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ARCHAEOLOGICAL DESK BASED ASSESSMENT

25 NOVEMBER 2013

Etihad Stadium Extension,

East Manchester,

Manchester

Archaeological Desk-based Assessment

Oxford Archaeology North

November 2013

BDP and Manchester City Football Club

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SUMMARY

Manchester City Football Club is presently devising proposals to extend the Etihad Stadium in East Manchester (centred on NGR 386800 398515). The proposals allow for an expansion of the South Stand and the North Stand, and the addition of 2,000 seats at pitch side, to increase the capacity of the Stadium. In order to facilitate the planning process, Oxford Archaeology North was commissioned to carry out an archaeological desk-based assessment of the Site Area. This was intended to establish as far as possible, the nature and significance of the sub-surface archaeological resource within the area of the proposed development, and to establish the impact of any future development upon this resource. The data generated from the assessment is intended to provide an informed basis regarding the significance of any archaeological heritage assets within the site.

In total, 38 heritage assets have been identified with a 250m radius of the centre of the Site Area, which include four Listed Buildings. In addition, elements of Philips Park, a Registered Park and Garden, lies with the north-eastern part of the wider study area, although the proposed development is outside the designated area. Of the total heritage assets identified, only 15 lie within the boundary of the Site Area. None of these are afforded statutory designation, and are thus not considered to be of national importance that would require preservation *in-situ*.

Most of the heritage assets within the Site Area are considered to be of low local archaeological importance, reflecting the known or probable extent of previous damage or disturbance. A few sites are considered to be of local, or even borough importance, which may merit preservation by record, should they be damaged or destroyed by future development. In particular, any buried remains of mid-nineteenth-century back-to-back dwellings situated adjacent to the North Stand would potentially be of archaeological interest, as they represent late examples of this type of domestic building in the Manchester area. Other sites of archaeological interest that could potentially survive as buried remains include small elements of the mid-nineteenth-century Bradford Iron Works, and part of a former reservoir that formed an early component of the infrastructure developed by the Manchester and Salford Water Works Company, although it is not anticipated that there will be any ground-breaking works in these areas.

The requirement for any further archaeological investigation of the Site Area in advance, or during, the proposed development would be based on a recommendation by the Greater Manchester Archaeological Advisory Service, which provides advice on planning applications to Manchester City Council. However, pending final design proposals, and the extent of ground-breaking works associated with the development, it is anticipated that a programme of archaeological investigation of the mid-nineteenth-century back-to-back dwellings may be merited. This may take the form of a watching brief during the ground works necessitated by the development. Should significant remains be found that would be damaged or destroyed by the future development of the site, these may require further excavation work to ensure preservation by record.

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Oxford Archaeology North (OA North) would like to thank Steve Merridew, Environmental Design Designer with BDP, for commissioning and supporting the project on behalf of Manchester City Football Club. Thanks are also due to Jay Patel with Deloitte Real Estate LLP for logistical support. OA North is also grateful to Norman Redhead, the Heritage Management Director with the Greater Manchester Archaeological Advisory Service (GMAAS), for his support and advice, and to Lesley Dunkley, for supplying data from the Greater Manchester Historic Environment Record. OA North is also grateful to the staff of the Museum of Science and Industry in Manchester, and the Lancashire County Record Office, for their assistance with the historical research.

The desk-based research and report was compiled by Dr Rachel Street, and the illustrations were produced by Mark Tidmarsh. The report was edited by Ian Miller, who was also responsible for project management.

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1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Manchester City Football Club (MCFC) is presently devising proposals to extend the Etihad Stadium in East Manchester (referred to hereafter as the Site Area). The current proposals allow for an expansion of the South Stand of the Stadium from a capacity of 47,500 to a maximum match-day capacity of 54,000, an extension of the North Stand to increase the capacity from 54,000 to a maximum match-day capacity of 60,000, and the addition of 2,000 seats at pitch side.

1.1.2 In order to facilitate the process, BDP, acting on behalf of MCFC, commissioned Oxford Archaeology North (OA North) to carry out an archaeological desk-based assessment of the Site Area. This was intended to establish as far as possible, the nature and significance of the sub-surface archaeological resource within the area, and to assess the impact of any future development upon this resource. The data generated from the assessment is intended to provide an informed basis regarding the significance of any archaeological heritage assets within the site, and thus inform the planning process.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 The Site Area (centred on NGR 386800 398515) is situated within the Bradford area of Manchester, which lies some 1.5km to the east of the city centre (Fig 1). It is bounded by Alan Turing Way to the west, the Ashton Canal to the north, Rowsley Street and the Regional Athletics Arena to the west, and Ashton New Road to the south (Plate 1).

1.2.2 The Site Area is located at the heart of the Etihad Campus (formerly known as Eastlands), which is at the centre of East Manchester. The Etihad Campus is a large area of formerly heavy industrial land that is part way through a dramatic transformation. Other developments within the Campus include the Regional Tennis Centre, the Regional Athletics Arena, the Velodrome, the National Squash Centre and the new Indoor BMX Arena.

1.2.3 The Campus is surrounded by a mixture of commercial and residential development, which includes the neighbourhoods of Beswick, Clayton, Openshaw and Miles Platting. The historic Philips Park is located to the north-east, and the Sport City District Centre, including an Asda superstore, is located to the east. The new City Football Academy (CFA) development, which is currently under construction, is located to the south-west of the site. There is also a car dealership located immediately to the south-west of the Site Area.

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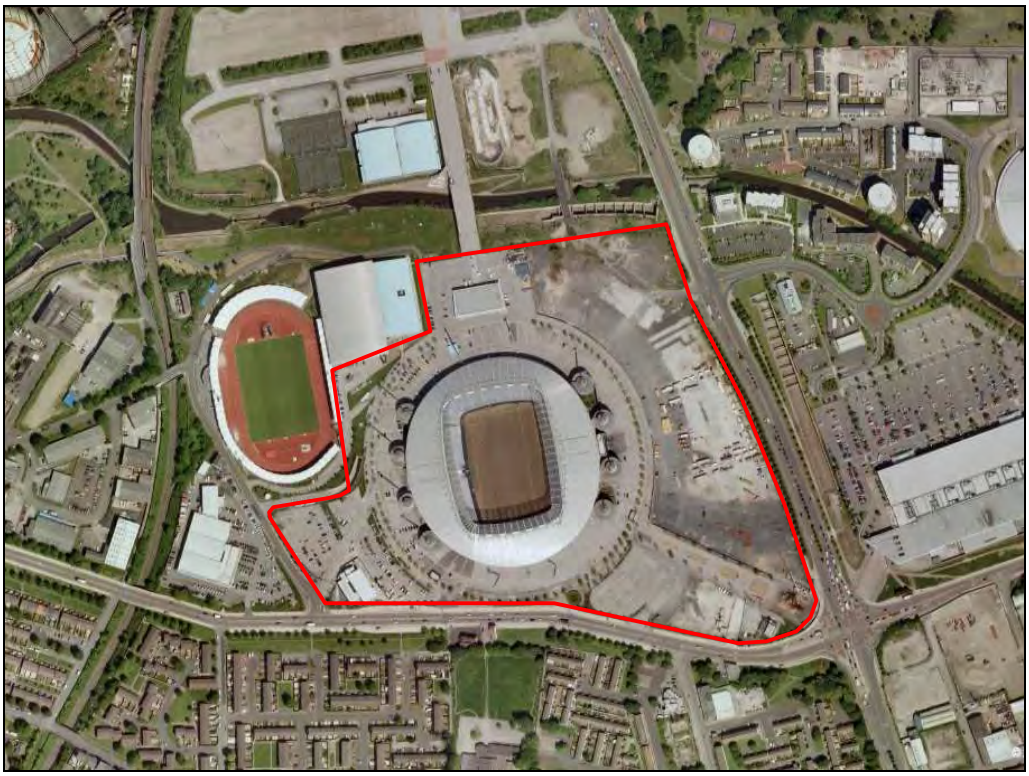

Plate 1: Aerial view of the Etihad Stadium, showing the indicative boundary of the Site Area

1.2.4 ***Topography:*** 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 the Mersey river valley, whilst the rivers Irwell, Medlock, and Irk represent the principal watercourses in Manchester (Countryside Commission 1998, 125).

