



BRAZIL MILL, KNOTT MILL, CASTLEFIELD, MANCHESTER, Greater Manchester

Archaeological Desk-Based Assessment



Oxford Archaeology North

March 2005

OMI Architects

Issue No: 2004-05/351

OA North Job No: L9497

NGR: centred SJ 383381 397472

Document Title: BRAZIL MILL, KNOTT MILL, CASTLEFIELD,
MANCHESTER

Document Type: Archaeological Desk-Based Assessment

Client Name: OMI Architects

Issue Number: 2004-05/351

OA Job Number: L9497

National Grid Reference: SJ 383381 397472

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Document File Location Wilm/Projects/L9497/Report

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SUMMARY

In response to a request from OMI Architects, acting on behalf of Castlefield Estates, Oxford Archaeology North (OA North) undertook a desk-based assessment and site inspection of the former Brazil Mill, Castlefield, Manchester (centred at NGR SJ 383381 397472). The assessment was undertaken during February 2005, and was required to assess the archaeological significance and potential of the site to support a planning application for proposed development.

The site lies within an area of Manchester of considerable archaeological and historical significance. Indeed, many of the structures in the vicinity of the study area form one of the foci for the current proposal for Manchester's nomination as a World Heritage Site. In particular, the terminus of the Duke of Bridgewater's Canal, Britain's first true artificial waterway, lies a short distance to the north-west and elements of the water-management control mechanism associated with this canal are situated across the river Medlock immediately adjacent to the study area.

The first structure known to have been erected within the proposed development site was a corn mill, which appears to have originated during the late 18th century. This mill is likely to have been water-powered and, whilst there is no supporting evidence within the available archival sources, the waterwheel may have been internal to the building.

The corn mill was supplanted by a textile mill during the early 19th century. The nature of the original power system employed within this factory remains uncertain, although the possibility of it having utilised the existing waterwheel cannot be discounted. However, an expansion of the textile complex prior to 1819 appears to have included the installation of a steam engine. The mill complex was remodelled during the late 19th century in response to a change in function, and was completely rebuilt during the mid-20th century.

In addition to the vestiges of early Industrial period structures, the study area has some potential to contain Roman remains. The site lies some 180m to the east of the Roman fort, in an area that is likely to have formed part of the Roman cemetery; artefacts of a Roman date discovered in the vicinity of the study area include an inscribed altar, a coin hoard, and fragments of pottery.

In broad terms, the extant building is of little archaeological or historical value, although its foundations appear to incorporate some historic fabric. The site does, however, have some potential to retain buried structures of archaeological significance. It is recommended that any reduction of the existing ground level associated with the proposed development is preceded by a programme of archaeological trial trenching to establish the nature and extent of buried remains. In particular, this should be targeted on establishing the presence or absence of any Roman remains and the putative waterwheel and power transmission features associated with the early industrial use of the site.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Nick Berry and Philip O'Dwyer of OMI Architects for commissioning the project on behalf of Castlefield Estates, and to Sharon Barnes for facilitating a site visit. Thanks are also due to Norman Redhead of the Greater Manchester Archaeological Unit for considerable support and advice. Further thanks are expressed to the staff of the Local Studies Unit at Manchester Central Library for facilitating access to the sequence of historic maps, and to the staff of the Greater Manchester County Record Office.

The desk-based assessment and site visit was undertaken by Ian Miller, and the drawings were produced by Mark Tidmarsh. Ian Miller compiled the report, and was also responsible for project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 In response to a request from OMI Architects, acting on behalf of Castlefield Estates, Oxford Archaeology North (OA North) undertook a desk-based assessment of a building known as Brazil Mill, situated within the Castlefield area of Manchester (centred at NGR SJ 383381 397472). The assessment was coupled with a site visit, and was undertaken during February 2005.
- 1.1.2 The study area lies within a part of Manchester that is of considerable archaeological significance. In particular, the site of the Roman fort lies a short distance to the west, whilst to the north-west is the Manchester terminus of the Bridgewater Canal and associated buildings and structures.
- 1.1.3 In order to secure archaeological interests, Manchester City Planning Department has requested that an archaeological desk-based assessment of the study area is undertaken and submitted to support an application for a proposed redevelopment of the site for office use. The principle aim of the assessment was to identify, as far as possible, the nature of the study area's archaeological resource in order to facilitate informed recommendations in advance of planning consent.

2. METHODOLOGY

2.1 DESK-BASED ASSESSMENT

2.1.1 The assessment consisted of desk-based study and a site visit. Several sources of information were consulted as part of the assessment, which have provided a good understanding of the developmental history of the study area. Archive sources that have been consulted include:

- **Greater Manchester Sites and Monuments Record (SMR):** the Sites and Monuments Record for Greater Manchester, held in Manchester, was consulted. This consists of a list of known archaeological sites within the county, and is maintained by the Greater Manchester Archaeological Unit (GMAU).
- **Greater Manchester County Record Office (GMCRO):** the County Record Office in Manchester holds the majority of original documents and maps for the area, and was visited primarily to consult early maps of the area, which can provide details of the development of the landscape, and other documents relevant to the study area.
- **Greater Manchester County Record Office (GMCRO):** the County Record Office in Manchester holds printed and manuscript maps and plans of relevance to the present study.
- **Lancashire County Record Office (LCRO):** the County Record Office in Preston similarly holds printed and manuscript maps and plans of relevance to the present study.
- **Manchester Central Library Local Studies Unit (MCL):** Manchester Central Library holds printed and manuscript maps and plans of relevance to the present study, and an extensive collection of published sources.
- **Salford Archives Centre (SAC):** this holds archives pertaining to the Bridgewater Canal and estate plans of the Duke of Bridgewater.

2.1.2 The aim of the site visit was to relate the findings of the desk-based study to the existing site, and to recover evidence not available from the archive sources. The visit included a rapid inspection of the interior of the extant building and the surrounding area.

2.2 ARCHIVE

2.2.1 A full professional archive has been compiled in accordance with the project design (*Appendix I*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The archive will be deposited with the Greater Manchester SMR on completion of the project.

3. BACKGROUND

3.1 INTRODUCTION

- 3.1.1 An understanding of the archaeological and historical background of a site provides the local context within which the extant structures and any buried remains can be assessed archaeologically. Such an understanding may be derived by collating the relevant information held within the County Sites and Monuments Record (SMR), the Local Studies libraries, cartographic evidence and published sources.
- 3.1.2 The following section provides an outline of the natural setting of the study area, its location both physically and relative to other districts within the city, and summarises the development of Castlefield. This section also provides a chronological account of the development of Brazil Mill in terms of its occupants and uses, and the evolution of the building currently occupying the site based on cartographic regression analysis.

3.2 LOCATION

- 3.2.1 Brazil Mill is situated in the Castlefield area, centred at NGR SJ 383381 397472, which forms part of the township of Manchester (Fig 1). The study area comprises an L-shaped building that occupies a block of land bounded by Knott Mill Bridge on Deansgate (Plate 1) and Commercial Street (Plate 2) to the north-west and north-east respectively. The south-eastern edge of the study area is bounded by a modern development, known as Riverside Mews (Plate 3), whilst the river Medlock forms the south-western edge. During the first half of the 19th century, Brazil Mill incorporated the site of Riverside Mews as an integral part of the cotton-spinning complex. This area has thus been afforded some consideration in the desk-top study as, in historical terms, it cannot be divorced from the buildings forming the focus of the assessment.
- 3.2.2 The study area lies immediately beyond the current World Heritage Boundary Proposal, which incorporates the Bridgewater Viaduct and the northern edge of Hewitt Street. This area forms one of the foci of Manchester's current proposal for World Heritage Site status, which is based on the crucial role the city played in accelerating the process known as the Industrial Revolution. In particular, Castlefield incorporates the terminus of Britain's first industrial canal and the first inter-city passenger railway, which is represented by the oldest mainline station in the world that survives on Liverpool Road (Falconer 2002, 12).
- 3.2.3 The site also lies just beyond the Castlefield Conservation Area boundary, which follows that of the city along the river Irwell, New Quay Street, Quay Street, Lower Byrom Street, Culvercliff Walk, Camp Street, Deansgate, Bridgewater Viaduct, and along Chester Road.

3.3 TOPOGRAPHY AND GEOLOGY

- 3.3.1 The study area lies on the eastern bank of the river Medlock (Fig 2), although the natural topography of the area has been masked largely by urban development. Borehole data obtained for the area bounded by Bridgewater Viaduct and Chester Road, for instance, concluded that ground levels had been altered significantly to create the modern surface, which previously fell from west to east towards the Medlock (UMAU 2001). The present study area lies at a height of *c*28m above Ordnance Datum, whilst land to the north and west rises slightly to the 30m contour, which probably reflects the trend of the natural topography.
- 3.3.2 The solid geology of the area consists of Bunter Sandstone of the Permo-Triassic. This sandstone is exposed to a depth in excess of 2m in the bank of the Rochdale Canal a short distance to the north of Brazil Mill. The overlying drift comprises glacial sands and gravels and late glacial flood gravels (Countryside Commission 1998).

3.4 HISTORICAL BACKGROUND TO CASTLEFIELD AND KNOTT MILL

- 3.4.1 *Prehistoric Period:* the current understanding of any activity in Manchester during the prehistoric period is very poor, although it is reasonable to suggest that the Castlefield area may have been conducive for late prehistoric settlement on account of the natural topography and its riverside location. However, physical indications for any such settlement are, at best, fragmentary and arguably the best evidence was yielded from a recent archaeological excavation that was targeted on a plot of land adjacent to Liverpool Road. During the course of this work, two Mesolithic flints, one Neolithic/Bronze Age waste flake, and a single fragment of late Bronze Age/Iron Age pottery were recovered, although none were found in securely stratified deposits (UMAU 2002). In addition to these artefacts, the Greater Manchester SMR includes four sites of prehistoric date in the area between Castle Street and Tomlin Street, situated to the north of the present study area.
- 3.4.2 *Roman Period:* in contrast to the earlier period, there is considerable evidence for activity in the area during the Roman period. This was focused on the Roman fort that was established in Castlefield during the late 1st century. The original fort comprised a turf rampart and timber gates, and, covering an area of *c*1.2ha, was of a size compatible with holding a 480 man infantry unit. The fort was rebuilt to similar dimensions in stone *c*AD 200 (Bryant *et al* 1986).
- 3.4.3 The fort was supported by a substantial extramural settlement, or *vicus*, that developed in both a northerly direction and along the line of Chester Road to the south (Grealey 1974, 11). It seems that this settlement originated largely during the early 2nd century, and incorporated numerous buildings and a concentration of iron-working hearths or furnaces. Much of the current understanding of the Roman *vicus* in Manchester is derived from the analysed results obtained from three major excavations, which have all focused on the area to the north of the fort: excavations on the southern side of Liverpool Road, centred on the former White Lion Street in 1972 (Grealey 1974),

excavations on Tonman Street (Jones and Reynolds 1978), and an excavation between Liverpool Road and Rice Street (UMAU 2002). In addition, recent excavations at Beetham Tower concluded that Deansgate is the route of a Roman road that was lined with Roman buildings (N Redhead pers comm).

- 3.4.4 The excavations undertaken in 1972 and 1978 revealed extensive evidence for Roman buildings, representing several successive phases of occupation commencing during the late 1st century and continuing into the 3rd century. In total, the remains of 13 buildings were identified during the excavations in 1972, whilst the investigations at Tonman Street revealed another 15 (GMAU AND UMAU 2003). These results were enhanced considerably by the conclusions drawn from excavations between Liverpool Road and Rice Street, which provided evidence for building plot divisions, small-scale agriculture, and possible leather preparation (UMAU 2002). It was concluded that this site lay close to the periphery of the *vicus* on the north side of the fort.
- 3.4.5 Physical evidence for the Roman settlement to the south of the fort is fragmentary, although it is believed to have incorporated a bath house on the north bank of the river Medlock, which was discovered during the 1770s (UMAU 2001, 7), and a temple of Mithras. Evidence for the latter was provided by structural remains that were reportedly unearthed during construction work in 1821 on the south side of the river Medlock (Whatton 1821, 257).
- 3.4.6 The extent of the cemetery associated with the Roman settlement in Manchester is not well understood, although it is probable that burials will have flanked the roads on their approach to the fort. Funerary remains have been discovered near the eastern boundary of Castlefield (Grealey 1974, 17), and Whitaker reported two urns having been found on the south bank of the river Medlock (1773, 59-60). Whitaker also noted a log coffin and bones that had been discovered in the same area. Similarly, Corbett's map of 1850 notes that when Pioneer Quay was excavated in 1849, '*many graves and relics*' were uncovered, including '*a cylindrical rock-cut grave*' (GMAU and GMAU AND UMAU 2003). A wooden coffin set in a grave lined with tiles was also discovered in 1832 at a location which Charles Roeder later described as '*evidently near Great Jackson Street, close by the Roman road to Chester, where many other Roman sepulchral stones have been secured*' (Roeder 1899, 109).
- 3.4.7 Roads from the fort and associated *vicus* linked Manchester with Ribchester to the north, Castleshaw, Slack and York to the north-east, Wigan to the north-west, and Northwich and Chester to the south. The latter road is believed to have forded the river Medlock a short distance to the north-west of the study area (UMAU 1998). Whilst the precise line of the Roman road across the river is uncertain, a map of Castlefield dated 1765 shows a routeway curving from the north side of the road to the bridge at Knott Mill and terminating at the river bank. The key to this map describes this route as a 'hollow way to the ford', implying this to have been a crossing point of some antiquity. The 'hollow way' is similarly indicated on a plan of 1771, and describes it as 'the old road to the river'. The road to the east, which linked Manchester to the forts at Buxton and Glossop, is also likely to have passed close to the site of

Brazil Mill. This raises an unattested possibility of the study area occupying part of the Roman cemetery, or even a linear extension of the *vicus* that may have extended down to the riverside.

