineteenth-century romantic styles. Behind the fire basket, which had four horizontal rails across the front, the base of the flue was formed of angled brick. This was overlain by a later extension to the front of the fireplace. It was of the same width as the original aperture (0.94m), extending 0.79m beyond the front of the fireplace. It survived to a maximum height of seven courses at the rear, but only two at the front, where a 0.37m wide raking pit survived. This represented a significant impact on the floor-space within the room, and it is unclear why the original aperture was not remodelled, rather than added to, with only the flue remaining in use from the earlier feature.

*Plate 53: Fireplace within Room **8***

5.7.34 At the southern end of the west elevation (***117***), a narrow doorway (***172***) appeared to have been retained for a longer period than those examples into the sub-surface passages observed in Rooms **6** and **7**. It was only 0.61m (2') wide, significantly narrower (approximately two-thirds) than those to the south. This was possibly to allow for the positioning of a window immediately to the north, which would have been compromised by the position of the stairs at the northern end of the passage if the doorway had been of similar width. The door also had a brick threshold, unlike those to the south, suggesting that it may have been inserted. At the northern surviving end of the wall, it was abutted on its eastern side by a two-brick long (0.45m) brick pier (***173***) of a full-brick thickness. This was of similar materials and construction to the wall it abutted, and due to the lack of survival of the main wall to the north, remains of unclear function. It might possibly relate to the base for a wash-stand, but others observed within the site would suggest it was of higher quality construction than these single-skin features, perhaps forming the southern pier for a flagstone bench, typical of cellars that were later used as workshops. The feature overlay the flagstone floor (***129***), demonstrating it to be later than the original construction of the cellar. Elsewhere, the floor was only well-preserved in the southern part of the room, and contained several brick repair patches, similar to those in Room **6**. A substantial deposit of fuel waste below floor level was also observed, similar to that in the cellars to the south.

6. FINDS

6.1 INTRODUCTION

6.1.1 In total, 5760 artefacts were recovered from the excavation, of which 5416 were fragments of clay tobacco pipe, seemingly representing pipe manufacturing waste. The remainder of the finds assemblage, comprising 344 fragments, largely comprised domestic items collected from the backfill of the houses along Bury's Court; few objects were recovered from the excavation of the dye works, other than occasional fragments of pottery and machinery. The classes of materials present within the assemblage were clay tobacco pipes, pottery, glass and ceramic bottles and jars, metalwork, and industrial residues. The finds were dated to between the late eighteenth to the mid-twentieth centuries.

Item	Date / Description	Count
Pottery	Post-medieval	114
Clay tobacco pipe	Nineteenth century	5416
Glass/glass Fe	Nineteenth century	69
Metalwork	Iron	62
	All Cu Alloy	40
	Tin	2
Misc.	Textile	2
	Plastic	5
Industrial Residue	Coal/fuel waste	2
	Slag	35
Misc.	Fuse plug, moulded plaster	3
Organics	Leather	26
	Wood	2
Total		**5760**

Table 1: Summary of the finds assemblage

6.2 POTTERY

6.2.1 A small assemblage of pottery (114 fragments) was recovered from the excavation of Bury's Court, although fragmentary, the material was generally in good condition. A few fragments of pottery were also recovered from the dye works and the air-raid shelter. Unsurprisingly, all of the pottery can be dated to the nineteenth or twentieth centuries, and comprised tableware and kitchenware vessels. However, the range of fabric types represented was limited.

6.2.2 ***Tablewares:*** the backfill of Room **2** along the western side of Bury's Court yielded a complete creamware saucer, a fragment of the popular transfer-printed design 'Asiatic pheasants' (Coysh and Henrywood 2001), together fragments of Willow pattern. A fragment of press-moulded pearlware, transfer printed and depicting a gentleman wielding a rapier, was recovered from the back passage. It probably dates to the mid-nineteenth century. A fragment of annular ware (Cornish type ware), striped in blue and white, with press-moulded *fleur de lys* was recovered from Room **3**. A transfer-printed floral plate fragment with hand painted detail probably dates from the mid- to late nineteenth century. A fragment of sponged or spatter ware was recovered from the west end backfill of Trench four. Plain pearlware was found throughout the backfill of rooms along Bury's Court.

6.2.3 The backfill of Room **1** in Bury's Court yielded two sherds of a porcelain teapot with hand painted decoration comprising red, yellow and green flowers, may be an example of Chinese export porcelain of eighteenth century date, although it equally may have derived from either Staffordshire or Liverpool and be in the same style. Such pottery suggests some degree of wealth in the area.

6.2.4 Three cream glazed cup fragments recovered from the air-raid shelter are obviously of wartime use. This is confirmed by a stamp on the base of a cup fragment which reads 'Royal Tudor ware. Barker bros. Ltd. England. GviR. 1943'. Fragments of a whiteware cup with 'GviR. Bridgwood. 1945' are probably produced by a Samuel Bridgwood of Longton, Stoke-on-Trent.

6.2.5 Three sherds of glazed white earthenwares with varying decoration were recovered from concreted soil layer ***152*** beneath the dye mixing area in the dye works. Of these, two were transfer printed plates and a hand-painted cup with 'chinoserie' type decoration. The sherds have a date range of the early to mid nineteenth century, suggesting that the foundations of the mixing platform ***145*** was constructed after this time.

6.2.6 ***Kitchenwares:*** a substantial part of the pottery assemblage comprised coarseware vessels in various fabrics, although the absence of fabric types such as mottled ware and tin-glazed earthenware was notable. Black- and brown-glazed redwares (typically with a reddish pink, medium to coarse fabric with medium to large gritty inclusions) constituted the largest group, and most are likely to be relatively locally produced. Vessel forms included pancheons, large jugs, basins, jars and cooking vessels. Unglazed red earthenware, or plant pots, were also present in the assemblage.

6.2.7 A complete Nottingham-type stoneware jar of a nineteenth-century date with rouletting was recovered from Room **6**. Such pottery is typical utilitarian ware during this period, and found mostly in domestic contexts. In addition, a cream glazed container or bottle fragment from the top of the stairwell with block lettering dates *c* 1900-40. Five fragments of a Cornish ware bowl were recovered unstratified and were recovered from between the flagstones of Room **6**. The pottery recovered from Room **6** suggests that the cellar was occupied during the late nineteenth to mid-twentieth century.

6.2.8 ***Bottles:*** two complete light brown stoneware bottles recovered from Trenches 1 (Room **6**) and 2, each bearing the impressed stamp of Doulton Lambeth above the base. This style of the stamp was commonly used on stoneware vessels between 1891 and 1956 (Eyles 2002). In addition, a grey stoneware bottle base was recovered from Room 1, although this was difficult to source its origin, it nevertheless could be ascribed a contemporary date.

6.2.9 ***Conclusion:*** in broad terms, the pottery assemblage is of little archaeological interest, and is unlikely to sustain any further analysis. It is perhaps interesting to note that the earlier wares, such as the Chinese export porcelain and the toy saucer, are somewhat incongruous in the context of Bury's Court, as they suggest a somewhat wealthier lifestyle in the houses than may have been previously presumed.

6.3 CLAY TOBACCO PIPE (*Dr David Higgins*)

6.3.1 ***Introduction:*** the excavations at Adelphi Street produced a very large quantity of clay tobacco pipes and kiln waste, almost all of which represents a single phase kiln dump sealed beneath the floors of a building. This assemblage is clearly of considerable archaeological importance.

6.3.2 In their *Research Priorities for Post-Medieval Archaeology* the *Society for Post-Medieval Archaeology* has identified the systematic collection of pipes as an area of particular importance where more work is needed (Anon 1988, 6). The *Bibliography of Clay Pipe Studies* (Atkin 1989) lists only two published pipes reports from Greater Manchester. Although one of these includes some kiln waste (Arnold 1983), this report only has poor illustrations of the bowl forms and none at all of the kiln debris itself. Only a few brief notes have been published since the *Bibliography* was prepared, and there has never been any substantive study of the Manchester pipe-making industry as a whole.

6.3.3 In his list of Manchester pipe-makers, Oswald lists some 52 manufacturers who were working there during the late eighteenth and nineteenth centuries (Oswald 1975, 180). This list is known to be very inadequate since Manchester was one of the principal pipe manufacturing centres with production right through until 1994, when the last factory relocated elsewhere. By the time of the 1831 Census, 17.4% of all British pipe-makers were recorded in Lancashire (which then included Manchester), the highest county total for anywhere in Britain (Cessford 2004, 8-9) and, by 1851, the Census recorded 157 pipe-makers in Manchester and Salford alone (*op cit*, 28). The south Lancashire area between Liverpool and Manchester was one of the most important pipe-making regions in the country and yet virtually nothing is known of the pipes that were produced in Manchester itself.

6.3.4 It is also known that pipes from Manchester were exported all over the World, with sales to places such as Africa, America, Australia and New Zealand continuing until well into the twentieth century. Although it is clear that Manchester was a pipe-making centre of national and international significance, there has been no systematic survey of the pipes produced in the city and very few groups have even been published. Given the significance of

Manchester as a pipe production and trading centre, this assemblage offers the potential to provide an important benchmark for future studies.

6.3.5 ***Quantification:*** based on the counts given to the material as bagged and sent for assessment, a total of some 5,236 fragments of pipe or pipe kiln debris were recovered from the excavations. This figure is made up of 3,802 pieces of pipe (including about 760 substantially complete pipe bowls), and 1,461 pieces of kiln debris.

6.3.6 The kiln debris can be further sub-divided into different classes. There are a few small fragments (four pieces) that may come from the kiln muffle itself, but the majority of the debris (1,207 pieces) comprises kiln supplements, *ie* single use clay objects used in the stacking and covering of the pipes during firing. There are also 245 pieces of slag laminate from the temporary cover built to seal the kiln, and a couple of pieces of trimming waste that have become accidentally fired.

6.3.7 Almost all of the pipes and kiln waste were recovered from a well-sealed deposit created when this material was used as bedding for floors during the construction of Bury's Court; only three pipe fragments were recovered from elsewhere on the site. In effect, the whole assemblage from this site can be treated as a single kiln dump, representing one phase of pipe production from a local factory.

6.3.8 ***Methodology:*** the pipes from this site were assessed during February 2008 using standard procedures for the examination of clay tobacco pipes from archaeological deposits. All of the fragments in each bag have been examined rapidly, and the number of pieces of pipe and kiln debris tabulated. A preliminary note has also been made of the range of different bowl forms and types of kiln waste present in each bag. Details of the pipes and kiln waste has been entered onto two pages of an excel spreadsheet so that the information can be sorted and interrogated as required.

6.3.9 ***Evaluation:*** clay tobacco pipes had a very short life expectancy, and no recyclable value once they were broken. They were also subject to rapid stylistic evolution and many of them were marked or decorated. These characteristics combine to make pipes one of the most sensitive and accurate means of dating archaeological deposits. The excavations produced a total of 3,802 fragments of clay tobacco pipe and 1,461 fragments of kiln debris, almost all of which represent a single dump of production waste from a local manufactory. The majority of the material is in a fresh and unabraded condition and many of the fragments are quite large, showing that they have not been much disturbed since being discarded from the factory.

6.3.10 By the middle of the seventeenth century, distinctive regional styles of pipe bowl form and mark had developed across the country. In South Lancashire (which included what is now Greater Manchester) a distinctive local pipe-making industry emerged based on the use of pipeclay, fireclay and coal from the South Lancashire Coalfield. This industry went on to become one of the most important in the British Isles during the nineteenth century, with Manchester / Salford being one of the main production areas.

6.3.11 Towards the end of the eighteenth century a new regional style of mark was developed, which comprised a long, single line stem stamp. This style appears to be particularly associated with the south Lancashire industry and numerous examples representing the products of at least three different manufacturers have been recovered from the excavations.

6.3.12 By far the most numerous mark recovered is that of W Griffith of Salford, examples of which were also found embedded in the kiln waste itself. There is no doubt that this mark identifies the source of the kiln dump. There were probably three different William Griffith's, presumably three generations of the same family, who were making pipes in Salford and Manchester from at least 1797-1884.

6.3.13 At least two other marks were present amongst the waste, W Smith for one of the William Smith's working from 1794-1848, and a name ending in '…rd', almost certainly a member of the Millward family, working from at least 1811-43. These suggest that the dump dates from before 1848. This fits perfectly with the cartographic evidence, which shows the buildings already in existence by 1848.

6.3.14 Very little is known of the bowl forms that were associated with this particular form of stem stamping, since only a couple of examples have ever been recovered where the stem mark and bowl are still attached. This group contains large, well preserved fragments where it may be possible to reassemble the marked stems with the bowls to see how these marks were used. At the very least, the close association of the marked stems and bowls should allow some degree of analysis.

6.3.15 In the nineteenth century moulded decoration on pipe bowls became extremely common and a wide variety of regional patterns and designs were produced. The excavations have produced large numbers of highly decorated pipe bowls dating from the first half of the nineteenth century. At least 15 different mould types are represented amongst the kiln dump with decorative motifs including flutes, flowers, foliage and Masonic emblems. Two very unusual types depict flags, cannon, swords and a crown with the slogan 'CHURCH AND KING' moulded on the bowl. The general range of motifs used would suggest a date of *c* 1820-40 for the group as a whole, while the specific reference to the King would suggest a date before 1837, when Victoria came to the throne. This helps refine the date at which the buildings are likely to have been erected.

6.3.16 At least four (and probably several more) different plain pipe moulds are also represented in the kiln dump. Together with the decorated pipes, these will allow a detailed assessment to be made of the range and nature of the pipes that were being produced in Greater Manchester at this period. Several fragments of coiled pipe stem were recovered from the excavations. These show that 'specials' of this type were also being produced on the site.

6.3.17 All of the pipes appear to have had long stems and they were finished with green glazed tips. Several of the kiln supplements used in firing show traces of this glaze on them. This would suggest the pipes may have been fired with the glaze already on them. If so, this is probably highly unusual, since it is thought

that the glazed tips were usually applied as a second process using a tipping muffle. This is an important issue regarding the technology employed that needs to be explored.

Plate 54: Examples of the clay tobacco pipes with masonic design and stars on spur

Plate 55: Examples of the clay tobacco pipe with Church and King motif

Plate 56: Kiln debris, including wad roll and sheet

Plate 57: Slag laminate from kiln, with W GRIFFITH mark embedded in waste

6.3.18 A substantial quantity of kiln waste was also recovered (1,461 pieces). Although there are only a few small scraps that may have come from the muffle itself were recovered, the waste clearly shows that a developed muffle kiln was in use, which would have had a stack of mushroom supports within the muffle. A wide range of rolls, straps, wads and sheet are represented, as well as slag laminate from the kiln covering. This is a very good assemblage of kiln debris, which is not only the largest ever to have been recovered from Greater Manchester, but also one that compares favourably nationally.

6.3.19 ***Potential:*** almost all of the excavated pipes and kiln waste come from consistent kiln dump dating from *c* 1820-40. This is by far the largest kiln group to have ever been recovered from the Greater Manchester area – an area in which there has also been very little previous study of its nationally important pipe-making industry. As such, this assemblage offers the potential to significantly advance our understanding of pipe production during this period. Preliminary analysis of the waste has shown that it was produced by the Griffith's family, who appear to have been one of the most important pipe-making families in Salford and Manchester during the late eighteenth and nineteenth centuries. At least 15 decorated and four plain patterns of pipe are represented in the kiln dump. This group offers the potential to define the range of products being produced by this prominent family at one particular point in time.

6.3.20 The large size of this group, together with the fact that it contains a lot of marked stems, also offers the potential to look at the relationship between stem marks and bowl form. It is not yet known what sort of bowl forms these marks were used with, let alone whether there was any relationship between the nature of the bowl and the use of a mark. Many of the decorative motifs represented on the excavated pipes are distinctive to the North West and this sample will establish an important reference point not only for the Griffith's family but also for the wider region as a whole. Furthermore, it will also be of value to overseas researchers since pipes of this period were exported to many other destinations around the world.

6.3.21 The excavated material has produced an outstanding assemblage that will provide an important benchmark in establishing the nature and range of the pipes that were produced in and traded from Greater Manchester. The recovery of kiln waste in association with the pipes will also allow an examination of the kiln technology and workshop practices that were being used.

6.3.22 Greater Manchester was one of the most important British manufacturing centres during the post-medieval period and one that formed part of an internationally important pipe-making industry. Despite this, there has been very little study of the pipes produced here, with the result that the products of the hundreds of pipe-makers who worked there are barely understood. This assemblage will clearly make an important contribution since it comprises a large kiln assemblage representing the range of products being produced by one of the principal pipe-making families.

6.3.23 There is no doubt that this is a key group that warrants full and detailed analysis and that a substantial body of illustrations will be needed to represent the range of bowl forms, makers' marks and decorative motifs recovered. The recovery of an assemblage of this quality and extent from Greater Manchester is long overdue. The proper analysis and publication of this kiln group pipes will not only provide a lasting benchmark for future researchers, but also one that is of national and international significance.

