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Archaeological Desk-based Assessment



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1. Summary

Manchester Life Development Company 3 Limited is devising proposals for the development of land bounded by Naval Street to the north, Poland Street to the east, Jersey Street to the south and Radium Street to the west to deliver a residential development (Use Class C3), with ground floor commercial space (Use Class E), within a building of varied height, ranging from 5 storeys to 10 storeys, cycle provision, hard and soft landscaping, access and servicing and other associated works. In order to support the planning application for the scheme, Manchester Life commissioned Salford Archaeology to carry out an archaeological desk-based assessment of the proposed development site. This was intended to establish, as far as possible, the nature and significance of the sub-surface archaeological resource to enable informed recommendations to be made for the future treatment of any surviving remains.

By the late 18th-century, former agricultural land within the development site had been divided into a grid of streets in anticipation of development. A row of workers' houses had already been erected on the north side of Jersey Street.

The Rochdale canal was opened to the south of Jersey Street in 1804, which caused slight alterations to the proposed street layout in the area. The Bengal Street Arm of the Rochdale Canal had been constructed through the centre of the proposed development site in 1808, instead of Heath Street. Coal wharfs were established to the north of the canal arm, whilst further workers' houses were erected on the Jersey Street, including a block of six back-to-back houses and the Cross Keys Inn.

The entire site had been developed by the mid-19th century, including a cotton warp sizing and fustian finishing mill or works, coal wharfs and Phoenix Iron Works. By the late 19th century, the domestic dwellings on Jersey Street had been cleared to allow for the expansion of Phoenix Iron Works. A glassworks was established in the west of the Site in the area that was previously marked as the steam power plant associated with the iron works. The glassworks was operated by Burtles and Tate, whose main manufactory was at Poland Street. In addition, the cotton warp sizing and fustian finishing works had been expanded to the south, comprising a rectangular building aligned east to west that ran parallel to the canal arm.

The configuration of buildings within the site remained mostly unchanged during the first quarter of the 20th century, though an additional iron works had been established on the north side of the canal arm. This consisted mainly of single-storey storage units and a rectangular building that functioned as a smithy. By 1928, the glassworks had been cleared and redeveloped into garages and a van yard. Land at the junction of Radium Street and Naval Street had been redeveloped into garages.

The same arrangement of buildings stood within the proposed development site during the late 20th century. Some of the buildings have been wholly or partly cleared, however, several remnants of 19th- and 20th-century buildings remain extant within the Site, including the west wall of the former Poland Street canal bridge, the east wall of the former Radium Street canal bridge, the Poland Street and Jersey Street façade of the Phoenix Iron Works, and the 1920s garages at Naval Street and Jersey Street.

The potential for the site to contain buried archaeological remains is considered to be high. Remains may include elements of the pre-industrial landscape, 18th-century workers' housing, early 19th-century workers' housing and an inn, the Bengal Canal Arm of the Rochdale Canal, coal wharfs, Phoenix Iron Works and its associated steam power plant, a cotton warp sizing and fustian finishing works, a late 19th-century glass works, an early 20th-century smithy / iron works. Any such remains that do exist within the site are likely to be of low (local) significance or potentially medium (regional) regional significance and, without a programme of mitigation, the scheme could damage or destroy these remains. The coal wharfs are likely to be of limited archaeological interest.

The Site does not contain any heritage assets that are afforded statutory protection, such as Listed Buildings, Scheduled Monuments, or any Registered Parks and Gardens. As stated above, the potential archaeological remains within the Site will likely be of low to medium significance, and, therefore, will not merit preservation *in-situ*.

The exact scope and extent of any further investigation of the proposed development area will be determined by the Greater Manchester Archaeological Advisory Service (GMAAS), in their capacity as archaeological advisor to Manchester City Council, however, it may be anticipated that an archaeological evaluation (consisting of either a strip map and record or trial trenches) may be required to establish the presence or absence of buried archaeological remains and, if present, their extent and significance. In addition, a watching brief may be required over the route of the former canal.

Should significant archaeological remains be encountered during the archaeological evaluation, further excavation may be required to offset the harm of the development to the buried archaeological resource, in line with the guidance provided by the National Planning Policy Framework. The scope and extent of any such further investigation will be determined by the Greater Manchester Archaeological Advisory Service (GMAAS), in their capacity as archaeological advisor to Manchester City Council.

2. Introduction

Manchester Life is the residential property development company supporting the sympathetic and sustainable redevelopment of Ancoats and New Islington into vibrant and inclusive communities.

The multi phased Manchester Life initiative combines the best of public and private sector expertise to plan, finance, develop and manage a portfolio of high-quality homes that will support the emergence of east Manchester. To date, Manchester Life has delivered nearly 1,500 new homes in Ancoats and New Islington.

The Ancoats and New Islington Neighbourhood Development Framework Update (2020) sets out the Council's ambitions for development in this area and the Poland Street Public Realm Strategy (2022) sets out the vision for the public realm in this area.

Manchester Life Development Company 3 Limited have prepared an Application for Full Planning Permission and Demolition within a Conservation Area at Phoenix Ironworks, Ancoats, Manchester (centred NGR 385149, 398764). The desk-based study aimed to identify as far as possible the nature, extent and significance of the sub-surface archaeological resource within the site so as to enable informed recommendations to be made for the future treatment of any surviving remains.

2.1 Site location

The proposed development area lies in the Ancoats area of Manchester (centred on NGR 385149, 398764; herein referred to as the 'Site'). The Site is bounded by Naval Street to the north, Poland Street to the east, Jersey Street to the south and Radium Street to the west.

The Site currently comprises hardstanding and warehouses. The site is located within the Ancoats Conservation Area, and the Howarth Metal Garages fronting Jersey Street and the wall bounding Jersey and Poland Street are of heritage interest.

A historic infilled canal arm, the Bengal Arm was built across the Site in the 19th Century to aid development of the site and the surrounding mills. By 1850 the Site was occupied by the historical Phoenix Iron Works, which comprised a casting shop fronting onto Poland Street, a large central courtyard and a four story office building fronting onto Jersey Street.

The Site is surrounded by a mix of industrial and residential uses. Industrial units are located to the north along Naval Street. To the east of the Site is industrial units and surface car parking. To the south of the Site is Flint Glass Works and Wharf, warehouses converted to offices and residential respectively. To the west of the site is the Grade II* listed Beehive Mill which has been converted into co-working and residential development.



Plate 1 Site Boundary superimposed onto Satellite image of the Site

2.2 Site Context

The Site lies within the Ancoats and Beswick ward. During the late 18th to early 20th century, Ancoats and New Islington was a thriving industrial district of Manchester, until it suffered significant economic decline during the post-war years. The decline of Britain's textile industry saw Ancoats' population decline. By the '90s the area was suffering from high levels of crime and dereliction. From the early 1990's onward the City Council has worked in conjunction with government agencies, businesses, community stakeholders and developer partners to develop and deliver comprehensive regeneration strategies in the area. The 2008 financial crisis halted many previous regenerations and placemaking efforts. With the remaining community vulnerable and a severe housing shortfall in the city, Ancoats was identified as a priority area for intervention on the Eastern edge of the city centre.

Following a series of coordinated interventions and partnerships, Ancoats has now seen its population grow and is noted as one of the most liveable communities in the country. Developers, landlords, cultural venues, local businesses and community groups now contribute towards community cohesion, safety, and the continued improvement of public spaces. Critical infrastructure has been delivered including the completion of Cutting Room

Square in 2010 and Cotton Field Park in 2011. A permanent home for the Manchester Grammar School sponsored New Islington Free School opened in September 2013. New homes have been delivered, facilitating the area's transformation into a neighbourhood of choice. Manchester Life Development Company has delivered nearly 1500 new homes for rent and sale across Ancoats and New Islington, including the refurbishment of the Grade II* Murrays' Mills. Collectively they have won an unprecedented number of awards within two years of opening. Tenants have been identified, and leases managed closely to control opening hours and help create an attractive community for both businesses and residents, and a vibrant daytime and evening economy. To date, Manchester Life have secured two planning permissions for their third phase of development. Eliza Yard (118 residential units with commercial at ground floor) received planning consent in July 2021 with Jersey Wharf (190 residential units with commercial at ground floor) received planning permission in January 2023. In addition to this, the Ancoats Mobility Hub, which will provide the parking for the Manchester Life schemes, received planning consent in July 2021.

The Site is located within the Ancoats Conservation Area. The nearest listed asset to the development Site is the Grade II* Listed Beehive Mill, located approximately 13m to the west of the Site.

The Site is located within Flood Zone 1 which means that there is less than 0.1% chance of flooding per annum. It falls within a Critical Drainage Area as prescribed by the Manchester, Salford and Trafford Strategic Flood Risk Assessment.

The Site is located within the Ancoats and New Islington area. The regeneration and development that has taken place so far has been guided by the Ancoats and New Islington Development Framework which was originally endorsed by Manchester City Council in October 2014.

In July 2020, Manchester City Council endorsed a refreshed Neighbourhood Development Framework which focused on the Poland Street Zone in Ancoats and was prepared to ensure future development preserved the character of the area whilst meeting future housing, sustainability and community needs. The Neighbourhood Development Framework states that the development will be a welcoming residential area with a range and mix of accommodation befitting a neighbourhood of choice within a low car use area with high levels of cycle parking.

In March 2022, an addendum to the Poland Street Zone NDF was endorsed at Manchester City Council's Executive on 16 March 2022. The addendum provides a strategy for the public realm in the area and is intended to guide the design of public realm across the neighbourhood, this is known as the 'Poland Street Zone Public Realm Strategy'.

The Site benefits from its location on the north eastern edge of Manchester City Centre, the principal economic driver for the City Region and a focus for employment, leisure, retail and cultural facilities. In addition, it benefits from excellent connections to public transport. In this regard, the site is located within walking distance of Manchester Piccadilly Station and Victoria Station which provide national and regional rail links, as well as acting as transport interchanges for local rail services and Metrolink services across Greater Manchester. In addition, Shudehill Bus Station and Metrolink Station and Market Street Metrolink station are

within walking distance of the site, providing connectivity to all lines on the Metrolink network and a number of regional bus services.

2.3 Topography and geology

Topographically, the Manchester conurbation as a region lies within an undulating lowland basin, which is bounded by the Pennine uplands to the east and to the north. The region as a whole comprises of the Mersey River valley, whilst the rivers Irwell, Medlock and Irk represent the principal watercourses in Manchester. The Site lies at a height of 50.6m above Ordnance Datum (aOD) and is relatively level.

The solid geology of the Site comprises the mudstone of the Manchester Marls formation, in an area previously dominated by lakes and lagoons. The solid geology is overlain by superficial deposits of Devensian Till, which formed between 116 and 11.8 thousand years ago during the Quaternary Period (British Geological Society, 2021).

2.4 Designations

The Site does not contain any heritage assets that are afforded statutory protection, such as Listed Buildings, Scheduled Monuments, or any Registered Parks and Gardens, however, the Site is located within the Ancoats Conservation Area which is a local designation.

2.4.1 Ancoats Conservation Area Description (DGM):

The streets of Ancoats were laid out during the latter part of the 18th century, with little development taking place other than small houses and shops along Great Ancoats Street and Oldham Road. Survey work for the Rochdale Canal was carried out by James Brindley in 1765. The knowledge that its construction would make the transport of raw materials and finished goods more convenient gave industrialists the confidence to build their cotton mills. The first mills were built in Ancoats as early as 1790. From the opening of the Rochdale Canal in 1804 through to 1912, the development of mills continued on a much larger scale, and enough of these buildings remain to enable the progress of mill design to be appreciated today.

The first single-class housing area in the country was built in 1889 to provide homes for mill workers in Ancoats. This block, called Victoria Square, was the first example of municipal housing in Manchester, which was followed shortly by the development of model housing in adjacent Anita Street (originally known as Sanitary Street).

The substantial economic activity generated by such a concentration of mills was halted by the mid-19th century as mills got much larger and moved to locations on the fringe of Manchester city centre as there simply wasn't enough land in Ancoats. Textile-engineering works emerged as a key local industry. By the late 19th century, Ancoats had emerged as an important focus for the city's glass industry and there were several glassworks that gained national renown. This was coupled with a growth in the ice-cream industry, brought by Italian immigrants. Another new industry to establish itself in Ancoats was newspaper printing. In 1939, the Daily Express newspaper company opened new premises, which were built in the "functional" style, using new curtainwall technology identical to that of the company's buildings in London and Glasgow.

2.4.1.1 Ancoats and its buildings today:

Ancoats, with its concentration of mill buildings, is an important landmark in the history of the Industrial Revolution. Old Mill, which is probably the oldest surviving in Manchester, was built in two phases in 1798 and 1801. It is one of the group of Murray's Mills and was constructed around a courtyard, with a canal basin and tunnel under one of the mills and Redhill Street, connecting it with the Rochdale Canal.

The firm of McConnel and Kennedy, whose group of mills was the largest cotton employer with 1500 workers, claimed to be the first to run spinning mules by steam power. Sedgwick Mill, dating from 1818-1820, is the oldest of the group still standing, and it is believed to be the oldest surviving iron-framed, fireproof factory in Greater Manchester.

Beehive Mill (recently converted into co-working and residential development), completed in 1824, has internal timber construction with rare cast-iron roof trusses, whilst the warehouse part has stone flag floors supported on cast-iron T-beams. The roof is a very early castiron spaceframe structure, unique in the area. These three groups of buildings, together with Brownsfield Mill on the other side of Great Ancoats Street, represent the chronological development of cotton mill architecture from 1800 to the 1920's. Together they constitute the first industrial estate in the world.

Although the area is dominated by the massive mill buildings, it also contains other listed buildings of differing character. The Victoria Square housing, noted earlier, is a five-storey block of flats dating from 1894. Built in red brick with a pitched slate roof and in the form of an enclosed courtyard, it may fairly claim to be one of the most successful local authority housing schemes in Manchester, due in part to its enclosure of shared inner space.

Modern printing technology has meant that the original Daily Express building is not now used for that purpose, although it is still in commercial use. Printing now takes place in new premises to the rear of the original building.

The Crown and Kettle public house on the corner of Oldham Road and Great Ancoats Street, is a late 19th century buff brick, Gothic-style building with stone traceried windows.

These latter buildings, together with the older non-listed buildings in the area, provide a contrast of architectural styles with the with the surviving massive mill buildings. The character / appearance of the area remains largely industrial, therefore any new development must ensure retention of that character through detailing and the use of compatible materials. The maintenance of road surfaces, kerbstones and street lighting, together with vacant site enclosures and "hard and soft" landscaped areas will also be essential.

2.4.2 Designated heritage assets

The Site is located within 250m of 13 statutory Listed Buildings (Table 1). The proposed development will not have a physical impact on these designated heritage assets, and so they are not considered further in this report.

Site	Designation	HER Number	Location (NGR)
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Royal Mill	Grade II*	2042.1.1	SJ 84975 98526
Old Mill and Decker Mill	Grade II* Listed Building	2043.2.0	SJ 8507 9858
Retaining wall on S. side of Redhill Street, W. of Union Street Bridge	Grade II Listed Building	12091.1.0	SJ 8504 9854
New Mill (Murray's Mill)	Grade II* Listed Building	2043.1.2	SJ 8503 9864
Sedgwick Mill	Grade II Listed Building	2120.1.0	SJ 8501 9854 (point)
Victoria Square	Grade II Listed Building	8504.1.0	SJ 8491 9881 (point)
Murray's Mills: Former Warehouse and Offices of Old Mill, Decker Mill, and New Mill	Grade II Listed Building	2043.1.1	SJ 8503 9860 (point)
Paragon Mill	Grade II* Listed Buildings	2042.1.2	SJ 8496 9859 (point)
Waulk Mill (Doubling Mill Fireproof Mill)	Grade II Listed Building	12401.1.0	SJ 85106 98622
Beehive Mill	Grade II* Listed Building	2121.1.0	SJ 8509 9871 (point)
Former Church of St Peter	Grade II Listed Building	8289.1.0	SJ 8495 9867 (point)
Union Street Bridge	Grade II Listed Building	6460.1.0	SJ 8516 9863 (point)
Little Mill	Grade II Listed Building	2043.1.3	SJ 8509 9866 (point)

Table 1 Designations located within the 250m of the Site

3. Method statement

3.1 Introduction

The assessment considers the potential impact of the proposed development upon any buried archaeological remains within the Site, and comprises a desk-based study. The production of the assessment followed the Chartered Institute for Archaeologists (CIfA) standard and guidance for undertaking archaeological desk-based assessments (*Standard and Guidance for Historic Environment Desk-based Assessment*, 2017).

3.2 Research sources

The desk-based assessment made use of the following sources:

- / Published and unpublished cartographic, documentary and photographic sources;
- / The Greater Manchester Historic Environment Record, maintained by the Greater Manchester Archaeological Advisory Service;
- / Manchester Local Archives and the Greater Manchester Record Office in Manchester Central Library;
- / The National Heritage List for England;
- / Salford Archaeology's extensive library of archaeological work carried out in the vicinity of the Site.

The aim of the research was to provide the relevant historical and archaeological background relating to the development of the Site. The available sequence of historical mapping was the principal source of information, as this provides evidence for the development of the Site since the late eighteenth century.

3.3 Site Inspection

The aim of the site inspection was to relate the findings of the desk-based study to the existing land use of the application area, in order to identify any evidence for surviving below-ground remains.

3.4 The document

The following presents the historical and archaeological evidence for the Site. Chapter 5 discusses the previous archaeological investigations that have taken place within the Site. A gazetteer (Chapter 6) is presented of heritage assets and sites of potential archaeological interest identified within the Site and this information, along with a map regression (Figs 3-11), is used to assess the significance of the remains (Chapter 7) and impact of the proposed development (Chapter 8). A mitigation strategy is outlined in Chapter 9, based on the assessment presented in the previous chapters.

3.5 Significance assessment methodology

An accepted methodology for assessing archaeological significance is the Secretary of State's criteria for the scheduling of ancient monuments, outlined in Annex 1 of 'Scheduled Monuments: identifying, protecting, conserving and investigating nationally important

archaeological sites under the Ancient Monuments and Archaeological Areas Act 1979' (DCMS, 2013). These criteria have all been utilised in this assessment and are listed below:

- / Archaeological interest
- / Historical interest
- / Period
- / Rarity
- / Documentation
- / Group value
- / Survival/condition
- / Fragility/vulnerability
- / Diversity
- / Potential

The significance assessment also uses the approach to assessing heritage value contained within '*Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*' issued by the International Council on Monuments and Sites (ICOMOS) in January 2011 (ICOMOS, 2011). This document states that an archaeological asset's significance can be assessed as very high, high, medium, low, negligible or unknown.

3.6 Impact assessment methodology

The impact assessment assesses the potential impact of the proposed development upon the significance of the archaeological resource within the Site. Mitigation is then recommended to reduce the level of impact on the significance of the identified assets.

4. Planning and legislative background

This assessment accords with National, Regional and Local Planning Policies which relate to the historic environment. National planning policies relevant to heritage asset management are contained within the National Planning Policy Framework (NPPF 2021).