1.2.5 The Site Area, however, is situated close to the southern bank of the river Medlock. It lies at a height of approximately 60m above Ordnance Datum (aOD) and, in broad terms, is fairly level, with localised variations that are the direct result of recent landscaping schemes.

1.2.6 ***Geology:*** Bradford lies on the Manchester Coalfield, which extends for some 6.5km through East Manchester, and is up to 2.5km wide. It is enclosed almost entirely by strata of red sandstone, which separates the Manchester Coalfield from the South-West Lancashire and Oldham coalfields. The Upper Coal Measures form the highest commercially viable beds of the coalfield, and comprises two thin seams of coal between bands of shales, limestone and sandstones. The overlying drift incorporates Pleistocene boulder clays of glacial origin, and sands, gravels, and clays of fluviatile/lacustrine origin (Hall *et al* 1995, 8).

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1.3 STATUTORY SITES

1.3.1 The Site Area does not contain any heritage assets that are afforded statutory protection, such as Scheduled Monuments, Listed Buildings, or any Registered Parks and Gardens. However, there are four Listed Buildings within a 250m radius of the Site Area boundary, whilst part of Philips Park, a Grade II Registered Park and Garden, also lies within a 250m radius (Fig 2).

1.3.2 The four Listed Buildings are all associated with the Ashton-under-Lyne Canal, which takes a route immediately to the north of the Site Area (Fig 2). The designated buildings comprise two locks, a bridge and a lock keeper's cottage.

1.3.3 Philips Park, together with Queen's Park in Manchester and Peel Park in Salford, were all established at public expense as a single enterprise, and were the first three public parks in the Manchester area. They were designed by Joshua Major (1786-1866) following an open competition, and opened consecutively on the same day in August 1846. Philips Park was afforded statutory designation as a Registered Park and Garden in 2001.

1.3.4 English Heritage compiles a non-statutory Register of Parks and Gardens of Special Historic Interest to highlight the existence of such areas to highway and planning authorities in order that they can be considered for safeguarding during the planning for developments. The grading system used for listed buildings applies to parks and gardens

1.3.5 It is important to consider impact of the proposed development on the setting of these designated assets. Whilst this has not been assessed in detail during the present study, the impact on the historic setting of the Listed Buildings and the Registered Park and Garden is unlikely to be greater than negligible, as the proposals allow for limited extension of an existing structure.

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2. METHODOLOGY

2.1 DESK-BASED ASSESSMENT

2.1.1 The archaeological assessment has focused on the Site Area, although information for a 250m radius has been considered in order to provide an essential contextual background. The assessment was carried out in accordance with the relevant IfA and English Heritage guidelines (IfA 2011, *Standard and Guidance for Archaeological Desk-based Assessments*; IfA 2010 *Code of Conduct*; English Heritage 2006, *Management of Research Projects in the Historic Environment* (MoRPHE)). The principal sources of information consulted were historical and modern maps, although published and unpublished secondary sources were also reviewed. The following repositories were consulted during the data-gathering process:

- ***Greater Manchester Historic Environment Record (HER):*** the HER holds data on the historic environment for Greater Manchester, including Listed Buildings, all known archaeological sites, along with the location and results of previous archaeological interventions in a linked GIS and database format. The HER was consulted to establish the extent of sites of archaeological and historic interest within the study area;
- ***Lancashire County Record Office (LRO), Preston:*** holds copies of mapping for the Manchester area, as well as a collection of secondary sources about the city and its suburbs;
- ***Greater Manchester Record Office, Manchester (GMRO):*** the catalogue of the Greater Manchester Record Office was searched for information relating to the study area, and relevant data was incorporated into the report;
- ***Archives and Local Studies, Manchester Central Library (MCL):*** the catalogue of the Archives and Local Studies section of Manchester Central Library was searched for information relating to the study area, although the library is presently closed to the public and could not therefore be visited;
- ***Local Studies Unit at Manchester Central Library:*** the local studies unit was consulted for information pertinent to the study area;
- ***Museum of Science and Industry, Manchester:*** the catalogue of the Museum of Science and Industry archives was searched for information relating to the study area, and relevant data was incorporated into the report;
- ***Oxford Archaeology North:*** OA North has an extensive archive of secondary sources relevant to the study area, incorporating both published work and unpublished client reports.

2.1.2 All archaeological sites in the Site Area and within a radius of 250m have been included in the Site Gazetteer (*Section 4*; Fig 2).

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2.2 ASSESSMENT METHODOLOGY

2.2.1 The results of the assessment have identified the significance of the archaeological resource of the Site Area. In order to assess the potential impact of any future development, consideration has been afforded to:

- assessing in detail any impact and the significance of the effects arising from any future development of the Site Area;
- reviewing the evidence for past impacts that may have affected the archaeological sites of interest identified during the desk-based assessment;
- outlining suitable mitigation measures, where possible at this stage, to avoid, reduce, or remedy adverse impacts.

2.2.2 Such impacts on the identified archaeological sites may be:

- positive or negative;
- short, medium or long term;
- direct or indirect;
- reversible or irreversible.

2.2.3 Key impacts have been identified as those that would potentially lead to a change to the archaeological site. Each potential impact has been determined as the predicted deviation from the baseline conditions, in accordance with current knowledge of the site and the proposed development. Table 1 shows the sensitivity of the site scaled in accordance with its relative importance using the following terms for the cultural heritage and archaeology issues, with guideline recommendations for a mitigation strategy.

Importance	Examples of Site Type	Mitigation
National	Scheduled Monuments (SMs), Grade I and II* Listed Buildings	To be avoided
Regional/County	Conservation Areas, Registered Parks and Gardens (Statutory Designated Sites), Grade II Listed Buildings Sites and Monuments Record/Historic Environment Record	Avoidance recommended
Local/Borough	Sites with a local or borough archaeological value or interest Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Low Local	Sites with a low local archaeological value Sites that are so badly damaged that too little remains to justify inclusion into a higher grade	Avoidance not envisaged
Negligible	Sites or features with no significant archaeological value or interest	Avoidance unnecessary

Table 1: Criteria used to determine Importance of Sites

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2.2.4 The impact is assessed in terms of the sensitivity of the site to the magnitude of change or scale of impact during any future redevelopment scheme. The magnitude, or scale of an impact is often difficult to define, but will be termed as substantial, moderate, slight, or negligible, as shown in Table 2.

Scale of Impact	Description
Substantial	Significant change in environmental factors; Complete destruction of the site or feature; Change to the site or feature resulting in a fundamental change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Moderate	Significant change in environmental factors; Change to the site or feature resulting in an appreciable change in ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Slight	Change to the site or feature resulting in a small change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.
Negligible	Negligible change or no material changes to the site or feature. No real change in our ability to understand and appreciate the resource and its cultural heritage or archaeological value/historical context and setting.