6.3.24 ***Recommendations for further study:*** all of the different classes of kiln waste and pipes recovered should be properly sorted, identified and catalogued. This catalogue should quantify the different types present, including any maker's

marks present as well as the type and number of any decorated fragments. General comments should note any significant features and cross-refer to any illustrated pieces. The bowls and stems in should be examined for joins and, if a number are found, an attempt should be made to reassemble marks with their bowl forms and/or to reconstruct complete pipes, which are extremely rare nationally from this period.

6.3.25 The most significant elements of the kiln dump should be studied and described. This analysis should explore workshop practices, production techniques and kiln technology. The quality and finish of the pipes should also be assessed to characterise the nature of the local products.

6.3.26 The number and range of mould types represented should be identified and described. The forms being produced in Greater Manchester should be discussed and compared with other evidence from elsewhere, both regionally and nationally. Illustrations for publication at 1:1 should be prepared of the complete range of bowl forms and decorative styles from the site. Twice life size details of the stamp types should also be drawn as a reference source for future researchers. A publication report should be prepared. This should explain the work carried out and present a synthesis of the pipe evidence from this site. So far as is possible, it should describe the pipe types represented and set them within the context of the Greater Manchester industry as a whole. The kiln waste should also be described and placed within both its regional and national context.

6.4 GLASS

6.4.1 In total, 69 fragments of glass were recovered from the Bury's Court excavation. In broad terms, the glass was in good condition, although there was some surface lamination. The majority of glass was represented by complete mould-blown bottles that would have contained mineral water, beer, wine, milk, and sauce. In addition several pharmaceutical and medicine bottles were recovered. The remainder of the glass assemblage comprised tableware and industrial items, including fragments of window glass, laboratory vessels, stirring rods and glass waste. The presence of the non-domestic glass suggests evidence of other industry in proximity to the site during the nineteenth and twentieth centuries.

6.4.2 ***Bottles:*** several of the bottles were stamped with the manufacturers marks of which the majority derived from local firms. This was a common characteristic of the later nineteenth and early twentieth centuries. Of these, a local brewery Groves & Whitnall based in Regent Road, Salford were represented. The company used bottles made by the Redfearn Brothers, a firm based in Barnsley, whom manufactured the amber green bottle glass, characteristic of the Leigh & Co mineral water firm; Leigh & Co was incorporated into Groves & Whitnall in the late nineteenth century. From 1899, the Groves bottles were henceforth stamped with Groves & Whitnall Ltd, although the company also used clear bottles at that time. Three amber and one clear bottles were collected from the site, many of these retained the marble stopper. Other firms included Taylor & Lees base in Oldham, MB Co

based at the Britannia Brewery in Manchester, Hammersby Ltd based in Broughton, and the Grosvernor Mineral Water firm based in Stalybridge.

6.4.3 The milk bottles derived from the Lancashire Hygienic Dairies, Palatine Dairies Ltd, and the Mayfield Dairy Company based in Clayton, Manchester. These were recovered from Trench 1, and amongst the backfill of Rooms **2** and **7**. The sauce bottles were largely unstamped, although Fletcher's of Selby was represented. Fletchers Sauce Co Ltd was established in 1920, and continued operating until 1973. Other firms included Slack & Cox Ltd, based in Manchester, and HJ Heinz.

6.4.4 ***Vessels:*** the domestic vessels included wide-necked jars, marmalade and condiment containers retrieved from the fills of the houses. Medicine bottles include square-shaped flasks, perfume bottles, ointment jars, screw necked jars, and a Boots Cash Chemist cough mixture bottle.

6.4.5 ***Other material:*** industrial items included several stirring rods, phials and test tubes which may represent material discarded from a process employed at the dye works in the nineteenth century. Some of these were recovered from layer ***152*** beneath the dye mixing area ***145***. In addition, several lumps of blue and clear waste glass were recovered from Rooms **1** and **2**, which were probably discarded after part of Bury's Court was abandoned.

6.4.6 In conclusion, whilst the glass assemblage has some potential to refine the overall dating of the properties on Bury's Court, the material has very little potential to contribute to any further understanding of activity on the site. It thus seems unlikely that the glass will sustain any further meaningful analysis.

6.5 COPPER ALLOY

6.5.1 In total, 40 copper alloy artefacts in varying condition were recovered from the excavation. None were subject to x-radiography. Copper alloy fittings were found on the flagstone floor of Room **4**, and a decorative door escutcheon (presumably Victorian) was recovered from the fireplace in Room **3**. A large brass scroll bracket or door fitting was recovered from Room **7**, and may be dated to *c* 1870-1910.

6.5.2 Domestic artefacts were also recovered from the demolition rubble within the Bury's Court properties. Three pieces of either a salt or pepper grinder were recovered from Room **2**, together with a decorative copper alloy buckle in the shape of the letter B, which may be dated broadly to *c* 1880-1920. A fragment of a copper alloy bell may have derived from a small table bell, or from a child's toy. A delicate copper alloy tea strainer was recovered from the air-raid shelter. Perhaps the most interesting copper alloy object from the excavation was a square or diamond shaped token bearing the words 'we the (..) profit to sharing'. This was probably a 'New Deal' trade token, dating to the 1930s.

6.5.3 ***Coins:*** six coins were recovered from the excavation, all of which were in fair to poor condition, some bearing no legible writing. However, one coin from a fireplace details the name 'Georgius IV', providing a date range *c* 1820-30. A

penny recovered from an unstratified layer bears the date 1862, and part of Queen Victoria's head, while a halfpenny, also unstratified, has the date 1852.

6.6 IRON

6.6.1 In total, 62 objects of iron were recovered from the excavation. In broad terms, the iron objects were in poor condition, being partially or wholly covered with corrosion products. The group was not subject to x-radiography, and whilst some identifications must, at this point, remain tentative, other objects can be identified clearly.

6.6.2 The excavation of demolition rubble within the properties along Bury's Court yielded seven fragments of an iron vessel, which almost certainly represented a cauldron. Some of the fragments displayed evidence for burning to the outer part of the vessel, consistent with its use on an open fire, suggesting that the fireplaces excavated in the houses had been used for cooking in addition to heating during the twentieth century.

6.6.3 Eight large pieces of iron from the fireplace in Room **7** appear to be the remains of a fire grate. Another 11 fragments of a grate were recovered from Room **1**, together with an unidentifiable flat piece of iron.

6.6.4 The fragments of iron recovered from the air-raid shelter included the probable remains of one or two lamps. Part of an oven or stove door was also retrieved from the backfill of the air-raid shelter, although it is conceivable that this originated from the houses.

6.6.5 In conclusion, the assemblage of iron objects has very little potential to contribute to any further understanding of activity on the site.

6.7 INDUSTRIAL RESIDUE

6.7.1 In total, 35 fragments of industrial residues and three pieces of coal were recovered from the excavation of the properties along Bury's Court. The fragments were all recovered from twentieth-century demolition deposits, and were thus essentially unstratified.

6.7.2 The industrial residues were all iron-working slag, the presence of which is perhaps unsurprising given the twentieth-century use of the site as an ironworks. The iron-working slag is of little archaeological interest, and has no potential to inform an understanding of the development of the site.

6.8 LEATHER

6.8.1 In total, 26 fragments of leather were recovered from the excavation. The majority of the fragments represented shoes or clogs of a nineteenth-century date. Eight fragments were recovered from Trench 3, and comprised six sole and two part sole/part vamp fragments. All the fragments appear to have metal bases to the sole, and the vamps are decorated with incised decoration.

Interestingly, some iron smelting appears on one of the vamp fragments suggesting they most likely belonged to one of the iron foundry workers.

6.8.2 Eleven fragments of either one or two pairs of gentleman's boots dating to approximately the late nineteenth century were recovered from Room **3**. The boots are reddish-brown in colour and large in size for the period. One of the boot soles shows signs of being patched over. Two further shoe fragments were recovered from the back passage within Bury Court, including a partial clog vamp or sole fragment, and a circular artefact, which is most likely a decorative piece from a belt.

6.9 WOOD

6.9.1 Two wooden objects were recovered from the dye works. Both objects were cylindrical in shape, each measuring no more than 0.40m long, resembling rollers from a machine such as a jigger or a mangle. One of the rollers retained a piece of yellow streaked dyed cloth along its terminal, suggesting that the fabric was not entirely finished prior to the machines abandonment. It is more likely that the roller was irreparable and discarded during the lifetime of the dye works.

6.10 PALAEO-ENVIRONMENTAL

6.10.1 One 15 litre bulk sample was taken from a secure context in Trench 2 for the assessment of charred and waterlogged plant remains. The whole sample was processed, and subject to palaeo-environmental assessment.

6.10.2 The sample was hand-floated, the flots were then collected on a 250 micron mesh and air dried. The flots were scanned with a Leica MZ60 stereo microscope and the plant material was recorded and provisionally identified. The data are shown on Table1. Botanical nomenclature follows Stace (2001). Plant remains were scored on a scale of abundance of 1-4, where 1 is rare (up to 5 items) and 4 is abundant (>100 items). The components of the matrix were also noted.

6.10.3 ***Results:*** occasional plant remains were recorded, and included a few *Juncus* (Rushes) and *Rubus fructicosus* (Blackberry) seeds and a few spores. The matrix consisted of clinker, coal, charcoal, wood and some Pre-Ouaternary spores.

Feature	Flot volume (ml)	Flot description	Plant remains	Potential
Trench 2	70	Clinker (3), coal (2), Charcoal (2), insect remains (1), wood (1), pre-Quaternary spores	CPR (1) *Rubus fructicosus* WPR (1) *Rubus fructicosus, Juncus*	None

Table 2: Assessment of charred and waterlogged plant remains from Adelphi Street.
Plants scored on a scale of 1-4, where 1 is rare (up to 5 items) and 4 is abundant (>100 items).

6.10.4 ***Conclusion:*** a very small assemblage of plant remains was recorded in this sample and no information concerning the economy or environment of the site is available. Therefore there is no potential for further any work on this sample due to the low numbers of plant remains.

7. CURATION AND CONSERVATION

7.1 RECIPIENT MUSEUM

7.1.1 Salford Museum and Art Gallery has been nominated as the ultimate repository for the site archive:

Salford Museum and Archives

Peel Park

The Crescent

Salford

M5 4WU

Tel: 0161 778 0800

7.1.2 Arrangements were made with the museum prior to the commencement of the excavations for the deposition of the complete site archive, and the museum curator has acknowledged his willingness to accept the archive.

7.2 CONSERVATION

7.2.1 There are no conservation requirements.

7.3 STORAGE

7.3.1 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).

8. DISCUSSION

8.1 INTRODUCTION

8.1.1 The following section presents a summarised, phased account of the development of the site, based on the results of the archaeological investigation. It has been compiled in advance of further historical research, which would undoubtedly enhance the results obtained. The results from each element of the investigation have been combined into a chronologically phased discussion.

8.2 PHASE 1 (LATE 1700S – *C* 1820)

8.2.1 William Green's map of 1794 shows the initial stages of development, with a single rectangular building erected within the study area by this date. The purpose of this building remains uncertain, and the excavation did not produce any remains that could be attributed firmly to the structure, or this initial period of development.

8.2.2 The area developed significantly during the early nineteenth century, as shown on historical mapping. A network of streets had been laid out by 1820, including Adelphi Street, as this part of Salford emerged as an important centre for the textile-finishing industries The dye works within the study area is depicted on Pigot's map of 1820. The dye works is shown as an L-shaped building, which extended east from the river Irwell up to the western side of Adelphi Street, and was associated with a probable reservoir. The excavated remains from this period included elements of the dye works' external walls (***187***) along the southern part of the complex, part of the eastern wall (***138***) of the range parallel to the river, and elements of the reservoir in the centre of the site. It is likely that elements of the properties excavated on Bury's Court also date to the early nineteenth century, and they had certainly been erected by 1820 as they also appear on Pigot's map.

8.2.3 Of particular archaeological interest is the large assemblage of clay tobacco pipe fragments and associated kiln material, which clearly indicate pipe-making in the immediate vicinity. The clay pipes have been ascribed an early nineteenth-century date, whilst archaeological evidence has indicated that they were deposited prior, or perhaps during, the construction of Bury's Court. It is interesting to note that the attributed maker of the clay pipes, William Griffiths, is listed at Middleton's Court in trade directories for the late eighteenth century (*eg* Scholes 1797, 50); Middleton's Court lies a short distance to the south of the present study area.

8.3 PHASE 2 (*c* 1820 - 31)

8.3.1 By 1831, the study area had attracted considerable development, as shown on Bancks & Co's map of 1831. The dye works was seemingly extended northwards with additional buildings along the eastern side of the site surrounding a courtyard. Several remains pertaining to the external arrangement of the dye works.

8.3.2 The layout of the machinery along the southern part of the works represented part of the dyeing process typically used in a dyehouse, although its machinery and vats derive from a later phase of use. However, the dye house as such probably changed little in terms of its original design.

8.3.3 It is possible that the dyes were heated originally by means of a dye furnace and then poured back into the vats. Evidence of this procedure is perhaps suggested by the complex arrangement of flues along the northern end of the boilers, or room ***142***, which may have provided the location of the furnaces. Archaeological evidence does, however, indicate that the vats were heated by means of steam passing through pipes through and alongside the vats by the mid-nineteenth century. Other evidence from this period included traces of the original courtyard (***144***) located to the west of the eastern reservoir at the southern end of the site.

8.3.4 Three stratigraphic relationships were observed between the primary phases of the properties along the southern and eastern sides of Bury's Court: Rooms **1** to **4** represented a single phase of construction; Rooms **6** to **8** also represented a single phase of construction; and Room **5** was of a different constructional phase to both the southern and eastern blocks. In terms of fabric, construction techniques, and artefact recovery, there is also no distinguishable date between these three episodes, and thus the only way to attempt a chronological sequence is to examine the spatial relationships between the various elements, to attempt to reveal how they would function as a unit.

8.3.5 Bancks & Co's map of 1831 depicts significant information about the housing complex. The courtyard is shown as open in the north-west corner, affording access from Adelphi Street between the reservoir and industrial buildings to the south, which formed the northern wall of the courtyard. Three further access points are also depicted, via narrow passages; one from Adelphi Street to the west, between Rooms **6** and **7**, and two from the south, along either side of Room **4**. These led to a street, which appears to be gated at its junction with Adelphi Street, bounded by the grounds of Adelphi House on its southern side, the river Irwell and a presumably industrial building at its western end. This was U-shaped in plan, butting the western end of the housing, which was also bounded on its southern side by a rectangular structure, presumably also accessed from this street. Internal divisions between individual properties are also shown, but not between Rooms **2** and **3**, or Rooms **5** and **6**. The stratigraphic evidence shows them to have been separate in their original construction, but they appeared to have been considered as single properties by the surveyor. The map also depicts Room **4** as having an angled northern face, joining the projecting northern edge of Room **3** to the narrower Room **5** to the east.

8.4 PHASE 3 (1831 - 48)

8.4.1 Between 1831 and 1848, the layout of the dye works had seemingly changed little, although the site of several boilers and dye tubs were shown attached to the eastern side of the dye house, which further emphasises that steam was probably used to heat the vats during this period. No evidence of the dye furnaces were encountered during the excavation, although these were either contained within the smaller range of buildings shown on the earlier historic maps on the eastern side of the site, or within the space occupied latterly by room ***142***, given the proximity to the chimney, flues and the wash room lying to its immediate west. None of the four metal vats exposed across the dye wash room retained any evidence of a flue surrounding the structures. However, an arrangement of pipes of varying diameters was observed passing through and above the slate-lined vat and across the eastern side of the metal vats in the dye wash room, which strongly suggests that the dye liquor was heated by means of steam. This is further emphasised by the presence of several boilers shown positioned along the eastern side of the dye wash room, which were likely to have provided the steam. The position of the boilers was not indicated on Bancks & Co's map, although traces of one of the three marked clearly on the 1848 Ordnance Survey map was exposed.