4.1 National Planning Policy Framework (NPPF)

The significance of the archaeological resource identified within this report has been assessed as recommended in the revised *National Planning Policy Framework* (Ministry of Housing, Communities & Local Government, 2021). The NPPF sets out the Government's planning policies and outlines the presumption in favour of sustainable development, which is defined by three principles: economic, social and environmental. Of the core planning principles underpinning decision making, conserving heritage assets 'in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations' is one. Section 16 deals specifically with this historic environment (paragraphs 189-208), and states that local planning authorities should consider:

- / the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- / the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;
- / the desirability of new development making a positive contribution to local character and distinctiveness; and
- / opportunities to draw on the contribution made by the historic environment to the character of a place.

Paragraph 194 states that "local planning authorities, when determining applications, should require the applicant to describe the significance of any affected heritage assets, including any contribution made by their setting. 'The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation".

Paragraph 203 states that the effect of a proposal on non-designated heritage assets (designated assets are covered in paragraphs 199-202) should be taken into account in determining a planning application.

Paragraph 205 states that local planning authorities should require developers to record and advance understanding of any heritage assets to be lost, in a manner appropriate to their importance and impact, and to make this evidence publicly accessible.

4.2 Local Development Framework

The NPPF outlines the need for local planning policies to create local plans and frameworks to implement the NPPF at a local level. Manchester City Council adopted a Core Strategy in 2012, which is scheduled until 2027 (Manchester City Council, 2012) . The heritage strategy is outlined in *Objective 6: Environment* and summarises the approach the local authority will take in determining planning applications which may affect the historic environment (Manchester City Council, 2012, p. 164).

Policy EN3 states:

‘Throughout the City, the Council will encourage development that complements and takes advantage of the distinct historic and heritage features of its districts and neighbourhoods, including those of the City Centre.

New developments must be designed so as to support the Council in preserving or, where possible, enhancing the historic environment, the character, setting and accessibility of areas and buildings of acknowledged importance, including scheduled ancient monuments, listed buildings, registered parks and gardens, conservation areas and archaeological remains. Proposals which enable the re-use of heritage assets will be encouraged where they are considered consistent with the significance of the heritage asset.’

Manchester City Council is advised on archaeological matters by the Greater Manchester Archaeological Advisory Service (GMAAS).

5. Historical background

The following section provides a framework to the present study, working chronologically through the periods listed below (Table 2).

British archaeological periods		
Period	Sub-period	Date range
Prehistoric	Palaeolithic	Pre-10,000 BC
	Mesolithic	10,000 – 3500 BC
	Neolithic	3500 – 2300 BC
	Bronze Age	2300 BC – 700 BC
	Iron Age	700 BC – AD 43
Historic	Romano-British	AD 43 – AD 410
	Early Medieval	AD 410 – AD 1066
	Late Medieval	AD 1066 – AD 1540
	Post-medieval	AD 1540 – c 1750
	Industrial Period	c AD1750 – 1914
Modern	Modern	Post-1914

Table 2 Summary of British archaeological periods and date ranges

5.1 Prehistoric period

The current understanding of human activity in the Manchester region during the prehistoric period is poor, although it is reasonable to suggest that several areas in the city centre, such as Castlefield, the area that now contains Manchester Cathedral and Chetham's School, and Ardwick, may have been conducive for late prehistoric settlement on account of the natural topography and the abundance of natural water sources (i.e. rivers) (Gregory, 2007). Evidence of prehistoric activity in the vicinity was yielded from an archaeological excavation that was targeted on a plot of land adjacent to Liverpool Road in Castlefield (Gregory, 2007, p. 181). During the excavation, two Mesolithic flints, a Neolithic/Bronze Age waste flake, and a single fragment of late Bronze Age/Iron Age pottery were recovered (HER 13944.1.0), although none of the finds were in securely stratified deposits.

5.1.1 Archaeological potential

There is no known evidence for prehistoric activity within the Site boundary, and the potential for any such remains to survive from this period is considered to be very low.

5.2 Romano-British period

Archaeological evidence for Romano-British activity in Manchester is focused on the Roman fort of *Mamucium*, which was established on a sandstone bluff within Castlefield (Gregory, 2007). Archaeological excavation has shown that in the late 1st century, the fort comprised a

turf rampart and timber gates, covering an area of c 1.2ha, and was of a size compatible with holding a 480-man infantry unit. The fort was rebuilt to similar dimensions in stone c AD 200 (*ibid*).

During the 2nd century, the fort was developed in association with a substantial extramural settlement, or *vicus* (Grealey, 1974, p. 11). Civilians occupied the extramural settlement, attracted by the security and commercial benefits of the nearby fort. Based on archaeological excavations and the distribution of Roman finds, the limits of this civilian settlement appear to have extended south-eastwards along Chester Road, terminating somewhere in the vicinity of Great Jackson Street, northwards from the fort to approximately Quay Street, westwards along Liverpool Road for c 100m from the north-west corner of the fort, eastwards across Deansgate to the area now occupied by the Beetham Tower. Castlefield Roman Vicus and Area of Roman Manchester lies 2.2 km to the south-west of the Site,.

Roads from the fort linked Manchester with Buxton to the southeast, Chester to the south, Wigan to the north-west, Ribchester to the north, and Castleshaw and York to the north-east. The Roman Road from Manchester to Castleshaw likely followed the course of the present Old Mill Street, which is located approximately 550m to the south of the Site. The settlement was well connected in terms of trade and consequently lasted until the late 3rd century AD. Archaeological potential.

5.2.1 Archaeological potential

There is no known evidence for prehistoric activity within the Site boundary, and the potential for any such remains to survive from this period is considered to be very low.

5.3 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 of 1066. The area around Manchester came under the control of several kingdoms during this period. In AD 620, Edwin occupied Manchester, and it may have been at this time that settlement in the town was established around the cathedral (Farrer & Brownbill, 1911). A gold finger ring (HER 9916.1.0), discovered in antiquity, has been traced to the Castlefield area (c 260m to the north-east of the Site), providing rare physical evidence for human activity in Manchester during this period.

In AD 919, the Anglo-Saxon king Edward the Elder established a fortified base, or burh, at Manchester, which was then part of Viking Northumbria. It has been suggested that the burh lay within the area around the cathedral, which had become a focus for settlement by the late 11th century. The site occupied presently by Chetham's School is thought to have been the site of a castle founded by Manchester's Norman barons. This early settlement at the confluence of the Rivers Irwell and Irk seems to have been bounded on the landward side by Hanging Ditch, whose curving line ran between the two rivers, taking a line that was followed subsequently by Toad Lane, the forerunner of Todd Street and Corporation Street.

Following the Norman Conquest, William I assigned most of the land between the Ribble and Mersey rivers to Roger of Poitou, who retained the manor of Salford demesne (Tupling, 1962), but divided his other newly acquired land into several fiefdoms (Kidd, 1996). The largest of

these was the landholding centred on Manchester, created by the grant of extensive lands in the hundreds of Salford, Leyland and West Derby to Albert Grelley (Tupling, 1962, p. 116).

By the 13th century, the Grelley family had established a manor house at the confluence of the rivers Irwell and Irk and the medieval town grew up around it (Hartwell, et al., 2004, p. 256). It was from this hall that they governed both the manor and the extensive barony. In 1222 Manchester was granted an annual fair, and in 1301 Thomas Grelley was granted the Great Charter of Manchester by Edward I, and thus it became a free borough (*ibid*).

A survey of the medieval layout of the city was undertaken in the 1980s by GMAU, which led to the designation of a zone defined as the Area of Medieval Manchester (Morris, 1983). The survey demonstrated that in addition to the manorial and ecclesiastical heart of the town, streets radiated out from the centre, the nearest of which were Withy Grove, Market Street Lane and High Street (c 300m to the northwest of the Site). The Site likely remained undeveloped and lay c 1km to the south-east of Manchester's medieval core.

The Site is situated within the Ancoats area of Manchester. The name Ancoats is believed to originate from *Elnecot*, and the Old English *ana cots*, meaning 'lonely cottage' (Cooper 2002, 13). The area likely remained rural during the medieval period and is first mentioned in land grants dating back to the 13th century. In 1908 Swindells described it as 'an almost idyllic rural backwater' (Swindells, 1908, pp. 19-26). In 1320 Ancoats was recorded in a survey as forming eight hamlets in the township of Manchester, within the Salford hundred (Harland 1861). These dwellings likely consisted of cottages and farmhouses, which may have been along Ancoats Lane (now Great Ancoats Street), Newton Lane (now Oldham Road) and Butler Lane (Miller, et al., 2007, p. 25), c 500m west of the Site.

5.3.1 Archaeological potential

The Site most likely lay beyond medieval settlement activity and the potential for buried archaeological remains is considered to be very low due to the extensive development that took place in the 18th and 19th centuries.

5.4 Post-medieval period

By 1539, John Leland was able to describe Manchester as the 'finest and busiest town in the whole of Lancashire, with the best buildings and the greatest population' (Chandler, 1993, p. 263), at a time when the textile industries in South Lancashire were beginning to flourish. Manchester emerged as a centre for the textile finishing processes, as woollen cloth was brought in from outlying areas for bleaching and dyeing. Most importantly, however, Manchester expanded its role as a market centre for textiles produced in the towns and hamlets of the surrounding district (Frangopulo, 1964, p. 26).

From the early 17th century, fustians produced in a network of towns with Manchester at their hub were being exported regularly to western and southern Europe, and the town became the principal commercial centre for the region (Hartwell, 2001, pp. 8-9). A flourishing business community developed, which was dominated by a few wealthy merchant manufacturers and fustian-dealing families, notably the Chethams, the Booths, the Wrigleys, and the Byroms. During this period, the Site presumably lay in a predominantly rural area that may have been used for agriculture.

Ancoats likely remained largely rural during the post-medieval period, with the most significant building in the area being Ancoats Hall. The manor of Ancoats was held by the Byrons of Clayton Hall for over four hundred years until they sold it to Oswald Mosely. Oswald Moseley built the timber-framed building at Ancoats Hall in 1596. Ancoats Hall overlooked the River Medlock on the eastern fringe of the area (Miller, et al., 2007, p. 25) and was described by Bruton as 'beautifully situated above the Medlock with lovely views over the green wooded country'. The Mosleys held the manor for the next two centuries until it was bought by mill owner George Murray who altered it into a Victorian brick-built mansion (Rose, et al., 2011, p. 5).

In his tour of the country in the 1720s, Daniel Defoe (Defoe, 1727) noted that Manchester had 'extended in a surprising manner, being almost double to what it was a few years ago', reflecting the further expansion of the textile trade (Hadfield & Biddle, 1970). By the 1790s, Manchester's thriving export market was beginning to displace London as a centre of overseas trade in cotton cloth, reflecting great improvements to the transport network across the North West.

Manchester underwent a rapid expansion during the post-medieval period. The population of Manchester increased from approximately 1800 people in 1563 to just over 3000 people in the year 1642 (Willian, 1980, pp. 38-9). The Hearth Tax Returns of 1664 listed 820 households, which suggests a population of approximately 3690. The population of Manchester roughly doubled between 1563 and 1664, despite an outbreak of plague in 1645 (Phillips & Smith, 1994, p. 7). By the census of 1773, the town's population had dramatically increased even further, with approximately 24,937 people living in the township of Manchester, 23,032 of which were living in the town itself. During the post-medieval period, Manchester changed from what had been a small market centre into the largest town in Lancashire (Nevell, 2003).

5.4.1 Archaeological potential

The Site most lay within an area of post-medieval activity. The potential for buried archaeological remains is considered to be low due to the extensive development that took place in the 18th and 19th centuries.

5.5 Onset of the industrial period

Ancoats retained a semi-rural aspect until the late 18th century, but by 1800 the area had been transformed into an industrial suburb (Miller, et al., 2007). This transformation began in the 1770s when land owned by the Leigh family was sold to Thomas Bound, a builder, who then sold it on to others for development (Little, 2004, p. 31). William Green's *Map of Manchester and Salford*, surveyed between 1787 and 1794 (Fig. 3), shows that development was initially focused on Great Ancoats Street and Oldham Road. The map also depicts the main elements of the existing street plan laid over the former agricultural fields. The principal driving force of development was the national demand for textiles, particularly cotton, and the introduction of steam-powered spinning mills (Williams & and Farnie, 1992, p. 3).

The earliest textile factories consisted of water-powered mills erected along Shooter's Brook to the south of Union (now Redhill) Street. There is some evidence to suggest, for instance, that New Islington Mill and Salvin's Factory originated in the late 1780s as water-powered

textile mills situated on the bank of Shooter's Brook (Miller, et al., 2007). New Islington Mill was 285m to the south of the Site. However, Shooter's Brook was a small watercourse, and in seeking a solution to the inadequate power supplied to their waterwheels from the brook, some manufacturers experimented with steam power. Notably, John Kennedy is reputed to have first applied steam power to one of his spinning mules whilst renting space at Salvin's Factory in 1793 (Lee, 1972, p. 9).

The invention of steam engines, and the demand for textiles, caused an explosion of factory building in Ancoats (Little, 2004, p. 31). Development was accelerated by the construction of the Rochdale and Ashton under Lyne canals, which offered cheap and reliable transport for goods and materials (Miller, et al., 2007). The Ashton Canal was proposed in 1791 and would link the factories in Manchester to the collieries in the Ashton and Oldham area. An Act of Parliament was passed in 1792, and construction commenced immediately under the direction of Edward Banks (Hadfield & Biddle, 1970, p. 19). The Ashton Canal opened in 1799. Many of the mills in Ancoats depended on the developing network of short branch canals for transport, coal and water for their steam-power plants.

5.5.1 Rochdale Canal

The Rochdale Canal was authorised by an Act of Parliament in 1794 and was linked to the Ashton Canal at Piccadilly in 1800. The canal linked Manchester with the ports of the East Coast via the rivers Aire and Trent and to Liverpool via the Ashton to Bridgewater Canal. These links made Piccadilly Basin a focus for trans-shipment goods and a key location in the canal network (Miller, et al., 2007).

The first design for the Rochdale Canal Basin was proposed in 1796, and revised in 1804, although neither of these proposed schemes were carried out. The Rochdale Canal Company's first warehouse was eventually constructed in 1806, at the end of one of the canal arms to the east of Dale Street and survives today as Dale Warehouse. Dale Street effectively divided the basin into two with a smaller, western section bounded by Lees Street, London Road (later Piccadilly) and Ducie Street. The eastern section was bounded by Back China Lane, Upper Stanley Street, Leech Street and Ducie Street. A plan drawn up in 1810 closely resembles the final layout, and proposed 23 wharf plots, with two general wharves and the four buildings that had been completed by that stage (Maw, et al., 2009); Plate 2 and Plate 3).

After the development of the Dale Warehouse, the company's offices were constructed immediately to the south-east in 1807, with two sheds located between the two arms. This range of buildings formed one of the two general wharfs for the Rochdale Canal Company, and was completed by 1810. However, development of the rest of the basin was slow, only being progressed during periods of prosperity. The next major development was not until 1817, when existing warehouses were expanded. Other improvements included new surfacing of the wharfs and installing cranes for loading and unloading goods (*op cit*, 22-3).

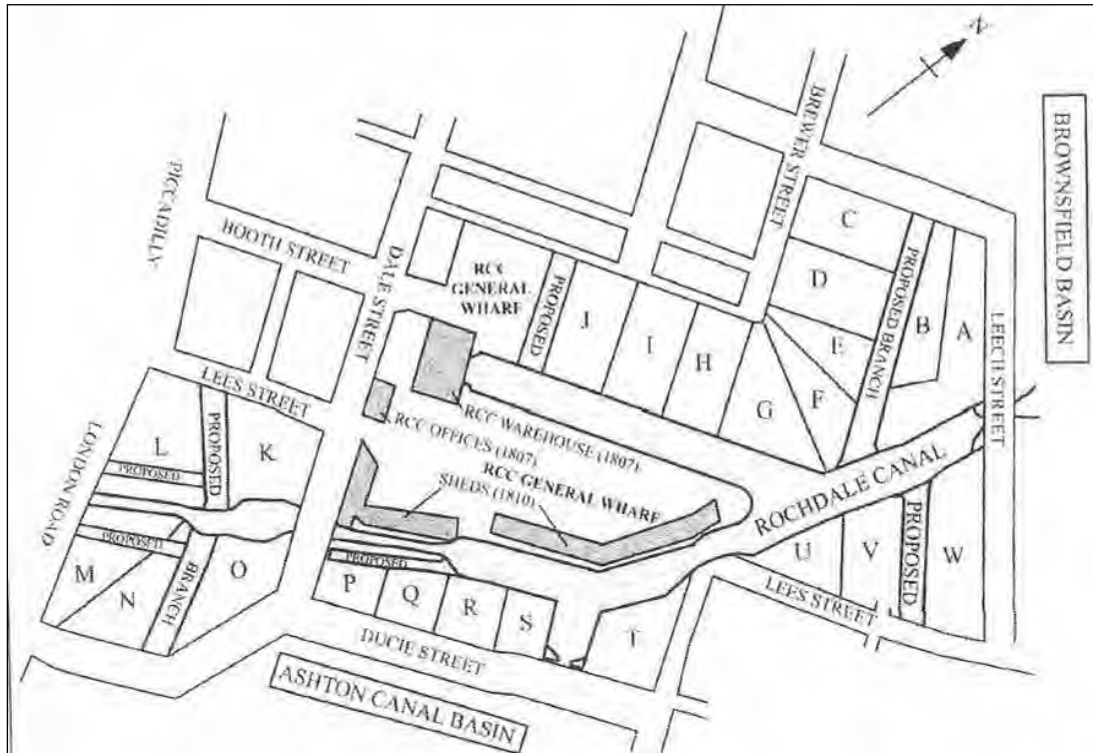


Plate 2 Plan of the Rochdale Canal Basin drawn in 1810

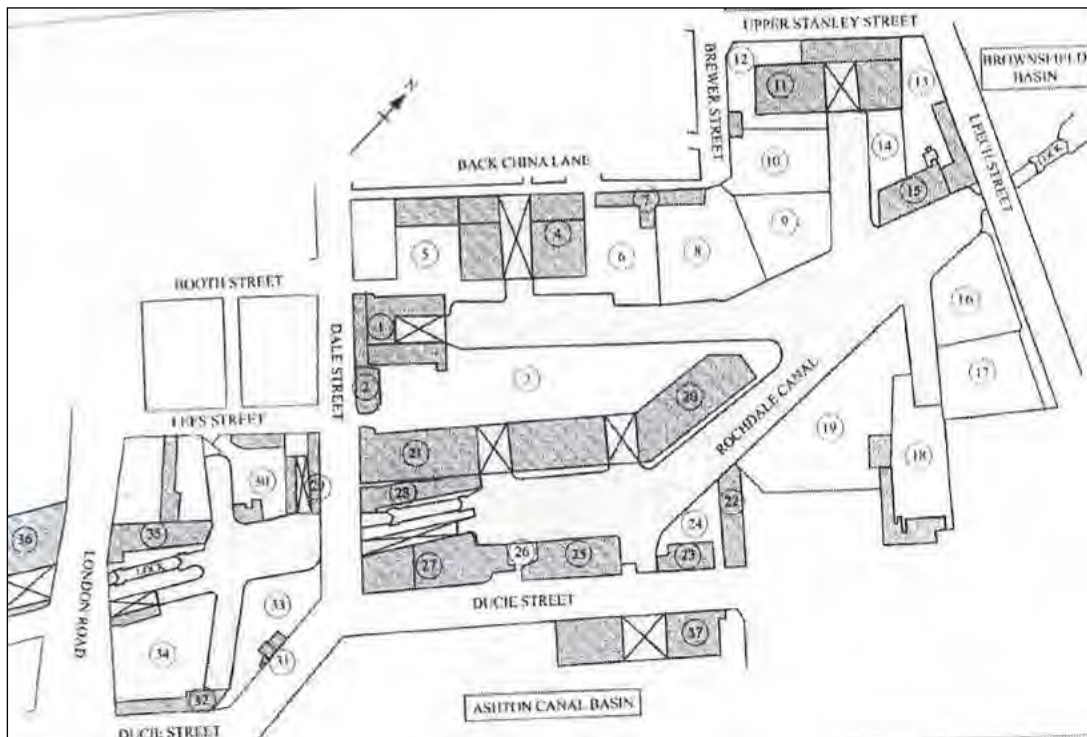


Plate 3 Plan of the Rochdale Canal Basin drawn in 1855. Select Key: 1 – Dale Warehouse (1807); 4 – Merchant's Warehouse (1825); 11 – Jackson's Warehouse; 18 – Stone Wharf; 19 – Stone Wharf & Sand Shed; 22 – Stables; 23 – Stables; 24 – Stable Yard

New warehousing was built in 1822, replacing the western warehouse of 1810, and was one of the first to employ iron in its structure. Over the next few years, the Rochdale Canal Company made several minor improvements, including renovating warehouse space as well as constructing the Lees Street Branch of the basin on the western edge. As part of traffic regulation, the Rochdale Canal Company ordered the construction of a stone gateway between the offices and the 'new' warehouse, which still stands today (*op cit*, 23).