Table 2: Criteria used to determine Scale of Impact

2.2.5 The interaction of the scale of impact (Table 2) and the importance of the archaeological site (Table 1) produce the impact significance. This may be calculated by using the matrix shown in Table 3:

Resource Value (Importance)	Scale of Impact Upon Archaeological Site			
	Substantial	**Moderate**	**Slight**	**Negligible**
National	Major	Major	Intermediate/ Minor	Neutral
Regional/County	Major	Major/ Intermediate	Minor	Neutral
Local/Borough	Intermediate	Intermediate	Minor	Neutral
Local (low)	Intermediate / Minor	Minor	Minor/ Neutral	Neutral
Negligible	Neutral	Neutral	Neutral	Neutral

Table 3: Impact Significance Matrix

2.2.6 The impact significance category for each identified archaeological site of interest will also be qualified, and recommended mitigation measures will be provided, where possible at this stage, to impacts that are of moderate significance or above; any measures to reduce any impact will be promoted in the report. It is also normal practice to state that impacts above moderate significance are regarded as significant impacts. It is important that the residual impact assessment takes into consideration the ability of the mitigation to reduce the impact, and its likely success.

2.2.7 It is also considered important to attribute a level of confidence by which the predicted impact has been assessed. For the purpose of this assessment, the criteria for these definitions are set out in the table below.

Confidence in Predictions	
Confidence Level	**Description**
High/Certain	The predicted impact is either certain, *ie* a direct impact, or believed to be very likely to occur, based on reliable information or previous experience, and may be estimated at 95% chance or higher.
Medium/Probable	The probability can be estimated to be above 50%, but below 95%.
Low/Unlikely	The predicted impact and it levels are best estimates, generally derived from the experience of the assessor. More information may be needed to improve the level of confidence, which can be estimated using the present information at above 5% but less than 50%.
Extremely Unlikely	The probability can be estimated at less than 5%.

Table 4: Impact Prediction Confidence

2.3 PLANNING BACKGROUND AND LEGISLATIVE FRAMEWORK

2.3.1 ***National Policy Framework:*** in considering any planning application for development, local planning authorities are bound by the policy framework set by government guidance. This guidance provides a material consideration that must be taken into account in development management decisions, where relevant. In accordance with central and local government policy, this assessment has been prepared in order to clarify the study site's archaeological potential and to assess the need for any further measures to mitigate the impact of the proposed development.

2.3.2 National planning policies on the conservation of the historic environment are set out in National Planning Policy Framework (NPPF), which was published by the Department of Communities and Local Government (DCLG) in March 2012. Sites of archaeological or cultural heritage significance that are valued components of the historic environment and merit consideration in planning decisions are grouped as 'heritage assets'; 'heritage assets are an irreplaceable resource', the conservation of which can bring 'wider social, cultural, economic and environmental benefits...' (DCLG 2012, *Section 12.126*). The policy framework states that the 'significance of any heritage assets affected, including any contribution made by their setting' should be understood in order to assess the potential impact (DCLG 2012, *Section 12.128*). In addition to standing remains, heritage assets of archaeological interest can comprise sub-surface remains and, therefore, assessments should be undertaken for a site that 'includes or has the potential to include heritage assets with archaeological interest' (DCLG 2012, *Section 12.128*).

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2.3.3 NPPF draws a distinction between designated heritage assets and other remains considered to be of lesser significance; 'great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be…substantial harm to or loss of a Grade II Listed Building, Park or Garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, including scheduled monuments, protected wreck sites, battlefields, Grade I and II* Listed Buildings and Grade I and II* Registered Parks and Gardens and World Heritage Sites, should be wholly exceptional' (DCLG 2012, *Section 12.132*). Therefore, preservation *in-situ* is the preferred course in relation to such sites unless exception circumstances exist.

2.3.4 It is normally accepted that non-designated sites will be preserved by record, in accordance with their significance and the magnitude of the harm to or loss of the site as a result of the proposals, to 'avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposals' (DCLG 2012, *Section 12.129*). Non-designated heritage assets of archaeological interest will also be subject to the policies reserved for designated heritage assets if they are of equivalent significance to scheduled monuments (DCLG 2012; *Section 12.132*).

2.3.5 ***Setting:*** the historic setting of a site also needs to be taken into account when considering any development proposals, and whether the character of that setting will sustain any impact as a result of development.

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3. BACKGROUND

3.1 HISTORICAL BACKGROUND

3.1.1 The following section provides an historical context to the present study, and is considered by period as detailed in Table 5 below. Key sites are summarised in the Gazetteer of Sites with numbers given in brackets (*Section 4*), and are mapped on Figure 2.

Period	Date Range
Palaeolithic	30,000 – 10,000 BC
Mesolithic	10,000 – 3,500 BC
Neolithic	3,500 – 2,200 BC
Bronze Age	2,200 – 700 BC
Iron Age	700 BC – AD 43
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	Post-1914

Table 5: Summary of British archaeological periods and date ranges

3.1.2 ***Prehistoric period:*** the current understanding of any activity in the Manchester area during the prehistoric period is poor, although it is reasonable to suggest that the Castlefield area in the centre of the city may have been conducive for late prehistoric settlement on account of the natural topography and its riverside location. However, physical indications for any such settlement are, at best, fragmentary, and there is no known evidence for prehistoric activity in proximity to the Site Area (UMAU 2000).

3.1.3 ***Roman period:*** evidence for Roman activity in the vicinity of the Site Area is similarly lacking. The first military occupation of Manchester was established during the governorship of Agricola (AD 77-84), and commenced with a five-acre wooden fort, known as *Mamucium*, which was established in the Castlefield area of the city (Brunton 1909). During the second century, the fort was developed in association with a substantial civilian settlement, or *vicus*, which expanded in both a northerly direction, and along the line of Chester Road to the south (Grealey 1974, 11). Roads from the fort linked Manchester with Ribchester to the north, Castleshaw, Slack and York to the north-east, Wigan to the north-west, Northwich and Chester to the south (Gregory 2007), and Buxton to the south-east. The route of the road to Castleshaw, Slack and York has been projected as running on a line some 0.3km to the north-west of the Scheme Area, while a third-century coin is reported to have been found in Philips Park. However, this Roman coin was an isolated find, and there is no additional evidence for any Roman settlement in Bradford (UMAU 2000).

3.1.4 ***Early medieval period:*** there is scant archaeological evidence in the region as a whole that represents the period between the end of the Roman occupation and the Norman Conquest. The area around Manchester came under the control of several kingdoms during this period. In AD 620, Edwin conquered and occupied Manchester, and it may have been at this time that settlement in the town was established around the cathedral (Farrer and Brownbill 1911). However, there is no known evidence for any human activity during this period in the Site Area or its immediate vicinity.

3.1.5 ***Medieval period:*** the Site Area is located within the historic township of Bradford, which is documented from the 1160s. The name is believed to have derived from Old English, and means 'wide ford'. This may refer to a crossing point over the River Medlock at the end of Mill Street, which lies a short distance to the north-east of the Site Area (Mills 1976, 66; Crofton 1905, 385). During this period, the area is likely to have comprised a mixture of wood land and good pasture, with water meadows alongside the River Medlock (Cooper 2002, 30). Local tradition maintains that wolves and eagles once inhabited the woodlands, and that honey production was part of the local economy, although there is little firm evidence to corroborate such claims.

3.1.6 By the late thirteenth century, Bradford formed part of the demesne land of the lords of Manchester. Settlement during this period is likely to have been focused around Bradford Old Hall (Site **23**), although the origin of this manor house is not entirely clear. The hall is not mentioned in surveys of the demesne land carried out in 1282 and 1322, suggesting that it may not have been built by that date (UMAU 2000). However, it seems possible that the hall was built between the 1330s and 1350s, when the manor of Bradford was held by John de Salford of Wakerley (Worsley). The manor was granted to Thomas de Booth of Barton by the lord of Manchester in 1357 and, in the early 1360s, de Booth also bought out the Wakerley family. Contemporary documents refer to a 'messuage' or dwelling, indicating that the hall may have been extant by that date. The manor house is also alluded to in 1514, when John Booth was recorded as having held the manor of Bradford Hall (Crofton 1905, 399-404).