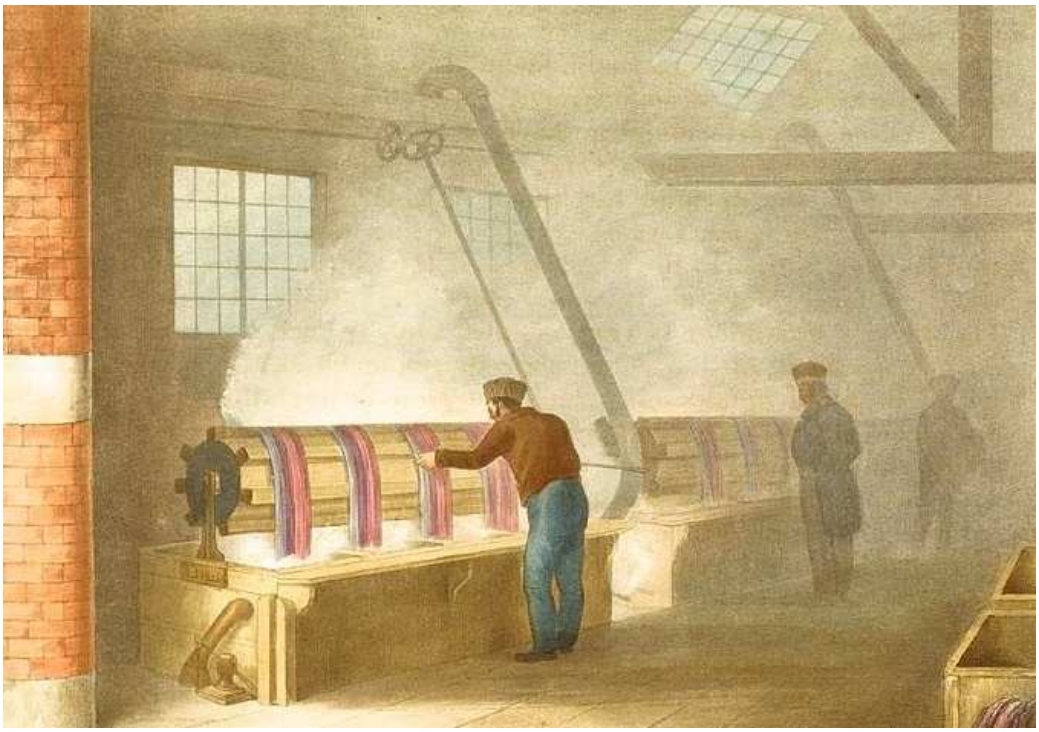

Plate 58: Steam-assisted dyeing technique in the 1840s (reproduced from Barfoot 1840)

8.4.2 Few traces of the square and rectangular-shaped dye tubs marked on the 1848 map survived, although elements of its early phasing was encountered, including the remnants of its stone slab foundation, and the remains of an old dye vat containing dyed cloth and fragments of mid-nineteenth century pottery. A layer of mixed coloured clay across the base of the foundation perhaps represented part of the original sediment debris later used as compacted levelling material. The foundation also incorporated the remnants

of a blocked drain containing orange dye, which may have been sealed during the preparation of a new dye.

8.4.3 The base of the iron vats along the eastern side of the dye house probably derive from this period, with further evidence of orange dye across the base of the concave brick surfaces beneath each vat. Other residues of purple dye was observed beneath the floor along the southern part of the wash room beneath dye tub ***156***, which represented an earlier dyeing process in the room. The insertion of the stone slabs ***159*** along the northern and southern side of the vat is possibly contemporary with the blocking of the channel beneath the mixing area foundation.

8.4.4 The Ordnance Survey map of 1848 depicts the properties forming Bury's Court in great detail that earlier mapping. The map shows the angled north wall of Room **4** to have only been present above the ground floor, with the plan of the ground floor shown as excavated. It is noteworthy that these are depicted as leading only into the privies, rather than as being continuous through to the street as on Bancks & Co's map. The Ordnance Survey map also shows the partitions between Rooms **2** and **3**, and **5** and **6**, and also shows a further transverse partition within Room **5**, positioned slightly west of centre. There was no surviving evidence for such a partition, although the room was the most poorly preserved, only surviving to the floor level of the ground floor. This detailed map also shows the positions of the stairs and associated passages to both the front (east) and rear of the properties fronting Adelphi Street. Rooms **6**, **7** and **8** formed rear cellars to these three large properties, the separate access to those to the front and rear suggesting that they were individual properties, almost certainly domestic dwellings, given the incorporation of fireplaces, and that the inter-joining doorways exposed within the excavation were subsequent insertions.

8.4.5 The passage through the houses fronting Adelphi Street into the courtyard and the angled front wall of the upper floor(s) of Room **4** appeared to be key in extrapolating the constructional sequence of the courtyard. The excavation demonstrated that Room **5** abutted Room **6**, and was thus of later construction, but the spatial analysis suggests this to be somewhat improbable. The butt joint between the two structures probably relates to the different construction methodologies between the two structures. Given the differences in plan type, mortar type, and lack of cellaring in Room **5**, it is probable that the two structures were built by separate speculators. It is improbable that the passage would have been included in the block of buildings to the east, which were constructed as a single episode, if Room **5** were not already established as a building plot, as access to the rear properties could easily have been attained from the south, through the open plot where Room **5** lay. Thus, it would appear that the original layout of the site was an L-shaped arrangement, fronting Adelphi Street and the unnamed street to the south, constructed by two separate developers. It is likely, given the hallway and fireplace within Room **5**, that it was also constructed as a domestic dwelling, with its entrance fronting the street to the south, as the access corridor, at cellar level associated with Rooms **6** and **7**, butted the north side of Room **5** at the northern end of the hallway.

8.4.6 This would suggest that the eastern range of buildings, fronting Adelphi Street, formed the secondary phase of construction, and by the time of the production of the Bancks & Co's map of 1831, most domestic development in the immediate area was on the street frontages. The angled wall face of Room **4**, between the differing depth of Rooms **3** and **5**, almost certainly demonstrates that either, or both of the properties either side predated it, and that it formed an episode of in-filling. The excavation determined that Rooms **3** and **4** were contemporary structures, suggesting that this range of structures formed an extension to Room **5**. They were similarly uncellared to Room **5**, but were accessed from the north, having fireplaces on the rear, southern walls. This also suggests a later date of construction, being accessed from the courtyard their construction formed on their northern side. The rectangular structure shown on the 1831 map along the southern side of Rooms **1**, **2** and the house to the west, was completely destroyed by later activity on the site, and nothing of it remained below ground. Its presence along the southern side of the housing showed that at ground floor level at the very least, there were no windows in this side of the buildings, making them similar to the numerous back-to-back properties for which the region is well known. The inclusion of a substantial privy block within this new construction, containing four closets, also suggests a later date of construction than the remainder of the courtyard, at it would have been rather superfluous to simply serve the four properties within this block.

8.4.7 How this chronological sequence relates to the name Bury's Court is unclear. The name suggests that the entire block was constructed by the owner of the dye works to the immediate north, but the documentary evidence suggests that Isaac Bury did not become the owner until *c* 1841, by which time the courtyard of dwellings had been completed. It is therefore possible that he purchased the dwellings to rent to his employees, and the courtyard was renamed accordingly.

8.5 PHASE 4 (1848 - 92)

8.5.1 During the mid- to late nineteenth century, the dye industry leant more to the expertise of scientists in the laboratory in terms of producing colour artificially, rather than to the skill of the dyer in the factory. During this time the development of coal-tar derived dyes were dominating the market based on the efficiency of their use and the varieties of colours. It is known that chemically produced dye arrived at Adelphi Dye Works by means of a paste contained within packets. Isaac Bury received mauve paste from Heinrich Caro, a German chemist working for a Manchester chemical company in the mid-1860s (Reinhardt 2000). During his time in Manchester, Caro developed three coal-tar derivative colours phenyline brown (also known as Manchester brown), Martius yellow and induline (*ibid*). He went on to become an important inventor of dyes between 1874 and 1883 producing the whole range of coal-tar based dyes in his laboratory. It is probable that Adelphi Dye Works benefited from these inventions, although no direct evidence of supply was recorded.

8.5.2 The introduction of synthetic dyes on the site was suggested by the types of vessels and machinery used to process them, although it is uncertain if these vessels were also used to process the naturally produced dyes. However, initially there was no change in the type of applicable knowledge and practical know how in terms of the machinery used. Evidence of machinery was represented by several machine beds above the flagged floor of the wash and drying rooms, and in the floor of the room encountered in Trench 5. These probably represented machinery such as jigger to roll the cloth in the wash room, and apparatus used to dry and brush the fabric such as mangles and cloth singers.

8.5.3 The part of the east range located within Trench 5 of the evaluation, to the north of the main focus of the excavation, appeared to have functioned as part of processing area, with the remains of two drains, presumably below large tubs, extant within and below the surviving basement floor. The lack of discolouration of the floor, as observed to the south, suggests that the process in this area was not dyeing, and the position relative to the kier bases observed at the southern end of the excavation area, would suggest that bleach was not being used either, strongly suggesting that this was a washing area, located almost immediately adjacent to the reservoir.

8.5.4 The range of dyes used on the site largely derived from chemically manufactured coal-tar colours such as yellow, orange, and mauve which by careful chemical and mordant selection produced a variety of hues. Other colours detected included black dye within the residues beneath the foundation of the dye mixing area, purple/indigo within the base of tub ***156*** at the southern end of the dye wash room, and blue dye within the metal containers ***193***. Traces of fixing agents and mordants were encountered within sediment filling the base of channel ***139*** in the dye wash room and in channels and tubs within the dye mixing area, in the form of a cream powdery substance. Although traces of indigo dye was observed on the site. Large amounts of yellow dye was observed within four vats (***137*** and ***153***) within room ***135***, although traces of orange dye were present under the foundation of the vats. The presence of the orange dye suggests that it may have been used in conjunction with mordants to produce an adjective yellow. Adjective yellows comprise alizarine orange, galloflavine and gambine yellow (Murphy 1911). The choice of mordant, such as alum mixed with alizarine orange, produced an orange with yellow tone, or chrome mordant produces a galloflavine yellow with a greenish tone that when applied to wool produces a fustic yellow colour.

8.5.5 The dyeing vats and kier were mostly constructed from non-corrosive material, such as zinc-coated iron (***153***), stone (***150***), slate (***137***), although this does not imply that all the vessels were likely to contain corrosive material such sulphurous dyes, although no direct evidence of acidic dye was observed. No dye residue was observed form the stone kier, although this may have been used to contain bleach or a fixing solutions. Traces of a square-shaped wooden tub attached to wall ***138*** contained traces of purple dye, which if it had been synthetically produced would have been highly flammable. This suggests that

the colour was possibly extracted from the indigo plant pertaining to the period of natural dye processing on site.

8.5.6 The two rows of cottages on the northern part of the site, identified on the 1831 map and named as Brierley's Court on the Ordnance Survey map of 1848, had been replaced by a new structure during this period. It seems likely that the space demanded for an expanbsion of the dye works was the primary rationale behind the demolition of Brierley's Court, although it remains possible that the houses had been damaged by the documented fire in 1865.

8.5.7 The archaeological survey determined that the building contained an engine room (***602***) at its eastern end. The substantial foundation suggested that a horizontal steam engine had been used to power machinery in the works. This engine powered one if not two lineshafts on the ground floor, whilst a belt mechanism fed the lineshaft attached to the trusses on the north side of the first floor. No physical remains of the associated boiler house survived, and its exact position within the works remains unclear, although the presence of steam pipes projecting from the south-east corner of the structure suggest that it originally stood to the south of the building.

8.5.8 It is possible that the removal of one of the boilers along the eastern side of southern range may have been as a result of another boiler room constructed on a different part of the works, such as the building suggested in the building survey. If this is the case, the removal of the boiler perhaps coincided with the growth of Isaac Bury's Adelphi Dye Works located directly north of the works.

8.5.9 The location of the chimney is not depicted clearly on earlier historic maps, although a circular-shaped structure as shown of the 1892 map probably marked its position. Its position, however, is clearly seen on an 1930s aerial photograph of the site.

8.6 PHASE 5 (1892 - 38)

8.6.1 The northern part of the site was remodelled during the early part of the twentieth century with the in-filling of the reservoir, and the realignment of Adelphi Street. The reservoir along the eastern area of the site had also been largely in-filled and built over, thus creating space for the erection of a large range of buildings across the central area of the site. The site continued to operate as a dye works, and was associated with the large dye works owned by Isaac Bury directly to the north. Other changes to the site during this period included the insertion of a rectangular-shaped room (***142***) south of the chimney, and modifications to the flues (***195***).

8.6.2 The modifications to the northern external wall retained evidence that both dye works were inter-linked, although a covered entrance linking the works is shown on the 1908 Ordnance Survey map. These modifications included construction of several flues aligned north/south passing through the wall. It is assumed that the flues were connected to a chimney within the larger dye works, the location of which is shown on the 1933 Ordnance Survey map. The upper surface of the wall was sealed by large amounts of compacted

demolition material, suggesting that this part of the site was unoccupied after part of the works was sold.

8.6.3 Walls across the eastern side of the site in Area A probably pertain to the construction of a building extending over the southern reservoir. It is probable that the wall originally formed the western limit of the reservoir as shown on the 1892 map. The building was seemingly constructed between 1892 and 1908 as shown on successive Ordnance Survey maps. The western external wall (***189***) survived along with part of the foundation of a probable stairwell (***190***) located on the western side of the wall. The location of the stairwell is shown on the 1933 Ordnance Survey map, although it was possibly constructed at an earlier time. A flagstone surface butting the western side of the ***190***, suggesting a residue of the works yard area prior to the construction of the building.

8.6.4 The modification of the flues across the northern side of the chimney and boilers probably relate to the removal of one the boilers. This may have resulted in the construction of room ***142*** which possible pertained to new machinery installed during the early twentieth century.

8.6.5 Several modifications within the dwellings on Bury's Court were revealed by the excavation. All the fireplaces were modified, many of them at least twice. It is probable that the fireplaces were built as two brick piers, as part of the construction of the main walls, with the apertures remodelled subsequently to house the fire baskets during the internal arrangement of each property. The recovery of dressed sandstone surrounds for two of these fireplaces implies that they had some form of decoration, although this may have been a subsequent addition. The typical later remodelling associated with such fireplaces was the conversion from a fire basket to a kitchen range, typically in the late nineteenth century, and most often associated with rebuilds using a black sooty mortar. This was certainly the case in Rooms **2**, **3** and **7**, although fire baskets were retained *in-situ* in Rooms **6** and **8**. However, that in Room **8** had become redundant, as had its sandstone surround, as it was overlain by a further fireplace, projecting into the room, itself constructed using black sooty mortar. This is a most unusual arrangement, suggesting that the room was no longer being used as a domestic dwelling at this time, as the fireplace encroached massively into the available floor space. It may possibly represent the change of use of the cellar to a workshop, the new fireplace possibly being a small industrial hearth.

8.6.6 The other cellars also appeared to have undergone transformation, although possibly at a slightly earlier date, given the use of pale lime mortar in these alterations. The cellars were connected to those at the front of the property via doorways inserted at the northern end of the dividing walls. This may reflect a change of use of the entire property to a single residence, or possibly just an increase in the size of the cellar dwelling to a single occupancy. The cellar level passage most probably went out of use at this time, as only one point of access would have been required. The window in Room **6** also became redundant, although not necessarily whilst the cellar was still in use, as the passage which afforded it light was in-filled and flagged over. All of these properties had been demolished by 1933.

8.7 PHASE 6 (1938 – 2000)

8.7.1 By 1938, Isaac Bury Ltd had sold some of its premises on Adelphi Street, and the buildings within the present study area were purchased by Sir James Farmer Norton & Co Ltd. The change in ownership brought about a change in function, with part of the site converted into an engineering works. Isaac Bury Ltd retained their ownership of their works to the north, as a plan deposited with Salford Building and Development Committee in November 1940 shows the location of two new air-raid shelters. By 1949, the rectilinear structure which was located on the western boundary of the application site had either been replaced by a larger, wider building.

8.7.2 The building at the northern end of the site in Area B appears to have remained unchanged till the mid-twentieth century, when it was acquired by Sir James Farmer Norton. Although the Ordnance Survey (1949) is unclear in its depiction of the buildings in the area, it seems that the structures running parallel to the river Irwell remained unchanged, whilst a shed had been appended to the south elevation of the northern range. It would seem sensible to assume that the blocked windows of this elevation were in-filled during this period, having no further function. In the later twentieth century**,** the building or buildings running parallel to the river Irwell were demolished, and the west elevation was rebuilt subsequently with the concrete and brick visible at the time of the survey.

8.7.3 The second half of the 1930s saw much debate on the need to protect the civilian population against the threat of aerial bombing and gas attack in an increasingly unstable political climate in Europe (Miesel 1994). By the summer of 1939, the British government had accepted as national policy that shelters should be provided 'in or near to the home of every citizen in vulnerable areas' (Home Office 1939, 2). Central government began to issue free shelters, including the Anderson-type shelter or kits to reinforce existing basements, although these were soon considered unsuitable for use in certain sites, resulting in the release of a new design for a brick and concrete surface shelter with a traversed entry in May 1939. The recommended minimum internal dimensions were 6½' (1.99m) long by 4½' (1.38m) wide, with an internal height of 6½'. The doorways and passage were to be 2' (0.61m) wide (Dobinson 2000, 56-7).

8.7.4 The air-raid shelter located within Trench 5 is a somewhat unusual feature, and it is uncertain as to whether it occupied the basement of an extant building, or was erected following the demolition of the building; the building is shown on the Ordnance Survey map of 1933, although this has no indication of whether it was still in use at that time, and it appears to have been replaced on the Ordnance Survey map of 1949. However, had the building still been extant during the Second World War, the corrugated roof of the air-raid shelter would have provided little protection from a falling floor above.

9. CONCLUSION

9.1 INTRODUCTION

9.1.1 The programme of archaeological investigation has provided a valuable opportunity to investigate the physical remains of the initial urbanisation and industrial expansion of the Adelphi Street area of Salford during the early nineteenth century. In particular, it has facilitated an examination of the key elements of the local industrial townscape: a steam-powered dye works, and associated workers' housing. The archaeological work has also contributed to research initiatives identified in the Archaeological Research Framework for the north-west (Brennand 2007). In particular, the excavation of the properties comprising Bury's Court has allowed an examination of life 'below stairs' in the cellar dwellings and workshops in working class houses (*op cit*, 146-7), and the identification of a clay tobacco pipe production site, with a potential to tie products to source with identifiable typologies (*op cit*, 154).