Expansion into the north-eastern part of the basin was carried out in 1825, with the cutting of the Upper Stanley Street canal arm, as well as one further west, near Dale Warehouse, towards Back China Street. Growth stagnated in 1826 and, in 1829, the Merchant's Warehouse was destroyed by fire, leading the Rochdale Canal Company to implement new safety regulations. Trade picked up again during the 1830s, and warehousing was added at the south-west corner of Ducie and Dale Street, as well as around Upper Stanley Street. Jackson's Warehouse was completed in 1836, named after a carrier company that operated between Liverpool and Hull (*op cit*, 23-5).

Railway Competition: the introduction of a viable railway in the 1820s brought an alternative, and faster, means of transporting bulk goods. The advantages of this new form of transportation were recognised instantly, leading to the rapid expansion of the railway network. The Ashton Canal was purchased by the Manchester, Sheffield & Lincolnshire Railway in 1842, and was operated as a single concern together with the Peak Forest and Macclesfield canals. The Rochdale Canal Company resisted take-over bids from various railway companies initially but, in 1855, it leased the canal to a consortium of railway companies. The canal remained profitable into the twentieth century, but was in sharp decline by the end of the First World War. The final boat journey across the Pennines on the Rochdale Canal was made in 1937 and, in 1952, the canal was closed to navigation, apart from the short section between Castlefield and the Ashton Canal junction at Piccadilly (Hadfield & Biddle, 1970).

5.5.2 Overview of Manchester's Textile Industry

By the 1780s, the national demand for textiles, particularly cotton, had begun to rise, resulting in a dramatic increase in mill building that transformed Manchester into a centre of the factory-based cotton manufacturing industry of international repute (Baines, 1835). The ebb and flow of business confidence powerfully influenced development, which was concentrated into short and intense bursts of investment (Williams & and Farnie, 1992, p. 19). The high price of land influenced the location of fresh industrial ventures, and thus the new steam-powered mule mills were built on the outskirts of the established nucleus of Manchester. The first of these was established in Ancoats during the 1780s. A commercial boom in 1800-02 saw the number of cotton-spinning firms in the township of Manchester double from 51 in 1799 to 111 in 1802, setting Manchester on its path to becoming the most highly concentrated centre of cotton spinning in the world (*ibid*).

In broad terms, fluctuations in the cotton market during the 1820s brought 'boom and bust' conditions for Manchester's manufacturers, although a report in the *Manchester Mercury* in 1827 claimed that 'the market for manufactured goods was the briskest which there has been for a very long time'. This favourable economic situation persisted until 1836, and led to numerous new textile mills being established around the fringes of the Manchester. However, a serious depression of trade in 1837 resulted in the loss of inefficient firms. Boom conditions

reigned between 1848 and 1853, and the number of cotton mills in Manchester reached a peak of 108 at the close of 1853 (Williams & Farnie, 1992, p. 21). It was at this time that Manchester gained its popular designation as 'Cottonopolis' in recognition that the city represented the nucleus of the whole cotton industry, harbouring representatives of all its component branches and ancillary trades.

The number of mills in Manchester declined gradually during the second half of the 19th century, and was surpassed by Bolton as the leading centre for cotton spinning in the 1850s. This reflected the continuing inflation of land values in Manchester in the face of increased competition for development plots, which presented significant issues to individual mill owners that needed to expand their factory premises. Some old, established firms in the city centre relocated their business to the suburbs for the same reason, a notable example being Henry Houldsworth, who moved from his large mill complex on Newton Street in Manchester to Reddish, where he established a 'state of the art' spinning mill in 1865.

By the early 1880s, the number of cotton spindles operating in the city was in the process of absolute decline, exacerbated by the 'Great Depression' of 1873–96. This had a significant impact on many cotton-spinning firms. Some of Manchester's largest firms, such as McConnel & Kennedy (HER 2042.1.0) and A & G Murray in Ancoats (HER 2043.1.0), specialised in the spinning of ultra-fine yarn, a branch of the industry that sustained less impact from the trade depression, whilst other firms were afforded some protection through diversification into the weaving and finishing branches.

Apart from textile mills, numerous other industries became established in the Ancoats area, including copperas works, iron foundries, steel works, sizing works, wire works, hat manufactories, and machine works, as shown on contemporary maps of the area. Manchester also emerged as a major glass-making district, centred largely in the Ancoats area.

5.5.3 Development of Glass

During the medieval period, the traditional centre of glassmaking was the Weald of Sussex and Surrey, where the densely forested areas had a ready supply of wood to fuel the furnaces and bracken as a source of potash. Simple furnaces and impurities in the potash meant that the glass was of poor quality, and production was on a small scale (Oxford Archaeology North, 2004, p. 11). Improvements in glassmaking began in the late 16th century when French glassmakers migrated to England.

King James I banned glassmakers from using wood in their furnaces in 1615, forcing glass workers to adapt their furnaces for coal. One key change was that the glass melting pots needed to be closer to the heat source, as coal burns with a shorter flame and requires much more air. An important feature of the coal-fired furnace was the installation of grates made from iron bars. The use of coal also necessitated modifications to facilitate the efficient venting of sulphur produced from burning coal, resulting in the English glass cone furnace. Glass cones were designed to remove smoke and soot, in addition to increasing the size of glass furnaces. The structure comprised an open-ended cone around and over the furnace, which increased the draught through the grate whilst maintaining a steady working temperature around the furnace (Parkin, 2000, p. 2). After its introduction in the late 17th century, the cone furnace became widely recognised as a classic symbol of the English glass-making industry.

After wood was banned, glassmaking shifted away from the traditional forest centres to areas where there was an abundance of coal. As a result, Tyneside, South Lancashire and South Yorkshire developed into important glass production centres.

Although Britain was an important glass exporter during the 17th century, the finest colourless glass was produced in Venice. In 1676, George Ravenscroft succeeded in developing good quality clear lead glass, also known as flint glass, in England. Ravenscroft patented his new technique, which introduced lead in addition to potash as a flux. Upon the expiry of Ravenscroft's patent in 1681, the production of lead glass was taken up by numerous glassmakers. A document dating to 1696 listed 27 out of 88 glasshouses were producing 'flint glass' (Vose, 1980, pp. 198-9).

The introduction of plate glass was a major advance in the glass-making industry. The process allowed glass to be cast into thick plates and then flattened by heavy rollers. The glass was finished by grinding and polishing. English plate glass was first manufactured by a company established in 1773 at Ravenhead, near St Helens. Specialist glassworkers were hired from France, but by the mid-19th century, 'the great majority of persons employed are Englishmen' (op cit, 90). Redding also claimed that English glass of the 19th century was superior to that of either the French or Venetian artisans as a result of 'the application of chemical and mechanical science to the improvement of several processes', but noted that 'great jealousy is manifested by the proprietors in keeping secret the details of their processes' (*ibid*).

The next improvement in glassmaking was the press-moulding technique, developed in America in the 1820s. Press-moulding was established in England in the 1830s, initially in the West Midlands, and eventually became a large industry. The first press-moulded glass known to have been produced in Manchester has been dated to 1848 (5.5.3.1 below), although it was not produced widely until the 1860s, coinciding with the introduction of tank furnaces and regenerative gas furnaces at the Pilkington glassworks in St Helens. The new German technology was developed by the Siemens brothers (Krupa & Heawood, 2002), and these new methods began to replace the old glass cones and pots.

In Manchester, the glass industry, however, does not appear to have taken advantage of the new technology, and glass manufacture continued to use traditional crucibles, although the results of the archaeological investigation at the Percival, Vickers & Co Glass Works implies that considerable modifications were made to the traditional cones which housed the furnaces (Oxford Archaeology North, 2004).

Few details are available regarding the improvements made to glass furnaces during the 19th century, reflecting that 'glassmaking was a closely guarded secret and little was recorded in the period 1826 to 1896' (Parkin, 2000, p. 2). However, it is generally accepted that whilst the round reverberatory furnaces of the early 19th century contained two or four crucibles, the period 1835-50 saw enlargements to accommodate eight or ten crucibles, each with a capacity of up to five hundredweight of molten glass (op cit, 14).

5.5.3.1 Glass Manufacturing in Lancashire

Entries in the parish registers of Stockport and Ashton-under-Lyne for the years 1605-53 are the earliest reference to glassmaking in the Manchester area (Vose, 1980, p. 146). The first coal-fired glasshouse in the region to have been excavated archaeologically was at Haughton

Green, near Denton, which was in production between 1636 and 1643 (Vose, 1994). Green, blue and black domestic glass, including decorated vessels, bottles and window glass were produced at the glasshouse. References to other 17th-century glassworks appear in a list of glasshouses in England and Wales compiled at the end of the century (Houghton, 1696), which refers to two works in Lancashire, one near Warrington, erected in c 1650 (Harris, 1968), and one at Sutton that was established c 1698.

The region's glass industry expanded during the 18th century, with works opening at Prescott in 1719, two works were established in Liverpool (Ashmore 1982, 14), a bottle works was opened at Thatto Heath, near St Helens, and the products of a Salford glasshouse were advertised in local papers in 1759-60 (Ashmore, 1969, p. 124). In 1785, Imison and King opened a glassworks in Newton Heath for the manufacture of 'all sorts of glass wares', and references to the Manchester firm of Atherton and Whalley, cut and engraved glass manufacturers, date back to 1795 (Dodsworth, 1980, p. 64).

The first well-documented large-scale glasshouse in Lancashire was established at Ravenhead, St Helens, in 1773. St Helens had become established as the main centre of plate-glass manufacture in the country by the 1860s, reflecting the local availability of raw materials such as coal, alkalis from the chemical works, and good supplies of suitable sand (Krupa & Heawood, 2002). Manchester, however, also emerged as a major glass-manufacturing centre; the industry was well enough established by 1821 for glassblowers to take part in the processions which marked the coronation of George IV (Dodsworth, 1980, p. 64), and by 1872 Manchester was the largest employer of glassmakers in England (Yates, 1987, p. 29).

An important group of Manchester's 19th-century glassworks were established within the Oldham Road and Ancoats area, although another concentration of works was also established in Hulme. Most of the glassworks in Ancoats were established by Warrington glass workers, who had moved to Ancoats to set up their businesses in the 1820s. The earliest glassworks in Ancoats, established in 1827, was Maginnis Molineaux and Co, which became the Molineaux Webb Ltd Co, Manchester Flint Glass Works (HER 12336.1.0). In 1833-4, Jackson, Woolfall and Percival established the Manchester Glass Bottle Works (HER 12428.1.0) at no. 6, Prussia Street, Ancoats. In 1844, however, Thomas Percival, the son of one of the partners in the Manchester Glass Bottle Works (HER 12428.1.0) concern, established his own manufactory on nearby Jersey Street (HER 6477.1.0; 12432.1.0), after spending several years as the manager of the Molineaux Webb works (Children's Employment Commission 1843).

Between 1855 and 1865, the number of glassworks in Manchester increased four-fold. Significant glass-making firms that were established in Ancoats during this period included Burtles Tate Ltd (1858) at the Poland Street works (HER 12429.1; located c 60m to the north-east of the Site), Thomas Kidd and Co (1868) at the Holt Town Glass Works, Ker Webb and Co (1868) at the Prussia Street Glass Works (HER 12430.1.0), the Ancoats Machine Glass Works on Pollard Street, and the Phoenix Glass Works on Collyhurst Street. The prosperity of the trade during these years reflected a shift from free-blown luxury items to the mass-production market, influenced by a growing demand for pressed glass.

Manchester became a major centre for the production of press-moulded glass in the third quarter of the 19th century, second only to Newcastle in terms of the quality and quantity of pressed glass that was manufactured (Oxford Archaeology North, 2004, p. 14). The first Manchester firm to produce pressed glass is thought to have been Molineaux Webb, who were manufacturing such wares as early as 1848, although they did not begin to register designs regularly until the 1860s (Dodsworth, 1980).

During the 1880s and 1890s, many of the Manchester glassworks began to close, possibly as a result of the great depression in trade, but also likely due to cheaper imports and failure to adopt new technology (Yates, 1987, p. 37). The Ordnance Survey map of 1893 (Fig. 7), however, shows that four glassworks were still in operation within the Ancoats area. Despite the depression, Burtles and Tate, who operated from the Poland Street Glass Works (established in 1858; Lloyd's List, 29th January 1884) were able to expand their enterprise, which included opening a glassworks on German Street within the Site (HER 12431.1.0). The German Street glassworks operated from 1887 to 1924 and was seemingly established within an already existing building that was part of the Phoenix Ironworks. It is currently uncertain whether primary manufacture or secondary finishing was carried out at this site. The site was small, approximately covering 25m by 30m, with two buildings arranged in an L-shape (*ibid*). There is no map evidence which shows a kiln chimney (Fig 6).

Very few glassworks survived into the 20th century, especially after the Great War. A detailed survey of Manchester's industries undertaken during the 1920s, makes no reference to glass manufacture in the city (Clay & Brady, 1929, p. 129). However, the Ordnance Survey map of 1922 (Fig. 8) annotated the flint glassworks on Poland Street, indicating that it may have still been in production. Slater's trade directory of 1909 lists Burtles and Tate & Co as glass manufacturers at the address (Slater, 1911, p. 474). The Poland and German Street glassworks are believed to have operated up until 1924 when they were taken over by Butterworths (HER 12429.1.0; 12431.1.0)

5.6 Development of the Site

The development of the Site can be traced reasonably well from the sequence of available historic mapping. Several cartographers began to map Manchester and its suburbs during the second half of the 18th century. One of the earliest accurate maps that captures the Site is William Green's plan of 1787-94 (Plate 4; Fig. 3). Green's map (Plate 4; Fig. 3) shows that the Site lay within a semi-rural part of Manchester, though the former fields had been carved up into a grid of streets in anticipation of development. Remnants of relict soil and a field boundary were excavated at Silk Street in 2008, c 100m north-west of the Site (EGM 16146.1.0). The relict soil and field boundary contained 17th- and 18th-century pottery, including a clay pipe bowl that dated to 1640-80 (HER 16146.1.0).

The Site was bounded by Elizabeth Street (currently Naval Street) to the north, Poland Street to the east, Elliott Street to the south (currently Jersey Street) and German Street to the west (currently Radium Street). The proposed line of an additional street had been laid horizontally, through the centre of the Site and was provisionally named Heath Street.

Some buildings had already been erected on the proposed streets, including a row of buildings on Elliot Street (renamed Jersey Street) and a detached property at the junction of Elliot Street

and German Street. The detached building on German Street was likely the Cross Keys public house / no. 97 Jersey Street (HER 6472.1.0) and the row of buildings likely represented workers' houses (HER 16147.1.0). The Cross Keys public house / no. 97 Jersey Street (HER 6472.1.0) lies beyond the Site boundary and is currently extant.

Scholes trade directory of 1794 listed several semi-skilled and skilled craftspeople as living in the Ancoats area, such as John Burrows, a blacksmith (Scholes, 1794, p. 24), John Cottingham, a book-keeper (Scholes, 1794, p. 34), William Heys, a plasterer (Scholes, 1794, p. 62), Phillip Phillips, a shopkeeper (Scholes, 1794, p. 103), William Ratcliffe, a bread baker (Scholes, 1794, p. 107), and William Warrington, a shoemaker (Scholes, 1794, p. 141).



Plate 4 Extract from Green's map of 1787-94, showing area to the east of the Site

The next available map that captures the Site is Johnson's map of 1819 (Plate 5). Johnson's map shows a similar configuration of buildings within the Site, however, the vacant plot of land between the Cross Keys Public House and the workers' houses on Jersey Street had been infilled by further housing. The main development in the area was the construction of the Bengal Arm of the Rochdale Canal (HER 16148.1.0), which ran through the centre of the Site, broadly correlating with the former proposed line of Heath Street. The branch of the canal had been constructed in 1808 and adjoined the Prussia Street Arm of the canal (HER 6476.1.0) to the east. The Prussia Street Arm of the canal was constructed slightly earlier, between 1805 and 1808, and lay beyond the Site boundary. Several 19th-century former canal bridges are still visible within the current street layout, including the west wall of the former Poland Street

Bridge (HER 6478.1.0) and the east wall of the former Radium Street Bridge (HER 6461.1.0), which are both within the Site and survive as standing structures.

Several vacant plots of land on either side of the canal were captured on Johnson's map, though these likely functioned as coal yards and wharfs, built to supply the surrounding steam-powered mills (Plate 5). An entry in the 'Manchester Directory' of 1811 refers to a coal yard operated by Edward Stelfox, a coal merchant at no. 8 German Street. Evidence from subsequent directories suggests that the coal yard was at the bottom of German Street, adjacent to the canal bridge and arm. The plots of land that had been developed likely consisted of a mixture of domestic, retail, commercial and industrial buildings. Pigot and Dean listed Thomas Andrew as a coal dealer at no. 7 German Street, canal wharf (Pigot & Dean, 1821, p. 3 and 211). Shopkeepers, weavers, butchers, smiths and spinners resided along Jersey Street (Pigot & Dean, 1821).

In the late 18th century, the area remained semi-rural and sparsely populated with its residents being a mixture of businessmen, tradespeople and even gentlemen. By the 1820s, there had been a demographic shift. An article published in *The Times* in 1819 stated that Ancoats had been 'created by the success of the cotton trade, and swarms with inhabitants, who all share its vicissitudes. It is occupied chiefly by spinners, weavers, and Irish of the lowest description, and may be called the St Giles' of Manchester' (*The Times*, 24th August 1819). The rate books for the surrounding streets list several Irish surnames by the 1820s.