3.1.7 The final reference to the hall is provided by an entry in a rate book of 1717-8 (*ibid*), and it seems to have been demolished shortly afterwards. It was replaced by a new manor house, which was built to the north, on the southern bank of the River Medlock. The site of the original hall and its moat is depicted on a plan of Bradford dating to 1761, although the actual hall is not shown, suggesting that it had been demolished by that date (Plate 2). Access across the moat was via a bridge across its south side, leading to the central area that is depicted as covered by trees on the plan of 1761.

3.1.8 The plan of 1761 shows that the land around Bradford Old Hall to have been divided into several small plots, within which are several possible buildings. The land to the south was divided into several larger fields, bounded to the south and east by roads (later named Ashton New Road and Mill Street). On the east side of Mill Street two adjacent fields are named as 'New Coal Pit Field' and 'Further Coal Pit Field'. The underground mine workings in the 'Four Feet Seam' are also marked on the plan, although this is almost certainly later annotation.

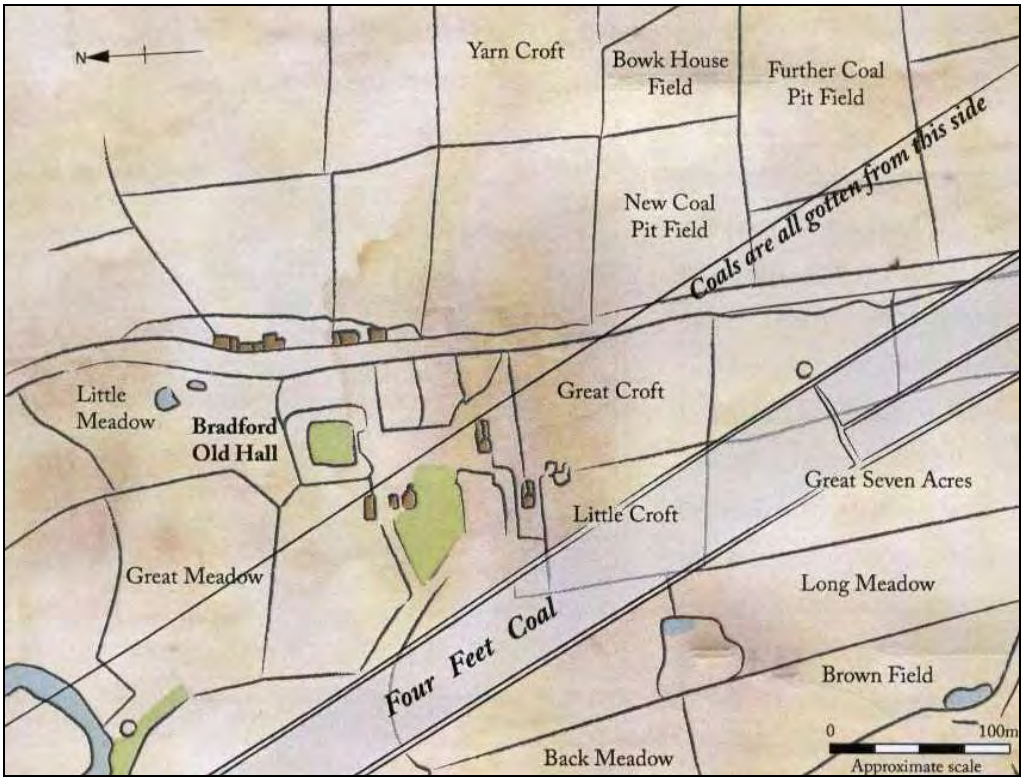

Plate 2: Copy of a plan of Bradford of 1761, showing the moat of Bradford Old Hall and the location of local coal seams (reproduced from Miller 2011)

3.1.9 A coal pit in the Bradford township is mentioned as early as 1593, when it was affected by flooding (Crofton 1905, 394-5). Coal mines are again mentioned in Bradford in 1607-8; and in 1611, 1622, and twice in the 1660s, individuals were buried in Manchester parish church (now the Cathedral) who had died as a result of accidents at 'Bradford coal pit' (Farrer and Brownbill 1911, 275; Crofton 1904, 121-4; Hatcher 1993, 122).

3.1.10 ***Industrial period:*** the completion of the Ashton-under-Lyne Canal from Ashton to Manchester in 1796 acted as a catalyst for the industrial development of the area. The canal took a route immediately to the north of the present Site Area and, from cartographic evidence, seemingly utilised part of the moat of Bradford Old Hall as a side reservoir for a short section of the canal between two locks. This arrangement is depicted clearly on a plan of the area that is undated, but probably produced in the early nineteenth century. This map also depicts several mining shafts is the area; two shafts are depicted to the east of the moat, a third shaft is shown a short distance to the west of the moat, and another shaft is marked on the site of what became Bradford Colliery (Site **03**).

3.1.11 Johnson's map of 1820 show two coal pits with associated buildings on the site of Bradford Colliery, and within the present Site Area (Fig 3); at least one of these buildings was probably for the winding gear. The pits are likely to have been owned by the Bradford Colliery Company, which is listed in a trade directory for 1822 as the owner of a coal yard on Newton Street in the Ancoats area of Manchester (Pigot 1822, 157).

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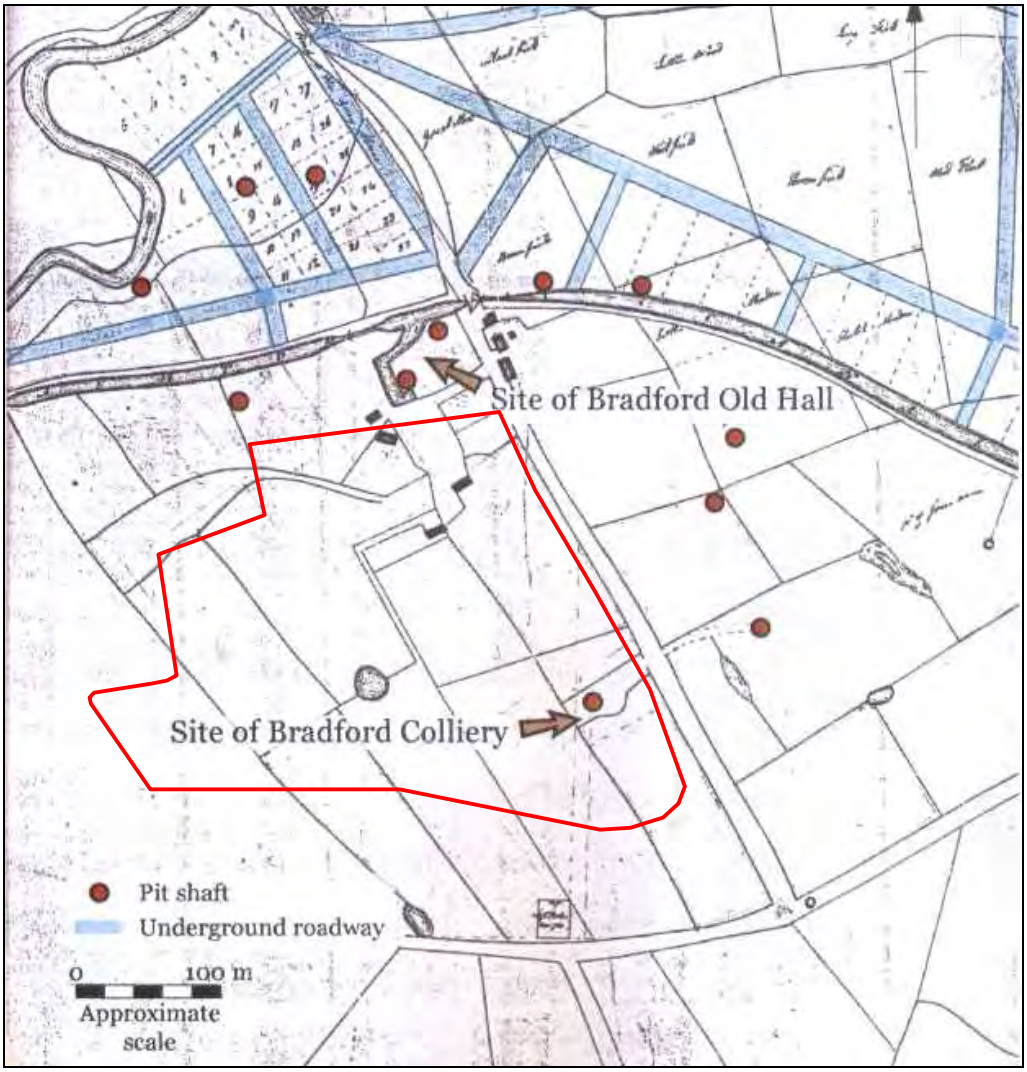