9.2 SIGNIFICANCE

9.2.1 A substantial quantity of clay tobacco pipe fragments and associated kiln waste has been recovered from the excavation. A wide range of rolls, straps, wads and sheet are represented in the assemblage, as well as slag laminate from the kiln covering. This is a very good assemblage of kiln debris, which is not only the largest ever to have been recovered from Greater Manchester, but also one that compares favourably nationally. In archaeological terms, this assemblage is of regional, if not national, importance.

9.2.2 The textile-finishing trades represented a key element of the wider textile industry, which was crucial to the economic and industrial development of Lancashire. The actual textile mills have attracted an increasing level of archaeological research and survey in recent years, although the associated dye and bleach works in the region remain an understudied resource. In many respects, this imbalance is a reflection of the limited number of finishing works that survive extant. In this respect alone, the remains of the Adelphi Dye Works are considered to be of high local archaeological importance.

9.2.3 The evaluation and subsequent excavation revealed the remains of the complex of dwellings around Bury's Court. These had differing levels of preservation, with the courtyard itself representing the most poorly preserved element, but the extant fabric provided significant detail about the form and function of each of the various structures. Two distinct ranges of buildings were identified, with those on the southern side being single-fronted properties facing the courtyard, whilst those to the east, which were cellared, formed part of properties fronting Adelphi Street, but also appear to have been accessed from Bury's Court. Room **5**, which was significantly stylistically different to the two other groups of dwellings, adds a further dimension to the complex, and the privy block in Room **4** represents a rare survival of such features. In

archaeological terms, the remains of these properties is considered to be of high local importance.

9.2.4 The recent 60th anniversary of the D-Day landings excited widespread interest in the surviving remains of structures associated with the Second World War, and several studies of air-raid shelters have been undertaken recently. However, there is a notable lack of published material on the variety of forms of air-raid shelters that were built. The shelter excavated as part of the present project has the potential to inform this discussion, and whilst the remains are considered to be of local interest, the results merit wider dissemination.

9.3.1 DISSEMINATION

9.3.1 The complete results obtained from the archaeological investigation at Adelphi Street, Salford, are incorporated in this document, which represents a final excavation archive report. In addition to Vermont Developments, copies of the report will be forwarded to Salford Museum and Art Galley, Salford Local History Library, Salford City Council Planning Department and Conservation Officer, the Greater Manchester Historic Environment Record, and Manchester Archives and Local Studies.

9.3.2 In order to disseminate the results obtained from the archaeological investigation to a national audience, a summary of the key findings should be synthesised into a paper, or papers, for publication in an appropriate manner. Most importantly, the assemblage of clay tobacco pipes and associated manufacturing debris has been highlighted as having considerable potential for further detailed analysis, which would be targeted towards ultimate publication. The results from any such analysis could form an academic paper in their own right, and merit publication in isolation from the rest of the dataset in a national journal, such as *Post-Medieval Archaeology*.

9.3.3 The results obtained from the excavation of the properties on Bury's Court contribute to the data generated from several excavations of similar remains elsewhere in Manchester and Salford. The combination of these results could provide an important paper for publication in an appropriate academic journal, such as the *Industrial Archaeology Review*. However, this would not necessarily require any further detailed analysis of the dataset generated from the present project.

9.3.4 A short publication of the air-raid shelter could similarly be prepared for publication without any further detailed analysis of the dataset. Inclusion in the newsletter of the *Association for Industrial Archaeology* might be an appropriate place for publication.

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APPENDIX 1: PROJECT BRIEF

BRIEF FOR ARCHAEOLOGICAL BUILDING SURVEY AND EVALUATION TRIAL TRENCHING AT THE VERMONT DEVELOPMENT SITE, ADELPHI STREET, SALFORD

Background

Vermont Developments have planning permission (App. No.06/53224/FUL) to redevelop the former Farmer Norton Engineering Works site located on the west side of Adelphi Street overlooking the river Irwell at SJ 8251 9897. The development involves demolition of all buildings on site followed by extensive ground works including basement car parking. An archaeological desk based assessment has been undertaken by Wardell Armstrong (July 2006) which has identified further archaeological mitigation which is now required to satisfy the archaeological condition attached to planning consent.

The main archaeological interests relate to the following:

a) Standing remains of an industrial building (referred to as Building 1 in the DBA), stylistically of *c* 1860 and appearing on the 1893 OS map in the DBA, located in the northern part of the site, which replaced two rows of workers' housing described as Brierley's Court on the OS1848 5' to 1 mile map. There appears to be an engine house at the eastern side of the block which has been heavily modified internally. However, the west facing side of the dividing wall retains several features of industrial archaeological interest including cast iron drive shaft boxes. Internally, the main block, which is of hand-made brick, has its original queen post roof structure, many original windows, wooden flooring and cast iron columns. This structure has been modified but has enough surviving original fabric to warrant an archaeological survey prior to demolition. It is proposed to demolish this building as soon as the archaeological survey has been completed, as demolition contractors are already on site. Whilst the basement for the c 1860 industrial building will have removed the earlier housing on the site, there is potential for below ground remains of the engine house and processing features to survive. Following demolition, a trial trench will be excavated across the engine house and any other potential features identified from the building survey.

b) Potential below-ground remains of Isaac Bury's Dye Works, which are shown on Bancks' Map of 1831 but not Green's late 18th century map. The 1848 OS map shows the site as Adelphi Sizing Works, with a long narrow building along the west (river) side of the site and a series of boilers and dye tubs attached on its eastern side. This long building range and attendant features are now covered by a concrete slab for a 20th century shed, but it is considered there is good potential for below ground remains relating to the dyeing process. The demolition contractors are due to remove the concrete floor at which point archaeological trial trenches will be excavated across features of interest as laid out in the brief.

c) Potential below-ground remains of Bury's Court, which is also present on Bancks' Map and depicted as possibly a mixture of industrial and domestic dwellings of varied plan form grouped around a triangular courtyard. This yard and the site of the former buildings has been used as a car park and entrance into the site and is perceived to

have good potential for below ground survival. Following demolition of surrounding buildings, archaeological trial trenches will be excavated across this area as set out in the brief.

The contracting archaeologist will inform GMAU and the client as soon as the survey of Building 1 has been completed so that it can be demolished. It is understood that the demolition contractors can provide assistance with lighting for the building survey.

The contracting archaeologist will liaise closely with the demolition contractors and the client to identify the best time to undertake archaeological trial trenching within the demolition programme.

A site meeting will be held between interested parties towards the end of the evaluation. **Should significant remains be identified which will be adversely affected by development ground works then a further more detailed phase of archaeological excavation will be required.** This will lead on to post excavation analysis, report production, archive deposition and an appropriate level of publication. Only after all of these have been satisfactorily completed can the archaeological condition be discharged. However, GMAU can inform the developer when archaeological site works have been completed and the site can be released for development purposes.

Brief for Building Survey

The survey will take the following form:

1) Historical research up to a maximum of two days to supplement that undertaken for the DBA, to provide further historic background for the building and sites subject to archaeological investigation.

2) Undertake measured survey drawings of the three floor plans of Building 1 at 1:100 scale. These drawings will form the basis for annotation and phasing.

i) Additional details need to be added by the archaeological survey, such as evidence for blocking, repair, joints, fittings and fixtures, power and processing, and key architectural features.

ii) Additional measured survey drawings are required:

A measured section at 1:100 scale at right angles through Building 1, to include a roof truss.

An elevation drawing of the west facing side of the engine house dividing wall.

3) The written description will comprise:

i) Historical analysis and context.

ii) An analysis of the buildings' plan, form, fabric, function, age and development sequence and of the evidence supporting this analysis (illustrate with historic map sequence, reduced plans, elevations and photographs).

iii) An account of the buildings' past and present use and of the uses of their parts, with the evidence for these interpretations.

iv) An account of the fixtures, fittings, plant or machinery associated with the buildings, and their purpose.

v) Any evidence for the former existence of demolished structures or plant associated with the buildings.

vi) Identification of key architectural features (including fixtures and fittings) which should be preserved in situ.

vii) A discussion of the relative significance of rooms/buildings within Building 1.

viii) Identify any areas of potential below ground archaeological interest relating to the original use, processes and power of the building.

4) There should be a detailed annotated photographic record showing:

i) The buildings' external appearance.

ii) The overall appearance of principal rooms and circulation areas.

iii) Any external or internal detail, structural or decorative, which is relevant to the buildings' design, development and use and which does not show adequately on general photographs.

iv) For the interior, detailed views of features of especial architectural interest, fixtures and fittings, evidence of power systems, blockings or jointing relevant to phasing the building.

v) Photographs to be taken as 35mm colour slide and high resolution digital (or monochrome medium format). Show view point directions on plans.

5) Survey Report

For the whole survey a report should be produced to an agreed timetable. It will include:

i) A summary statement of the survey's findings.

ii) The background to the survey including location details.

iii) An outline of the methodology of the survey.

iv) A section charting the history of Building 1 and the industrial complex it belonged to, supported by map evidence and other illustrations as appropriate.

v) An account of past and present use of all buildings on the site and of the uses of their parts, with the evidence for these interpretations, illustrated by reduced drawings and photographs.

vi) An account of the fixtures, fittings, plant or machinery associated with the buildings, and their purpose.

vii) Any evidence for the former existence of demolished structures or plant associated with the building.

viii) A discussion of the relative significance of rooms and features within Building 1

and the processes they were associated with.

ix) A description of the significance of the building in its local and regional context.

xi) The identification of areas of below ground archaeological potential that should be subject to trial trenching.

xiii) A catalogue of archive items, including a list of photographs.

xiv) A copy of the brief.

6) The Greater Manchester Sites and Monuments Record supports the Online Access to Index of Archaeological Investigations (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. The archaeological contractor must therefore complete the online OASIS form at http://ads.ahds.ac.uk/project/oasis/. Contractors are advised to contact the Greater Manchester Sites and Monuments Record prior to completing the form. Once a report has become a public document by submission to or incorporation into the SMR, the Greater Manchester Sites and Monuments Record may place the information on a web-site. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to the case officer at Greater Manchester Sites and Monuments Record.

Other Considerations

1) The Assistant County Archaeologist will be consulted on the report before it is sent out to the client.

2) The archaeological contractor will abide by the Institute of Field Archaeologists Bye-Laws of Approved Practice.

3) Contractors shall comply with the requirements of all relevant Health & Safety legislation and adopt procedures according to guidance set out in the Health & Safety Manual of the Standing Conference of Archaeological Unit Managers.

4) Copies of the survey report will be sent to:

The client (x4), Salford Conservation Officer, Urban Vision Planning Case Officer (Tim Hartley), GMAU (x2 - one to enter on to the Greater Manchester Sites and Monuments Record), Salford Local Studies Library, Salford Museum Service.

Prepared by:

Norman Redhead

Assistant County Archaeologist (GMAU)

25 April 2007

Copies to: Tim Hartley, Salford Planning

Joe Martin, Salford Conservation Officer

APPENDIX 2: CONTEXT INDEX

Dye Works/Iron Works (Areas A and B) contexts

Context	Area (A/B)	Description	Phase
100	A	Concrete floor overlying the engine house ***602*** floor	5
101	A	Demolition debris sealed beneath floor ***100***	4
115	A	Clay along the eastern side of the site, representing the area formerly used as a reservoir	1
135	A/Dye Wash Room	Group number	2
136	A/Room ***135***	Engine bases at the northern end of Room ***135***	2
137	A/Room ***135***	Slate-lined dye vat at the northern end of the room	2
138	A/Room ***135***	North/south aligned external wall along the eastern side of the room	1/3
139	A/Room ***135***	Channel aligned north/south across the centre of the room	2
140	A/Room ***135***	Stone flagged floor	2
141	A/Boiler Room	Group number	2
142	A	Rectangular-shaped room along the eastern side of wall ***138***	3
143	A/Chimney	Group number	4
144	A	Cobble surface bordering the eastern and southern sides of dye mixing area ***145***	2
145	A/Dye mixing area	Group number	2/3
146	A/Room ***145***	Wooden containers along the eastern side of the mixing area	3
147		Cobble yard surface aligned north/south along the eastern side of the boiler room and dye mixing area	3
148	A/Drying area	Flagged floor surface south of channel ***139***	2
149	A/Room ***145***	Clay layer beneath room ***145***	1/2
150	A/Room ***145***	Dye kier	2/3
151	A/Room ***135***	Dye fixing residue from within channel ***139***	2/3
152	A/Room ***145***	Concretion beneath room ***145***	2

153	A/Room ***135***	Row of three iron fixing vats along the eastern side of room ***135***	2/3
154	A/Room ***135***	Orange dye clay deposit across the southernmost vat of ***153***	2/3
155	A/Room ***135***	Yellow dye clay attached to the western face of wall ***138***, and filling vat ***137***	2
156	A/Room ***135***	Wooden tub located along the south-eastern side of the room	2
157	A/Room ***135***	Wooden trough/channel located along the south-eastern side of the room	2
158	A/Room ***135***	Randomly laid brick surface spread across the northern part of the room above the tubs and vats, associated with the later use of the works	3
159	A/Room ***135***	Series of three stone slabs used as capping over vats ***153*** and providing a working area either side of wooden tub ***156***	2
160	A/Room ***135***	Stone base beneath tub ***156***. The base in turn sealed large amounts of purple dye residue	2
161	A	Stone machine beds above the eastern side of floor ***148***	2
174	A/Trench 5	Northern external wall of the southern range of building as shown on Bancks map of 1831	2
175	A/Trench 5	Brick drain south of wall ***174***	2
176	A/Trench 3	Possible southern brick wall of the small reservoir at the eastern part of the site	2
177	A/Trench 5	Air-raid shelter	5
178	A/Trench 5	Basement flagged floor	2
179	A/Trench 5	Eastern external wall (same as ***138***)	1
180	A/Trench 5	Cellar light within wall ***179***	2
181	A/Trench 5	Machine base/tub	2
182	A/Drying area	Stone machine bed above floor ***148*** at the eastern end of the room	2/3
183	A/Drying area	North/south wall along the eastern side of the room	2/3
184	A/Drying area	Stone trough within the south-eastern corner of the room	2
185	A/Drying area	Brick-lined drain aligned east/west within the flagged floor ***148***	2
186	A/Room ***135/136***	Northern wall dividing the dye wash room ***135*** and the pumping engine house ***136***	2
187	A	Southern external wall of the dye works	2
188	A/Iron works	Partition wall pertaining to Adelphi Iron Works	5

189	A	Eastern external wall of Adelphi Iron Works, which may overlay the dye works wall	5
190	A/Iron works	Room along the western side of wall ***188***	5
191	A/Room ***136***	Western wall of engine room	2
192	A/Room ***136***	Eastern wall of engine room	2
193	A/Dye mixing area ***145***	Degraded iron tubs within a compacted dump of waste chemical debris along the eastern side of room ***145***	2
194	A/Room ***143***	East/west aligned wall along the southern side of the chimney foundation wall	4
195	A	Flues along the eastern side of the chimney, north of boiler room ***141***	4
196	A/Room ***143***	Northern wall of square structure at the southern end of the chimney foundation	4
197	A/Room ***143***	North/south aligned brick wall within the chimney foundation	4
198	A/Room ***143***	East/west aligned brick wall butting the northern part of wall ***138***	4
199	A	Eastern wall of room ***142***	3
200	A/Room ***143***	Western internal wall butting walls ***194*** and ***196***	4
201	A/Room ***143***	Eastern internal wall butting ***194*** and ***196***	4
202	A	Flagged floor surrounding machine bed ***161*** along the eastern side of wall ***183***	2
203	A/Room ***145***	Flagged area surrounding the dye mixing area and keyed into cobble surface ***144***	2
204	A/Dyeing area	Machine bed above floor ***148***	2
601	B	Northern external wall of the northern range	4/5
602	B	Engine room group number	3
603	B	Western brick wall of room ***602***	3
604	B	Rectangular-shaped structure along the eastern wall (***610***) of room ***602***	3
605	B	Remains of Walker Street	4
606	B	Pavement along the eastern side of Walker street	4
607	B	Kerb along the western side of pavement ***606***	4
608	B	Stone wall of the reservoir	2
610	B	Eastern wall of room ***602***	3
611	B	Southern wall of ***602***	3
612	B	Circuit box	4/5

Bury Court contexts (Area C)

Context	Area (C)	Description	Phase
102	C	Southern external wall of Bury Court houses	
103	C/Room **1**	Western wall of the western room	
104	C/Rooms **1, 2, 3**	Northern external wall	
105	C/Room **2**	Western wall	
106	C	Partition wall dividing rooms **2** and **3**	
107	C/Room **3**	Eastern wall	
108	C/Room **4**	Western wall	
109	C/Room **4**	Northern wall	
111	C/Room **5**	External wall	
112	C/Room **4**	Northern wall of chamber	
113	C/Room **4**	East/west aligned partition wall parallel with ***112***	
114	C/Room **6**	Flagstone floor	
116	C/Room **6**	Western external wall	
117	C/Room **6**	Southern external wall	
118	C/Room **6**	Eastern wall	
119	C/Room **7**	Eastern wall	
120	C/Room **8**	Eastern wall	
121	C/Room **6**	Northern wall	
123	C/Room **7**	Northern wall	
124	C/Room **1**	Fireplace	
126	C/Room **1**	Eastern wall	
127	C/Room **1**	Orange clay levelling below floor	
128	C/Room **8**	Fireplace built within the southern wall	
129	C/Room **8**	Flagstone floor	
130	C/Room **3**	Fireplace built within wall ***102***	
131	C/Room **3**	Flagstone floor	
132	C/Room **3**	Stair passage along the eastern side of the room	
133	C/Room **6**	Fireplace within wall ***116***	
134	C/Room **6**	Fireplace within wall ***118***	
162	C/Room **6**	Passageway along the northernm side of room 6	
163	C/Room **6**	Lower passageway (beneath ***162***?)	
164	C/Room **6**	Window at the southern end of passageway ***162***	