- 3.4.8 *Medieval Period:* there is very little archaeological evidence in the region as a whole that represents the period between the end of the Roman occupation and the Norman Conquest. It is therefore unsurprising that the archaeological evidence for any activity in the vicinity of Castlefield for the early medieval period is scant; the putative remains of four sunken-floored buildings of Anglo-Saxon type were discovered beyond the north gate of the Roman fort, although their date and interpretation was not corroborated, and several stray finds of 10th and 11th centuries date has been found in the area (Morris 1983; UMAU 2004).
- 3.4.9 Post-Conquest Manchester was established around the manor house and parish church of St Mary. In 1223, the right to hold an annual fair was obtained, and the town was important enough to be granted a charter in 1301 (Kidd 1993, 14). However, the vicinity of Castlefield remained almost wholly undeveloped until the 18th century (3.4.11 below); the only known activity in the area during the late medieval period was focused upon a mill at Knott Mill (GMAU 1993). The earliest reference to this mill dates from 1509, when a licence was given for the mill dam; it has been suggested that the mill, and subsequently this part of Manchester, derived its name from the miller (Farrer and Brownbill 1911, 178). The site of the mill is thought to have been incorporated into, or built upon, by the Duke's Warehouse (UMAU 1998).
- 3.4.10 *Post-Medieval and Industrial Period:* during 18th century, south-east Lancashire as a whole was predominantly an agricultural area of isolated settlements and market towns with, at its centre, the growing town of Manchester (Williams and Farnie 1992, 3). By the middle of the century, Manchester was expanding at a considerable rate, and it was during this period that Deansgate, Market Street and Shude Hill developed commercially (Farrer and Brownbill 1911, 180).
- 3.4.11 By the 1780s, the national demand for textiles, particularly cotton, began to rise, resulting in a dramatic increase in mill building that transformed Manchester into a great centre of the factory-based cotton manufacturing industry (Baines 1835). This process of industrial development was facilitated greatly by the introduction of canals, which provided the first efficient means of transporting bulk loads of goods. The first true industrial canal in Britain was that built by the Duke of Bridgewater, which was completed from Worsley to Manchester in 1764. The Manchester terminus of the canal was at Knott Mill, a short distance to the west of the present study area, whilst the bend of the river Medlock to the south of the study area was adapted as the final length of the canal (Sillitoe 1988). An important feature of the canal terminus was the distinctive canal warehouse, where perishable goods were stored between being delivered to the town and distributed locally. The first major warehouse to be erected in association with the canal was the Duke's Warehouse, which was built soon after 1765 (Taylor *et al* 2002, 10). This was soon complemented by Hensall, Gilbert and Company's Warehouse (known latterly as the Grocers' Warehouse) in c1776, the Merchants' Warehouse in

1825, and Middle Warehouse in 1828-31 (Greene 2002). The surviving warehouses are a distinct element of the streetscape in Castlefield, and add an important characteristic to the area.

- 3.4.12 During the construction of the canal, a channel was cut from the river Medlock to allow water to flow through the industrial complex at Knott Mill via a mill leat. A secondary channel, directed through a brick-built culvert system, was cut to supply water to the power features and unloading dock at the Grocers' Warehouse. As the Medlock is fed by the Pennines, and was subject to rapid and heavy flooding, this channel was fitted subsequently with an overflow tunnel that was constructed adjacent to the site of Brazil Mill (Sillitoe 1988). This tunnel is believed to have been built in 1838 (Tomlinson 1961, 139).
- 3.4.13 The importance of Castlefield as a hub of the region's transport network was increased by the completion of the Rochdale Canal, which was opened for its full length in 1804 (Hadfield and Biddle 1970, 85-6). This canal formed a direct route across the Pennines, and provided Manchester with a link to the east coast port of Hull via the rivers Calder, Hebble and Aire.
- 3.4.14 By this period, development had begun to encroach on the study area. An early stage in this development is depicted on William Green's map of Manchester and Salford, surveyed between 1787 and 1794, which shows the main elements of the existing street plan laid out on former fields of the area south of the river Medlock. Other areas on the periphery of the town, such as Ancoats, are similarly depicted, reflecting a rapid development of the industrial sectors, and most notably textile manufacture; the number of cotton-spinning firms in the township of Manchester doubled from 51 in 1799 to 111 in 1802 (Williams and Farnie 1992, 19). It is against this economic background that the origins of Brazil Mill as a cotton-spinning factory need to be considered.

3.5 GAZETTEER OF KNOWN ARCHAEOLOGICAL SITES

- 3.5.1 The following gazetteer is drawn entirely from entries on the Greater Manchester Sites and Monuments (SMR) database. It is included here to provide an overview of the known sites within the vicinity of the study area. The locations of the gazetteer sites are depicted on Figure 2.
- 3.5.2 **Site 1** is the study area itself, which is entered on the Greater Manchester SMR database (record no 9865.1.0) as the site of a corn mill.
- 3.5.3 **Site 2** (SMR no 11638.1.0) is the floodgate of stone construction, which survives across the river Medlock immediately to the west of Brazil Mill. It is believed to be an original component of the hydraulic system associated with the Bridgewater Canal terminus basin. As part of the canal's original design, the river Medlock was diverted to Potato Wharf via a culvert situated adjacent to Brazil Mill (Fig 7). The flow of water entering the culvert was controlled by the floodgate, the remains of which are considered to be of national historical importance. The site is designated as a Listed Building (Grade II).

- 3.5.4 **Site 3** (SMR no 11671.1.0) is a township boundary stone of probable 18th century origin. It comprises a low, round-headed slab of sandstone with a very slightly canted face, which is inscribed. The site is designated as a Listed Building (Grade II).
- 3.5.5 **Site 4** (SMR no 11190.1.0) is the Bridgewater Canal basin, which dates from c1760-65. The site is designated as a Listed Building (Grade II).
- 3.5.6 **Site 5** (SMR no 415.4.24) is the spot where a Roman inscribed altar, dedicated to the goddess Fortuna Conservatrix, was discovered in 1612. The inscription reads ‘*to fortune the preserver, Lucius Senecianus Martius, a centurion of the sixth legion, surnamed the Victorious*’. This altar, which was without a capital or a base, was probably not earlier than 120 AD, and is curated presently by the Ashmolean Museum in Oxford.
- 3.5.7 **Site 6** (SMR no 415.4.25) is the spot where fragments of Roman pottery and a small hand quern were discovered in c1898.
- 3.5.8 **Site 7** (SMR no 415.4.1) is the spot where a hoard of Roman coins was discovered whilst digging the foundations of Knott Mill railway station in 1852. The hoard comprised over 1600 coins, ranging from Sabina (128-136 AD) to Valens (364-378 AD), although the most were of a 4th century date.
- 3.5.9 **Site 8** (SMR no 415.4.15) is the spot where fragments of Roman pottery, iron nails, lead, tiles and glass were discovered during the late 19th century.
- 3.5.10 **Site 9** (SMR no 9849.1.0) is the site of the Duke’s Warehouse, which was erected at the Castlefield terminus of the Bridgewater Canal.
- 3.5.11 **Site 10** (SMR no 11191.1.0) is the Bridgewater Viaduct, which was built over Castlefield Basin in 1843 to bypass the original Chester Road/Deansgate river crossing at Knott Mill.
- 3.5.12 **Site 11** (SMR no 10503.1.0) is the location of an archaeological evaluation undertaken in 1998 (3.7.2 below).
- 3.5.13 **Site 12** is the location of a rock-cut grave discovered in 1849.

3.6 HISTORICAL DEVELOPMENT OF BRAZIL MILL

- 3.6.1 The development of the buildings occupying the study area from the late 18th century may be traced reasonably well from the available cartographic sources. This allows the pertinent details of the site’s evolution to be discerned, which may be enhanced from other sources of primary documentation, notably entries within commercial trades’ directories.
- 3.6.2 Several detailed maps of the area were compiled during the second half of the 18th century, including those by Arthur Young (1771), Hugh Oldham (1771), Ludwig von Högrewé (1778), and Foulkes (1785). However, all of these maps focus upon the canal basin at Castlefield and its junction with the river Medlock, and none provide any detail for the present study area. Similarly, a map surveyed by H Clarke in August 1765 (reproduced in GMAU 1993)

shows the mill to the north of Knott Mill Bridge, and a kiln on the western bank of the river Medlock, but the study area is depicted as having been vacant, suggesting that it was undeveloped at this date.

- 3.6.3 ***William Green's Map of Manchester and Salford, 1794 (Fig 3)***: this is one of the earliest detailed cartographic sources to depict a building within the study area. The map shows a medium-sized rectangular structure situated on the eastern bank of the river Medlock, with a porch projection on the front elevation, small extensions at the back, and an enclosed area to the rear presumably forming a yard. The building is aligned north-east/south-west along the Knott Mill frontage, with the north-eastern gable end facing onto Commercial Street. The adjacent land to the south-east is shown as undeveloped.
- 3.6.4 The building is identified clearly as a corn mill, and, whilst Green's map provides no indications as to the power source used, it is likely that the mill was driven by a waterwheel. As no part of the building overhangs the river Medlock, it seems likely that any such waterwheel was located internal to the building. However, Green's map provides no indication of any water-management features, such as a mill dam, weir or mill races, and the possibility that the mill was actually steam-powered should therefore not be discounted entirely; it is interesting to note that the position of one of the small projections shown to the rear of the corn mill was occupied subsequently by chimney associated with the textile mill steam plant (3.6.11 below).
- 3.6.5 The results of cartographic regression analysis have indicated that the part of the modern building fronting Knott Mill Bridge occupy the footprint of the former corn mill. This raises the possibility that the present building may incorporate historic fabric within its build.
- 3.6.6 ***Bancks and Thornton's Plan of Manchester and Salford, 1800 (Fig 4)***: this large-scale map lacks detail of individual buildings, but nevertheless shows the study area to contain a rectangular structure of similar dimensions to that portrayed on Green's map. An enclosed yard is also shown to the rear, but the building is not labelled as to its function. Similarly, no evidence for any water-management features that would be associated with a waterwheel is provided.
- 3.6.7 It is uncertain whether the site continued in use as a corn mill at the time of Bancks and Thornton's survey. Entries within the available trades' directories for the late 18th and early 19th centuries, such as those produced by Raffald (1776) and Scholes (1794; 1797), are inconclusive as none provide a specific reference to either a corn or textile mill at this location. The earliest pertinent reference is provided in a trades' directory for the year 1809, which lists a Joseph Dunkerley as a cotton-spinner at Knott Mill (Dean and Dean 1809, 56). Dunkerley appears in successive directories until 1817, when Lionel Lloyd and Company are listed as cotton-spinners at Brazil Mill (Pigot and Dean 1817, 156).
- 3.6.8 Lionel Lloyd is entered as a cotton-spinner in trades' directories from the year 1809, but his address is given as Queen Street, Hulme (Dean and Dean 1809).

It seems that this was Lloyd's home address, suggesting that he had been engaged in the 'cottage industry' side of textile production at this date.

- 3.6.9 **Johnson's Map, 1819 (Fig 5):** the detail shown upon Johnson's map implies the study area to have been remodelled and expanded relative to Bancks and Thornton's map of 1800. This included the development of the yard area to the rear of the original mill to form much larger structure. It is tempting to suggest that this expansion included the installation of steam-power plant, although firm evidence is lacking as the building is unlabelled.
- 3.6.10 A small-scale map produced to accompany Pigot and Dean's trades' directory for the year 1822 also shows the buildings within the study area to have expanded relative to Bancks and Thornton's map, but not to the extent shown on Johnson's map. The map shows two rectangular buildings forming a L-shaped block along the Knot Mill Bridge and Commercial Street frontages, with that facing Knott Mill Bridge seemingly being of larger dimensions. The south-eastern facing elevation of the latter is abutted by another rectangular structure. The map also indicates the yard area to the rear to have been developed to incorporate a narrow building parallel to Commercial Street, and a larger range set at a right angle.
- 3.6.11 **Bancks and Co's Map of Manchester and Salford, 1831 (Fig 6):** this map provides the same information as that of Pigot and Dean's map, but in greater detail. Notably, the rectangular structure to the rear of the Knott Mill Bridge range is shown to have incorporated a square-shaped projection against its northern corner. This is likely to represent a chimney, suggesting that this building housed the steam-power plant, which will almost certainly have comprised a vertical beam engine served by one or two boilers.
- 3.6.12 The southern half of the complex is shown to have comprised an open yard, with a single rectangular building parallel and adjacent to Commercial Street, and some smaller ancillary buildings occupying the south-eastern corner of the yard. The only access to this comparatively large mill complex appears to have been via an entrance off Commercial Street. The complex is identified as '*Lloyd's Cotton Mill*', confirming the entries listed in contemporary trades' directories (eg Pigot 1832). By this date, Brazil Mill formed one of a small group of cotton mills clustered into the small area bounded by Knott Mill Bridge, the Rochdale Canal, City Road, and the river Medlock (Frangopulo 1962, 42).
- 3.6.13 **Plan of c1840 (Fig 7):** the configuration of the mill complex as depicted by Bancks and Co is replicated on three detailed cartographic sources for the area produced during the mid-19th century. The earliest of these is an undated plan (SA/CA 105), although probably of c1840, which identifies the site as Brazil Mill. The plan also provides details of the water-management features across the river Medlock adjacent to Brazil Mill. These include the overflow connected to a long tunnel, which runs beneath the western edge of the Duke's Warehouse and the canal beyond, and the route of the brick-built culvert system that directed water to drive the power features within the Grocers' Warehouse.