Plate 3: A plan probably dating to the early nineteenth century, showing the canal utilising the former moat of Bradford Old Hall, together with numerous coal pits, and the approximate position of the indicative Site Area boundary (reproduced from Miller 2011)

3.1.12 The Bradford Colliery Company is referred to in a newspaper article of 1835 (*Manchester Times and Gazette*, 10 January 1835). By that date, it seems likely that the colliery was owned by the firm of Thomas Porter & Co, which is listed in a trade directory for 1834 as the owners of the coal yard on Newton Street in Ancoats (Pigot 1834, 408). A newspaper article printed some eight years later recounts an act of highway robbery, where a man returning home from his coal yards 'was stunned by a violent blow in the forehead'. The victim, Thomas Porter, is described as 'a proprietor of coal pits at the Bradford Colliery' (*Preston Chronicle*, 5 February 1842).

3.1.13 Johnson's map also shows a large reservoir in the western part of the Site Area, which was built by the Manchester and Salford Waterworks Company (Site **05**). This company was established in 1808, and built reservoirs on the eastern fringe of Manchester at Beswick, Bradford, Gorton and Audenshaw. These reservoirs cumulatively supplied two million gallons of water per day to the town, initially in stone pipes, although these were replaced by iron pipes in 1817 (Parkinson-Bailey 2002, 39).

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3.1.14 Census Returns for Bradford for 1841 provide interesting information on the socio-occupational make-up of Bradford. It is clear that a considerable proportion of the local male population were employed as coal miners at Bradford Colliery, highlighting the importance of the colliery to the local economy (Miller 2011). Bradford New Hall, which had replaced the Old Hall as the manor house, was described at this time as a 'dilapidated farmhouse', reinforcing the impression that the post-medieval landscape was being subject to major change (*Manchester Guardian*, 26 August 1846).

3.1.15 The second half of the nineteenth century saw the emergence of Bradford as an important centre for ironworking and wire drawing. The origin of these industries locally can be traced to 1853, when Richard Johnson & Brother purchased land adjacent to Bradford Colliery with the intention of building an ironworks (Site **10**). This housed puddling furnaces to transform pig iron produced in a blast furnace into wrought iron that could be used for manufacturing wire. In addition to the puddling furnaces, the Bradford Ironworks contained mechanical hammers and rolling mills that were required to process the iron ready for producing, or drawing-out, wire (Miller 2011).

3.1.16 One of the early managers of the Bradford Ironworks was George Bedson, who was responsible for the introduction of several important technological advances that revolutionised the wire-making industry. In particular, in 1860, Bedson introduced the first continuous galvanising plant. The success of this new process led the firm to extend their works in 1864, and land on the west side of Forge Lane was developed as a new galvanising plant (Site **11**). At the same time, the firm persuaded the Lancashire & Yorkshire Railway to build a new goods yard (Site **14**) on adjacent land in return for guaranteeing a minimum traffic of 200 tons per week to and from the ironworks (Seth-Smith 1973).

3.1.17 It was during this period that William Johnson died and, in 1865, Richard Johnson decided to form a partnership with his nephew, leading to the formation of Richard Johnson & Nephew. In that year, building on their reputation for supplying the sheathing wire for the first trans-Atlantic cable, Richard Johnson & Nephew secured the contract to supply all the wire for the Cincinnati Bridge in America. Hundreds of coils of wire, one-eighth of an inch in diameter, were produced, each coil containing between 12,000 and 16,000 feet of wire (Seth-Smith 1973, 58-64).

3.1.18 Bradford Ironworks was described in 1870 in an article printed in the *Manchester Evening New*s: 'Now Bradford may be described as a thriving industrial community. Nevertheless, it is, to speak mildly not a nice place. If Bradford were in the United States it would doubtless have a daily newspaper of its own, two large boarding houses and a bank. Being in England, however, it has a public house, a Local Board of Health, a medical hall and several very bad smells…the works at Bradford covers some 10 or 12 acres, and there are employed between 500 and 600 hands. Twenty boilers of an aggregate of 800 horses power supply steam to ten engines of from 20 to 100 horses power each. Thus, Johnsons is a small kingdom of itself…' (*Manchester Evening News* 1870).

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3.1.19 The development of Bradford Colliery and Bradford Ironworks no doubt led to the development of housing in Bradford and, by the end of the nineteenth century, the Site Area and its environs were densely populated. In consequence of the expanding local population, and the associated problems of dealing with issues such as sanitation and drainage on a local scale, Bradford applied to be incorporated within the city of Manchester during the 1880s (Frangopulo 1962, 62). The area continued to expand its industrial base during the twentieth century, although industrial activity was dominated by the Bradford Colliery (Site **03**) and the adjacent Bradford Ironworks (Sites **10** and **11**).

3.1.20 ***Twentieth-century expansion and decline:*** in 1899 the Bradford Colliery Company was formed as a limited company, and was purchased by the Fine Cotton Spinners' and Doublers' Association (*The Times*, 25 May 1901), although continued to trade as the Bradford Coal Company. Developments at the colliery then included the deepening of the downcast shaft (which then became known as the Deep Pit) to 927 yards (847.65m), with the bottom seam of Crombouke coal being intersected at 2769' 9" (844.22m) from the surface (Hayes 2004, 112). At that date, the colliery employed 404 men underground, and 125 surface workers (Warrender 2007, 112). In 1900, an extensive electrical plant was installed, and a second shaft, known as Parker Shaft (No 2), was sunk in 1906.

3.1.21 In 1935, the colliery was purchased by Manchester Collieries Ltd, a considerable concern which, by 1940, owned 14 mines in the Lancashire Coalfield. Several improvements were implemented in order to increase productivity. This included the replacement of the surface plant, which necessitated the demolition of several existing buildings, including a bricksworks that had been established in the early 1870s (Miller 2011). As a result, output from the colliery increased from 171,557 tons in 1937 to 243,363 tons in 1940 (Hayes 2004, 114). Further reorganisation and reconstruction of the pit was completed in 1958. However, the colliery began to lose money in 1966, and final closure was announced in 1968 (*The Times* 8 June 1968), although large reserves of the coal remained (Hayes 2004, 115; Warrender 2007, 114). At that date, nearly 1,500 miners were employed, and daily output was averaging 2,130 tons of saleable coal. The winding gear was demolished in 1973, and any other machinery, which was considered not worth salvaging, was buried on the site (Warrender 2007, 115).