165	C/Room **6**	Doorway within wall ***121***	
166	C/Room **6**	Wash stand along the northern end of wall ***116***	
167	C/Room **6**	Stair case at the western end of passageway ***162***	
168	C/Room **6**	Brick wall riser across the northern end of passageway ***162*** representing part of a stair	
169	C/Room **7**	Fireplace within the southern wall	
170	C/Room **7**	Brick base of washstand west of fireplace ***169***	
171	C/Room **7**	Stairs connecting the cellar and the ground floor	
172	C/Room **8**	Doorway at the southern end of wall ***117***	
173	C/Room **8**	Brick pier butting the eastern side of wall ***117***	

APPENDIX 3: FINDS CATALOGUE

OR No	Material	Count	Description	Vessel	Date range	Provenance
	Pottery	1	Nottingham stoneware - complete	Jar	c18-19th	Nottingham?
	Pottery	1	Stoneware bottle - complete	Bottle	C19th	Local?
	Pottery	1	Cornish ware	Bowl	C19-20th	
	Pottery	2	Willow pattern - whiteware - (transfer printed)	Plate	C20th	
	Pottery	1	Transfer printed/hand painted pearlware	Plate	Mid-late C19th	
	Pottery	1	Unglazed red earthenware	Plant pot	C19-20th	Local?
	Pottery	1	Pearlware	Cup	C19th	Staffordshire /Liverpool?
	Pottery	1	Whiteware		C20th	
	Pottery	1	Rim painted pearlware	Plate		Staffordshire /Liverpool?
	Pottery	1	Transfer printed/hand painted pearlware	Plate	C19th	Staffordshire /Liverpool?
1001	Pottery	1	Stoneware bottle - complete	Bottle	C19th	Local?
1002	Pottery	1	Transfer-printed / press-moulded PW		c18-19th	Staffordshire /Liverpool?
1005	Pottery	1	Complete creamware saucer	Saucer	C19-20th	?
1006	Pottery	1	Green glazed stoneware lid	Teapot	C19th	?
1012	Pottery	4	Whiteware decorated with blue		C20th	?
1016	Pottery	3	Whiteware - 'Royal Tudor ware'	Cup	c1943	Longton, Stoke-on-Trent
1025	Pottery	1	Unidentifiable			
1027	Pottery	2	Annular ware - brown glaze, white/green slip trail	Teapot	C19th	Yorkshire/local?
1027	Pottery	1	Cream slipped white salt glazed stoneware jar	Jar	C19-20th	Local?
1027	Pottery	4	Hand painted creamware	?	Mid C19th	Staffordshire/Liverpool?
1027	Pottery	2	Porcelain - painted red, yellow and green	Teapot	C18th	China?
1029	Pottery	11	White salt glazed stoneware	Bottle	C19th	Local?
1048	Pottery	1	Whiteware	?	C20th	?
1076	Pottery	1	Transfer printed pearlware		C19th	?
1077	Pottery	1	Brown glazed red earthenware		C18-19th	Local?

1078	Pottery	1	Blackware	Large vessel	c18-19th	Local?
1079	Pottery	4	Whiteware with 'G vi R Bridgwood. 1945'	Cup	c1945	Presumed Staffordshire
1080	Pottery	2	Cornish (annular) ware	?	C19-20th	Cornwall/staff/liverpool
1080	Pottery	1	Transfer printed pearlware (chinoiserie)	Cup	C19th	Staffordshire/Liverpool?
1080	Pottery	1	Transfer printed pearlware - asiatic pheasants	Plate	C19th	Staffordshire/Liverpool?
1081	Pottery	1	Whiteware with green painted rim	Plate	C20th	?
1085	Pottery	1	Cornish/annular ware	Bowl	C19-20th	?
1085	Pottery	1	Pearlware furniture knob		C19th	?
1086	Pottery	1	Base of jar/bottle with bold lettering	Jar/bottle	c1900-30	?
1087	Pottery	1	Transfer printed pearlware (chinoiserie)	Plate	C19th	Staffordshire/Liverpool?
1087	Pottery	7	Creamware - plain/floral		C19th	Staffordshire/Liverpool?
1087	Pottery	3	Pearlware (plain)	Bowl	C19th	Staffordshire/Liverpool?
1087	Pottery	2		Plate	C19-20th	?
1087	Pottery	1	Unidentified transfer printed rim	Plate	C19th	?
1088	Pottery	1	Sponged/spatter ware		C19th	Staffordshire/Liverpool?
1088	Pottery	1	Transfer printed PW - bridge scene	Bowl	C19th	Staffordshire/Liverpool?
1088	Pottery	1	Pearlware base sherd (plain)	Jar	C19th	
1089	Pottery	1	Porcelain	Cup	C19th	Staffordshire/Liverpool?
1095	Pottery	5	Cornishware	Bowl	C19-20th	
1095	Pottery	2	Salt glazed stoneware	Jar	C19-20th	
1095	Pottery	1	Yellow glazed red coarseware	Large vessel	C19th	Local?
1098	Pottery	4	Transfer printed (toy) pearlware saucer	Saucer	C19th	?
1098	Pottery	1	Blackware	Large vessel	c18-19th	Local?
1098	Pottery	1	Bristol glazed stoneware	Bottle	C19th	Local?
1127	Pottery	1	Cornish ware with press moulded fleur de lys	?	C19th	Prob Staffordshire
	Pottery	1	Stoneware bottle fragment subjected to heat	Bottle	C19th	Local?
	Pottery	1	Damaged fineware -	?	C19th?	

			porcelain			
	Wood/Fe	1	Jigger or mangle - roller type object		C19-20th	Local?
	Wood/Fe	1	Dye cloth roller - appears a bit toxic		C19-20th	Local?
	OBM	1	Decorative moulded plaster		C19th	Local?
1004	Plastic	1	Buttons		C20th	Local?
1011	Plastic	2	Button		C20th	Local?
	Plastic	1	Scrap		C20th	Local?
	Coal	2				Local?
1132	Coal	4				Local?
	Bakelite/metal?	1	Plaque - a wartime sign/poster		C20th	
1022	Ceramic	2	Ceramic plug/fuse		c1939-45	Manchester?
1133	Ceramic	5416	Clay tobacco pipe dump	Decorated bowls, stamped stems, kaolin waste	Up to 1840	Salford/Manchester
	Fe	1	Part of an oven/stove/furnace		C19-20th	Local?
	Fe	1	Drain?		C19-20th	Local?
	Fe	1	Pipe - industrial/domestic		C19-20th	Local?
	Fe	3	Grate/drain		C19-20th	Local?
	Fe	1	Flat metal		C19-20th	Local?
	Fe	11	Unidentifiable object		C19-20th	Local?
	Fe	8	Remains of fireplace - grate and stove		C19-20th	Local?
	Fe	1	Handle? Possibly from something industrial		C19-20th	Local?
	Fe	1	Iron handle - possibly from the cupboard		C19-20th	Local?
	Fe	1	Cylindrical object - machinery/wartime object?		C19-20th	Local?
	Fe	2	Nails		C19-20th	Local?
	Fe	1	Hinged object with nails		C19-20th	Local?
	Fe	26	Slag		C19-20th	Local?
1023	Fe	1	Drain		C20th	Local?
1028	Fe	1	Hanging rack		C19-20th	
1028	Fe	11	Remains of 1/2 cylindrical objects - gas lamps?		C19-20th	
1031	Fe	4	iron hinges - belonging to door/large object		C19-20th	Local?
1036	Fe	1	Slag			Local?

1049	Fe	1	Slag		Local?
1083	Fe	2	Part of grate?	C19th-20th	Local?
1091	Fe	1	Slag		Local?
1092	Fe	7	Remains of iron vessel - Cauldron? possibly a cauldron	Early-mid C19th	Local?
1094	Fe	6	Slag		Local?
1097	Fe	4	Unidentifiable	C19th-20th	Local?
	Cu Alloy	1	Escutcheon	C19-20th	
	Cu Alloy	2	Buttons/studs	C19-20th	
	Cu Alloy	1	Spoon	C19-20th	
	Cu Alloy	1	Fastening - possibly from a greatcoat/tunic	C19-20th	
	Cu Alloy	1	Slag	C19-20th	
	Cu Alloy	1	Decorative fitting for front door	C19th	
	Cu Alloy	15	Rivets/fixings	C19th	
	Cu Alloy	1	Penny/halfpenny	C19th	
1003	Cu Alloy	1	Ladies decorative buckle	C1870-1920	
1003	Cu Alloy	1	Bell piece - from toy/table bell	C19-20th	
1050	Cu Alloy	1	Penny - 1862, Victoria's head shown partially	c1862	
1050	Cu Alloy	1	Halfpenny - 1852	c1852	
1052	Cu Alloy	1	Copper alloy tag - ww2 related?	C20th?	
1055	Cu Alloy	1	Penny - no remaining writing	C19-20th	
1057	Cu Alloy	1	Penny	C19-20th	
1059	Cu Alloy	1	Trade token 'we the XX profit to sharing'	c1929-42	
1060	Cu Alloy	1	Fitting - from a cupboard/box	C19-20th	
1061	Cu Alloy	3	Bits of a pepper or salt grinder	C19th	
1062	Cu Alloy	1	Halfpenny 'Geogius IV'	1820-30	
1064	Cu Alloy	1	Fitting from pipe/object	C19th	
1065	Cu Alloy	1	Cruet of some sort/small container? Pepper grinder?		
1069	Cu Alloy	1	Tea strainer	C19-20th	
1082	Cu Alloy	1	Fitting for an object	C19-20th	
	Tin	1	Tin cup Cup	C1939-45	
1035	Tin	1	Container - bullet holder?	C20th	

	Leather	2	Near complete soles		Late C19-20th	
	Leather	4	Sole scraps		Late C19-20th	
	Leather	2	Part vamp/sole		Late C19-20th	
	Leather	11	Remains of 3/4 boots		Late C19-20th	
	Leather	5	Remains of 2 boots with incised decoration		Late C19-20th	
1013	Leather	1	Remains of vamp/sole		Late C19-20th	
1013	Leather	1	Circular leather obj - part of belt?		Late C19-20th	
	Glass	2	Tubular objects - assoc with dyeing?		C19-20th	Local?
	Glass	2	Window glass	Window	C19-20th	Local?
	Glass	1	Clear bottle	Bottle	C19-20th	Local?
	Glass	11	Tubular objects - assoc with dyeing?	Tube	C19-20th	Local?
	Glass	1	Squared bottle - spirit	Bottle	C19-20th	Local?
	Glass	1	Medicine bottle	Bottle	C19-20th	Local?
	Glass	1	Window glass	Window	C19th	Local?
	Glass	1	Complete glass bottle - medicine?	Bottle	C19-20th	Local?
	Glass	1	Pale green (whisky?) bottle	Bottle	C19-20th	Local?
	Glass	4	Fragments of aqua coloured glass	Bottle	C19-20th	Local?
	Glass	2	Slag		C19-20th	Local?
	Glass	1	Slack & Co - pre 1880s - iridescent jar/cover	Jar	Pre 1880?	Local?
1004	Glass	1	Clear glass	Jar	Post 1880s	Local?
1010	Glass	1	Palatine dairies ltd. Milk bottle	Bottle	Post 1880s	Local?
1010	Glass	1	Lancashire hygienic dairies	Bottle	Early-mid C20th	Local?
1010	Glass	1	Clear glass, hexagonal base - Worcester sauce?	Bottle	Late C19-20th	Local?
1010	Glass	1	(ink?) bottle	Bottle	Late C19-20th	Local?
1010	Glass	1	(Jam) Jar	Jar	Late C19-20th	Local?
1042	Glass	1	Part bottle - groves and whitnall	Bottle	MidC19th-20th	Local?
1042	Glass	1	Dark green bottle - 'tablespoons'- medicine?	Bottle	Late C19-20th	Local?
1042	Glass	2	Light green fragments	Bottle	Late C19-20th	Local?
1042	Glass	1	Groves and whitnall bottle - complete	Bottle	Late C19-20th	Local?
1042	Glass	1	Aqua glass part bottle	Bottle	Late C19-20th	Local?
1042	Glass	1	Boots bottle (medicine). Pale	Bottle	1930s	?

			aqua			
1042	Glass	1	Complete Fletchers Tiger sauce	Bottle	Late C19-20th	Local?
1042	Glass	2	Complete clear glass bottle	Bottle	Late C19-20th	Local?
1043	Glass	1	Taylor and Lees, Oldham (neck missing)	Bottle	Late C19-20th	Local?
1043	Glass	1	Clear glass	Bottle	Late C19-20th	Local?
1066	Fe/Glass	1	Remains of light/radio transistor		c1939-45?	Local?
1070	Glass	1	Bottle neck	Bottle	Late C19-20th	Local?
1070	Glass	1	Aqua coloured marble		Late C19-20th	Local?
1071	Glass	1	Marble		Post 1880s	Local?
1072	Glass	1	Bright blue glass		?	Local?
1072	Glass	1	Clear glass tube (thin)	Tube	C19-20th	Local?
1073	Glass	1	Window glass	Window	C19th	Local?
1073	Glass	1	Pale green glass (ointment) jar	Jar	C19-20th	Local?
1073	Glass	1	Gaming counter made from sheet glass		C19-20th	Local?
1075	Glass	1	Test tube		C19-20th	Local?
1075	Glass	1	Bottle fragments	Bottle	C19-20th	Local?
1084	Glass	1	Slag		?	Local?
1099	Glass	2	Bright blue glass		2 C19th-20th	Local?
1099	Glass	1	Window glass		2 C19-20th	Local?
1099	Glass	2	Bottle glass		2 C19-20th	Local?
1099	Glass	1	Circular object - lid?		1 C19-20th	Local?
1099	Glass	1	Test tube - complete		1 C19-20th	Local?
1104	Glass	1	Fragment		C19-20th	Local?
1108	Glass	1	Unidentifiable clear glass		C19-20th	Local?
1118	Glass	1	Green bottle glass		C19th?	Local?
1118	Glass	1	Window glass	Window	C19th?	Local?