- 3.6.14 **Ordnance Survey 1st Edition 60": 1 mile map, surveyed 1850 (Fig 8):** this detailed map again replicates the configuration of Brazil Mill shown on Banks' map, although refers to the site as having been known formerly as 'Knott Mill'. This map similarly shows the adjacent water-management features across the river Medlock.
- 3.6.15 **Adshead's Plan of the Township of Manchester, 1850 (Fig 9):** the configuration of the mill complex is again replicated, although this map does incorporate some slight variations. Most notably, the putative steam-power plant housing is shown to have been expanded slightly to the west, hinting at some remodelling, such as the replacement of the boilers. The occupiers of the mill complex at this time are identified as 'Lea Birch & Co'. This is confirmed by entries within trades' directories for the year 1850, which list Lea Birch & Co as 'cotton-spinners, merchants and commission agents', and gives the address of their mill as 'Commercial Street, Knott Mill' (Slater 1850, 39).
- 3.6.16 By 1865, it seems that the mill complex had fragmented into multiple occupancy, as indicated by entries in a trades' directory for that year (Slater 1865, 42). This lists ten different firms as being based at 2, Commercial Street. Some of these included textile-based trades, such as smallware manufacturers, but also included an umbrella manufacturer, a wheelwright, a machine maker, and a screw bolt maker; a detailed list is presented in *Appendix 2*.
- 3.6.17 **Ordnance Survey 1st Edition 1:500, 1891:** this map was surveyed in 1888 and was published in 1891. This very detailed map confirms the site to have been converted from a cotton-spinning mill to new industrial uses; the site is identified as 'Commercial Foundry (Iron)', which also appears to have incorporated the former warehouse situated to the south-east of the mill. This is slightly misleading, however, as the mill was occupied by various tenants, of which the Osborne Brothers (brassfounders) were only one (Slater 1890). The remodelling of the mill complex appears to have involved the erection of a new structure which in-filled the area between the Commercial Street range and the putative engine house, seemingly forming a large, rectangular building. The original chimney, however, appears to have been retained *in-situ*. Other additions to the site included the erection of another range of buildings along the south-western edge of the site, adjacent to the river Medlock.
- 3.6.18 **Ordnance Survey 1st Edition 1: 2500 map, 1894 (Fig 10):** this map illustrates the same layout to that shown on the 1891 map, but with slightly less detail. Entries within trades' directories of this period demonstrate the former mill complex to have remained in multiple occupancy, although site does not appear to have been used as an iron and brass foundry by 1895 (Slater 1895, 113).
- 3.6.19 A particularly useful source of information is a sequence of photographs of the mill taken by H Entwistle in 1896 (MCL/117898; 120668; 120670). These provide some internal views of the mill, and an image of the south-east facing external elevation of the Knott Mill Bridge range, which appears to be derelict as many of the windows are without glazing. The mill is shown to have been of brick construction, rising to four storeys, and incorporating segmental-

arched windows. The building identified as the steam-power plant housing (3.6.9 above) is shown to have been partially demolished as it is without a roof and internal features appear to have been removed, although the square-section chimney survived intact. The outline of two large, blocked arches may just be discerned to the west of the chimney, although the detail is faint. These may represent elements of the original power system housing, whether that be water or steam power.

- 3.6.20 More photographs of the site were taken in 1899, including a particularly useful view of the Commercial Street elevation, with the Duke's Warehouse in the background (MCL/139621). The north-eastern end of the Knott Mill Bridge range is shown to have been of eight storeys, seemingly including a semi-basement, whilst the Commercial Street range is of five storeys, also including a semi-basement. The Knott Mill Bridge range has much smaller windows than the Commercial Street range, implying an earlier date of construction, and incorporates a series of taking-in doors on most floors, perhaps reflecting its former use as a corn mill. The apparent absence of windows within the south-east facing elevation of the Knott Mill Bridge range is curious, and again implies that the building was not intended originally as a cotton-spinning mill. These factors demonstrate that the two ranges were of different phases of construction, and that the Knott Mill Bridge range was the original late 18th century building. The photograph also shows the Globe Mattress Company to be occupying the Commercial Street range.
- 3.6.21 ***Goad's Insurance Plan, 1899:*** in general terms, the sequence of insurance plans produced by Charles Goad are an extremely useful source of information for most studies of commercial premises in Manchester. However, Brazil Mill was evidently not selected for a detailed survey, and merely the outline of the buildings is depicted. The building is, however, labelled as a mattress works.
- 3.6.22 ***Ordnance Survey 1:500 map, 1909:*** this map indicates the extent of the buildings on the site to have contracted; much of the range along Commercial Street to the south of the entrance appears to have been demolished. Entries within trades' directories demonstrate that the mill complex was still occupied by various businesses at this time, although by 1925 the study buildings appear to have been used exclusively by cotton waste dealers (Kelly 1925).
- 3.6.23 ***Ordnance Survey 1:2500 map, 1932:*** this map indicates the site to have undergone a further episode of remodelling, with a few minor additions to the south-eastern corner of the complex, resulting in a configuration resembling that of the late 19th century.
- 3.6.24 ***Ordnance Survey 1:1250 map, 1948 (Fig 11):*** this map replicates the detail of the 1932 revision, although the buildings forming the focus of the present study are labelled as a 'rag works', whilst those to the east are identified as an 'engineering and chemical works'. The building fronting Knott Mill Bridge appears to have been reduced in size slightly, and trades' directories of this period (eg Slater 1945) list its occupiers as 'cleaning cloth manufacturers' and 'sewing machine manufacturers'. A chimney is still marked in the original position.

3.6.25 **Ordnance Survey 1:1250 map, 1965 (Fig 12):** the detail provided by this map implies yet a further episode of remodelling, particularly of the building fronting Knott Mill. The corner appears to have been chamfered, and the narrow projection along much of the front of the building appears to have been removed. This implies that the building currently occupying the study area was erected between 1948 and 1965, although its plan conformed to the earlier buildings.

3.7 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

3.7.1 Whilst antiquarian interest in the Roman fort of Manchester can be traced to the mid-16th century, when it was mentioned in Leland's account of the town, the first major archaeological excavation in Roman Castlefield was undertaken by Bruton in 1906-07. This work was focused on the north-western corner of the fort, on a site bounded by Duke Street and Duke Place, and revealed the line of the western stone wall of the fort in addition to some internal features (Bruton 1909).

3.7.2 Since then, numerous controlled archaeological investigations have been undertaken in the area of the Roman fort and its associated *vicus*, the details of which are beyond the scope of the present report; a concise summary of these investigations is presented in *Castlefield, Manchester: An Archaeological Desk-Based Assessment* (UMAU 2004). However, an archaeological evaluation undertaken on the site of the Duke's Warehouse, situated on the opposite side of Knott Mill Bridge to the present study area, is of relevance. This programme of trial trenching, undertaken by the University of Manchester Archaeological Unit in 1998, revealed evidence for Roman activity. Whilst surviving evidence of structural remains was scant, fragments of Roman pottery was recovered and a possible Roman ground surface was identified (UMAU 1998). The evaluation also exposed the remains of a wall that may have represented part of an early fulling mill. This incorporated curvilinear stone blocks, possible originating from an arched window or door surround (*ibid*).

3.7.3 The study area is not recorded to have been subject to any form of archaeological excavation. The extent of buried archaeological remains on the site is therefore untested.

4. SUMMARY SITE DESCRIPTION

4.1 INTRODUCTION

- 4.1.1 A site visit was undertaken to relate the findings of the desk-based study to the existing study area, and included an internal inspection of the building and the immediate vicinity.

4.2 THE STUDY AREA BUILDING

- 4.2.1 The extant building comprises a two-storey structure, seemingly erected as a single unit, forming an L-shaped building along Knott Mill Bridge and Commercial Street, broadly mirroring the footprint of its early 19th century predecessor. The structure is composed of machine-pressed bricks, set in a cement-based mortar, and is clearly of a 20th century date. It incorporates a series of large windows on each floor and roller-shutter access on both the Knott Mill Bridge and Commercial Street frontages. A low parapet encloses a single-pitched roof, which is supported by steel trusses. Individual truss members are all L-section steel, jointed by slender gusset plates (Plate 5), and probably represent the most interesting features of the extant building. Numerous partition walls within the building are of modern date (Plate 6).
- 4.2.2 Elements of the original building, however, appear to survive at foundation level. In particular, the brickwork visible in the lower part of south-western elevation of the structure fronting Knott Bridge Mill is evidently of a much earlier date to the rest of the building (Plate 4). Similar historic fabric forms the foundations of the modern building immediately to the south-east, although a clear construction break between this brickwork and that beneath the study area building testifies to the foundations being of differing dates.
- 4.2.3 The modern building does not incorporate a cellar, and only a single, small part of the structure utilises a level at a depth below the surrounding ground surface. It would therefore seem likely that the original basements have been filled and a concrete surface laid over the top, offering some potential for historic fabric to survive beneath the modern floor surface.

4.3 THE IMMEDIATE VICINITY

- 4.3.1 The area formerly occupied by the putative steam power plant housing and the southern part of the former mill complex have been largely redeveloped for modern residential purposes. The overflow channel and sluice mechanisms across the river Medlock, however, survive *in-situ* (Plates 7 and 8). The mouth of the large culvert beneath Knott Mill Bridge, although largely blocked by concrete stopping, also survives. This impressive culvert is composed of large stone ashlar and appears to be in good condition.

5. SIGNIFICANCE OF THE SITE

5.1 INTRODUCTION

5.1.1 The building occupying the study area is not a designated site, and therefore does not have legal protection against modification or redevelopment. A site visit has confirmed that the extant buildings, to a large degree, is of little archaeological or historical significance. There is a potential, however, for the foundations to be of some significance, as these may pertain to the earlier structures that occupied the site.

5.2 CRITERIA

5.2.1 There are a number of different methodologies used to assess the archaeological significance of sites. Whilst no detailed guidelines for the retention for historic fabric within extant structures has been produced by either English Heritage or the Institute of Field Archaeologists, the ‘Secretary of State’s criteria for scheduling ancient monuments’, which is included as Annex 4 of PPG 16 (DoE 1990), has been used to assess the significance of the Brazil Mill site. In the following section, the known or possible remains within the study area are considered using these criteria.

5.2.2 **Period:** the extant building appears to have been erected during the mid-20th century, and is clearly of the modern period. In broader terms, however, the location of the study area is of significance to the two periods of history that characterise Castlefield, namely the Roman and early Industrial periods.

5.2.3 In terms of the Roman period, Brazil Mill may lie within part of the former settlement associated with the fort, and particularly within the cemetery area. The possibility that buried remains pertaining to the Roman cemetery, or an easterly extension of the *vicus*, cannot be dismissed entirely.

5.2.4 The earliest potential remains of the Industrial period within the study area include elements of the 18th century corn mill; the foundations of the extant building appear to incorporate original fabric. Similarly, the modern building may incorporate physical elements of the early 19th century cotton mill that is known to have occupied the site.

5.2.5 **Rarity:** in broad terms, the fort represents the dominant type of site associated with the Roman occupation of the North West. Some of the associated settlements and cemeteries have also been excavated. In the context of Manchester, however, the part of the Roman settlement to the east of the fort is perhaps the least understood.

5.2.6 The foundations of the mill may represent elements of a late 18th century corn mill, and/or an early 19th century cotton-spinning mill. Specifically, these foundations may incorporate elements of water-power or early steam-power transmission systems, which may be considered to be of regional rarity.

- 5.2.7 The water-management features across the river Medlock adjacent to Brazil Mill represent elements of Britain's first true industrial canal, and are of considerable rarity.
- 5.2.8 **Documentation:** there is no documentation for the Roman period in relation to the study area, and whilst there is some for the surrounding area, it is of variable quality.
- 5.2.9 The historical development of the study area buildings can be traced reasonably well from cartographic sources, and the occupants and uses of the site have been identified from the sequence of available commercial trades' directories. However, only limited primary documentation pertaining to the actual operation of the mill has been identified during the course of the assessment, and nothing relating to the original corn mill.
- 5.2.10 The archival sources relating specifically to the Bridgewater Canal and its water-management features have not been examined in detail as part of this assessment. However, any such study is unlikely to modify the conclusions drawn.
- 5.2.11 **Survival/Condition:** the extent to which any buried Roman remains survive beneath the extant building is unknown, and will be dependent entirely upon the depth to which the original basements of Brazil Mill were excavated.
- 5.2.12 The corn mill and the early cotton-spinning mill have been largely obliterated, although it is possible that the foundations may survive reasonably intact, and may contain evidence for the use of the site during the early Industrial Period.
- 5.2.13 The water-management features across the river Medlock survive in good condition.
- 5.2.14 **Diversity:** the potential Roman remains within the site will be associated with the extramural settlement, or its associated cemetery. Later remains represent the Industrial Period, and comprise a corn mill that was converted subsequently to a textile mill.
- 5.2.15 **Potential:** given the industrial use of the site since the late 18th century, and particularly the incorporation of basements within the structure of Brazil Mill, it may be suggested that there is a low potential for any Roman remains to survive within the study area. However, any such remains would have the potential to contribute significantly to the current understanding of the development of Roman Manchester. The research framework for Manchester, for instance, concluded that amongst the current gaps in existing knowledge were the full extent of Roman Castlefield and the end of Roman Manchester (GMAU AND UMAU 2003).
- 5.2.16 Another gap in current knowledge identified in the research framework was an understanding of early mills, and particularly the mechanisms of power-transmission. The study area has potential to inform a greater understanding in this respect.