3.1.22 Bradford Ironworks continued to expand during the early twentieth century. The outbreak of the First World War led to a rise in the demand for wire, and particularly barb wire. In order to meet this demand, a new rod mill was built at the ironworks. The company maintained their position at the forefront of the industry into the mid-twentieth century. In 1956, the firm produced the major portion of copper tape and steel armouring that was used in the construction of the first trans-Atlantic telephone cable (Johnson and Nephew 1947). However, in the face of increasing competition from overseas, the works eventually closed in the 1980s, and was demolished subsequently.

3.2 MAP REGRESSION ANALYSIS

3.2.1 The development of the Site Area may be traced from the sequence of available historic mapping. Notwithstanding the eighteenth-century plans of the Bradford estate and coal workings, the earliest reliable map that shows the Study Area at a reasonable scale is William Johnson's '*Map of the Parish of Manchester*', which was published in 1820 (Fig 3). This map shows the study area during an early stage in the process of industrial development. The Site Area is largely undeveloped, although several dispersed buildings and associated structure are shown. These include a rectangular building in the south-western corner of the Site Area (Site **01**), which may have been associated with a circular feature (Site **02**) that is annotated as a coal pit on later mapping. Other coal pits and ancillary buildings are shown in the eastern part of the Site Area, representing the early development of Bradford Colliery (Site **03**). The only other building shown is an isolated structure in the north-eastern corner of the Site Area, which is annotated on later mapping as Oxley Place (Site **04**).

3.2.2 The most significant feature in the Site Area shown on Johnson's map is a large reservoir that formed part of the infrastructure for the Manchester and Salford Water Works (Site **05**). The Ashton-under-Lyne Canal is also shown immediately adjacent to the northern boundary of the Site Area, although the Bradford branch canal (Site **06**) had yet to be constructed.

3.2.3 Several roads in the area are also depicted on Johnson's map. That corresponding broadly with the eastern boundary of the present Site Area became known as Mill Street and, more recently, Alan Turing Way. The road running along the southern boundary was remodelled subsequently as Ashton New Road, which was opened in 1825 as a turnpike between Manchester and Ashton-under-Lyne.

3.2.4 The next available survey of the study area is provided by the Bradford tithe map of 1845, which shows further development of the area (Plate 4). The branch of the canal leading southwards to the colliery had been constructed by that date (Site **06**), extending southwards from the main line of the Ashton Canal to Bradford Colliery. The map also shows a group of buildings (Plot 51) to the north of the Site Area, owned and occupied by William Pritchard and Brothers, and listed as 'Factory, yard and land unbuilt upon'. Situated to the south-east of this are three cottages with yards fronting Mill Street (Plots 54-6) owned by Robert Walker, whilst to the south are a group of cottages (Site **04**) owned by Thomas Oxley (Plots 58-66). Further south is a small plot containing one building and one pit (Forge Pit, labelled on the mid-late nineteenth-century plan of Bradford Colliery) and listed as Plot 69, 'Coal Pit Brow'. In the south-eastern extent of the Site Area are two plots, the northern of which (Plot 158) contains a house and garden owned by Robert Hadfield. To the south-east of this is a group of houses and yards (Plots 150-54), with a stable to the east (Plot 155), all of which are owned by James Butterworth (Site **07**). To the north-east of this is a detached smithy (Plot 149), owned by Jonathan Holland. Another building range is shown in the north-western part of the Site Area (Site **08**).

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3.2.5 Five groups of dwellings are shown in the south-western part of the Site Area, which include a rectangular row of cottages owned by the 'Grey Mare Building Club' (Plots 133-146). West of this is a group of cottages (Plots 126-29), and to the south a group of houses and yards (Plots 130-32), all owned by Catherine Mills. West again is a larger group of cottages (Plots 115-21), again owned by Catherine Mills. South of this, fronting Ashton New Road are a group of cottages and yards including a stable (Plots 109-113, 113a, 114 and 114a), owned by John Holt.

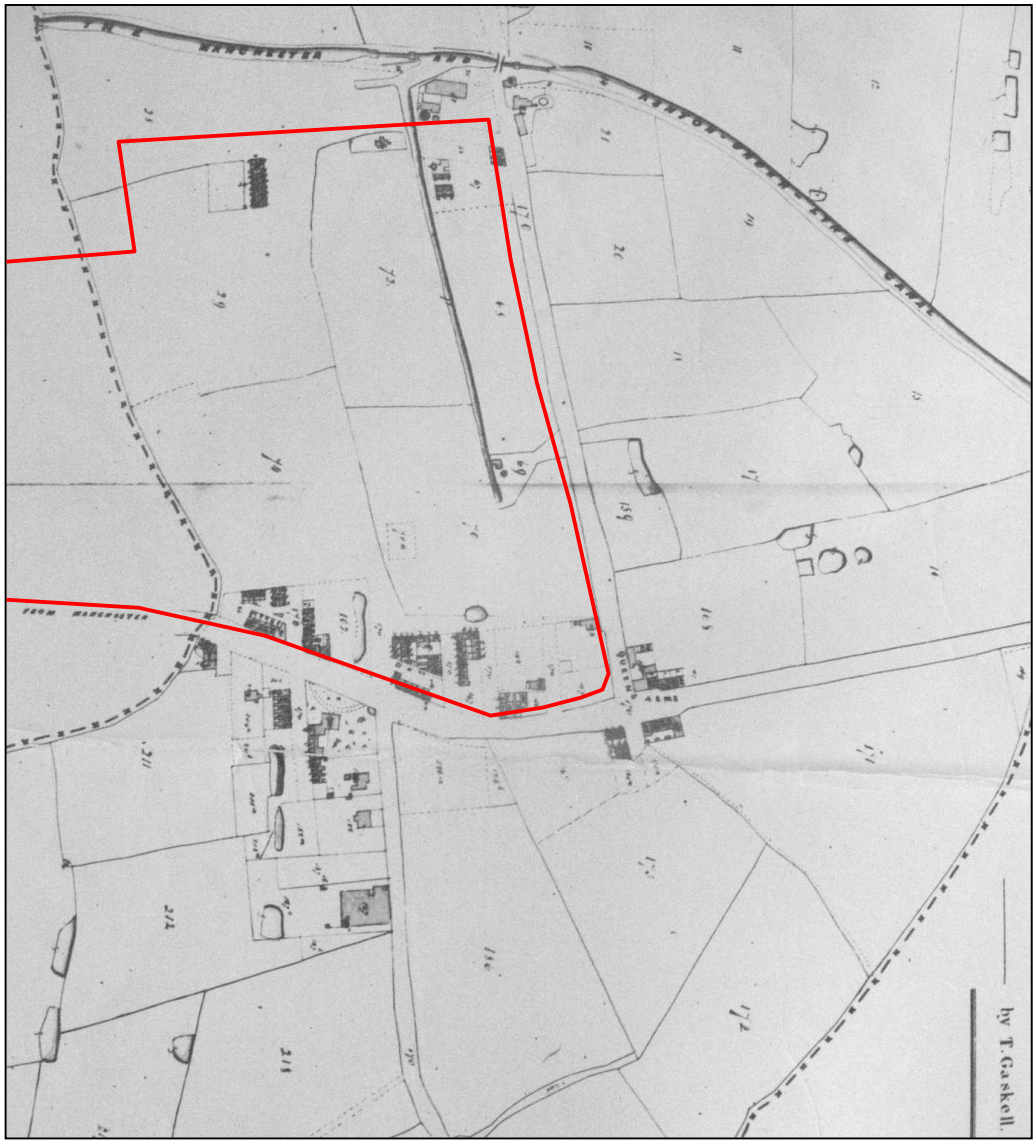

Plate 4: Extract from the Bradford tithe map of 1845, showing approximate position of the indicative Site Area boundary

3.2.6 The layout of the buildings in the Site Area shown on the tithe map is depicted in greater detail on the Ordnance Survey 6":1 mile map of 1848 (Fig 4). The houses in the south-eastern corner of the Site Area are shown (Site **07**), together with Oxley Place in the north-eastern corner (Site **04**). The building range in the north-western part of the Site Area is also shown (Site **08**), and Bradford Colliery (Site **03**) is named as such on the map.