ILLUSTRATIONS

FIGURES

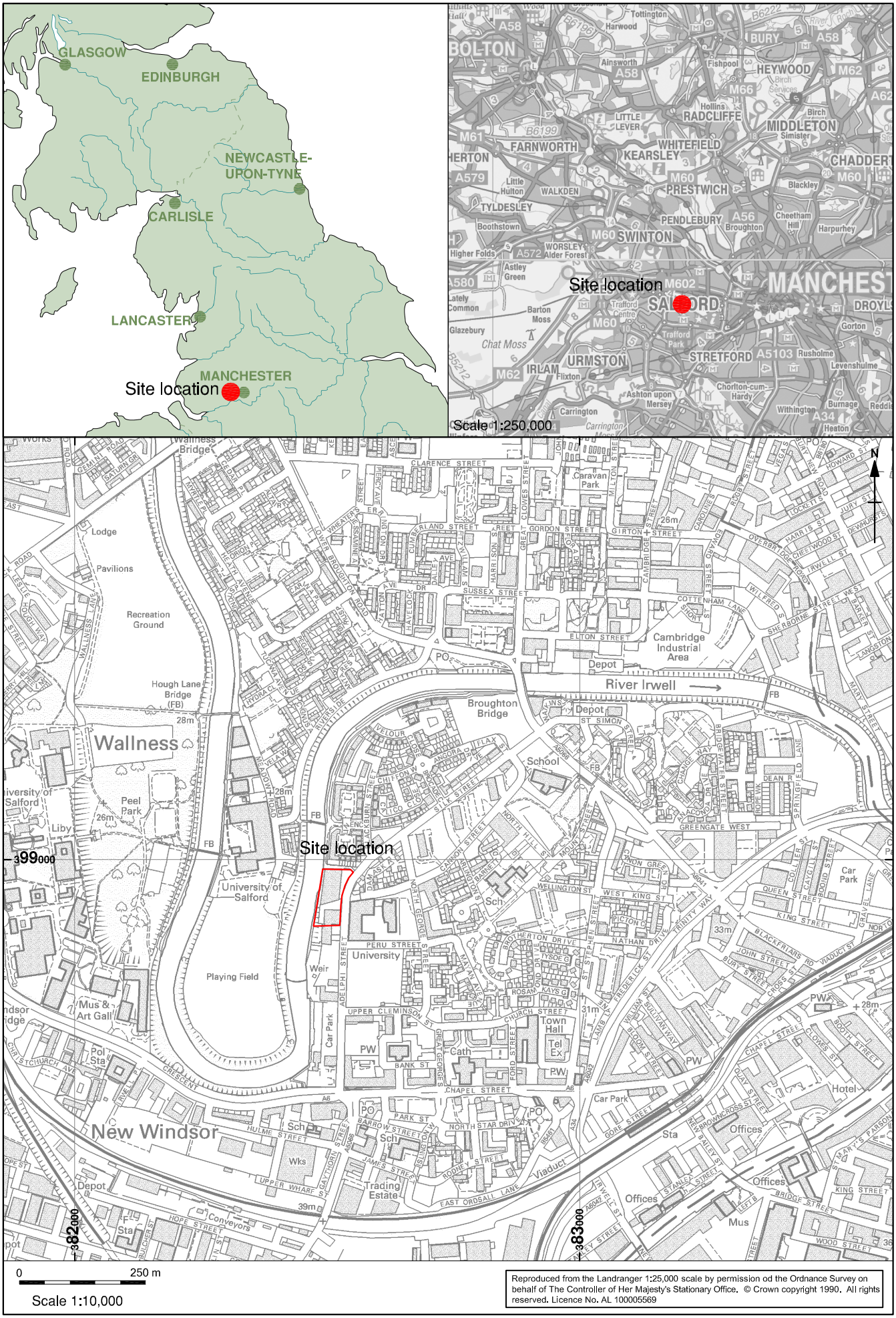

Figure 1: Site location

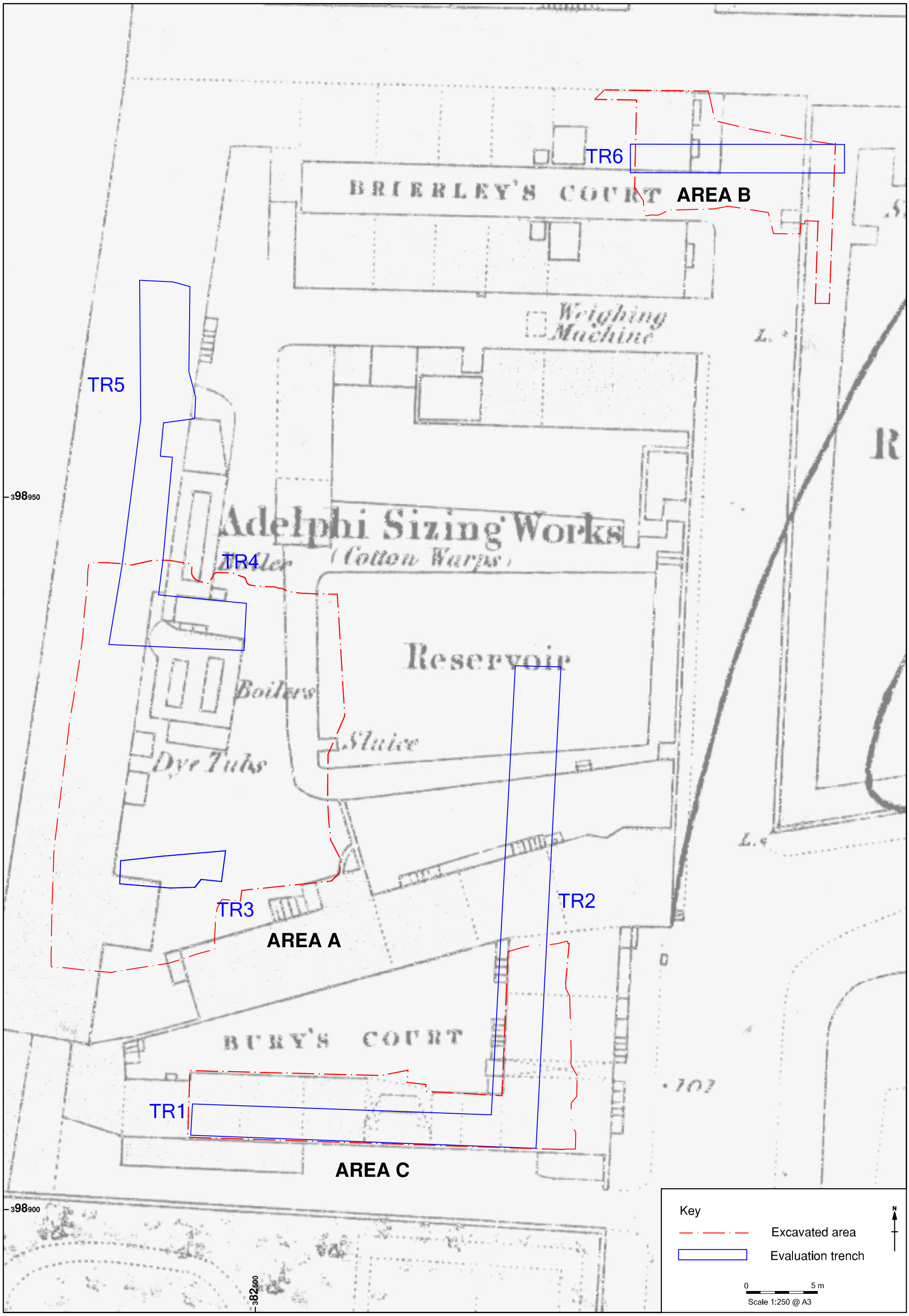

Figure 2: Trench location plan, superimposed on the Ordnance Survey map of 1848

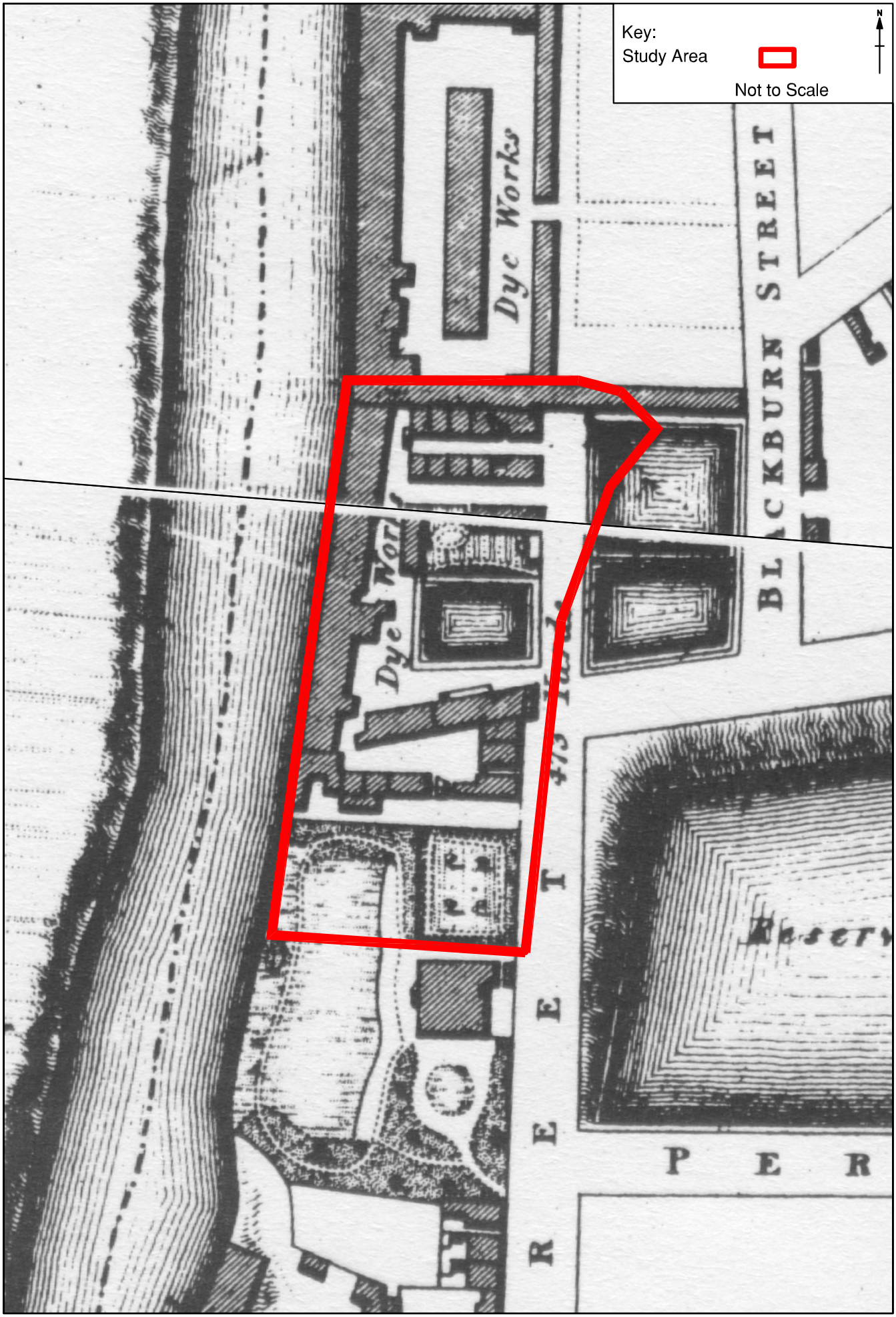

Figure 3: Extract from Bancks & Co's map of 1831, showing study area boundary

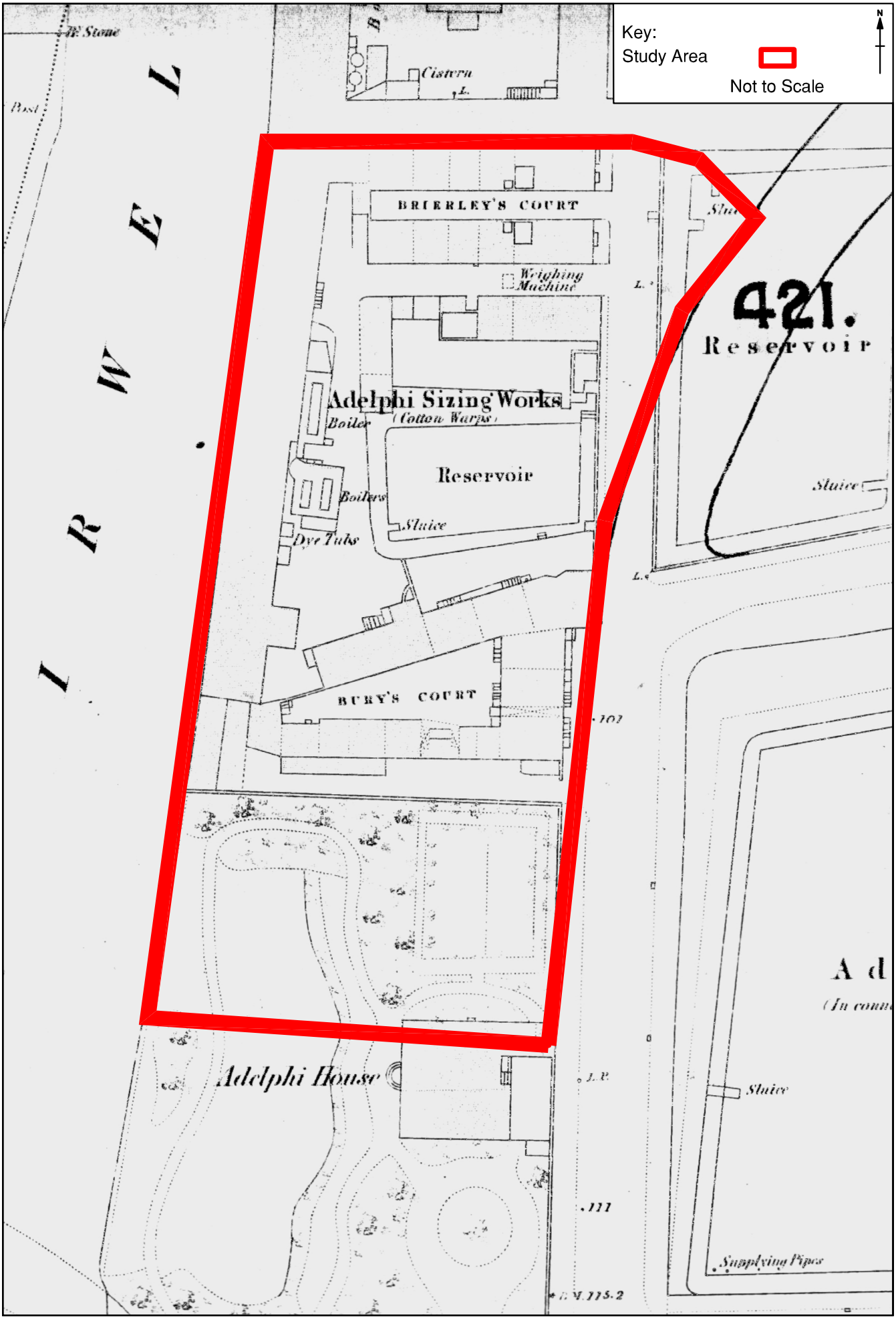

Figure 4: Extract from the Ordnance Survey 60': 1 mile map of 1848

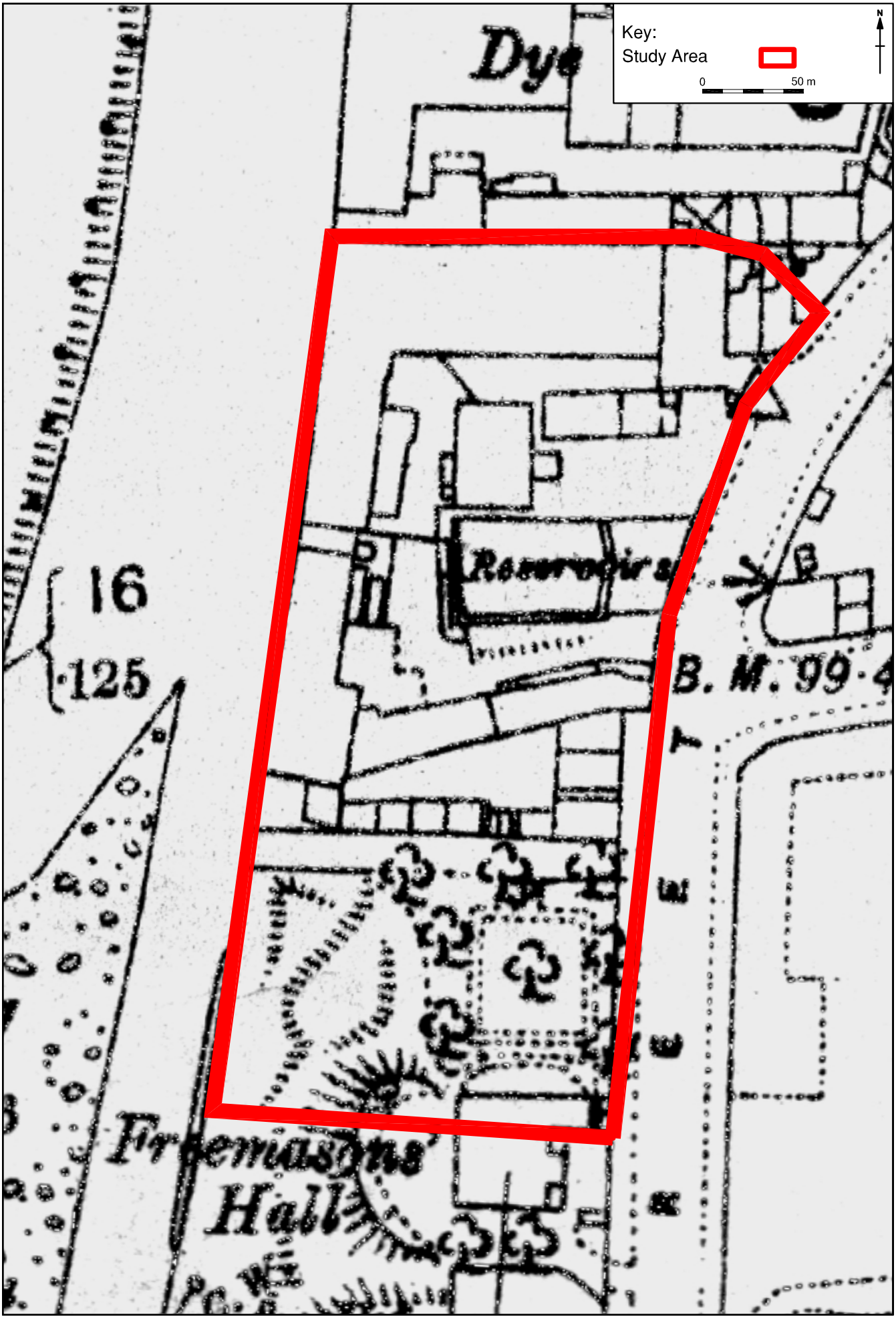