5.3 SIGNIFICANCE

- 5.3.1 Using the above criteria, and particularly rarity, survival/condition and potential, the study area possibly contains non-statutory remains of a high local, or even regional, significance.
- 5.3.2 The presence of any surviving Roman remains would certainly be high local or regional significance.
- 5.3.3 Surviving physical evidence for water-powered mills in Manchester is extremely rare, and any such remains within the study area would be of high local significance. Similarly, any physical evidence for power transmission systems associated with an early 19th century steam engine would be of high local significance.

6. LIKELY IMPACT OF DEVELOPMENT

6.1 IMPACT

- 6.1.1 In broad terms, the archaeological impact of any development of the study area can be assessed as being either direct or indirect. A direct impact would involve an alteration to the physical condition of the site, which might be either positive or negative, whilst an indirect impact would involve an alteration to the setting of a site, and may again be either positive or negative.
- 6.1.2 Details of the proposed development within the study area have yet to be finalised, and it has therefore not been possible to identify specific impacts. However, the following are likely to sustain some impact.

6.2 STANDING REMAINS

- 6.2.1 Redevelopment of the site is likely to have a direct impact on the extant structure within the study area, namely its demolition. The obliteration of the building's foundations may be seen to be a negative impact, as this incorporates historic fabric of potential significance. The bulk of the structure, however, is of little archaeological value, and its removal from the environs of the proposed World Heritage Site could arguably be viewed as a positive direct impact.

6.3 SUB-SURFACE REMAINS

- 6.3.1 Redevelopment of the site may have a direct negative impact on buried remains in the study area, involving their damage or destruction as a result of ground-reduction works or the excavation of service trenches. In particular, such works within the western part of the study area may impact upon the remains of the putative waterwheel and associated underground mill races, and evidence for early power transmission features, whilst the reduction of ground levels elsewhere has some potential to affect remains of a Roman date.

7. RECOMMENDATIONS FOR ARCHAEOLOGICAL MITIGATION

7.1 INTRODUCTION

7.1.1 The extant structure is not a designated site, and therefore does not have legal protection against modification or redevelopment, although there is some potential for buried remains of archaeological significance to survive *in-situ*. As such, in accordance with current planning policy guidance, any such buried remains would require preservation by record should they be directly affected by future development proposals.

7.1.2 The scope and details of any archaeological recording required in advance of redevelopment would be devised by the Assistant County Archaeologist for Greater Manchester once design proposals are known. However, in general terms, it may be anticipated that the following archaeological works will be required.

7.2 ARCHAEOLOGICAL EVALUATION

7.2.1 It is envisaged that a limited programme of archaeological evaluation will be required in advance of any ground-reduction works within the study area. The primary objectives of any such evaluation would be to establish the presence, character, date and extent of any buried remains. In particular, any surviving remains of Roman date and those pertaining to the power systems associated with the corn mill and the early textile factory are likely to be priorities.

8. BIBLIOGRAPHY

8.1 CARTOGRAPHIC SOURCES

Young, A, *Plan of Castlefield*, 1771

Von Hogrewe, L, *Plan of the Castlefield Basin and Canal Features*, 1778

Green, W, *Map of Manchester and Salford*, begun in 1787 and completed in 1794

Banks and Thornton, R, *A Plan of Manchester and Salford*, 1800

Banks and Co, *A Map of Manchester and Salford*, 1831

Adshead, J, *Plan of the Township of Manchester*, 1850

Johnson, *Plan of Manchester*, 1819

Ordnance Survey, 1850 1st Edition 60": 1 mile map

Ordnance Survey, 1891 1st Edition 1: 500 map

Ordnance Survey, 1894 1st Edition 1: 2500 map

Ordnance Survey, 1909 1: 500 map

Ordnance Survey, 1932 1: 1250 map

Ordnance Survey, 1948 1: 1250 map

Ordnance Survey, 1965 1: 1250 map

8.2 PUBLISHED SOURCES

Baines, E, 1835 *History of Cotton Manufacture in Great Britain*, London

Bruton, FA (ed), 1909 *The Roman Fort at Manchester*, Manchester

Bryant, S, Morris, M, and Walker, JSF, 1986 *Roman Manchester: A Frontier Settlement*, GMAU, Manchester

Countryside Commission, 1998 *Countryside Character Volume 2: North West*, Cheltenham

Dean, R, and Dean, W, 1809 *Manchester and Salford Directory*, Manchester

Dean, R, and Dean, W, 1811 *Manchester and Salford Directory*, Manchester

DoE, 1990 *Planning Policy Guidance 16: Archaeology and Planning*

English Heritage, 1991 *Management of Archaeological Projects*, 2nd Edn, London

- Falconer, K, Manchester and Salford – The Proposed World Heritage Site, in R McNeil and JSF Walker (eds), 2002, 12-14
- Farrer, W, and Brownbill, J, 1911 *The Victoria History of the County of Lancaster*, Vol 4, London
- Fletcher, M, 1996 Industrial Archaeology, in R Newman (ed) *The Archaeology of Lancashire*, 157-69
- Frangopulo, NJ (ed), 1962 *Rich Inheritance: A Guide to the History of Manchester*, Manchester
- GMAU, 1993 *Proposed Development at Bridgewater Wharf, Castlefield, Manchester: An Archaeological Response*, unpubl rep
- GMAU and UMAU, 2003 *Manchester Research Framework, Phase 1: The City of Manchester*, Vol 1, unpubl rep
- Grealey, S (ed), 1974 *Roman Manchester*, Altrincham
- Greene, JP, Castlefield – Where Manchester Made Transport History, in R McNeil and JSF Walker (eds), 2002, 25-27
- Hadfield, C, and Biddle, G, 1970 *The Canals of North West England*, 1, Newton Abbot
- Jones, GBD, and Reynolds, P, nd *Roman Manchester: The Deansgate Excavations 1978*, unpubl rep
- Kelly, 1928 *Directory of Manchester, Salford and Suburbs*, 1, Manchester
- Kidd, A, 1993 *Manchester*, Manchester
- McNeil, R, and Walker, JSF (eds), 2002 *The Heritage Atlas 4: Manchester – Archetype City of the Industrial Revolution*, UMFAC, Manchester
- Morris, M, 1983 *Medieval Manchester: A Regional Study*, The Archaeology of Greater Manchester, 1, Manchester
- Pigot, J, 1813 *Manchester and Salford Directory*, Manchester
- Pigot, J, 1830 *Manchester and Salford Directory*, Manchester
- Pigot, J, 1832 *Manchester and Salford Directory*, Manchester
- Pigot, J, 1835 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Dean, R, 1815 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Dean, R, 1817 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Dean, R, 1820 *Manchester and Salford Directory*, Manchester

- Pigot, J, and Dean, R, 1822 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Dean, R, 1825 *Manchester and Salford Directory*, Manchester
- Pigot, J, and Slater, I, 1841 *Manchester and Salford Directory*, Manchester
- Roeder, C, 1899 Recent Roman Discoveries in Deansgate and on Hunt's Bank and Roman Manchester Re-studied, *Trans Lancashire Cheshire Antiq Soc*, **17**, 187-212
- Sillitoe, PJ, 1988 *The Castlefield Canal Basin 1763 – 1805: A Chronology of Development*, unpubl dissertation
- Slater, I, 1850 *General and Classified Directory and Street Register of Manchester and Salford*, Manchester
- Slater, I, 1865 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1886 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1890 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1895 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1900 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1905 *Manchester and Salford Directory*, **1**, Manchester
- Slater, I, 1911 *Manchester and Salford Directory*, **1**, Manchester
- Taylor, S, Cooper, M, and Barnwell, PS, 2002 *Manchester: The Warehouse Legacy*, London
- Tomlinson, VI, 1961 Early Warehouses on Manchester Waterways, *Trans Lancashire Cheshire Antiq Soc*, **71**, 128-151
- UMA, 1998 *Knott Mill Bridge, Manchester: Archaeological Evaluation*, unpubl rep
- UMA, 2002 *Liverpool Road, Manchester: Archaeological Excavation*, unpubl rep
- UMA, 2004 *Castlefield, Manchester: Archaeological Desk-Based Assessment*, Revised Edition, unpubl rep
- Wardle, 1828 *The Manchester and Salford Directory and Memorandum for 1828*, Manchester
- Wardle and Bentham, 1815 *The Commercial Directory for 1814-15*, Manchester
- Whatton, WH, 1821 *Gentlemen's Magazine*, **2**, 257
- Whitaker, J, 1773 *The History of Manchester*, 2nd edn, London
- Williams, M, and Farnie, DA, 1992 *Cotton Mills of Greater Manchester*, Preston

9. ILLUSTRATIONS

9.1 FIGURES

Figure 1: Location map

Figure 2: Position of the study area relative to the Roman fort, showing gazetteer sites

Figure 3: Extract from Green's *Map of Manchester and Salford*, begun in 1787 and completed in 1794

Figure 4: Extract from Bancks and Thornton's *Plan of Manchester and Salford*, published in 1800

Figure 5: Extract from Johnson's *Plan of Manchester*, published in 1819

Figure 6: Extract from Bancks and Co's *Map of Manchester and Salford*, published in 1831

Figure 7: Plan of c1840 (SA/CA 105)

Figure 8: Extract from the Ordnance Survey 60": 1 mile map, surveyed in 1849 and published in 1851

Figure 9: Extract from Adshead's *Plan of the Township of Manchester*, published in 1850

Figure 10: Extract from the Ordnance Survey 1: 2500 Second Edition map, 1896

Figure 11: Extract from the Ordnance Survey 1: 1250 map, 1948

Figure 12: Extract from the Ordnance Survey 1: 2500 map, 1965

9.2 PLATES

Plate 1: The Deansgate frontage of Brazil Mill

Plate 2: The Commercial Street frontage of Brazil Mill, looking south-west

Plate 3: The Commercial Street frontage of Brazil Mill, looking north-west

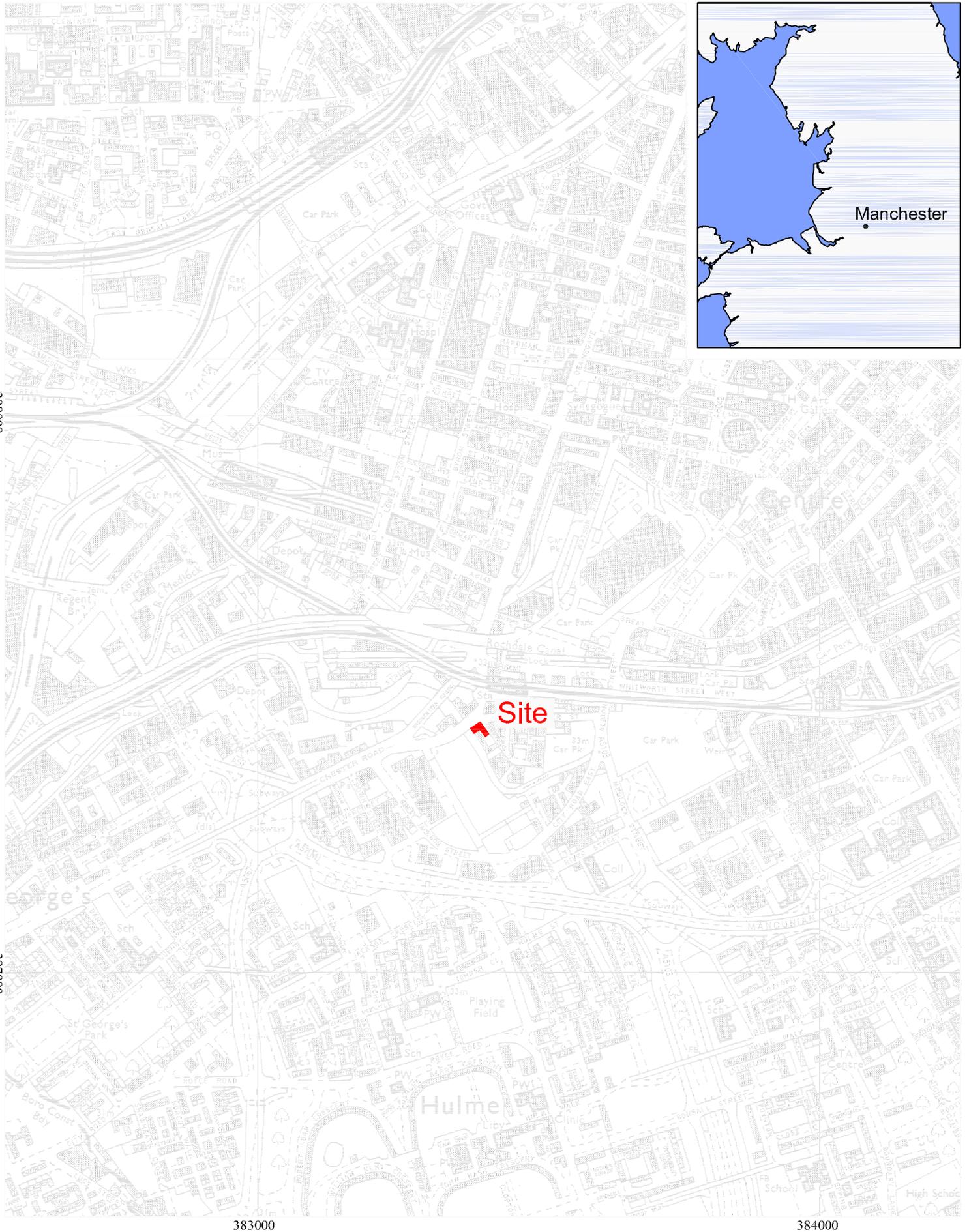
Plate 4: The south-western elevation of the Knott Mill Bridge block and adjacent modern development, showing stone blocks surviving in the original foundations