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3.2.7 The area experienced considerable residential development during the second half of the nineteenth century, as shown on the next available edition of Ordnance Survey mapping, which was surveyed in 1888 and published at a scale of 1:500 in 1890, and at 25":1 mile in 1893 (Fig 5). These show that the building range depicted on earlier mapping in the north-western part of the Site Area (Site **08**) to have been a row of 18 back-to-back houses, situated between Bailey Street and Wood Street (Plate 5). Another block of 20 apparent back-to-back housing is shown to the east (Site **09**), situated between Eldon Street and Middlewood Street, with what may represent a communal block of privies in the centre (Plate 5). The other housing in the area seemingly comprised double-depth houses, typical of late nineteenth-century domestic properties. Similar double-depth houses are shown parallel to Ashton New Road in the south-western part of the Site Area. Situated immediately to the north of this housing, on the north site of Sarah Ann Street, is a Wesleyan Methodist Chapel (Site **13**).

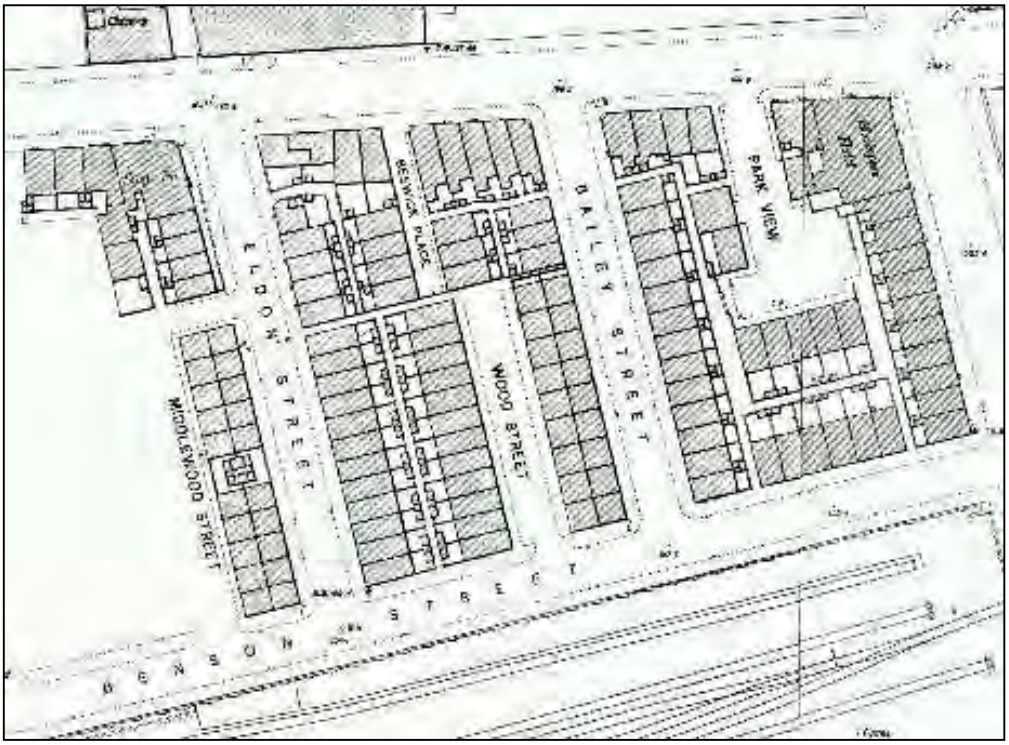

Plate 5: Extract from the Ordnance Survey 1:500 map of 1890, showing the residential development in the northern part of the Site Area

3.2.8 Ordnance Survey mapping also shows considerable industrial expansion to have occurred by the 1890s. Bradford Colliery (Site **03**) is shown to have been well established, together with its associated Hoffman-type brick kiln. Bradford Iron Works is also shown, comprising the original part (Site **10**) on the eastern side of Forge Lane, and a later expansion (Site **11**) to the west of Forge Lane, occupying the central part of the Site Area. A cotton factory annotated as Park Mills (Site **12**) is shown along the eastern boundary of the Site Area. It is uncertain precisely when Park Mills were established, although the firm of Murray Sharp & Co is listed as manufacturers of 'checks, ginghams and mixed goods' at Park Mills in Bradford in trade directories from the 1860s (Slater 1863, 428; Slater 1876, 38; Slater 1879, 44; Slater 1883, 70).

3.2.9 Industrial growth in the area was undoubtedly stimulated by the development of the local railway system by the Lancashire & Yorkshire Railway Company, which established a goods station to serve the Bradford Iron Works. This infrastructure evidently included a goods warehouse (Site **14**) and a series of railway sidings (Fig 5).

3.2.10 The next edition of Ordnance Survey mapping, published in 1908 (Fig 6), shows the area as largely unaltered relative to the 1893 map, although additional double-depth housing had been built between Middlewood Street and Ashfield Street in north-western part of the Site Area. Park Mills (Site **12**) had also been replaced with rows of housing by that date. The map also shows some expansion of the local railway network, with the erection of a new goods shed (Site **15**) and additional lines to serve Bradford Colliery.

3.2.11 The Ordnance Survey map of 1922 (Fig 7) depicts the northern extent of the Site Area much as it was on the 1908 map, although Bradford Colliery had evidently been subject to some remodelling. By the time of the next edition of mapping, published in 1932, the Bradford Iron Works (Site **10**) had been extended to the eastern boundary of the Site Area, replacing rows of earlier housing. Some modifications also appear to have taken place within the complex of buildings on the western side of the iron works (Site **11**). The colliery has again seen modifications to its buildings, and an additional chimney is marked on the eastern side of the site. A square complex named 'Miner's Welfare Baths' is shown filling the northern half of the plot bounded by Bank Street to the west and Hawke Street to the east.

3.2.12 The Ordnance Survey map of 1951 (Fig 8) shows a large building labelled 'works' to the north of Philips Park Road, which replaced smaller industrial buildings in this area shown on earlier maps. The Bradford Iron Works complex is still extant, but now simply labelled as 'works'. The colliery buildings have again been altered. The brick kiln and associated chimney have been demolished, and a second chimney towards the eastern extent of the site is no longer extant. The northernmost of the two shafts depicted on the 1922 and 1932 editions of mapping is no longer extant, but a new shaft is shown towards the north-east corner of the site. An electricity sub-station is marked on the southern boundary of the site. The area of housing and baths at the southern extent of the Site Area appears unchanged from its depiction on the 1932 map.

3.2.13 The site was cleared in the late twentieth century, and a stadium, used for the 2002 Commonwealth Games, was built over much of the central portion of the Site Area. Mill Street, on the eastern side of the Site Area, was widened to a dual carriageway and named Alan Turing Way (UMAU 2002, 3 and 5). The stadium was converted subsequently to a football ground, used by Manchester City Football Club. The remainder of the Site Area has not been redeveloped, although a major programme or remediation and site servicing works immediately to the east of the stadium was carried out in 2011, which removed all structural remains of former buildings in this area.