Figure 5: Extract from the Ordnance Survey 25":1 mile map of 1892

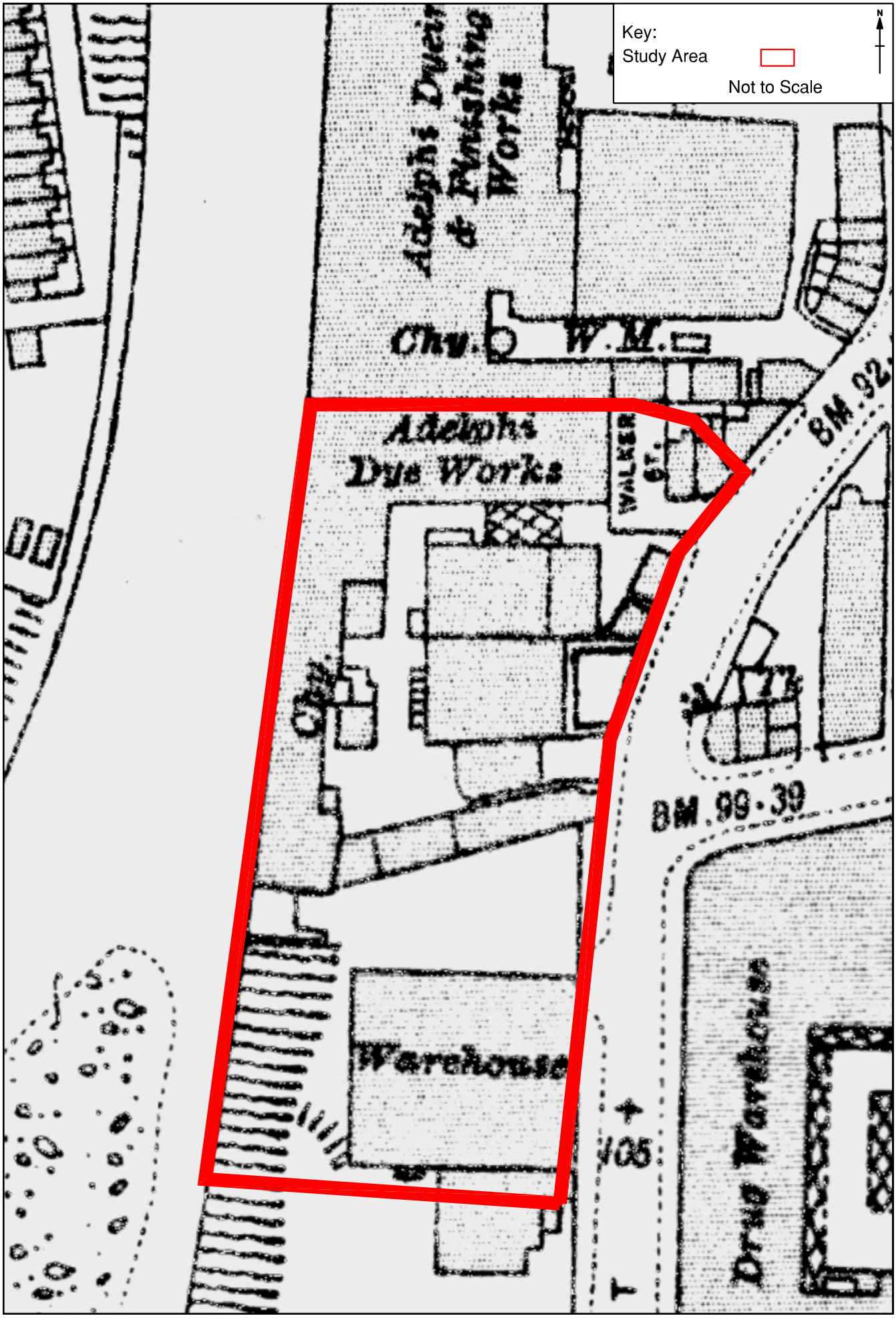

Figure 6: Extract from the Ordnance Survey map of 1933

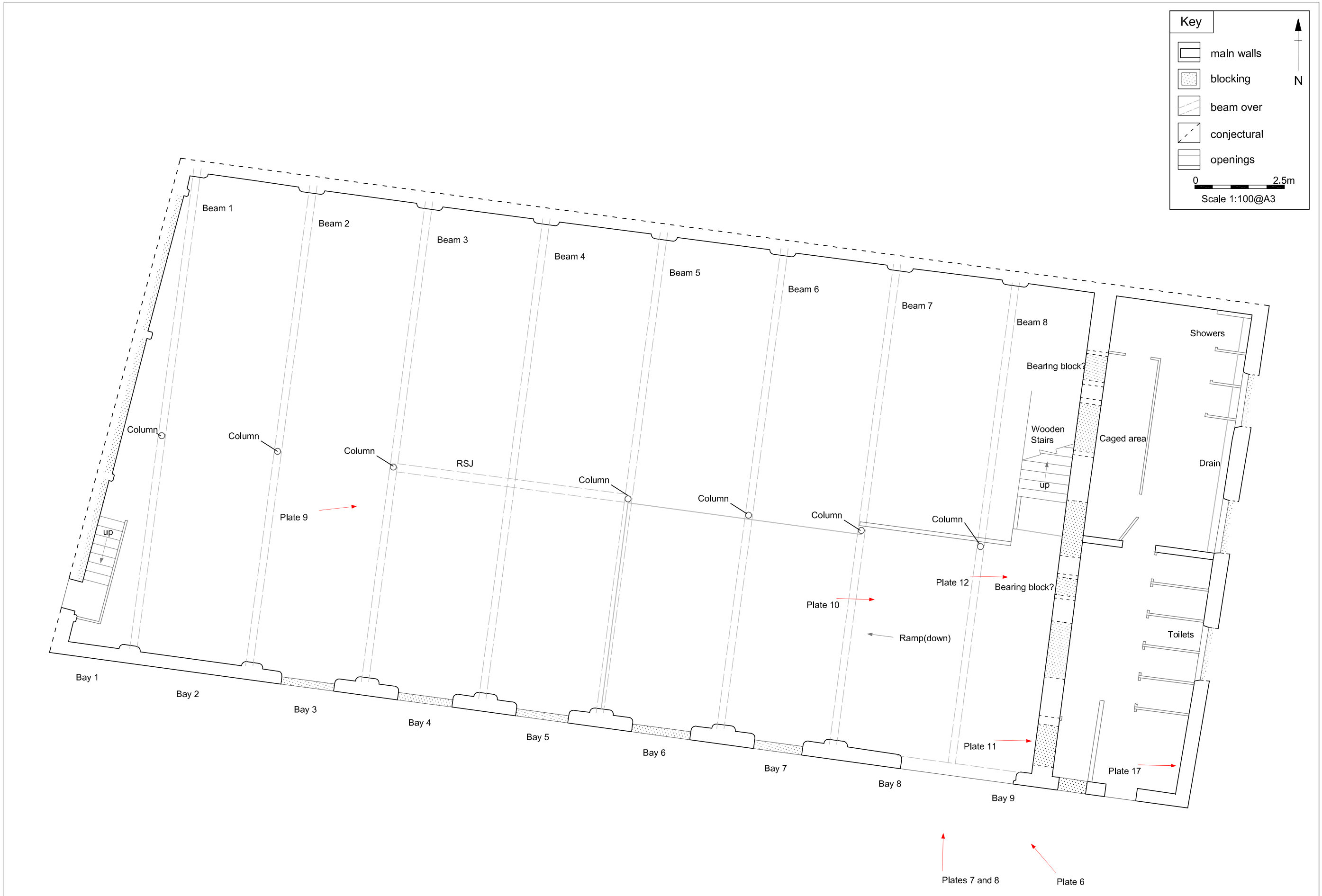

Figure 7: Ground floor plan, showing direction of photographs

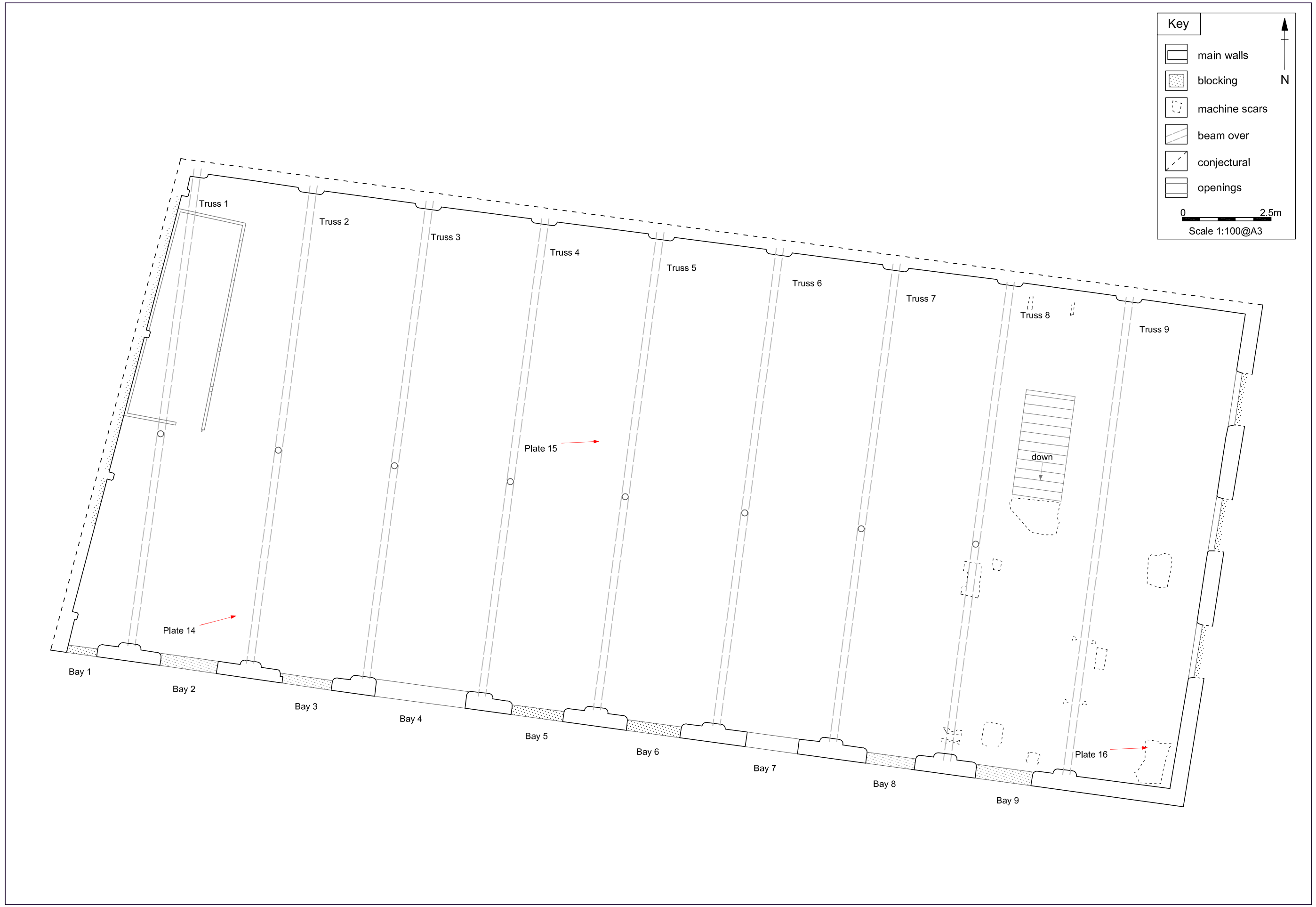

Figure 8: First floor plan, showing direction of photographs

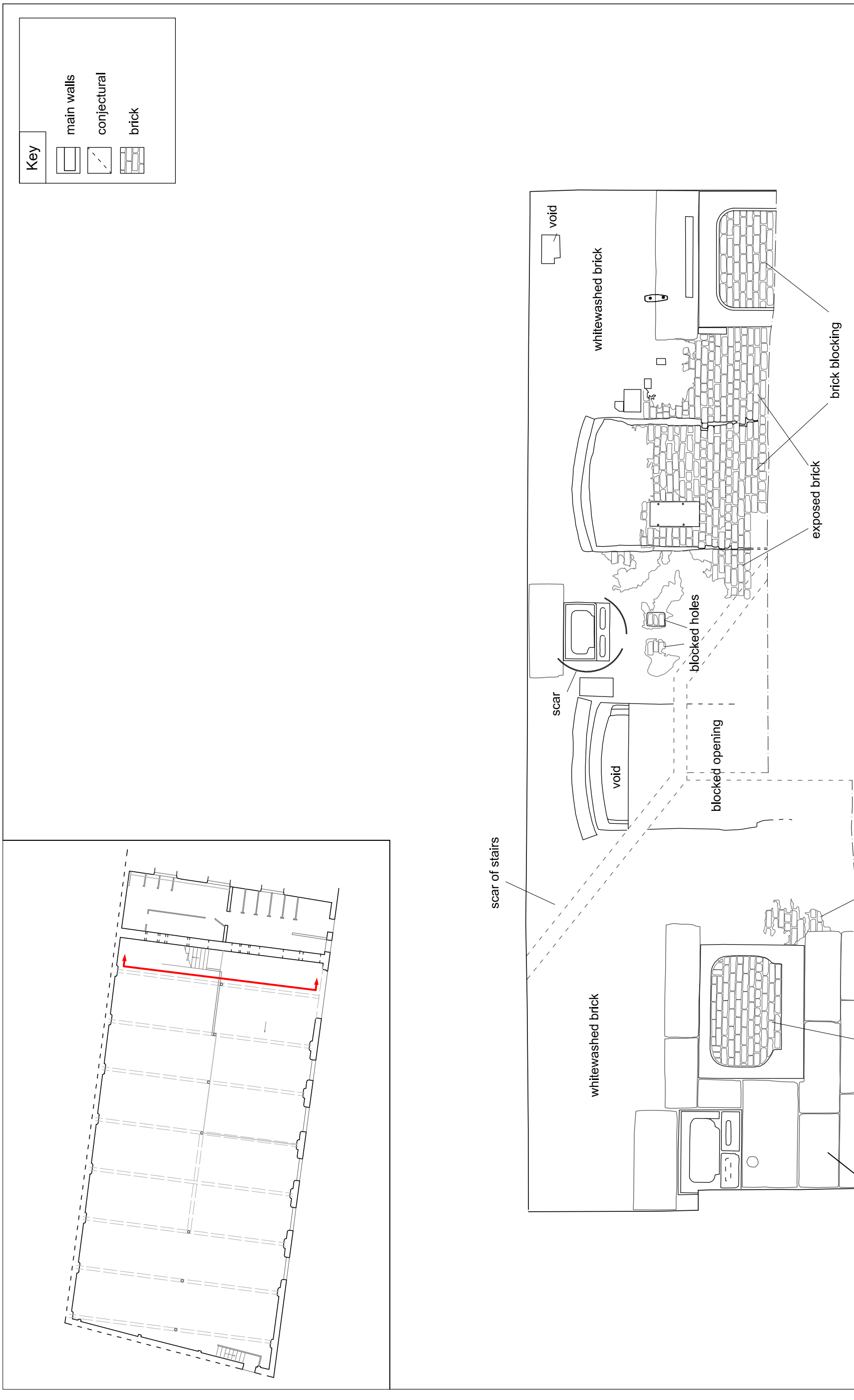

Figure 9: East-facing elevation of internal partition, ground floor

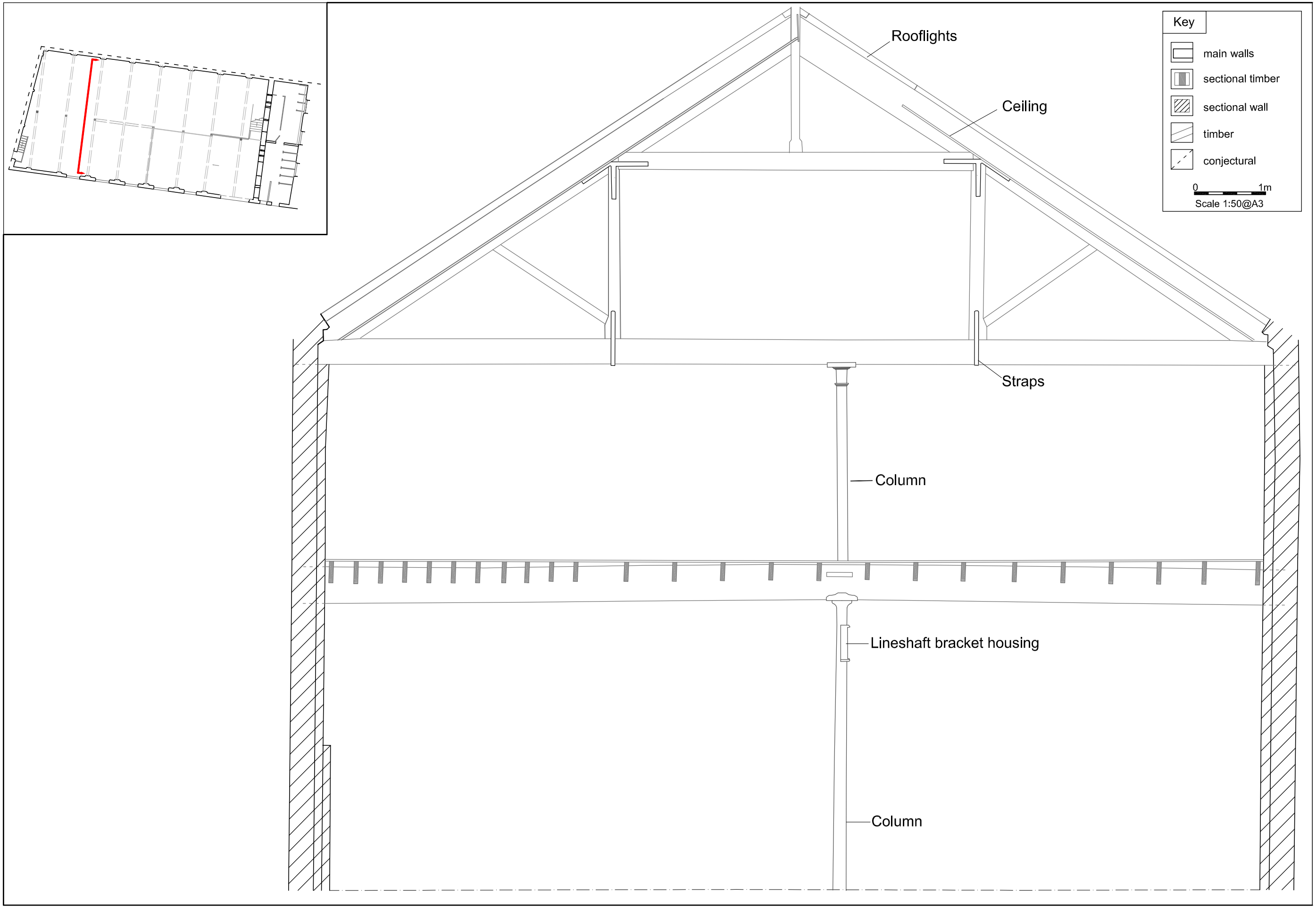

Figure 10: East-facing cross-section