Plate 5: Looking south along the upper floor of the Commercial Street block

Plate 6: Looking north-east across the upper floor of the Commercial Street block

Plate 7: The overflow channel to the west of Brazil Mill

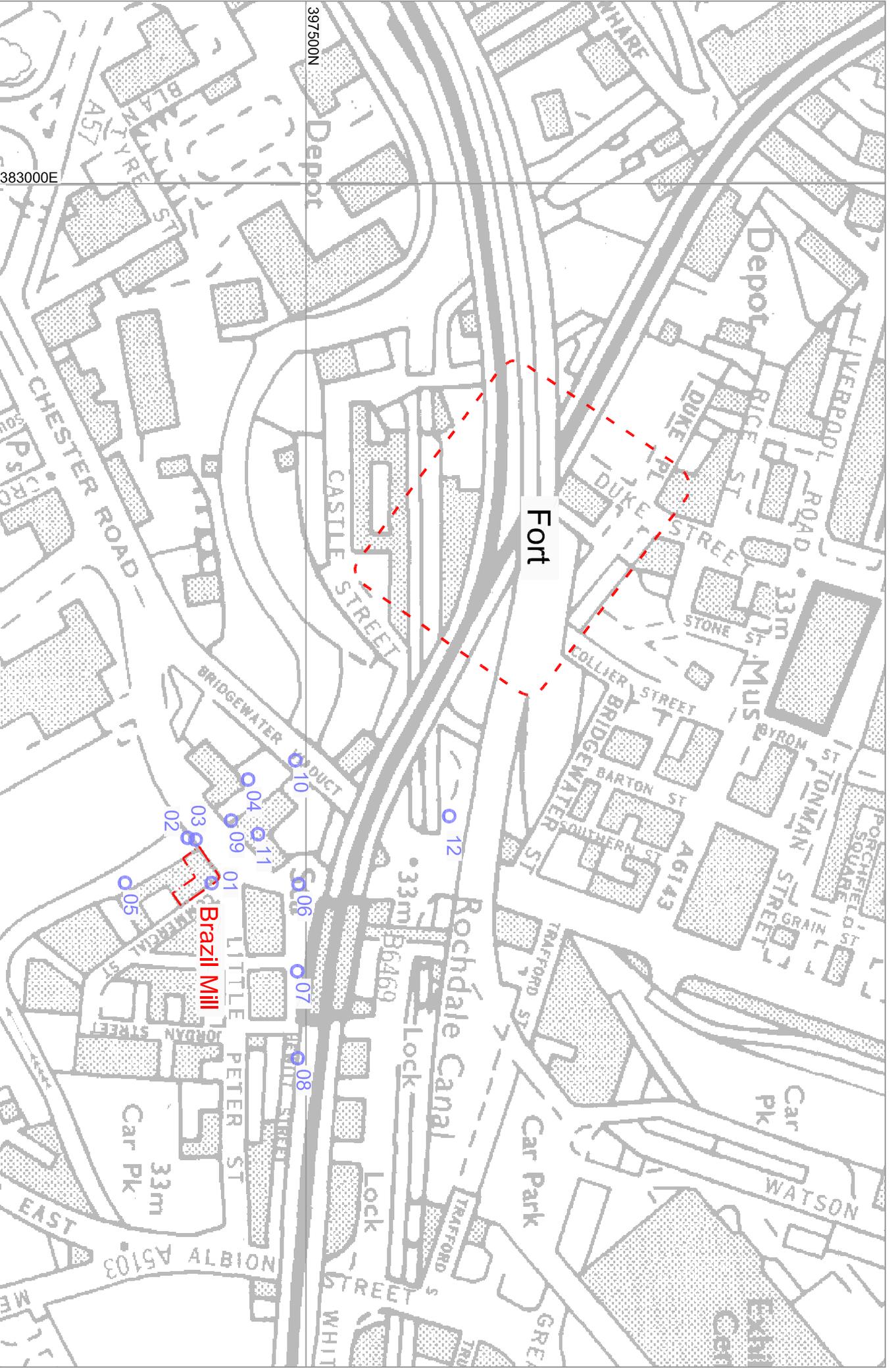
Plate 8: Looking north along the river Medlock, showing sluice mechanism



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Figure 1: Location Map



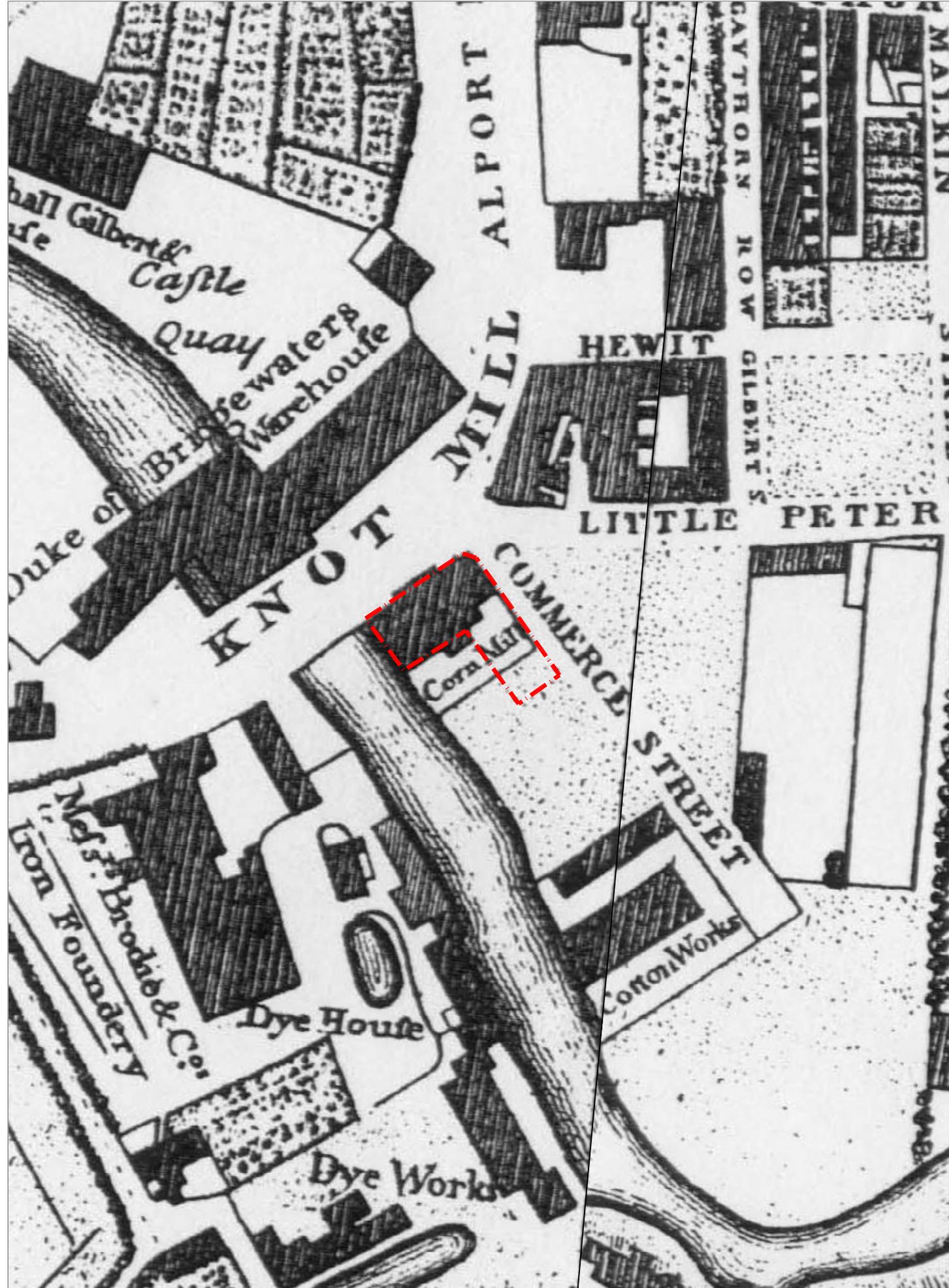
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08 gazetteer site

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Scale 1:3000 @ A4



Figure 2: Position of the study area relative to the Roman fort, showing gazetteer sites



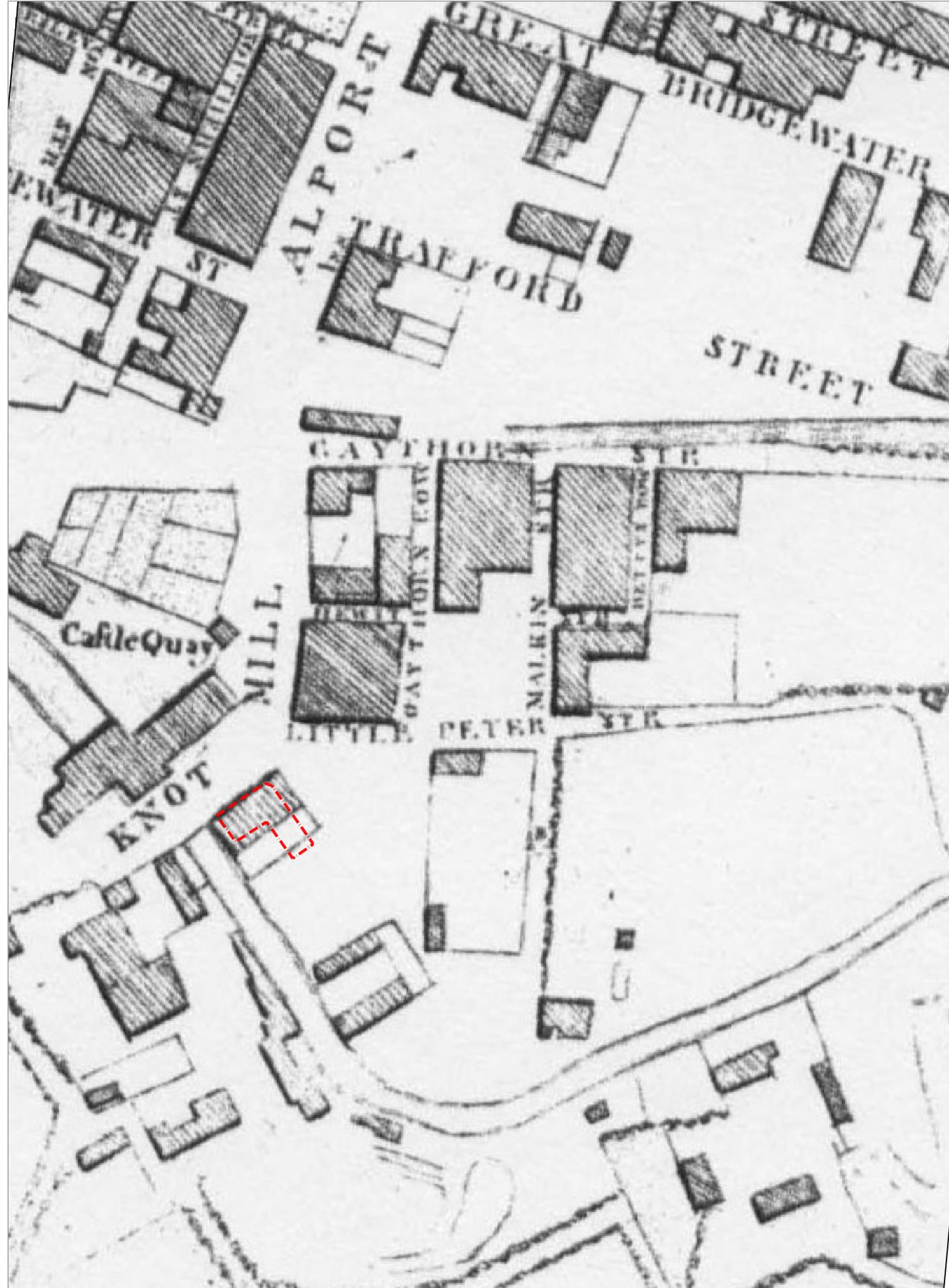
Study Area



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Figure 3: Extract from Green's map of Manchester and Salford