Plate 5 Extract from Johnson's map of 1818-9, showing the approximate Site boundary

Banks and Co's *Plan of Manchester and Salford*, published in 1831 is the next available map that captures the Site and the first to show the individual buildings in detail (Plate 6; Fig. 4). The footprint of the late 18th-century properties (HER 16147.1.0) is shown on the map, with a larger building erected at the east end of the row, later known as the Cross Keys Inn (Plate 7).

A second row of workers' housing had been erected to the east (HER 16149.1.0). These had a similar footprint to the 18th-century houses to the west, except for a block of six back-to-backs at the west end of the row.

Pigot and Slater's trade directory of 1841 provides an insight into some of the occupants within the study area. The trade directory recorded John Goodier as the victualler at the Cross Keys at no. 87 Jersey Street (Pigot & Slater, 1841, p. 106). Thomas Andrews continued to deal coal at German Street in 1841 (Pigot & Slater, 1841, p. 21). George Browne was also listed as a coal dealer on German Street (Pigot & Slater, 1841, p. 51).

The census returns of 1841 provide an insight into the social history of the Site. None of the street numbers were recorded. John Goodier, a publican, was likely the landlord of the Cross Keys Inn. John lived with seven people, who mostly had different surnames to one another. The adjacent census entries were similar, suggesting that the properties were multiple occupancy. Occupations listed included sawyers, winders, weaver, piecer, greengrocer, brass foundry worker, mechanic, joiners, an agricultural labourer, porters and a mason (Census Returns of 1841, Jersey Street, Manchester).



Plate 6 Extract from Bancks' and Co's map of 1831, showing the Site boundary

The Ordnance Survey map of 1851 (Plate 7; Fig. 5) is the first accurate plan that details the Site. The same buildings are captured along the north side of Jersey Street. External

staircases and / or pavement lights are depicted on the Ordnance Survey map, indicating that the houses may have contained cellars. In addition, stone window lintels are visible at pavement-level at no. 97 Jersey Street (HER 6472.1.0) that currently stands immediately to the west of the Site boundary, indicating that the contemporary structure contained a cellar. The plot of six back-to-back (see Plate 6) dwellings on Jersey Street had been converted into through houses by 1851.

By the mid-19th century, the entire Site had been developed. The Ordnance Survey map of 1851 (Plate 7; Fig. 5) shows that '*Phoenix Works (iron and brass)*' (HER 6473.1.0) had been erected in the plot of land between the Bengal Arm of the Rochdale Canal and the houses on Jersey Street. The HER entry suggest that the iron works was in existence by at least 1841. The 1851 map clearly shows the footprint of the casting shop at the east end of the works and the factory's steam power plant (HER 6473.1.1) at the west end of the factory, which included a cistern, engine house, boiler and chimney. The size and configuration of the engine house are consistent with a vertical beam engine (HER 6473.1.1). Coal wharfs and a '*cotton warp sizing and fustian finishing works*' (HER 16151.1.0) were established on the north side of the Bengal Arm and Naval Street (Plate 7; Fig. 5). The mill's steam power plant is not clearly marked on the mid-19th-century maps (Plate 7 and Plate 8).

Adshead's map of 1851 (Plate 8) shows a similar configuration of buildings within the Site. The colour-coded plan marks domestic dwellings in light grey, whilst places of business and warehouses are hatched with black horizontal lines. Public houses, inns and hotels are coloured pink, and mills and factories are orange. The plan suggests that the owners / managers of the coal wharfs likely lived on-site. In total, two properties along Jersey Street were places of business. In addition, the plan suggests that the small mill in the north of the Site was operated by J. Thornton, and Phoenix works was ran by J. Eloë & Co (Plate 8).

Slater's trade directory of 1850 provides an insight into the social history of the Site. John Eloë and Co operated the Phoenix Iron Works, and were also listed as a machine makers (Slater, 1850, p. 12 and 56). The trade directory indicates that Richard Hardman, a beer retailer resided at no 95 Jersey Street. The Cross Keys was at no. 99 Jersey Street and was ran by Charles Chouler. Andrew Knowles and Son were listed under '*coal merchants, owners and dealers*' in Slater's trade directory and operated several sites across Manchester and Salford, including a coal yard at Elizabeth Street, which may have been within the Site (Slater, 1850, p. 21).

The 1851 census returns for Jersey Street suggests that many of the residents were employed in the textile industries as weavers, frame tenter (cotton), cotton winder, piecers, cotton packer and overlookers. Other people worked as joiners, railway porters, mangle makers, teachers, tin plate workers, iron moulders, an iron blaster. Most of the residents were either born in Ireland, Manchester, Salford (or the surrounding towns). Many families housed lodgers to subsidise their income. In addition, no's 67, 71, 77, 87 to 105 Jersey Street were multiple occupancy, potentially suggesting that the cellars were inhabited as separate dwellings. No. 95 Jersey Street functioned as a lodging house. The residents included a family of five, who took in two lodgers and a second family of five, who took in 27 lodgers, totalling 39 inhabitants (Census Returns of 1851, Jersey Street, Manchester).



Plate 7 Extract from the Ordnance Survey map of 1851, showing the Site boundary

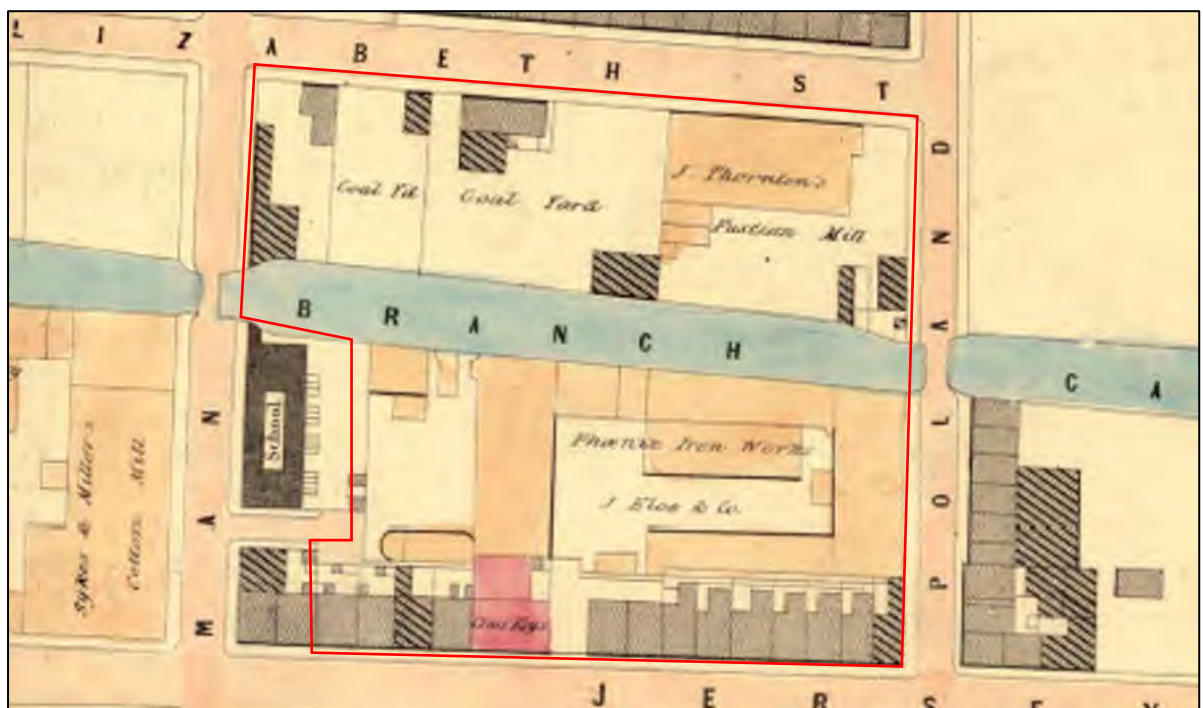


Plate 8 Extract from Adshead's map of 1851, showing the Site

The Ordnance Survey map of 1891 (Plate 9; Fig. 6) shows that all the houses had been demolished and that Phoenix Iron Works (HER 6473.1.0) had been expanded over the former footprint of the dwellings in the east of the Site. The late 19th-century walls of the former iron works currently survive along the Jersey Street and Poland Street frontages. In addition, the 'cotton warp sizing and fustian finishing works' marked on the 1851 map (Plate 7) had seemingly been converted into an iron works and engineering works by the 1890s. The conversion of the site necessitated the erection of a large building along the north bank of the canal arm (Bengal Street arm of the Rochdale Canal, HER 16148.1.0). This building contained a chimney, marked on the Ordnance Survey map of 1891 (Plate 9; Fig. 6), suggesting that it formed part of the processing/manufacturing area. Slater's trade directory of 1895 suggests that this building was occupied by Guest and Brookes, machine makers (Slater, 1895, p. 317). In addition, the canal bridges on Radium Street and Poland Street appear to have been widened.

A glassworks (HER 12431.1.0) had been established at the west end of the iron works, in broadly the same area as the former steam power plant (HER 6473.1.1). As noted above, the German Street Glass Works was operated by Burtles and Tate, who also ran the Poland Street Glass Works (section 5.5.3.1). The German Street Glass Works operated from 1887 to 1924. It is uncertain whether primary manufacture or secondary finishing was carried out at this site. The site was small, approximately covering 25m by 30m, with two buildings arranged in an L-shape (*ibid*). There is no map evidence which shows a kiln chimney. Burtles and Tait were fined '20s and costs in two cases of employing young persons against the provision of the Act' at the German-street, Manchester (Manchester Courier, 17th March 1888).

Glass manufacturing was an important industry within the Ancoats area and the principal glass manufacturers in Manchester are listed in Slater's trade directory of 1877, including a new glassworks, occupied by Andrew Flint and Co, flint glass manufacturers at Flint Glass Works, Prussia Street, Oldham Road (Slater 1877, 300) (HER 12430.1.0). Percival, Vickers & Co Ltd operated the glass manufactory off Jersey Street until c 1914, which was shown on the 1891 map as British and Foreign Flint Glass Works (OA North 2004; HER 12432.1.0). Burtles and Tate operated the Poland Street Glass Works, whilst Butterworth and Co ran a factory in Newton Heath (Slater, 1877, p. 105).

Slater's trade directory of 1895 listed two glass manufacturers along German Street in 1895, including 'Cannington, Shaw and Co Ltd (manufacturers of glass bottles and carboys of all descriptions for home and export), German Street, Oldham Road'. In addition, 'Burtles and Tate (manufacturers of flint, coloured, ornamental and table glass, Poland Street and German Street' were also listed (Slater, 1895, p. 120). St Marten's permanent building society had been established in a building on German Street, between Elizabeth Street and Jersey Street (Slater, 1895, p. 181). This was likely the building that lay just beyond the west Site boundary. Thomas Ellison was the landlord of the Cross Keys public house and William Allen was a brass founder at the Phoenix Iron Works (Slater, 1895, p. 229).

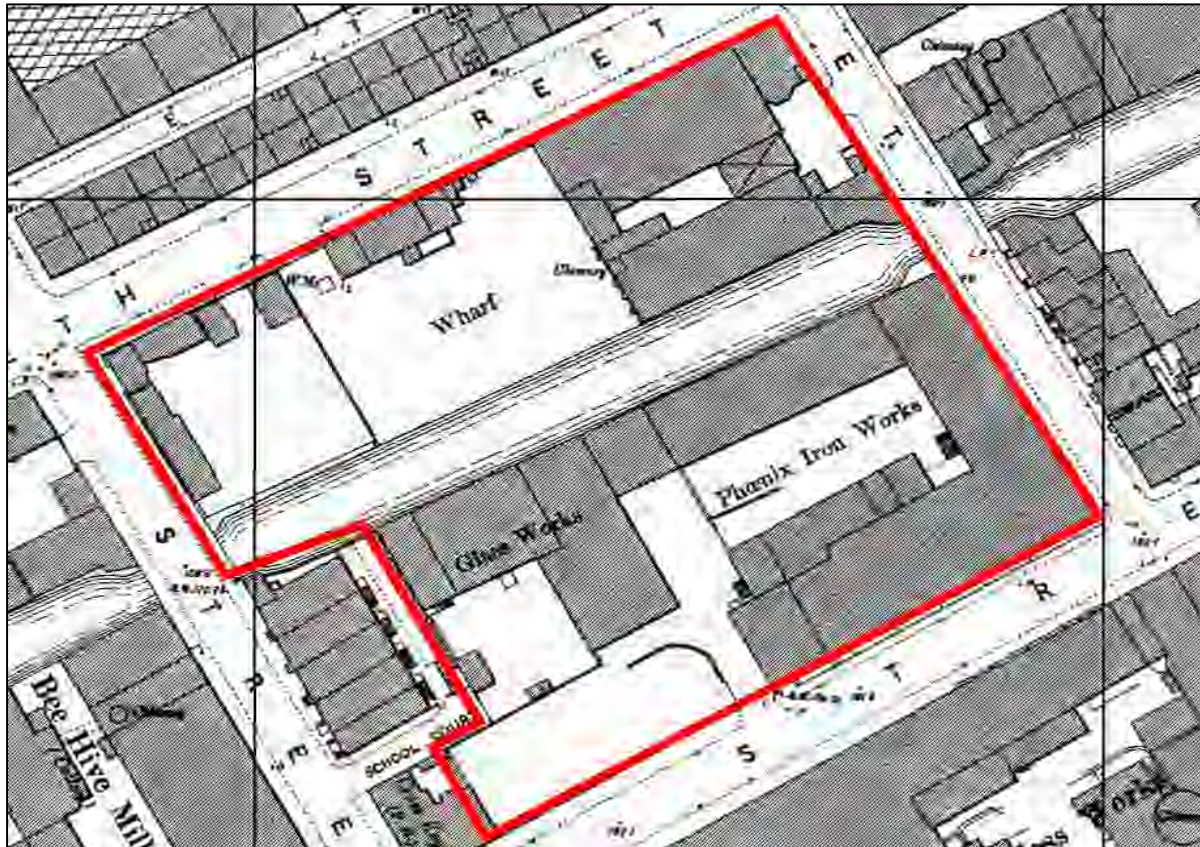


Plate 9 Extract from the Ordnance Survey map of 1891, showing the Site boundary

The Ordnance Survey map of 1908 (Plate 10; Fig. 7) shows broadly the same configuration of buildings at German Street Glass Works, Phoenix Iron Works and the fustian mill / works. The coal wharfs had been partly redeveloped into an iron works and rectangular building, aligned broadly north to south in the north-west corner the Site. The same arrangement of buildings were shown on the Ordnance Survey map of 1922 (Fig. 8). Burtles and Tate are believed to have continued operating from the Poland and German Street glassworks up until 1924 when they were taken over by Butterworths (HER 12429.1.0; 12431.1.0). A newspaper article suggests that Burtle and Tate continued to produce fancy glass, laboratory glass, table glass and lighting glass in Manchester in 1915 (Staffordshire Sentinel, 10th May 1915).

Slater's trade directory of 1911 recorded no traders along German Street, between the Naval Street junction and Jersey Street, within the Site (Slater, 1911). The Cross Keys Public House was listed as no. 95, which lay just beyond the west Site boundary. The Cross Keys Public House was run by Benjamin Ernest Fairbrother (Slater, 1911, p. 386). William Allen was listed as an engineer at the former Phoenix Iron Works (*ibid*). Gilbert Forrest occupied the iron foundry along Naval Street (Slater, 1911, p. 493). Mabbott and Co Ltd, engineers occupied a building on Poland Street, between Naval Street and Jersey Street, within the Site (Slater, 1911, p. 561).

Goad's fire insurance plans of 1928 comprise a detailed survey of the buildings within the Site (Plate 11), showing that several buildings had been redeveloped. The Bengal Arm of the canal seems to have been partly or wholly infilled by 1928. The north most building of the Phoenix

Iron Works had been demolished and the site continued to be operated by William Allen, 'Engineer and Foundry'. The foundry buildings consisted of one- and two-storey factory buildings, with a four-storey office and 'patterns over'. Single-storey garages had been erected along the Jersey Street frontage and the glassworks seems to have been cleared and redeveloped into a loading bank. The garages and loading bank were occupied by Sutton and Co (Manchester), Vans Yard. The north-west corner plot of the site had also been developed into garages and was part of the Sutton and Co, Vans Yard.

The iron works on the north side of the former Bengal Arm and adjacent buildings (formerly J Thornton's fustian mill) functioned as an engineers and iron works, named 'Mabbott and Co Ltd Engineers and Phoenix Iron Works' (Plate 11). Buildings within the engineer and iron works complex included a single-storey iron store, a smithy, a two-storey store, a single-storey spray printing and cellulose spraying building and a single-storey office building. In addition, two three-and-a-half-storey buildings were in the east of the complex. A machine shop operated on the first floor, with tinsmith on the second floor and showroom on the third floor. The three-and-a-half storey building on Naval Street and single-storey office are captured on a photograph taken in 1962 (Plate 12).

The arrangement of buildings shown on Goad's fire insurance plan are replicated on the 1948 (Fig. 9), 1953 (Fig. 10) and 1969 (Fig. 11) Ordnance Survey plans. The buildings in the Site were progressively cleared during the late 20th and early 21st century. The garages shown on the 1928 plan (Plate 11) still stand on Jersey Street and at the junction of Naval Street and Radium Street. The late 19th-century walls of the Phoenix iron works currently stand along the Poland Street and Jersey Street frontages.