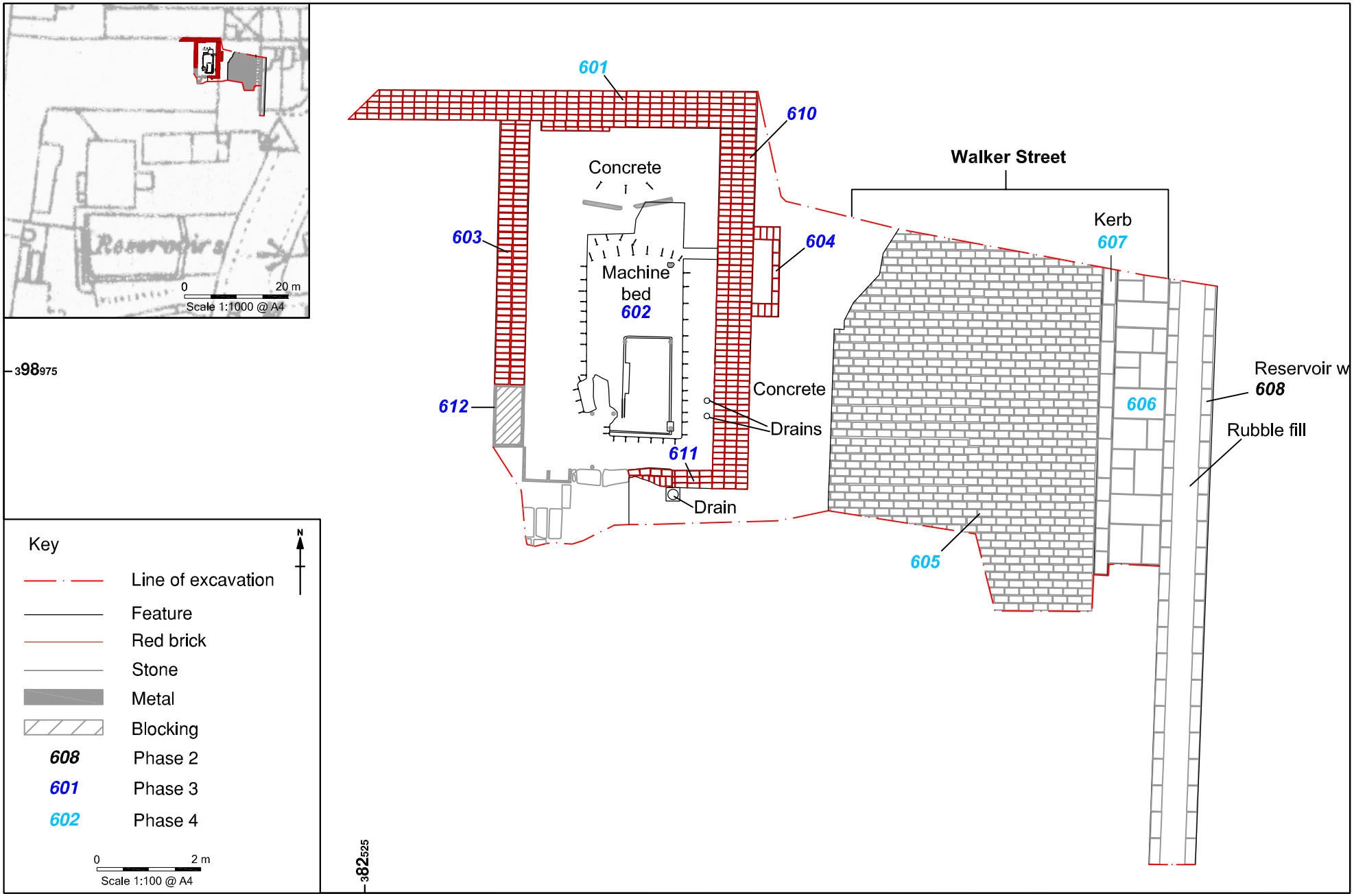

Figure 11: Excavated remains of the engine house and Walker Street in Area B

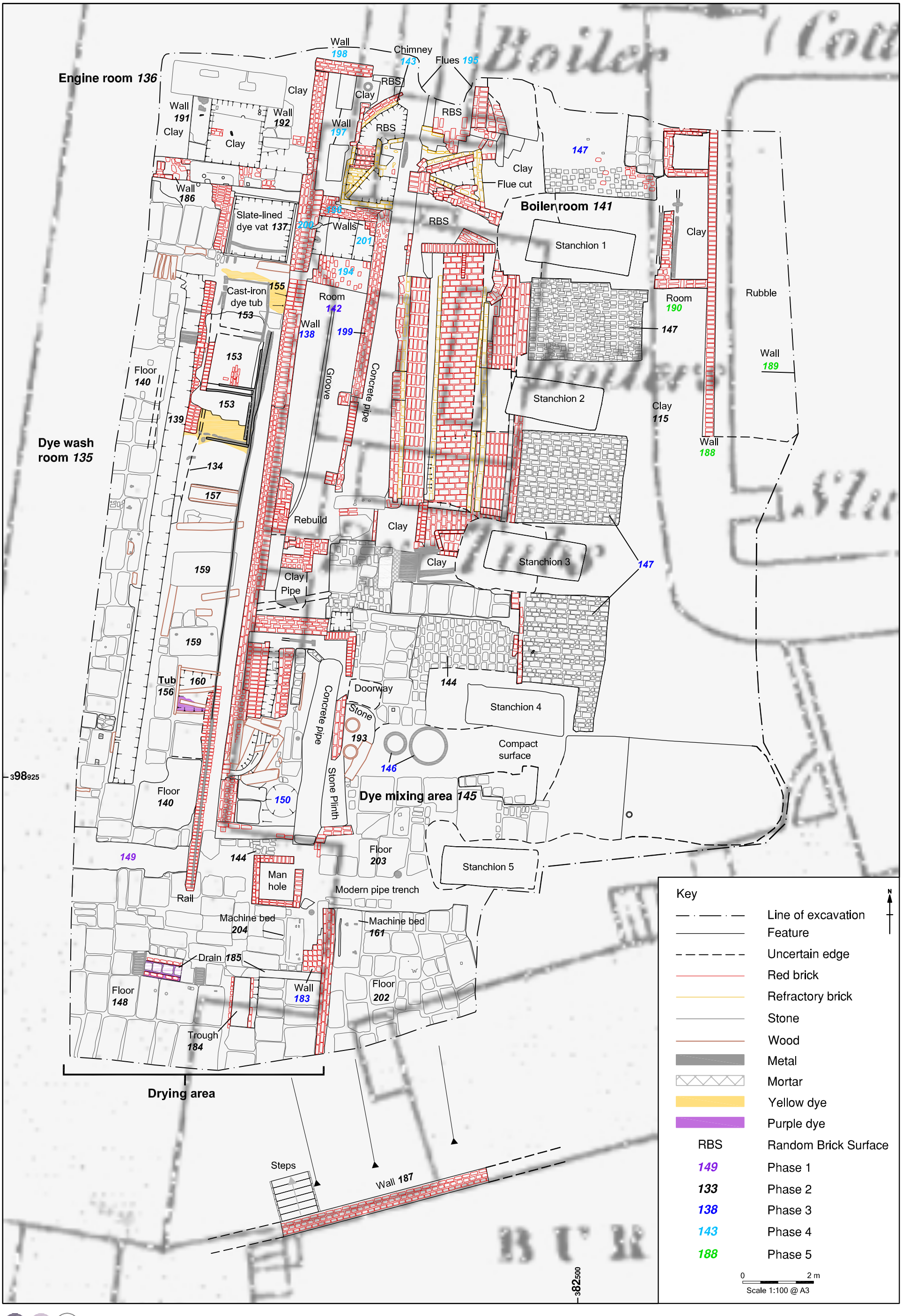

Figure 12: The excavated elements of the dye works, superimposed on the Ordnance Survey map of 1848

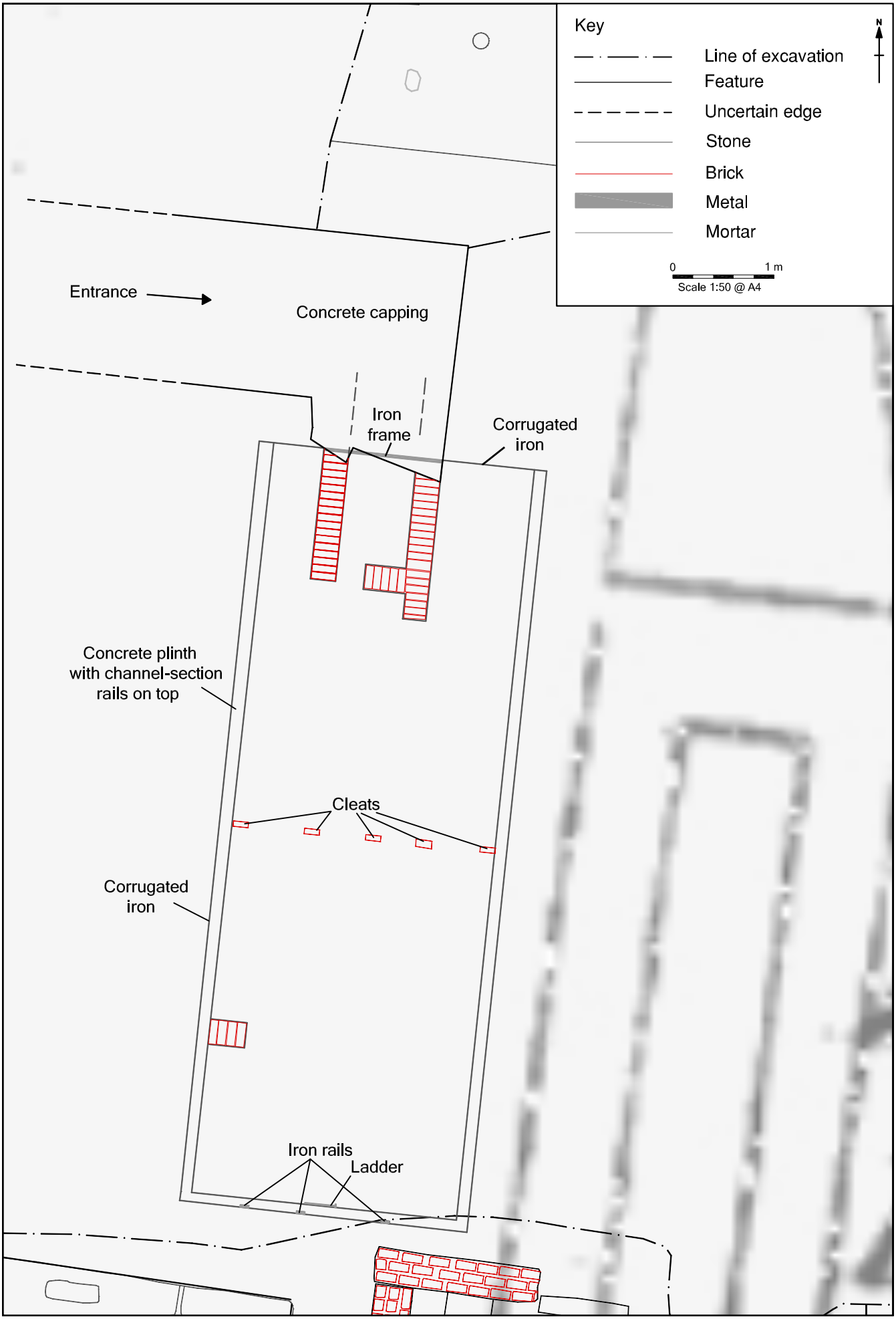

Figure 13: Detail of the air-raid shelter exposed in Trench 5

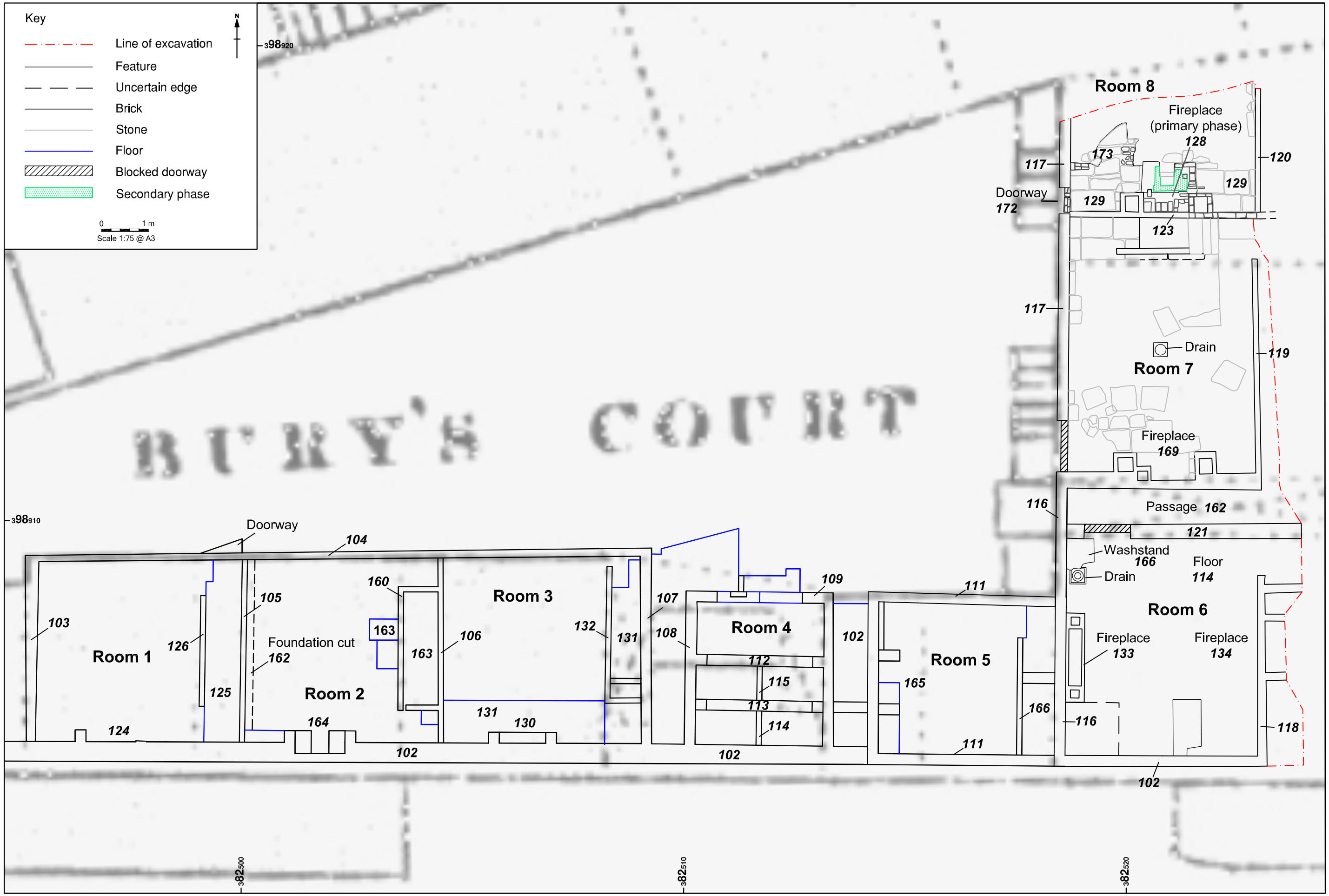

Figure 14: Detailed plan of Rooms 1-8, Area C, superimposed on the Ordannce Survey map of 1848