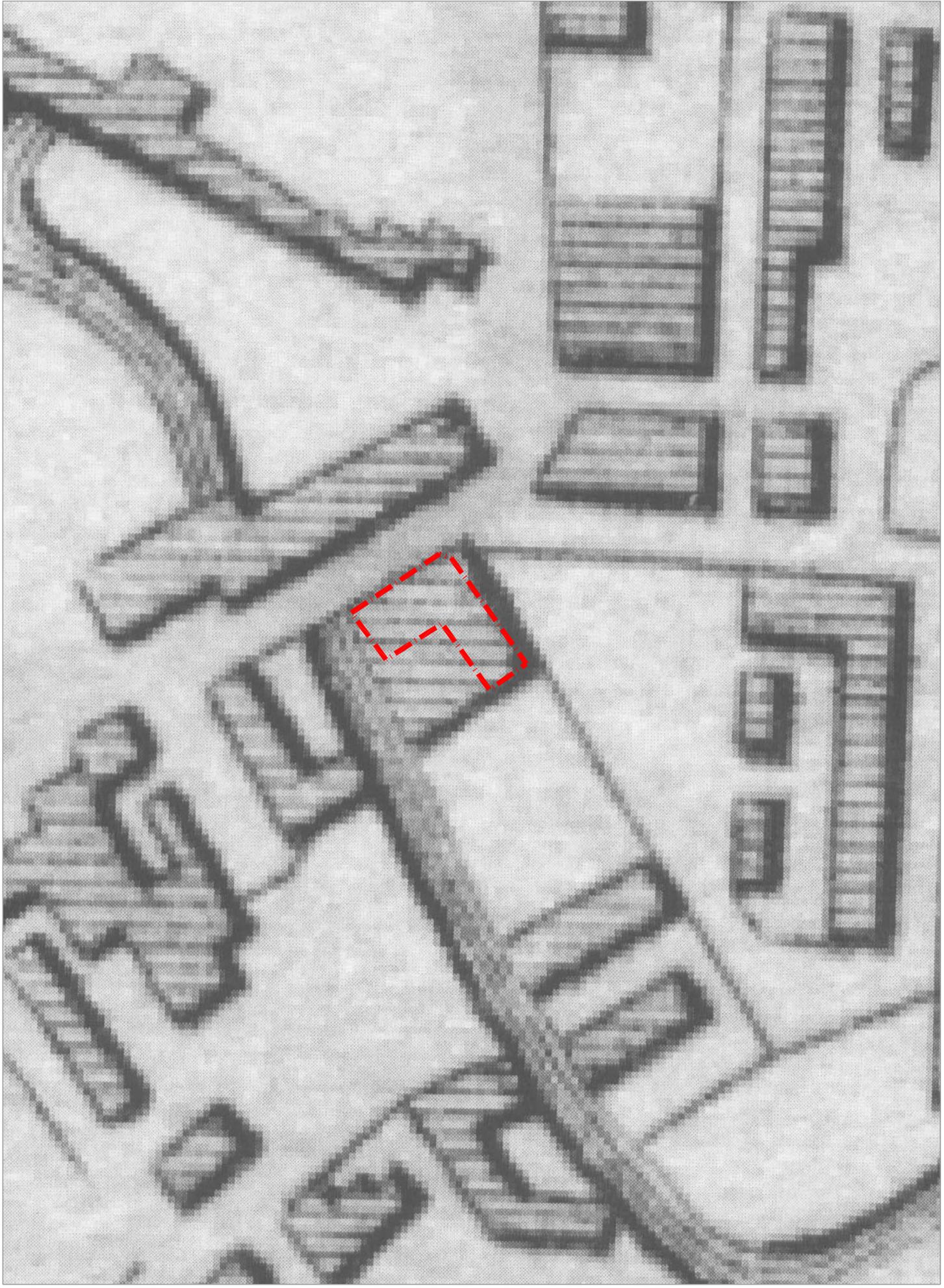
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Figure 4: Extract from Banks and Thornton's Plan of Manchester and Salford, published in 1800

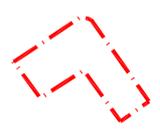
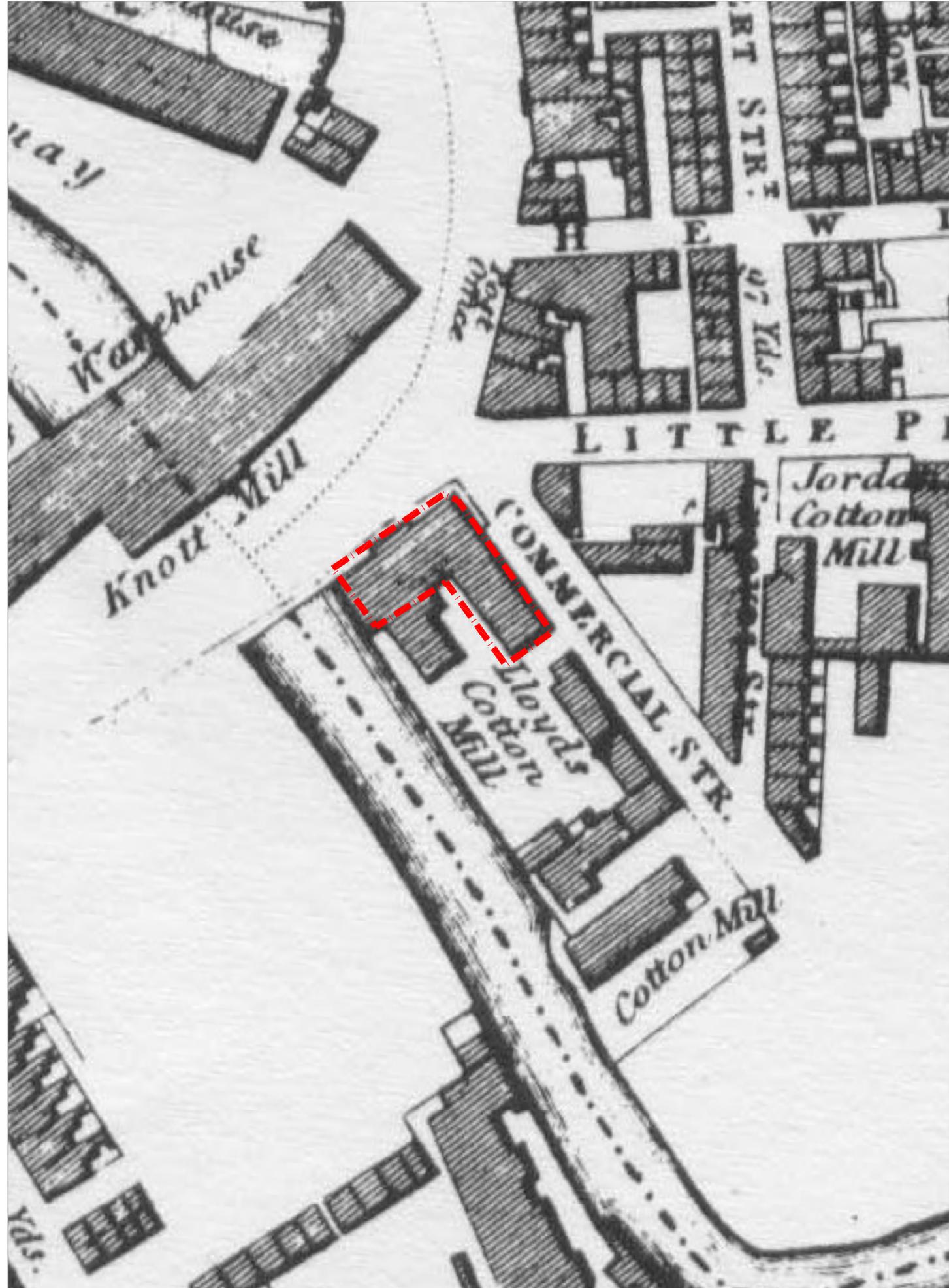


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Figure 5: Extract from Johnson's Plan of Manchester, published in 1819



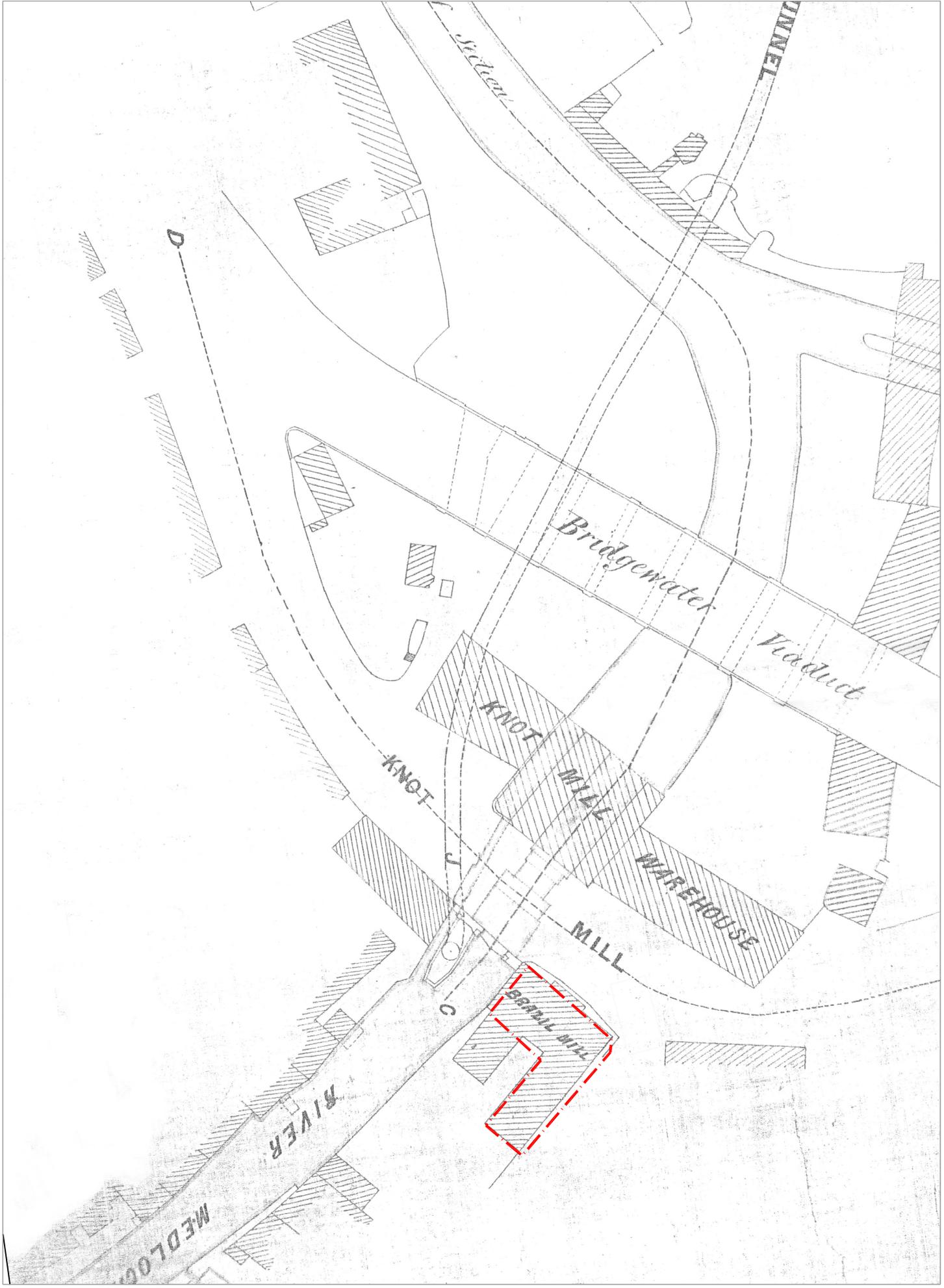
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Figure 6: Extract from Bancks and Co's Plan of Manchester, published in 1831