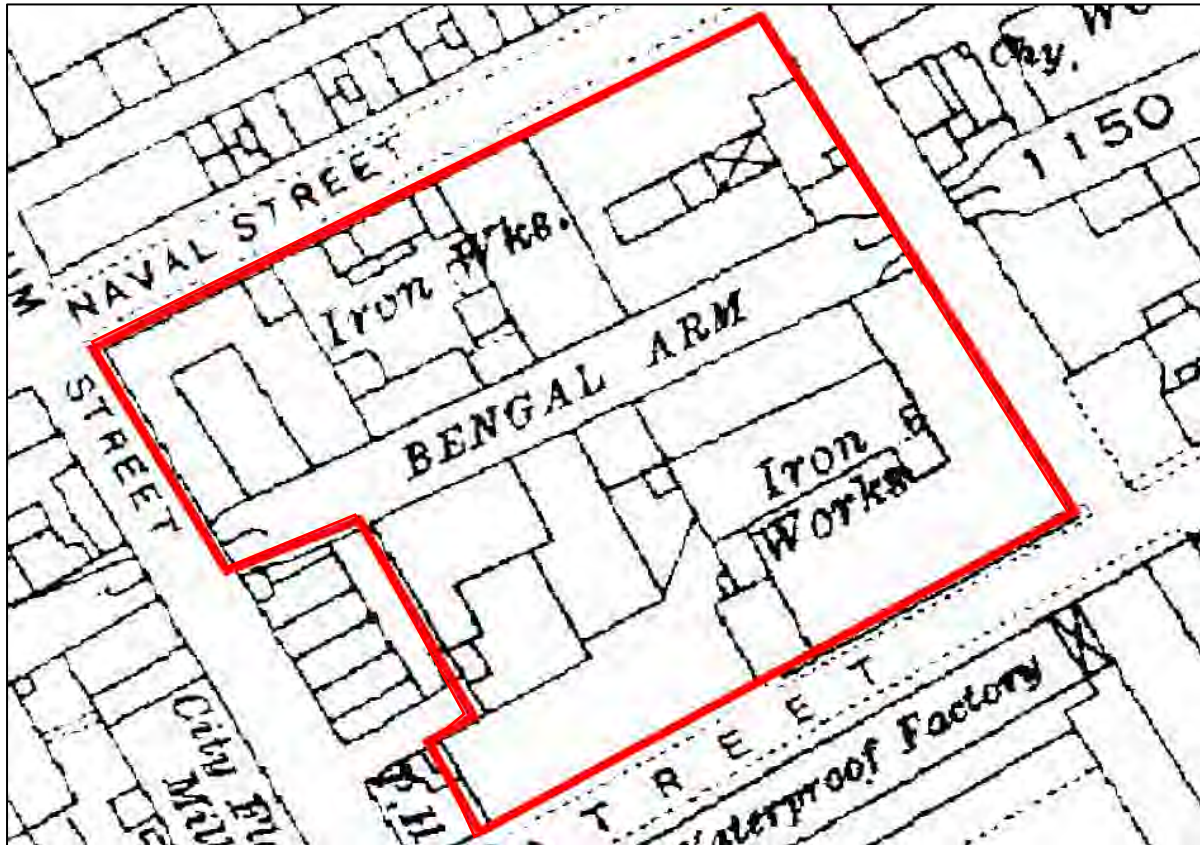


Plate 10 Extract from the Ordnance Survey map of 1908, showing the Site boundary

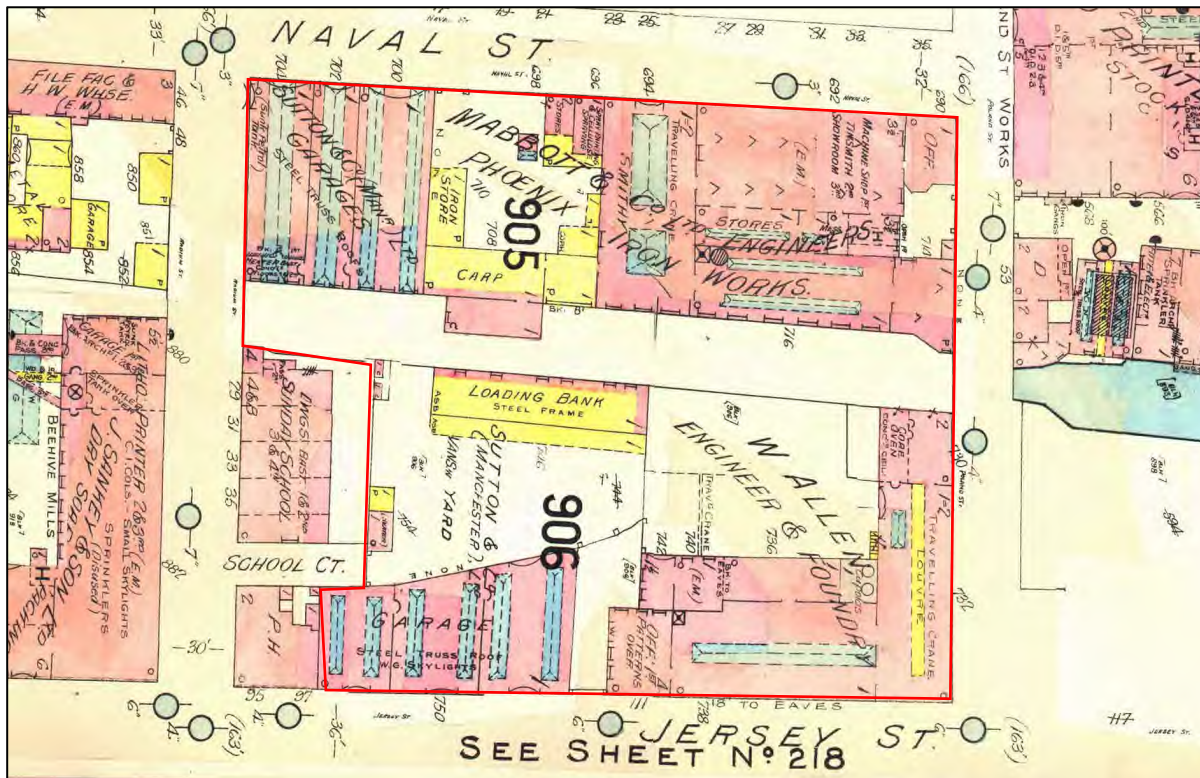


Plate 11 Goad's Fire Insurance Map, surveyed 1928, sheet 217, showing zoomed in image of the Site



Plate 12 Photograph of Naval Street, taken in 1962, showing three-and-a-half storey building associated with the engineer and iron works, courtesy of Manchester Local Image Collection

5.7 Previous archaeological works

Several desk-based assessments, heritage statements and building recordings have taken place within a 250m radius from the Site. Building surveys have been undertaken at Murray's Mills (EGM 2512), Waulk Mill (EGM 3365), The Smith's Arms (EGM 3840), George Leigh Street School (EGM 3848), Howarth Metals (EGM4014), Beehive Mill (EGM 4018;EGM 455), Murray's Mills: Old and Decker Mills (EGM 4026), Murray's Mills: Murray Street Block and Bengal Street Block (EGM 4027), Former Edinburgh Castle Public House (EGM 4355), McConnel and Kennedy's Mill (EGM 456) and Mount Pleasant, 162-4 Oldham Road (EGM 4980).

Howarth Metals (EGM 4014) desk-based assessment covered the Site Area. The desk-based assessment was produced in 2009 by Oxford Archaeology North. The study identified potential for buried archaeological remains relating to a late 19th-century glassworks, and late 18th-century artisans' workshops/ cellar dwellings fronting onto Jersey Street. It was also possible that the site could contain the buried remains of a former branch canal, an iron foundry/ engineering works, and a small part of a textile mill (Oxford Archaeology North, 2009).

Following the desk-based assessment (EGM4014), An English Heritage Level II type survey of the historic wall fronting Jersey Street was undertaken in July 2010 by Oxford Archaeology North (Oxford Archaeology North, 2010). The wall retained physical evidence for multiple phases of construction, retaining many of its original characteristics. Although the wall only

survives as a façade, the structure on Jersey Street nonetheless represents a rare surviving example of 19th-century foundry buildings in Ancoats. Of most interest were the quality of construction and the expense undertaken for architectural embellishment, in an industry and an area associated with more utilitarian stylings. The rebuilt Poland Street façade was of much lower architectural quality, it did retain some stylings in the form of Staffordshire Blue brick decoration, and highlighted the contrast between the more usual standard of architecture associated with such buildings, and the more decorative Jersey Street frontage.

In total, eight archaeological evaluations and six excavations have been undertaken within the vicinity of the Site. A section of the infilled Bengal Street canal arm was excavated during an evaluation in 2006 by Oxford Archaeology North (Oxford Archaeology North, 2007). The excavation took place c 60m to the west of the Site. The structural remains that were revealed were found to survive in good condition, although the excavation of a transect across the entire arm was precluded by the presence of modern buildings. The portion available for investigation was excavated to a depth of 2.3 metres below the modern ground surface, where clay of natural origin was exposed. This did not appear to have been puddled to form a waterproof base to the canal, as its natural plasticity and thickness seemingly formed a natural waterproof boundary; an absence of puddle clay was similarly revealed during an excavation of the canal basin within the Murrays' Mills complex on the opposite side of Jersey Street (EGM 4024).

The southern edge of the canal arm was vertically sided, and was retained by a brick wall that was used subsequently as a foundation for the northern wall of the Bengal Street block of Bee Hive Mills [HER 2121.2.0]. The wall was three bricks wide (0.57m) and was composed of mould-thrown bricks laid in English garden wall bond with pale lime mortar. At its base, 2.03m below ground level, was a half-brick offset plinth, at least three courses high, but cut into the natural clay below the limit of excavation.

The presence of well-preserved 18th- and 19th-century workers' houses was confirmed at Loom Street (EGM4029) and were excavated in seven open area trenches by University of Manchester Archaeology Unit in 2007 (UMAU 2007). Similarly, an excavation at George Leigh Street recorded the remains of early 19th century workers' housing (EGM4028; OAN 2008). A third excavation was undertaken at Beehive Mills (EGM 4024).

In 2003 an archaeological excavation was carried out on the site of the former Percival, Vickers & Co Ltd British and Foreign Flint Glass Works (EGM3737). The work was undertaken by Oxford Archaeology North, following a previous watching brief and archaeological evaluation, which revealed that remains of the glassworks were extensive and well-preserved. The excavation was then followed by a further watching brief in 2004. The results were presented in a report titled "Flint Glass Works, Jersey Street, Manchester: Post-Excavation Assessment" (OA North 2004). The aim of the assessment was to investigate the survival and significance of the buried archaeological remains at the site.

The Flint Glass Works was established in 1844 and was part of an important group of glassworks that opened in Manchester in the 19th century. By 1863, it was the largest of Manchester's glass factories. It was sold by 1914 and converted into clothes works and later used as a wastepaper warehouse.

The investigation revealed the remains of three furnaces and their flues at the site, two of which were original, whilst the third was a later addition (c 1870). The remains of an annealing house and workshops were also exposed. The finds assemblage included 3628 glass fragments of different colours and styles, post-medieval pottery, clay tobacco pipes, metalwork and crucibles. The finds were significant as they provided a comprehensive insight and record of the technological developments of glassworks during the period and could highlight details of the glass manufacturing process.

5.8 Summary of archaeological potential

No prehistoric, Roman or medieval activity is known to have taken place within the Site.

The Site lies within the Ancoats area of Manchester and was developed at the onset of the industrial period. The earliest buildings within the Site were a row of 18th-century workers' housing along Jersey Street. During the early 19th century, the Bengal Arm of the Rochdale Canal was constructed through the centre of the Site. Coal wharfs were established on the north side of the canal, whilst another row of terraced houses were erected along the north side of Jersey Street.

By the mid-19th century, the Site had been entirely developed. Phoenix Iron Works had been established between the houses on Jersey Street and the canal arm. A mill and coal wharfs had been erected between Elizabeth Street and the north side of the canal. By the late 19th century, a glass works had been established within the Site and the domestic dwellings on Jersey Street had been cleared.

The Site was redeveloped into garages and a van yard, and iron works during the early 20th century and the canal arm was infilled.

Remnants of several 19th- and 20th-century buildings survive within the Site, including the west wall of the former Poland Street canal bridge, the east wall of the former Radium Street canal bridge, the Poland Street and Jersey Street façade of the Phoenix Iron Works, and early 20th-century garages.

6. Site Inspection

A Site visit was carried out as part of the archaeological assessment on 17th February 2023. The aim of the Site inspection was to relate the findings of the desk-based study to the existing land use of the application area, in order to identify any evidence for surviving below-ground remains.

The Site currently contains the vestiges of several 19th- and 20th-century buildings, including the Poland Street and Jersey Street façade of the former Phoenix Iron Works. The brick-built walls survive up to ground floor level and run adjacent to the south and east perimeter of the Site (Plate 13 and Plate 14). The walls are associated with the late 19th-century expansion of the iron works and were subject to a historic building survey in 2010 (Oxford Archaeology North, 2010). As noted in the building survey, the Jersey Street façade is more decorative than the Poland Street façade. The west wall of the former Poland Street canal bridge is situated at the north end of the Phoenix Iron Works wall. The wall consists of two courses of large stone blocks (Plate 14). The street level is slightly raised at the former bridge.

In total, three 1920s garages front Jersey Street and extend north into the Site (Plate 15). The garages are brick-built and were first shown on Goad's 1928 plan (Plate 11, p 32). A steel beam / girder is visible above each of the garage doorways. The garages are utilitarian in style and have no decorative details, except perhaps the Staffordshire blue bricks that are within the partition walls of the garage entrances. The garages along Jersey Street are almost identical to the three garages that occupy Naval Street (within the Site), including the Staffordshire blue brick detail. The garage doors on Naval Street have been partly infilled with more recent brickwork and shutters. The rear aspect of the garages on Jersey Street are visible along School Court, which forms part of the west Site boundary (Plate 16). School Court survives as a narrow, single lane street.



Plate 13 View of late 19th-century walls of the former Phoenix Iron Works on Jersey Street, looking north-east



Plate 14 View of late 19th-century wall of the former Phoenix Iron Works on Poland Street and the west wall of the former Poland Street canal bridge, looking south-west



Plate 15 1920s garages fronting Jersey Street, looking west



Plate 16 Rear view of the 1920s garages on Jersey Street, within the Site, looking broadly east

Much of the land within the Site consists of hard-standing surfaces, which can be accessed via Jersey Street or School Court. This area is largely vacant and corresponds with the former footprint of Phoenix Iron Works and the glassworks. It is currently being used to store building materials and welfare cabins. Granite setts are visible beneath the hard-standing surface to the rear of the garages on Jersey Street (Plate 17).

Standfirm Recycling Centre occupies land at the junction of Poland Street and Naval Street, together with a small car park. The former recycling centre consists of a single-storey garage and a two-storey, flat-roof building that appears to be of late 20th-century construction (rear view visible on Plate 18 and Plate 20).

An additional workshop / warehouse is situated to the west of the recycling centre. The boundary between the two properties is marked by the vestiges of a 19th- or early 20th-century wall, which also seems to form a partition between the two buildings. This wall correlates with the east external wall of the early 20th-century iron works / smithy (GE15; Fig 14). Part of a late 19th- / early 20th-century wall also survives along the pavement, in the north of the Site. The premises is clad in a wood effect and black material, which masks the fabric of the building. The south / rear wall of the building is visible within the Site and seems to consist of a modern wall (Plate 20). The southern end of the east wall of the building has also been partly re-built (Plate 20). In total, three 1920s garages occupy the north-west corner of the Site, along Naval Street, which are similar in construction and contemporary with those on Jersey Street.



Plate 17 View to the rear of the garages on Jersey Street, looking south-east. Note the cobbled setts in the left of the frame



Plate 18 View of vacant land, consisting of hard-standing surfaces in the area of the former Phoenix Iron Works, looking north-east



Plate 19 View of Site, showing hard-standing surfaces and internal view of the Poland Street façade of the former iron works, looking north-east



Plate 20 View of Site, looking north-west towards welfare cabins and 1920s garage

7. Gazetteer

The following gazetteer entries (GE) summarise the sites of potential archaeological interest within the Study Area and elements of the historic landscape. The identification of these heritage assets is drawn primarily from the historic map regression analysis, Historic England, and the HER data. The locations of the gazetteer entries are shown on Figures 12 and 13 within Appendix 1: Figures.

Gazetteer Entry 01

Site Name	Pre-industrial remains
Designation	Non-designated heritage asset
HER Number	-
Site Type	Relict soils and former fields (site of)
Period	Post-medieval
NGR	385149, 398764
Source	Green's map
Description	Green's map shows that the Site lay within a group of fields. A grid of streets had been superimposed onto the map, in anticipation of development. Relict soils and field boundaries yielding 17 th -century remains have been excavated at Silk Street, to the north of the Site.
Assessment	Historic field boundaries and relict soils have the potential to contain post-medieval finds, which are rare in Manchester. Remains associated with the pre-industrial landscape may survive within isolated parts of the Site and could be affected by the proposed development scheme.

Gazetteer Entry 02

Site Name	Cross Keys Public House
Designation	Non-designated heritage asset
HER Number	6472.1.0
Site Type	Public House (extant)
Period	18 th century
NGR	Centred SJ 8512 9872 (10m by 10m)
Source	HER
Description	Building at the junction of Jersey Street and German Street first shown on Green's map of 1787-94 (Fig. 3). The building currently occupies no. 97 Jersey Street and is extant. The building lies immediately to the west of the Site. First annotated as the Cross Keys Public House on 1891 OS map (Fig. 6).
Assessment	The building is currently extant and will not be affected by the proposed scheme.

Gazetteer Entry 03

Site Name	Workers' housing on Jersey Street
Designation	No designation

HER Number	16147.1.0
Site Type	Domestic dwellings (site of)
Period	18 th century
NGR	SJ 8513 9873
Source	HER; Historical maps
Description	The HER states ' <i>Green's map, published in 1794 (Fig. 3), shows a block of buildings fronting onto the northern side of Elliott Street (now Jersey Street). The size of this block is consistent with a terrace of artisans' workshop dwellings. These are likely to be some of the earliest workers' housing in Ancoats. Bancks & Co's map of 1831 shows that the block comprised a terrace of six houses with a larger property at the eastern end, presumably representing retail or commercial premises. The detail provided by the Ordnance Survey map of 1850 indicates that the properties incorporated cellars, with separate access from the street, suggesting that they were used for dwellings. The houses had been demolished by the late 1880s. Subsequent development does not appear to have included any basements, offering some potential for the survival of the original cellar dwellings</i> '. The houses had been cleared by the late 19 th century.
Assessment	Remains of dwellings may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 04

Site Name	Rochdale Canal, Bengal Canal Arm
Designation	No designation
HER Number	16148.1.0; 16148.1.1
Site Type	Canal arm (site of)
Period	19 th century
NGR	Centred SJ 8508 9874 (214m by 105m)
Source	HER; Johnson's 1818-9 map; Bancks's 1831 map
Description	The HER states ' <i>Branch of the Rochdale Canal, opened by 1808 but first shown cartographically on Pigot's map of 1819. Appears to have been infilled on the Ordnance Survey map of 1948. Passed underneath Poland Street and German Street, terminating at Bengal Street to the west</i> '. A section of the Bengal Arm was excavated in 2007 at a depth of 2.3m below the modern ground surface.
Assessment	Remains of the canal may survive and could be affected by the proposed development scheme.

Gazetteer Entry 05

Site Name	Former canal bridge, Poland Street
Designation	Non-designated heritage asset
HER Number	6478.1.0
Site Type	Canal bridge wall (extant)
Period	19 th century

NGR	SJ 8518 9879 (point)
Source	HER; Modern mapping
Description	Early 19 th -century former canal bridge over the Bengal Arm of the Rochdale Canal. The canal has since been infilled, however, the walls of the former bridge are currently extant and the street-level is slightly raised. Building materials: stone, iron beam. The west wall of the canal bridge lies within the Site and is extant. The bridge appears to have been widened between 1851 (Fig. 5) and 1891 (Fig. 6) to its current width.
Assessment	The west wall of the bridge currently survives within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 06

Site Name	Former canal bridge, Radium Street
Designation	Non-designated heritage asset
HER Number	6461.1.0
Site Type	Canal bridge wall (extant)
Period	19 th century
NGR	SJ 8509 9875 (point)
Source	HER; modern mapping
Description	Early 19 th -century former canal bridge over the Bengal Arm of the Rochdale Canal. The canal has since been infilled, however, the walls of the former bridge are currently extant and the street-level is slightly raised. Building materials: stone, iron beam. The east wall of the canal bridge lies within the Site and is extant. The bridge appears to have been widened between 1851 (Fig. 5) and 1891 (Fig. 6) to its current width.
Assessment	The east wall of the bridge currently survives within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 07

Site Name	Workers' housing, Jersey Street
Designation	Non-designated heritage asset
HER Number	16149.1.0
Site Type	Domestic dwellings (site of)
Period	19 th century
NGR	SJ 8517 9875 (point)
Source	HER; Bancks's 1831 map; OS Map of 1851
Description	Terrace of nine workers' houses, first shown on Bancks's map of 1831 (Fig.4). Demolished by the end of the 19 th century, presumably to allow for the expansion of Phoenix Iron Works. The HER suggests that the houses did not include cellars. The west end of the row consisted of a plot of six back-to-back dwellings in 1831 (Fig. 4). These had been converted into through houses by 1851 (Fig. 5). Phoenix Iron Works extended over the former footprint of these houses by 1891.
Assessment	Remains associated with the former houses may survive within the Site and

could be affected by the proposed development scheme.