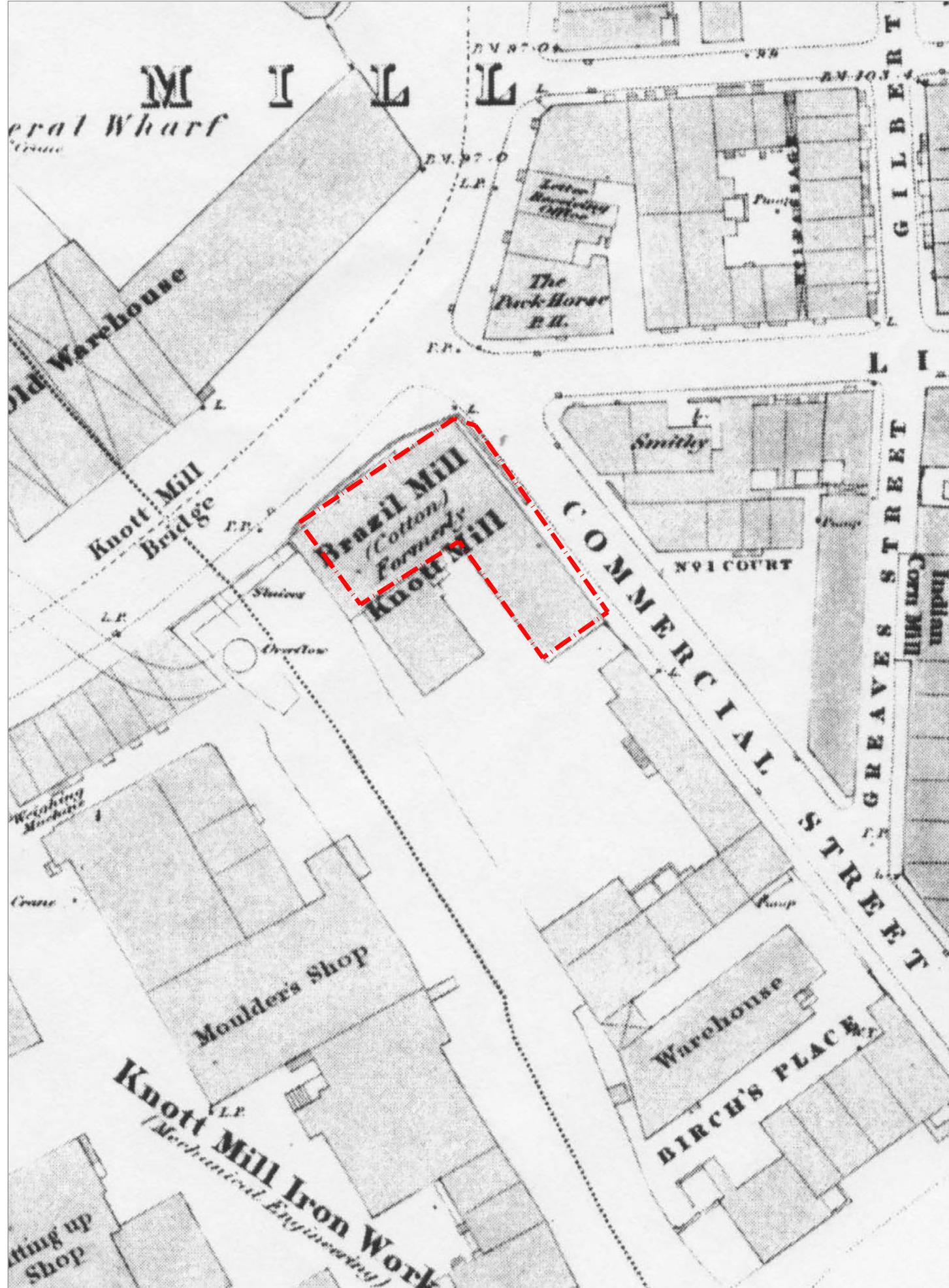


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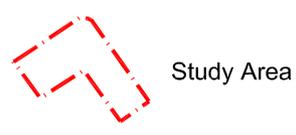
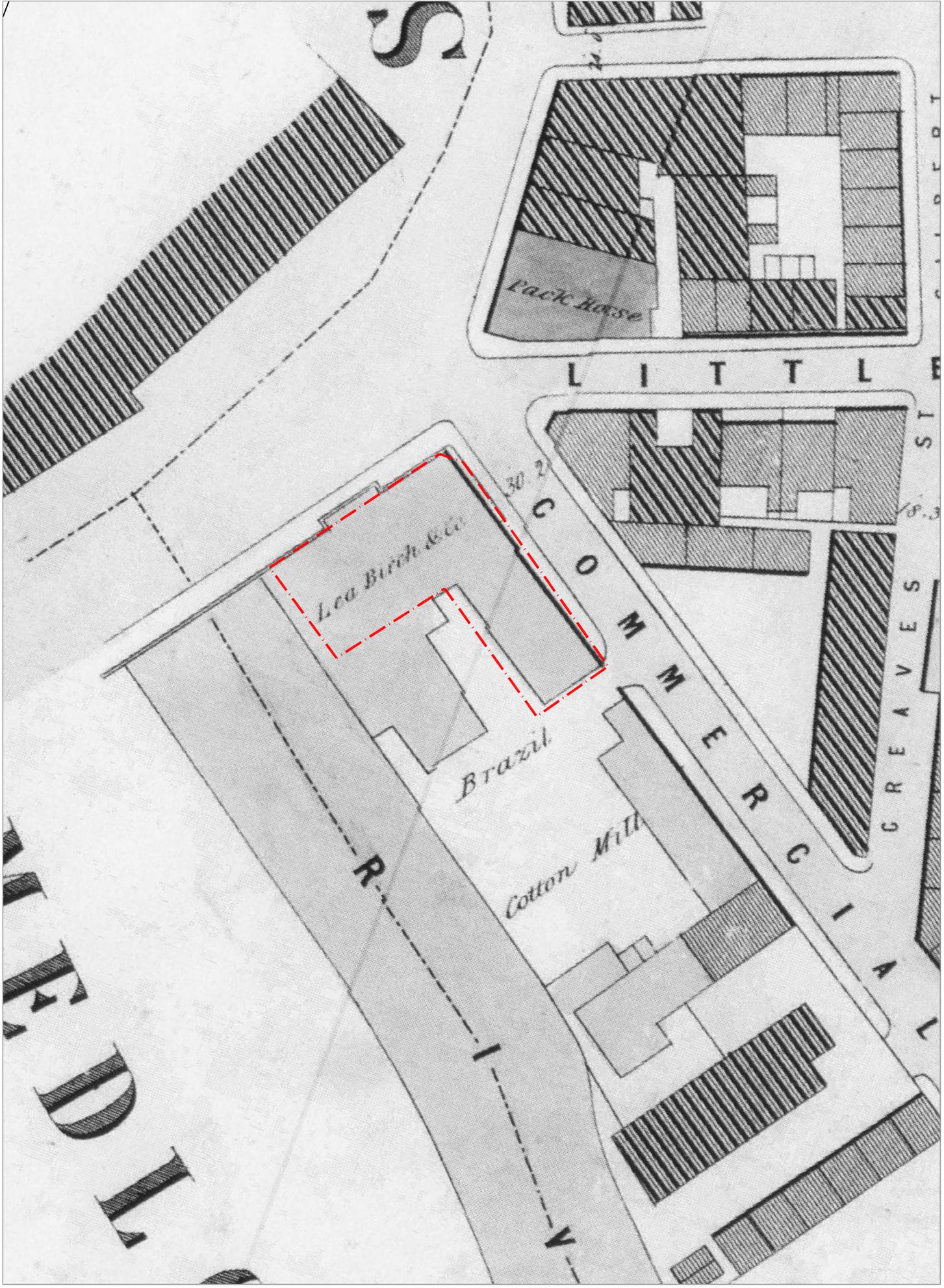
Figure 7: Plan of c1840 (SA/CA 105)



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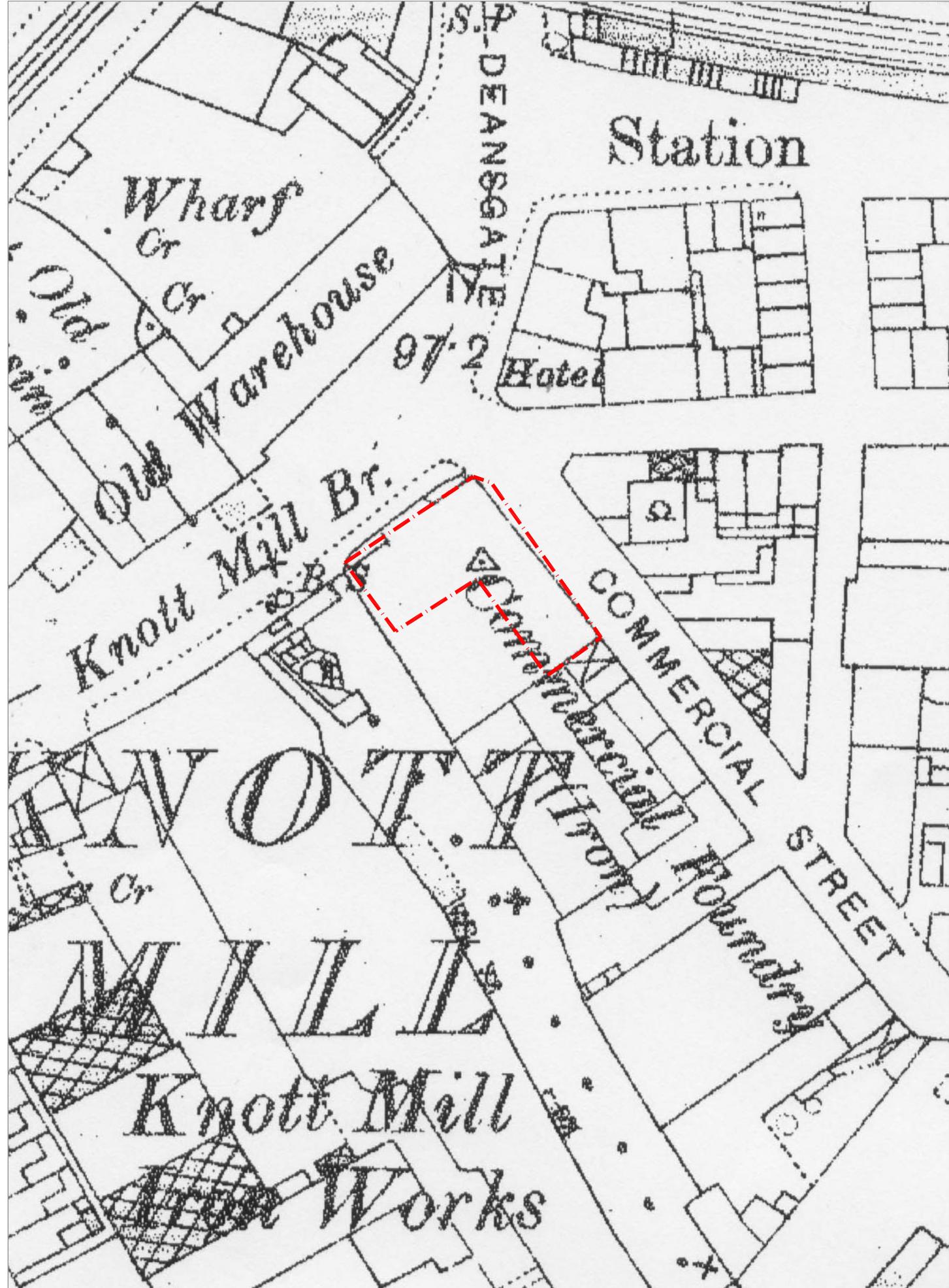
Figure 8: Extract from the Ordnance Survey 60": 1 mile map, surveyed in 1849 and published in 1850



Not to Scale



Figure 9: Extract from Adshead's Plan of the Township of Manchester, published in 1850