Gazetteer Entry 08

Site Name	Phoenix Works (iron and brass)
Designation	Non-designated heritage asset
HER Number	6473.1.0
Site Type	Works (site of)
Period	Early / mid-19 th century
NGR	Centred SJ 8518 9876
Source	HER; OS mapping
Description	HER states that ' <i>Late-C19 brick-built industrial building. 1 & 3 storeys and 11 bays. There is a sign "Hill & Son Ltd" on the building. Engineering? Possibly due for demolition. Mostly vacant. Later single-storey section (mid to late C20) to rear. 3-storey section at east end – 3x3 bays with tall, arched windows and a loading door. Very distinctive, recessed full arched window to front: blocked. E end of building possibly lowered or demolished. (1) An iron works first depicted clearly on the OS first edition map of 1850, although one component of the complex appears on Pigot's map of 1841. The works was remodelled and expanded in several episodes during the later 19th & 20th centuries. The early elements have been largely demolished, although remnants of C19 walling survive along the Jersey Street and Poland Street frontages. In 2010, a survey of the historic walls fronting Jersey Street revealed that these retained physical evidence for multiple phases of construction and incorporated the remains of distinct structures. Although it survives only as a façade, the structure on Jersey Street nonetheless represents a rare surviving example of C19 foundry buildings in Ancoats. Of most interest were the quality of construction and the expense undertaken for architectural embellishment, in an industry and an area associated with more utilitarian stylings. Although the rebuilt Poland Street façade was of much lower architectural quality, it did retain some stylings in the form of Staffordshire Blue brick decoration, and highlighted the contrast between the more usual standard of architecture associated with such buildings, and the more decorative Jersey Street frontage</i> '.
Assessment	Remains associated with the former building may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 09

Site Name	Phoenix Works steam power plant
Designation	Non-designated heritage asset
HER Number	6473.1.1
Site Type	Steam power plant (site of)
Period	Early / mid-19 th century
NGR	383230, 397285 (centred at)
Source	HER; OS mapping

Description	Site of an engine house, boiler, cistern and chimney, named on the Ordnance Survey map of 1851 (Fig. 5). It seems probable that these features supplied power to the Phoenix Iron Works; their detached location is curious. The size and configuration of the engine house are consistent with a vertical beam engine. A similarly sized building in the same position is shown to have formed part of the nearby glass works (HER 12431.1.0) on the OS map of 1891 (Fig. 6). However, the building had been demolished by 1928 (Plate 11, pp. 32).
Assessment	Remains associated with the steam power plant may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 10

Site Name	Cotton warp sizing and fustian finishing works
Designation	Non-designated heritage asset
HER Number	16151.1.0
Site Type	Mill (site of)
Period	Early / mid-19 th century
NGR	SJ 8515 9879 (point)
Source	HER; OS mapping
Description	Site of a cotton warp sizing and fustian finishing works named on mid-19 th -century maps. It seems likely that the works will have been steam powered, although there is no indication on historical mapping as to the location of the steam-power plant. The works had seemingly been converted to an iron works and engineering works by the 1890s. The conversion of the site necessitated the erection of a large building along the north bank of the canal arm (Bengal Street arm of the Rochdale Canal, HER 16148.1.0). This building contained a chimney, marked on the OS map of 1891 (Fig. 6), suggesting that it formed part of the processing/manufacturing area. By 1928, the former mill buildings had been acquired by Mabbott and Co Ltd - Engineers. The Ordnance Survey map of 1948 and 1955 (Fig. 9) labelled the works as Phoenix Works.
Assessment	Remains associated with the former mill and later engineer / iron works may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 11

Site Name	Coal wharfs
Designation	Non-designated heritage asset
HER Number	-
Site Type	wharfs and associated buildings (site of)
Period	Early / mid-19 th century
NGR	385130 398795 (centred at)
Source	Bancks & Co's map of 1831; OS mapping
Description	Coal wharfs established on the north side of the Bengal Arm of the

Assessment	Rochdale Canal by 1841. Coal wharfs shown on the Ordnance Survey map of 1851 (Fig. 5). Developed into an iron works by 1908 (Fig.7). Remains associated with the coal wharfs / iron works may survive within the Site and could be affected by the proposed development scheme.
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Gazetteer Entry 12

Site Name	Cross Keys Inn
Designation	Non-designated heritage asset
HER Number	-
Site Type	Inn / Hotel (site of)
Period	19 th century
NGR	385149, 398733
Source	Bancks's map of 1831; OS mapping
Description	Cross Keys Inn first labelled on the Ordnance Survey map of 1851 (Fig. 5) and Adshead's map of 1851 (Plate 8, pp. 28). Footprint of the inn was first shown on Bancks's map of 1831 (Fig. 4). Pigot and Slater's 1841 trade directory noted John Goodier as the victualler at the Cross Keys at no. 87 Jersey Street (Pigot & Slater, 1841, p. 106). Cleared by the late 19 th century to allow for the expansion of the Phoenix Iron Works. Likely contained a cellar.
Assessment	Remains of the inn may survive within the Site and could be affected by the proposed scheme.

Gazetteer Entry 13

Site Name	German Street Glass Works
Designation	Non-designated heritage asset
HER Number	12431.1.0
Site Type	Glassworks (site of)
Period	Late 19 th century
NGR	Centred SJ 851 988 (100m by 100m)
Source	HER; OS mapping
Description	The main Burtles Tate plant was at Poland Street. German Street seems to have been a smaller subsidiary works and it is currently uncertain whether primary manufacture or secondary finishing was carried out at this site. The site was small – 25m by 30m – with two buildings arranged in an L-shape. There is no map evidence which shows a kiln chimney. The glassworks seems to have been established in a building that appears to have originated as part of the Phoenix Iron Works, but was converted to a glassworks by Burtles Tate & Co Ltd in the late 19 th century. It is uncertain whether primary manufacture or secondary finishing was carried out at the German Street site (later Radium Street), although it is of note that the detailed Ordnance Survey map of 1891 (Fig.6) does not mark any furnaces.
Assessment	Remains associated with the glass works may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 14

Site Name	Regina Textile
Designation	Non-designated heritage asset
HER Number	6470.1.0
Site Type	Mill (site of)
Period	Late 19 th century
NGR	Centred SJ 8514 9880 (10m by 10m)
Source	HER
Description	The HER states ' <i>Late 19th-century brick-built mill, 3 storeys and 6x3 (2 per bay) bays. Currently in multiple occupation. Possibly used for engineering. Tall ground-floor windows. Demolition to west of building (extension). Related smaller buildings to rear. Older offices all to east end, single storey and late 19th century. Possibly no longer extant. It is not clear from available mapping which building/site is referred to above</i> '. Not labelled on any of the historic maps (Figs 3 to 10).
Assessment	Remains associated with Regina Textile may survive within the Site and could be affected by the proposed development scheme.

Gazetteer Entry 15

Site Name	Iron Works
Designation	Non-designated heritage asset
HER Number	-
Site Type	Iron works (site of)
Period	Early 20 th century
NGR	385135, 398791
Source	Goad's map of 1928; OS mapping
Description	Iron works first shown on the Ordnance Survey map of 1908 (Fig. 7), built over former coal wharf. Goad's map of 1928 (Plate 11, pp. 32) shows that a smithy was located in a rectangular building orientated north to south between Elizabeth Street (renamed Naval Street) and the Bengal Arm of the Rochdale Canal. Goad's plan shows that the remainder of the buildings on the site of the coal wharf were predominantly iron stores and were associated with Mabbott and Co Ltd and Phoenix Iron Works. East external wall of the former smithy may survive within the Site as upstanding remains, between the recycling centre and building to the west.
Assessment	Remains associated with the mill may survive within the Site and could be affected by the proposed scheme.

Gazetteer Entry 16

Site Name	Garages
Designation	Non-designated heritage asset
HER Number	-
Site Type	Garages (extant)
Period	Early 20 th century

NGR	385143, 398732 and 385099, 398773
Source	Goad's map of 1928; OS mapping
Description	Garages built on Jersey Street and Naval Street between 1922 and 1928. Currently standing within the Site. Both sets of garages are associated with Suttons and Co Ltd (Manchester) and the van yard.
Assessment	The garages currently stand within the Site and will be affected by the proposed scheme.

8. Significance

8.1 Policy context for heritage assets

The archaeological resource of an area can encompass a range of assets, including below-ground remains, earthworks, and standing buildings and other structures. Some of these remains may have statutory protection, such as Scheduled Monuments or listed buildings. Others do not, but may nevertheless be of archaeological significance. Under both national and local planning policy, as outlined below, both statutory and non-statutory remains are to be considered within the planning process.

The NPPF sets out the Government's planning policy and framework for England, and how these are expected to be implemented. The NPPF places particular emphasis on assessing the development proposals in line with an up-to-date local plan. Consequently, Manchester's Core Strategy (adopted July 2012) was consulted as the key Development Plan Document in the Local Development Framework (LDF), with particular reference to Policy EN3: Heritage. In determining applications, local planning authorities must be able to understand the significance of any heritage assets affected by a proposed development in order to assess its impact. This enables the conservation of heritage assets in a manner suitable to their significance so that they can be enjoyed for their contribution to the quality of life of this and future generations, or else they can be recorded and advance understanding of the significance of any heritage assets to be lost in a manner proportionate to their importance and the impact, and to make this evidence publicly accessible.

8.2 Designated heritage assets

The Site is within 250m of 13 statutory listed buildings and lies within Ancoats Conservation Area, however, the proposed development will not have a physical impact on these designated heritage assets, and so they are not considered further in this report (see Section 2.3.1, p 6).

8.3 Significance of the archaeological resource

8.3.1 *Historical and archaeological interest*

Historical and archaeological interest

The streets of Ancoats were laid out during the latter part of the 18th century, with little development taking place within the area. Survey work for the Rochdale Canal was carried out by James Brindley in 1765. The knowledge that its construction would make the transport of raw materials and finished goods more convenient, gave industrialists the confidence to build their cotton mills. The first mills were built in Ancoats as early as 1790. The Bengal Arm of the Rochdale Canal was built through the centre of the Site in the 1800s. The development of mills and other industries continued on a much larger scale throughout the 19th century. Domestic dwellings, coal wharfs, a cotton warp sizing and fustian finishing mill and iron works were among the earliest buildings to have been erected within the Site. By the end of the 19th century, the domestic properties had been cleared to allow for the expansion of the iron works and a glass works was established near German Street / School Court. The Site, therefore, is of historical and archaeological interest.

8.3.2 *Baseline significance conditions*

Period

No prehistoric, Roman or medieval activity is known to have taken place within the Site, and the potential for such remains is considered to be extremely low due to the intensive development of the Site from late 18th century, onwards.

The earliest remains that may survive within the Site include elements of the pre-industrial landscape (GE01), such as relict soils and field boundaries.

The most likely remains to be encountered within the Site would date to the industrial period and could include workers' housing (GE03 and GE07), the Bengal Canal Arm (GE04), Phoenix Iron Works (GE08-9), a cotton warp sizing and fustian finishing works / mill (GE10), coal wharfs (GE11), Cross Keys Inn (GE12), German Street Glass Works (GE13), Regina Textile (GE14), an early 20th-century iron works / smithy (GE15). The industrial period is significant to Manchester's history. Therefore, sites reflecting Manchester's industrial heritage may be considered significant due to period.

Several remnants of 19th- and 20th-century buildings are currently extant within the Site, including west wall of the former Poland Street canal bridge (GE05), the east wall of the former Radium Street canal bridge (GE06), the Jersey Street and Poland Street façade of the former Phoenix Iron Works (GE08) and the 1920s garages (GE16).

Rarity

Buried remains pre-dating the 19th century (GE03-7) may be considered significant due to rarity, as few remains survive within the area due to extensive development during the industrial period. In addition, glassworks and iron works are considered to be poorly understood and recorded and therefore may be considered rare (GE07).

Archaeological remains associated with early 19th-century workers' housing (GE07 and GE12) may not be considered rare as several examples have been excavated in the past 30 years.

Documentation

The historical development of the Site can be traced reasonably well from cartographic and other primary sources. Further documentary research would undoubtedly furnish additional evidence, although this is unlikely to alter the outline and conclusions presented in this assessment.

Group value

The majority of the non-designated heritage assets in the Site represent elements of the industrial townscape, which played a central role in the development of the city from the late 18th century onwards. As such, these heritage assets have some group value.

The Bengal Arm of the Rochdale Canal has group value with the Rochdale Canal and former canal bridge on Radium Street and Poland Street. The canal arm, canal and former canal bridges will have group value several additional former canal bridges that are within the study area (.egg Jersey Street) and survive within the current streetscape.

Survival / condition

The survival, extent and condition of any below-ground archaeological remains within the Site is presently unknown. Previous archaeological investigations within the land surrounding the Site have revealed 17th-century remains and industrial period below-ground structural remains. The late 18th-century houses likely had cellars and have good potential to survive within the Site. Similarly, Phoenix Iron Works steam power plant and elements of the former cotton warp sizing and fustian finishing mill / works and the Bengal Arm of the Rochdale Canal will have likely had deep-foundations.

Fragility / vulnerability

Any buried archaeological remains, should they be present and survive *in situ*, are vulnerable to damage or destruction during any earth-moving works associated with the restoration scheme.

Diversity

The diversity of the below-ground remains within the Site is presently unknown. However, cartographic evidence and previous archaeological investigations suggest that any below-ground remains would probably date to the industrial period and may, therefore, be considered significant due to diversity.

Potential

There are no prehistoric, Roman or medieval sites within the Site or its environs, and the potential for prehistoric is considered to be low.

The Site was within an area of former fields in the 18th century. The survival of field boundaries, features and soils may have some potential to address the research agendas outlined in the current *Archaeological Research Framework for North West England* (<https://researchframeworks.org/nwrf/sample-page/post-medieval>):

Post-medieval to Industrial	
PM09	How did ecological changes linked to agricultural improvement impact upon the wider landscape?
PM11	How can palaeoenvironmental indicators of consumption enhance our understanding of the wider patterning and social context?
PM15	How well recorded and understood are farming landscapes, field patterns, distributions of buildings and building types?
PM27	How do the industries associated with the North West evolve and develop during this period?
Ind09	How does the nature of rural settlement change during this period?
Ind15	How well recorded and understood are farming landscapes and field patterns?
Ind21	How did industrial period towns affect the pre-existing historic landscape?

Table 3 Post-medieval research agendas

Buried remains of field boundaries and relict soils have the potential to survive within discrete parts of the Site, potentially in areas that have not been intensely developed and may have some potential to address the research aims listed above (Table 3).

The Site contained a mid-19th-century iron works, a mid-19th-century cotton warp sizing and fustian finishing works, a late 19th-century glassworks, an early 20th-century iron works / smithy and associated steam power plants. Remains associated with these former buildings may have some potential to address the research agendas outlined in the current *Archaeological Research Framework for North West England* (<https://researchframeworks.org/nwrf/sample-page/industrial>):

Industrial	
Ind52	What Industrial and Modern period type sites need further study?
Ind60	How can we make sense of the relative significance of historic industrial processes and building types perceived as poorly understood and recorded?
Ind55	What is the evidence for the development of power production?
Ind58:	How have industrial buildings adapted to new technology and processes?

Table 4 Industrial period research agendas

Textile finishing works, iron foundries and glassworks have all been identified as industrial processes / buildings that are poorly understood and require further study. Phoenix Iron Works steam power plant has also been identified (Fig. 12). The iron works, finishing works, glassworks and associated steam power plants all have good potential to survive within the Site and, therefore, may address the research aims listed in the table above (Table 4).

Late 18th-century workers' houses had been established along Jersey Street. By 1831, further houses had been erected along Jersey Street, including double-depth houses, back-to-back houses and an inn / public house. Remains of workers' houses have the potential to address the research agendas outlined in the current *Archaeological Research Framework for North West England* (<https://researchframeworks.org/nwrf/sample-page/industrial>):

Industrial	
Ind22	How can we take forward our understanding of the impact of industrialisation on the working class and their living conditions?
Ind26	How can we take forward our understanding of the impact of industrialisation on the middle class, particularly their housing and its location?
Ind30	How have buildings changed in response to planning regulations?
Ind33	How well studied and understood are the back yards of workers housing and what is their significance?

Table 5 Industrial period research agendas

The late 18th-century houses and inn likely contained cellars and have the potential to survive within the Site and therefore have the potential to address the research aims listed in the table above (Table 5).

The former Bengal Arm of the Rochdale Canal was constructed within the Site in the 1800s. Several bridges were constructed over the canal and are extant within the Site. Extant canal structures and the remains of the canal have the potential to address the research agendas outlined in the current *Archaeological Research Framework for North West England* (<https://researchframeworks.org/nwrf/sample-page/industrial>):

Industrial	
Ind68	What can archaeological studies tell us about commodity storage and exchange buildings?
Ind91	How were transport infrastructures improved and how was this related to the developing urban and market hierarchy during the industrial period?
Ind93	How well do we understand the evolution of rural versus urban bridge construction?
Ind98	How well understood and recorded are the North-Weats canals, waterways and basins?

Table 6 Industrial period research agendas

The line of the canal has not been redeveloped and good potential to survive within the Site and has the potential to address the research aims listed above (Table 6).

Coal wharfs (GE08) were established along the north bank of the canal in the early 19th century, however, it is unlikely that any structures associated with the coal wharfs will survive within the Site as they were redeveloped during the late 19th and early 20th centuries. Cobbled surfaces associated with the wharf may survive within the Site, but would have limited potential to address any research aims listed in the regional framework.

8.4 Summary of significance

It can be concluded from the information gained from the desk-based research that the Site is of archaeological interest and has potential to contain buried remains dating from the Roman to the industrial period.

Using the above criteria and the ICOMOS guide for assessing value of heritage assets (the Site most likely contains non-statutory archaeological remains of low (local) and potentially medium (regional) significance (ICOMOS, 2011).

The Site has some potential to contain relict soils (GE01) which would be of low (local) significance.

The Site has high potential to contain workers' housing (GE03 and GE07), the Bengal Canal Arm (GE04), Phoenix Iron Works and its associated steam power plant (GE08-9), a cotton warp sizing and fustian finishing works / mill (GE10), Cross Keys Inn (GE12), German Street Glass Works (GE13) and an early 20th-century iron works / smithy (GE15), which would be of low (local) and potentially medium (regional) importance.