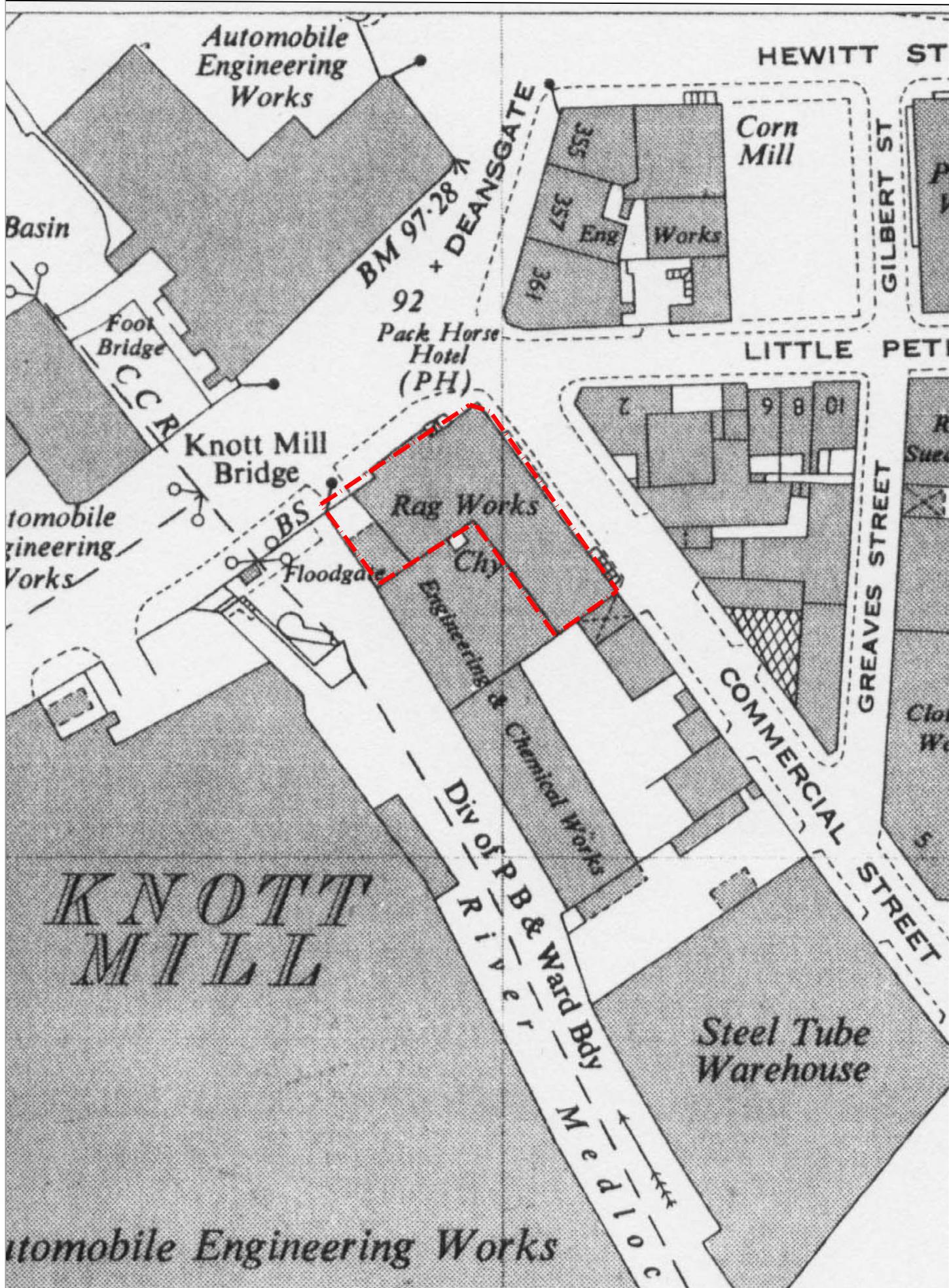
 Study Area



Not to Scale



Figure 10: Extract from the Ordnance Survey 1:2500 Second Edition map, 1896



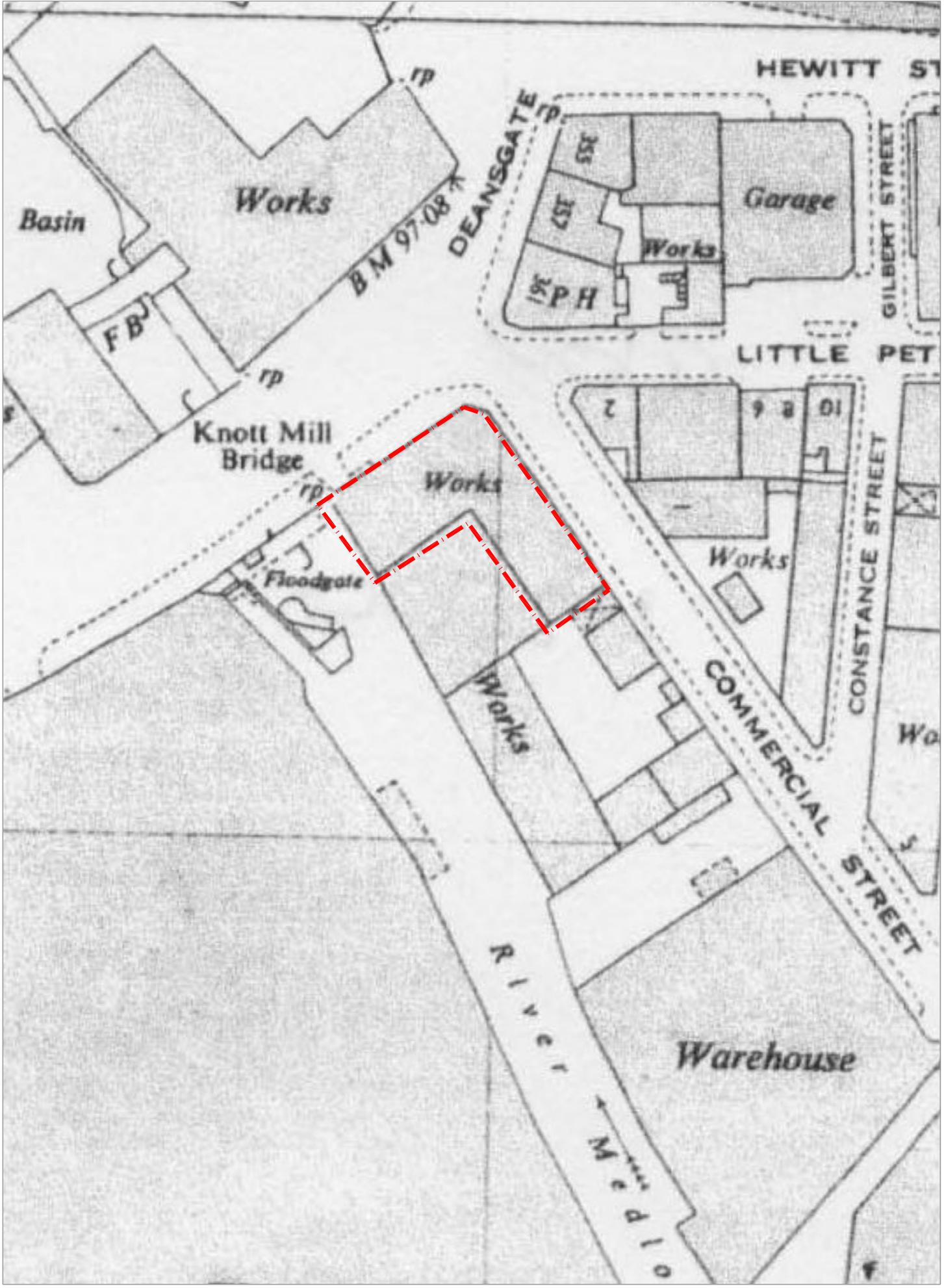
Study Area



Not to Scale



Figure 11: Extract from the Ordnance Survey 1:1250 map, 1948



 Study Area

Not to Scale



Figure 12: Extract from the Ordnance Survey 1:2500 map, 1965



Plate 5: Looking south along the upper floor of the Commercial Street block



Plate 6: Looking north-east across the upper floor of the Commercial Street block



Plate 7: The overflow channel to the west of Brazil Mill



Plate 8: Looking north along the river Medlock, showing sluice mechanism

APPENDIX 1: PROJECT BRIEF

BRIEF FOR ARCHAEOLOGICAL DESK BASED ASSESSMENT FOR BRASIL MILL, KNOTT MILL, CASTLEFIELD, MANCHESTER

Background

OMI Architects are dealing with a proposed office development at Knott Mill, Castlefield, Manchester. Currently the site is occupied by a 1960s building used recently by Black & Decker. Manchester City Planning Department have requested that an archaeological desk top study is submitted with the planning application.

The proposal site has considerable archaeological interest. Given that the current building does not have basements there is a chance that Roman remains could survive. The proposal site lay just to the south-east of the probable Roman ford across the Medlock. Recent excavations at the Beetham Tower site on Deansgate a little to the north showed that Roman buildings lay alongside this road and it is quite possible that the building activity extended down to the riverside. A further possibility is that cemetery remains could occur, as we know that the Roman cemetery was located on the east side of the Roman fort. A quick glance at historic mapping shows no obvious evidence of cellar lights for the proposal site which means that Roman deposits could survive at relatively shallow depths. There have been a number of desk top studies and excavations of Roman sites in Castlefield over the last year or so which can inform the current study.

The other archaeological interest is for the industrial period. The proposal site lies beside a key area for Manchester's industrial development – the Bridgewater Canal terminus of 1765, which is one of the main components of the World Heritage proposal site. Green's map of 1878-94 shows a corn mill lying adjacent to the road approaching Knott Mill Bridge and at right angles to the river Medlock. Further historic research should be undertaken to establish the likely age of this corn mill, which could have medieval antecedents, but by 1831 it had been extended and altered to become Lloyds Cotton Mill, with a range of buildings added down Commercial Street. By the time of the OS 6ft to 1 inch map of 1849, the mill is depicted as 'Brazil Mill, formerly Knott Mill'. By the late 19th century the mill had been converted to the 'Commercial Foundry (Iron)'. Clearly there is a long and complex history to the industrial period premises on this site. It can be anticipated that substantial below ground remains will survive from this period, such as evidence for water power for the corn mill, steam engine and boiler house remains, and the foundry.

An archaeological desk based assessment will be undertaken to identify potential remains of archaeological interest, assess their significance and make recommendations for mitigation with regards to the proposed development scheme. Maps will be used to indicate areas and features of archaeological potential. Further archaeological works may arise from this study, in relation to the development scheme, such as archaeological evaluation and further controlled excavation to expose and record important features, and watching briefs.

The following brief sets out the parameters for the archaeological desk based assessment.

Brief

The assessment will consist of a desk based study and a site inspection.

1) Research for the desk based study will include the following:

- X consultation with the Greater Manchester Sites and Monuments Record held by GMAU (contact Norman Redhead tel: 0161 275 2319)

- X a historic map regression exercise (scaled up to a uniform size)
- X examination of published and unpublished documentary sources held at Greater Manchester County Record Office and Manchester Central Library.

2) Following the desk based study there will be a site inspection to relate the existing site to research findings.

3) A report will be produced presenting the results of the survey. It will include the following sections:

- X summary
- X introduction to project with site location map
- X methodology
- X archaeological and historical background (including scaled up historic map regression)
- X identification of features or areas of known or potential archaeological interest
- X assessment of the impact of the proposed scheme on the historic built environment and potential below ground remains
- X recommended archaeological mitigation
- X sources
- X gazetteer of sites
- X copy of the brief

Other considerations

1) The archaeological curator will be consulted on the draft report, especially the section relating to proposed mitigation strategy.

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

3) Contractors shall comply with the requirements of all relevant Health & Safety legislation.

4) Copies of the report will be sent to the client, Manchester Planning Authority, the Assistant County Archaeologist (GMAU).

Norman Redhead
Assistant County Archaeologist
GMAU
24 January 2005

APPENDIX 2: SELECTIVE TRADES' DIRECTORIES ENTRIES

Year	Entry	Source
1809	Joseph Dunkerley, cotton spinner at Knott Mill Lionel Lloyd listed as cotton spinner at Queen Street, Hulme	Dean and Dean 1809
1811	Joseph Dunkerley, cotton spinner at Knott Mill Lionel Lloyd listed as cotton spinner at Queen Street, Hulme	Dean and Dean 1811
1813	Joseph Dunkerley, cotton spinner at Knott Mill Lionel Lloyd listed as cotton spinner at Queen Street, Hulme	Pigot 1813
1815	Joseph Dunkerley, cotton spinner at Knott Mill	Wardle and Bentham 1814-15
1815	Joseph Dunkerley, cotton spinner at Knott Mill Lionel Lloyd listed as cotton spinner at Queen Street, Hulme	Pigot and Dean 1815
1817	Lionel Lloyd and Company, cotton spinners at Brazil Mill, Knott Mill	Pigot and Dean 1817
1820	Lionel Lloyd and Company, cotton spinners at Brazil Mill, Knott Mill	Pigot and Dean 1819-20
1822	Lionel Lloyd and Company, cotton spinners at Brazil Mill, Knott Mill	Pigot and Dean 1821-21
1825	Lionel Lloyd, cotton spinner at Brazil Mill, Knott Mill	Pigot and Dean 1825
1828	Lionel Lloyd, cotton spinner at Brazil Mill, Knott Mill	Wardle 1828
1830	Lionel Lloyd, cotton spinner at Brazil Mill, Knott Mill	Pigot 1830
1832	Lionel Lloyd, cotton spinner at Brazil Mill, Knott Mill	Pigot 1832
1838	Brazil Mill Company, cotton spinners on Commercial Street	Pigot and Son 1838
1841	Brazil Mill Company, cotton spinners on Commercial Street Lea Birch, cotton merchant, Commercial Street and St Ann's Square	Pigot and Slater 1841
1850	Lea Birch and Company, cotton spinners, merchants and commissioning agents, Brazil Mill	Slater 1850
1865	No. 2 Commercial Street occupied by: Reid and Oliver, engravers Oliver, coal merchants Sykes, umbrella manufacturer P Hall, smallware manufacturer W Ashton & Co, machine makers Dodd, screw bolt maker Berrie, cement manufacturer NJ Amies, smallware manufacturer Anderton, wheelwright	Slater 1865

1886	No. 2 Commercial Street occupied by: J Reid, engraver Thomas Greenhaigh, engraver NJ Amies, smallware manufacturer H & F Morton, wood turners Osborne Brothers, brassfounders	Slater 1886
1890	No. 2 Commercial Street occupied by: J Reid, engraver NJ Amies, smallware manufacturer H & F Morton, wood turners Francis & Company, hat manufacturers Osborne Brothers, brassfounders W Ashton & Co, machine makers J Gibson & Co, soap manufacturers T Ryder & Co, brewers' engineers	Slater 1890
1895	No. 2 Commercial Street occupied by: J Reid, engraver NJ Amies, smallware manufacturer H & F Morton, wood turners Globe Mattress Company, mattress makers A Girling, fustian cutter J Gooch, velvet splasher	Slater 1895
1900	No. 2 Commercial Street occupied by: H & F Morton, wood turners Rulle, upholsterer Rogers, cornice pole maker	Slater 1900
1905	No. 2 Commercial Street occupied by: The British Rug and Mat Manufacturing Co Ltd JY Bibby & Co, carpet and rug makers Manchester Novelty Co H & F Morton, wood turners Manchester Platen Machine Safety Guard Co Ltd	Slater 1905
1911	No. 2 Commercial Street occupied by: J Holberry & Co, manufacturers Knott Mill Manufacturing Co, underclothing manufacturer H & F Morton, wood turners Horsfall & Co, electrical engineers Phin & Mackay, electrotypers	Slater 1911
1925	No. 2 Commercial Street occupied by: JW Schofield, cotton waste dealer H Lawson and Co, cotton waste dealer	Kelly 1925
1945	No. 2 Commercial Street occupied by: A Wainwright Ltd, cleaning cloth manufacturers G Perkins Ltd, sewing machine manufacturers	Kelly 1945