Several 19th- and 20th-century historic buildings are currently extant within the Site, including west wall of the former Poland Street canal bridge (GE05), the east wall of the former Radium Street canal bridge (GE06), the Jersey Street and Poland Street façade of the former Phoenix Iron Works (GE08) and early 20th-century garages (GE16). A historic building survey has been undertaken at the former façade of the Phoenix Iron Works (Oxford Archaeology North, 2010).

The coal wharfs (GE08) are of limited archaeological interest may be considered negligible.

9. Impact assessment

9.1 Development Proposals

Manchester Life Development Company 3 Limited have prepared a planning application for the residential development of 256 units on their 'Phoenix Ironworks' site (formerly Howarth Metals), Jersey Street. The delivery of the proposals will involve ground-breaking works that have the potential to affect any surviving archaeological remains within the Site.

9.2 Impact upon archaeological resource within the Site

Delivery of the development proposals will necessitate some ground-breaking and landscaping works across the Site, with potential to impact on buried archaeological remains.

This assessment has demonstrated that the Site has the potential to retain buried remains of the pre-industrial landscape, 18th-century workers' housing, early 19th-century workers' houses, Phoenix Iron Works and its associated steam power plant, a cotton warp sizing and fustian finishing works, a late 19th-century glassworks, a canal arm and early 20th-century iron works / smithy (Figs 12-4). Any such remains that do exist within the Site are likely to be of low (local) significance and potentially medium (regional) significance and, without a programme of mitigation, the scheme could damage or destroy these remains.

10. Recommendations

10.1 Heritage Assets

The NPPF (paragraphs 189-208; Section 4.1, p11) makes clear that where the loss of the whole or a material part of a heritage asset's significance is justified by a development, the developer should be required to record that asset and advance understanding of its significance, and to make this evidence publicly accessible.

The NPPF outlines the need for local planning policies to create local plans and frameworks to implement the NPPF at a local level. Manchester City Council's heritage strategy is outlined in *Objective 6: Environment* (Section 4.2, p12) and summarises the approach the local authority will take in determining planning applications which may affect the historic environment (Manchester City Council, 2012, p. 164).

10.2 Further Investigation

The exact scope and extent of any such further investigation of the Site will be determined by the Greater Manchester Archaeological Advisory Service (GMAAS), in their capacity as archaeological advisor to Manchester City Council. It may be anticipated, however, that an archaeological evaluation (consisting of either a strip, map and record or trial trenches) may be required to establish the presence or absence of buried archaeological remains and, if present, their extent and significance. In addition, archaeological monitoring in the form of a watching brief may be required over the route of the former canal.

Should significant archaeological remains be encountered during the archaeological evaluation, further excavation may be required to offset the harm of the development to the buried archaeological resource, in line with the guidance provided by the National Planning Policy Framework. The scope and extent of any such further investigation will be determined by the Greater Manchester Archaeological Advisory Service (GMAAS), in their capacity as archaeological advisor to Manchester City Council.

Sources

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Appendix 1: Figures

- Figure 1: Site location map
- Figure 2: Site boundary superimposed onto modern mapping
- Figure 3: Site boundary superimposed onto Green's plan of Manchester and Salford, 1787-94
- Figure 4: Site boundary superimposed onto Bancks and Co's plan of Manchester and Salford, 1831
- Figure 5: Site boundary superimposed onto the Ordnance Survey 1:1056 Town Plan, published 1851
- Figure 6: Site boundary superimposed onto the Ordnance Survey 1:500 Town Plan, published 1891
- Figure 7: Site boundary superimposed onto the Ordnance Survey 1:2500 County Series map, 1908 Edition
- Figure 8: Site boundary superimposed onto the Ordnance Survey 1:2500 County Series map, 1922 Edition
- Figure 9: Site boundary superimposed onto the Ordnance Survey 1:1250 National Grid map, 1948 Edition
- Figure 10: Site boundary superimposed onto the Ordnance Survey 1:1250 National Grid map, 1953 Edition
- Figure 11: Site boundary superimposed onto the Ordnance Survey 1:1250 National Grid map, 1969 Edition
- Figure 12: Location of Gazetteer site superimposed onto modern mapping
- Figure 13: Location of Gazetteer site superimposed onto modern mapping
- Figure 14: Areas of Archaeological Potential superimposed onto modern mapping



Figure 1:

Site Location

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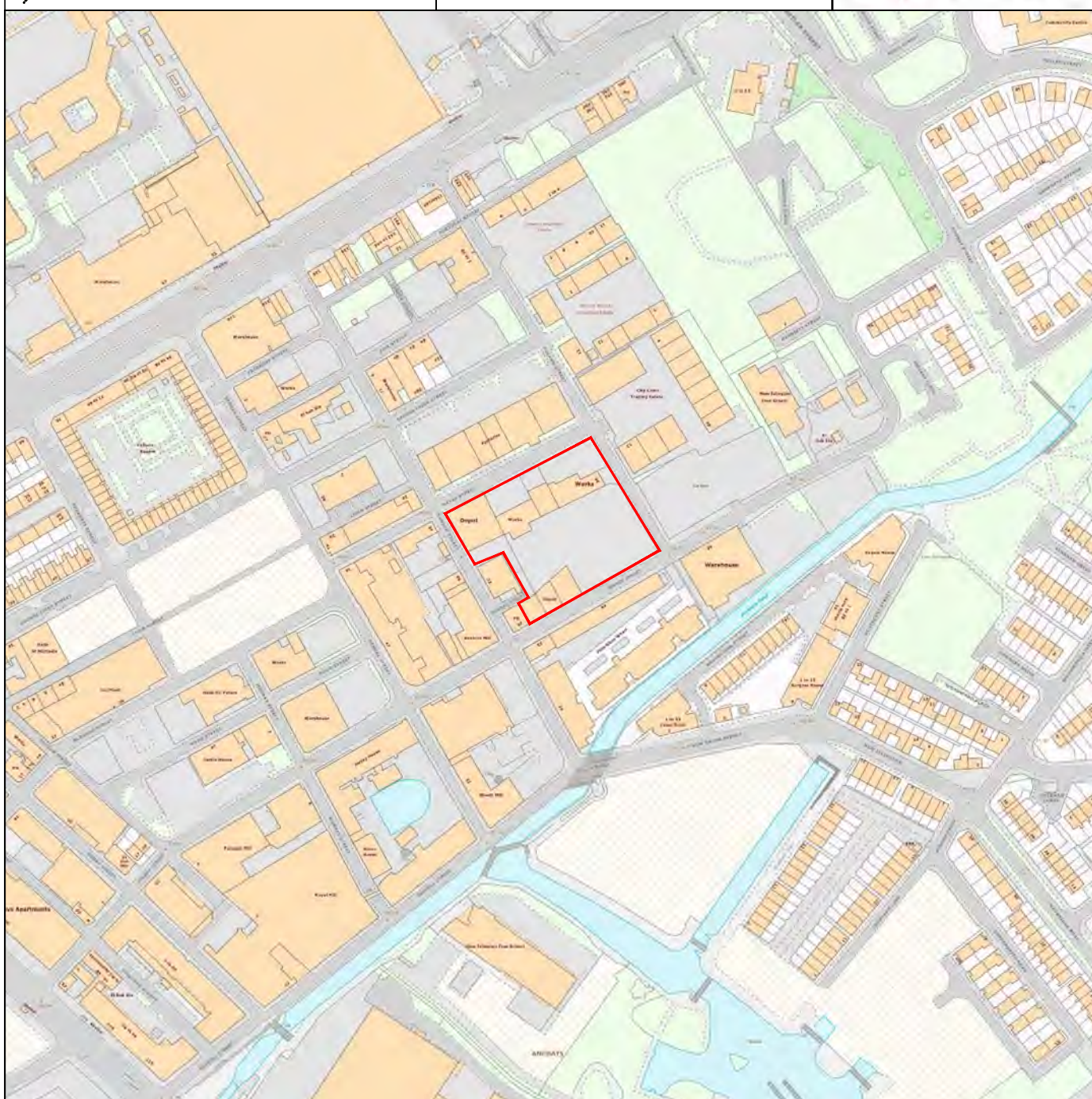




Figure 2:

Site Boundary Superimposed onto Modern Mapping

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Key:

 Site Boundary

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0 50 m

Scale at A4 1:1000

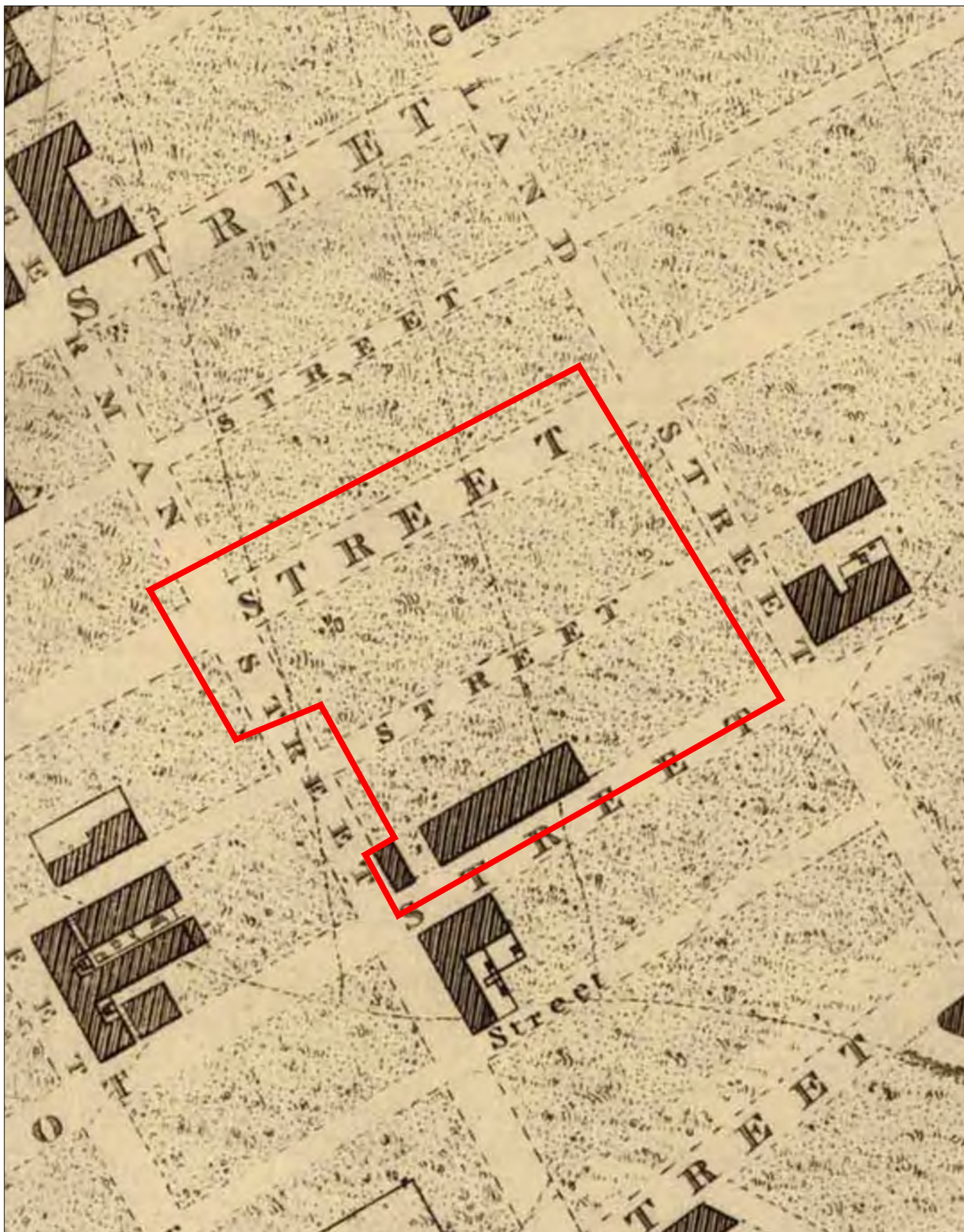


Figure 3:
Site Boundary Superimposed onto Green's Map of Manchester & Salford 1787-94



Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m



Scale at A4 1:1000

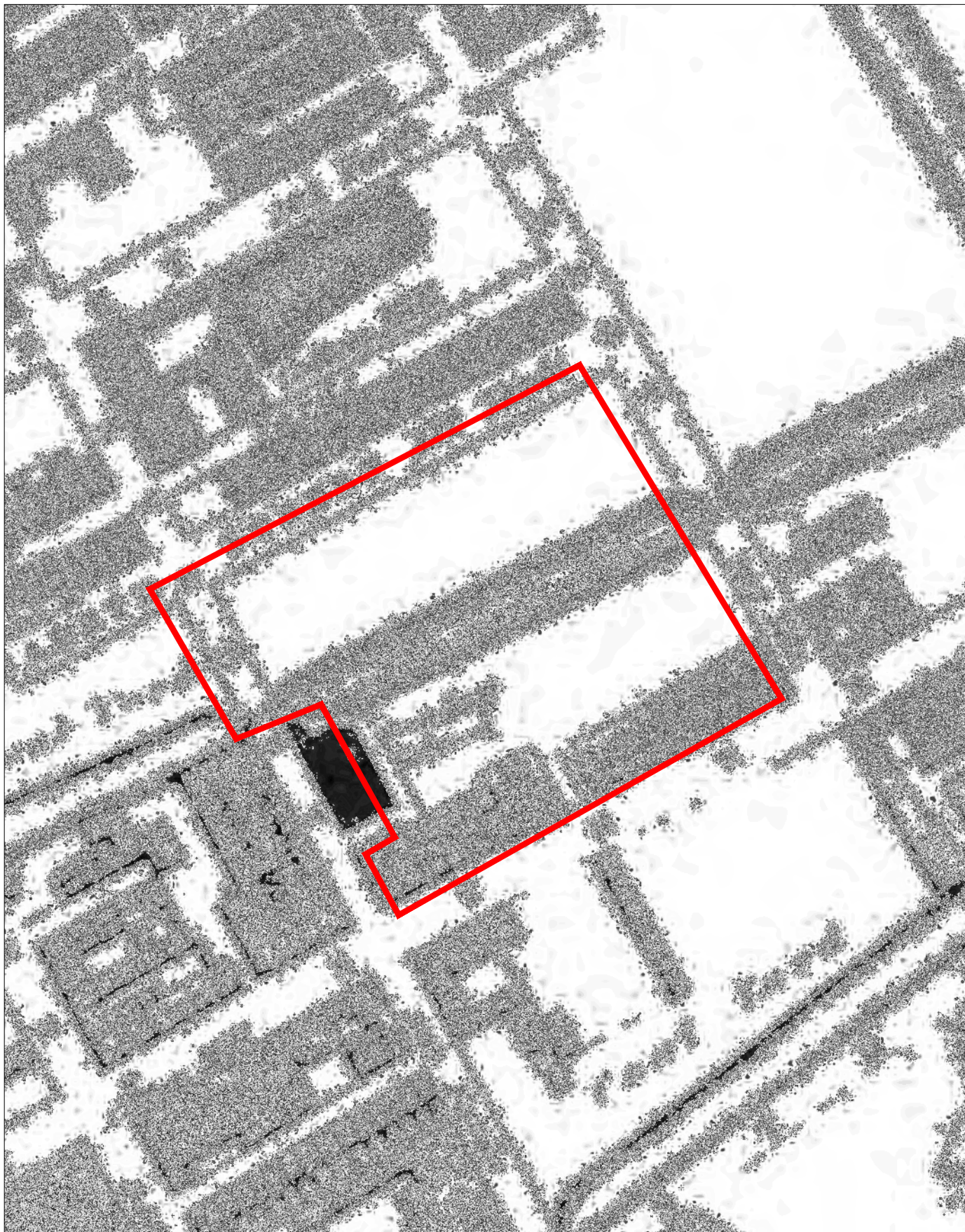


Figure 4:
Site Boundary Superimposed onto Bancks & Co's Map of Manchester & Salford 1831



Key:

— Site Boundary



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0 50 m
Scale at A4 1:1000



Figure 6:

Site Boundary Superimposed onto the 1:500 Town Plan of 1891

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m

Scale at A4 1:1000



Figure 7:

Site Boundary Superimposed onto the 1:2500 County Series Map of 1908

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m



Scale at A4 1:1000

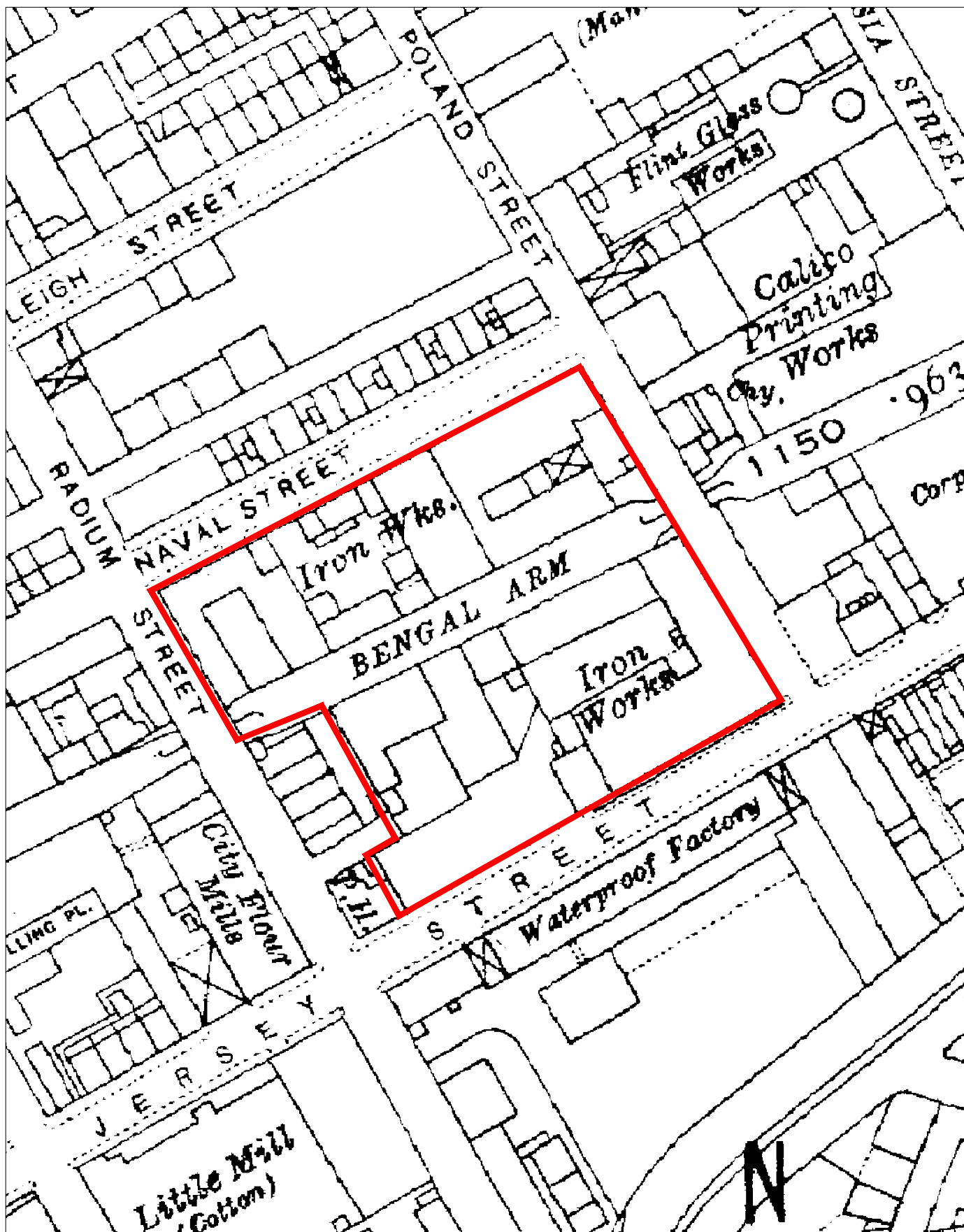


Figure 8:

Site Boundary Superimposed onto the 1:2500 County Series Map of 1922

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m



Scale at A4 1:1000

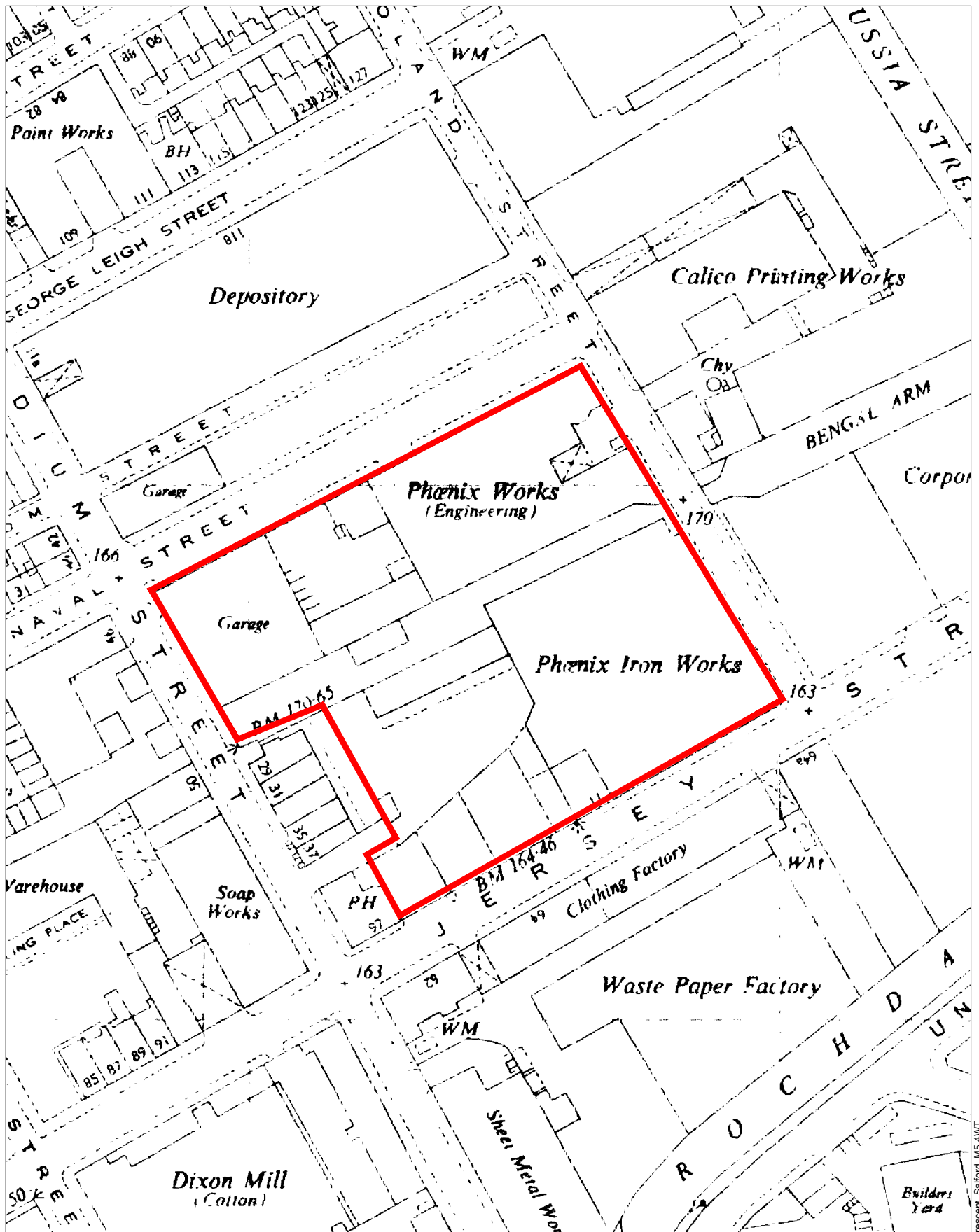


Figure 9:

Site Boundary Superimposed onto the 1:1250 National Grid Map of 1948

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m

Scale at A4 1:1000

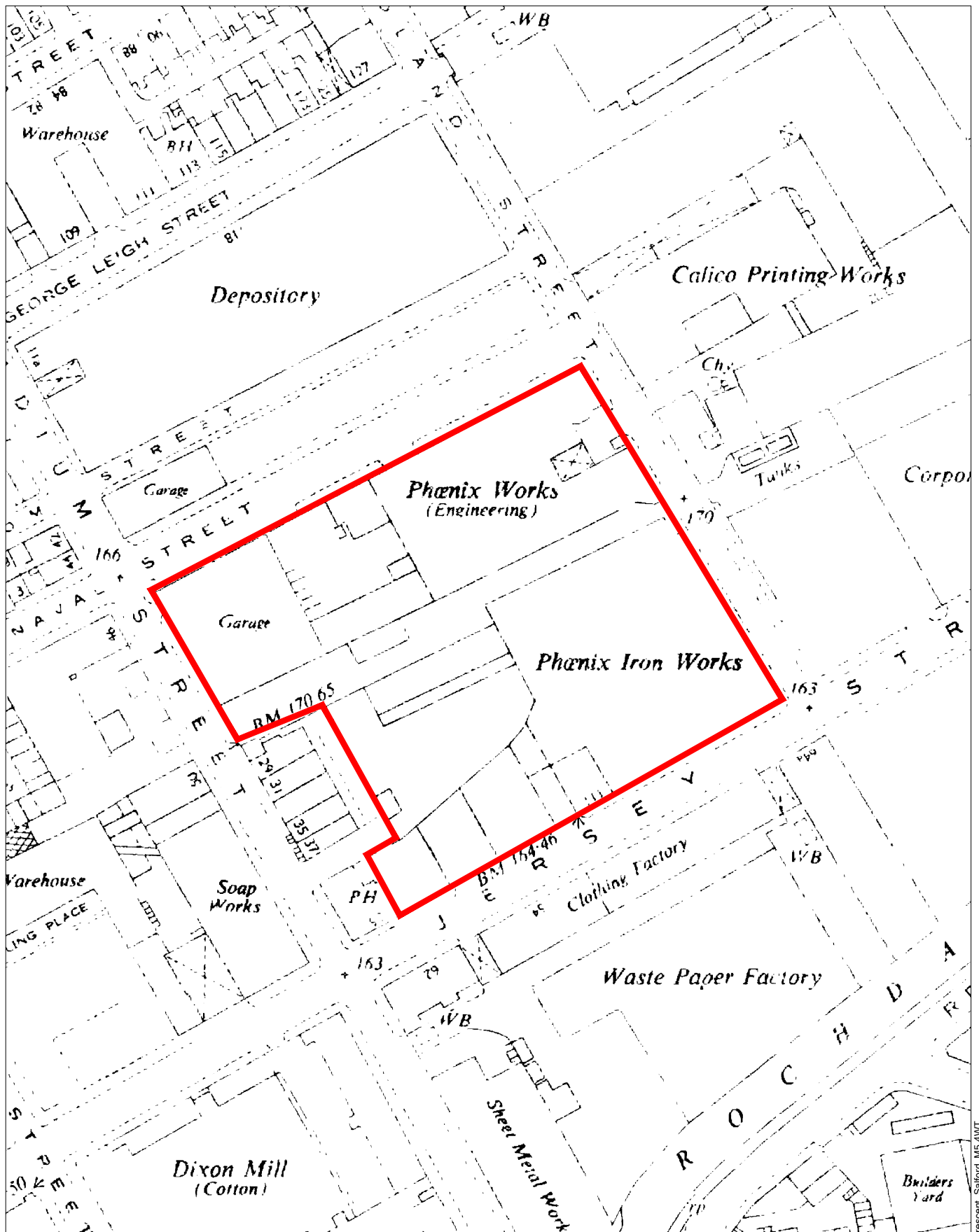


Figure 10:

Site Boundary Superimposed onto the 1:1250 National Grid Map of 1953

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m



Scale at A4 1:1000

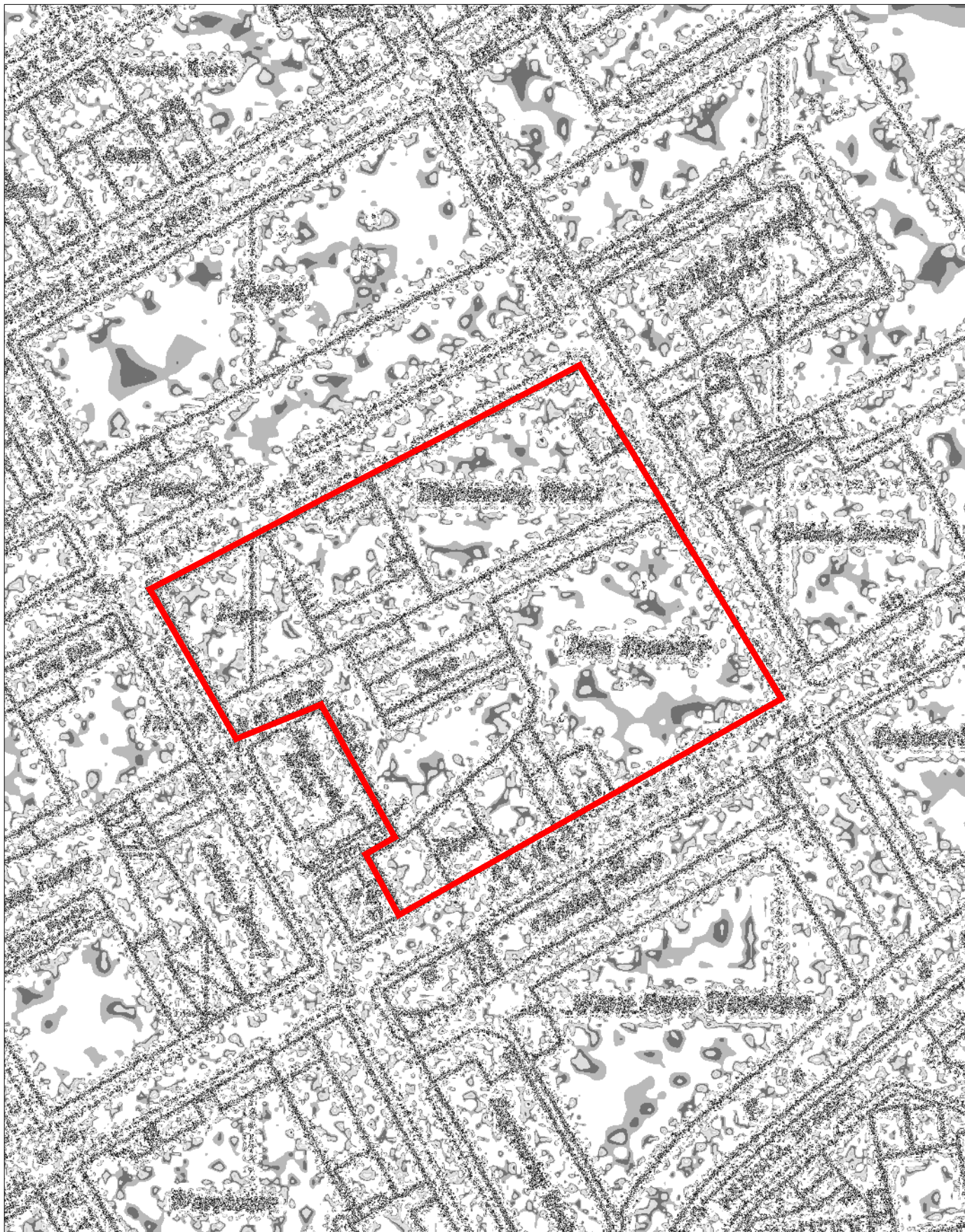


Figure 11:

Site Boundary Superimposed onto the 1:2500 National Grid Map of 1969

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Key:

— Site Boundary



**SALFORD
ARCHAEOLOGY**

0 50 m



Scale at A4 1:1000



Key

- GE12 - Cross Keys Inn
- GE11 - Coal wharfs
- GE10 - Cotton warp sizing and fustain finishing works (full extent)
- GE09 - Steam power plant (iron works)
- GE07 - Early 19th-century workers' houses
- GE06 - Former canal bridge, Radium Street
- GE05 - Former canal bridge, Poland Street
- GE04 - Bengal Arm of the Rochdale Canal
- GE03 - 18th-century workers' houses
- GE02 - Cross Keys Public House
- GE01 - Relict soils
- Site boundary

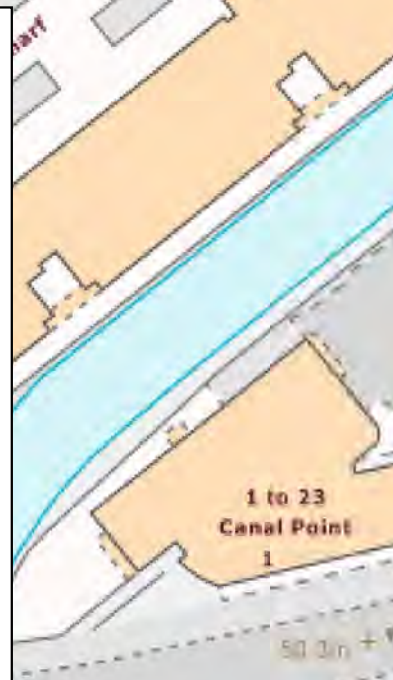


Figure 12: Locations of Gazetteer Entries

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0 10 20 m



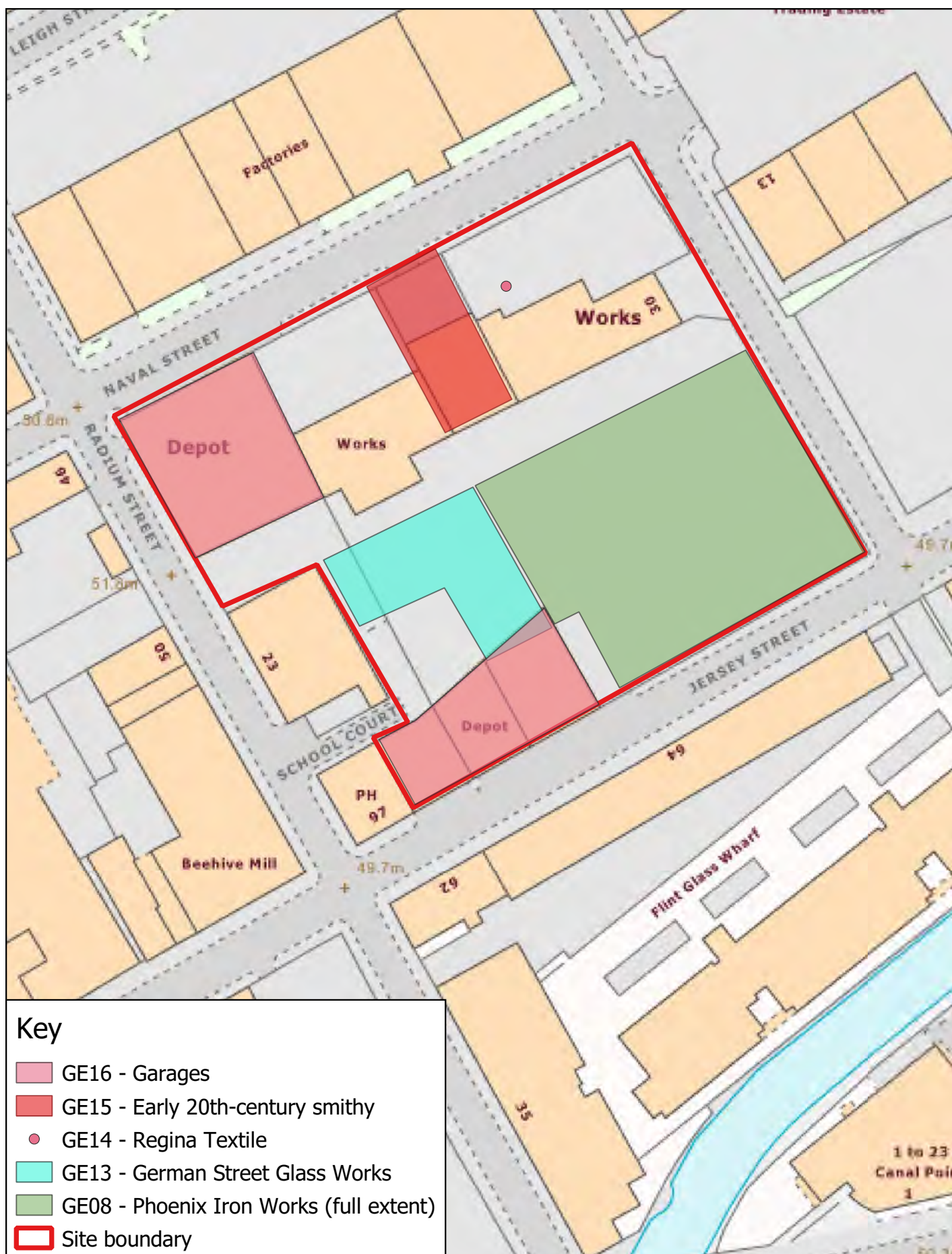


Figure 13: Locations of Gazetteer Entries

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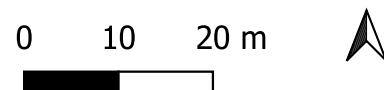




Figure 14: Area of archaeological potential

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0 10 20 m





CONSULTANCY



DESK-BASED ASSESSMENTS



WATCHING BRIEF & EVALUATION



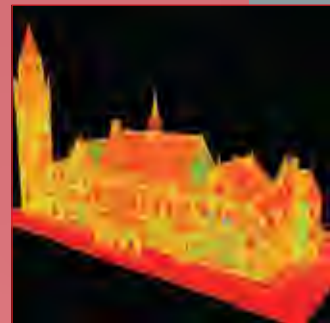
EXCAVATION



BUILDING SURVEY



3D LASER SCANNING



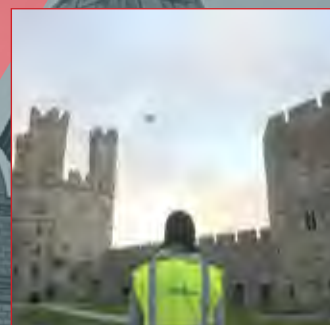
COMMUNITY INVOLVEMENT



LANDSCAPE SURVEYS



DRONE SURVEYS



WORKSHOPS & VOCATIONAL TRAINING



RESEARCH PUBLICATIONS



SEMINARS, DAYSCHOOLS CPD EVENTS