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3.3 PREVIOUS ARCHAEOLOGICAL WORK

3.3.1 A considerable amount of archaeological work has been undertaken within the boundary of the Site Area in recent years. In 2010, a large programme of archaeological investigation was carried out in advance of the remediation and site servicing works (OA North 2011). This was targeted on the footprint of Bradford Colliery (Site **03**), the historic core of the Bradford Iron Works (Site **10**), and Park Mills (Site **12**). In addition, several archaeological evaluation trenches were placed across former workers' housing in the western part of the Site Area (Sites **04** and **07**) and the route of the Bradford Branch Canal (Site **06**). The results obtained from these evaluation trenches demonstrated that these sites had been destroyed entirely, seemingly as a result of preparation works in advance of developing the site for use as part of the Commonwealth Games in 2002 (OA North 2011).

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4. GAZETTEER OF SITES

Site Number	**01**
Site Name	Building (site of)
HER Number	-
Period	Post-medieval
NGR	386631, 398377
Source	Johnson's map 1820
Description	Rectangular building in the south-western corner of the Site Area, and within the historic township of Beswick, depicted on Johnson's map of 1820. Its intended function is unknown, although it may have been associated with the adjacent coal pit (Site **02**). The building appears to have been demolished by the time of the Ordnance Survey map of 1848, and the site developed by double-depth housing by the end of the nineteenth century.
Assessment	The heritage asset lies within the boundary of the Site Area, although it is likely that any buried remains were destroyed during the redevelopment of the area in the late nineteenth century.

Site Number	**02**
Site Name	Coal Pit (site of)
Period	Post-medieval
NGR	386598, 398375
Source	Johnson's map 1820; OS 1848
Description	Coal pit annotated on the Ordnance Survey map of 1848, seemingly corresponding with a circular feature shown on Johnson's map of 1820. The site had been developed by double-depth housing by the end of the nineteenth century, or by Rowsley Street.
Assessment	The heritage asset lies on the boundary of the Site Area, although it is likely that any buried remains were destroyed during the redevelopment of the area in the late nineteenth century.

Site Number	**03**
Site Name	Bradford Colliery (site of)
HER Number	9691.1.0
Period	Post-medieval
NGR	387026, 398451
Source	HER; Johnson's map 1820; OS 1848; OS 1893; Miller 2011
Description	A colliery developed in the mid-nineteenth century from earlier coal workings. Expanded to the largest colliery in the Manchester Coalfield, which remained in production until the late 1960s.
Assessment	The heritage asset lies within the boundary of the Site Area, although all buried remains were subject to archaeological investigation in 2010 prior to their ultimate removal during the remediation and site servicing works in 2011.

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Site Number	**04**
Site Name	Building (site of)
HER Number	-
Period	Post-medieval
NGR	386940, 398712
Source	Johnson's map 1820; OS 1848
Description	Rectangular building depicted on Johnson's map of 1820. Annotated as Oxley Place on the Ordnance Survey map of 1848. Subsumed by an expansion of the Bradford Iron Works (Site **10**) during the second half of the nineteenth century.
Assessment	The heritage asset lies within the boundary of the Site Area, although any buried remains that survived nineteenth-century redevelopment as an iron works were destroyed during the remediation and site servicing works in 2011.

Site Number	**05**
Site Name	Manchester and Salford Waterworks Reservoir (site of)
HER Number	-
Period	Nineteenth century
NGR	386652, 3985031
Source	Johnson's map 1820; OS 1848
Description	A reservoir developed in the early nineteenth century as an initial component of the infrastructure developed by the Manchester and Salford Waterworks Company. Infilled during the second half of the nineteenth century, and the site developed as railway sidings. The eastern part of the reservoir was built over subsequently by the Etihad Stadium.
Assessment	The heritage asset lies in the boundary of the Site Area. Whilst most of the site will have been destroyed during the redevelopment of the area in advance of the Commonwealth Games in 2002, there is some potential for elements of the south-western corner of the reservoir to survive *in-situ*.

Site Number	**06**
Site Name	Bradford Branch Canal (site of)
HER Number	-
Period	Nineteenth century
NGR	386904, 398769 – 387033, 398476
Source	OS 1848; OS 1893; Miller 2011
Description	A private branch of the Ashton-under-Lyne Canal that was opened in the second quarter of the nineteenth century to serve Bradford Colliery. Remained in use until the mid-twentieth, after which it was infilled.
Assessment	The heritage asset lies within the boundary of the Site Area, although any buried remains were removed during the remediation and site servicing works in 2011.

Site Number	**07**
Site Name	Workers' housing (site of)
HER Number	-
Period	Nineteenth century
NGR	387012, 398361
Source	Bradford tithe map 1845; OS 1848; OA North 2011
Description	Several blocks of housing, representing an early stage in the urban development of the area, first shown on the tithe map of 1845.
Assessment	The footprint of the heritage asset lies within the boundary of the Site Area, although archaeological evaluation in 2011 demonstrated that any buried remains were probably destroyed during the development of the site in advance of the Commonwealth Games in 2002.

Site Number	**08**
Site Name	Workers' Housing, Wood Street (site of)
HER Number	-
Period	Nineteenth century
NGR	386815, 398683
Source	Bradford tithe map 1845; OS 1848; OS 1893
Description	A block of 18 back-to-back cottages, without cellars, that are first shown on the Bradford tithe map of 1845, representing an initial stage in the intensive residential and industrial development of Bradford from the mid-nineteenth century onwards. The houses persisted well into the twentieth century, and are shown on the OS map of 1951, although some of the properties appear to have been remodelled by that date. The houses had been demolished by the 1980s.
Assessment	The footprint of the heritage asset lies within the boundary of the Site Area, and buried remains may survive *in-situ*. Ground-breaking works associated with the proposed development may impact upon buried remains of this site.

Site Number	**09**
Site Name	Workers' Housing, Eldon Street (site of)
HER Number	-
Period	Nineteenth century
NGR	386764, 398672
Source	OS 1893
Description	A block of 20 back-to-back houses, without cellars, that are shown on the OS map of 1893, but are likely to have been erected during the late 1840s or early 1850s, representing late examples of this type of domestic property. The houses had been demolished by the 1980s.
Assessment	The heritage asset lies within the boundary of the Site Area, although the footprint of most of the buildings lies beneath the Etihad Stadium, and are likely to have been destroyed during the redevelopment of the site in 2002.

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Site Number	**10**
Site Name	Bradford Iron Works (site of)
Period	Nineteenth century
NGR	386963, 398558
Source	OS 1893; OS 1908; OS 1922; Miller 2011
Description	The original part of the Bradford Iron Works, which was developed in the mid-nineteenth century, and expanded in the early twentieth century. The iron works remained in use until the 1980s, when the site was demolished.
Assessment	The heritage asset lies within the boundary of the Site Area, although the buried remains were excavated archaeological in 2010 prior to their ultimate removal during the site servicing works in 2011.

Site Number	**11**
Site Name	Bradford Iron Works (site of)
HER Number	-
Period	Nineteenth century
NGR	386865, 398510
Source	OS 1893; OS 1908; OS 1922
Description	An expansion of the Bradford Iron Works (Site **10**) that was effected in 1864, and comprised the erection of new buildings to the west of Forge Lane. The iron works remained in use until the 1980s, when the site was demolished.
Assessment	The footprint of the heritage asset lies within the boundary of the Site Area, and whilst much of the site lies beneath the footprint of the Etihad Stadium, some buried remains of the south-eastern corner of the works may survive *in-situ*. This part of the iron works is shown on historical mapping to have included a detached building with a large chimney, suggesting that it may have been a boiler house.

Site Number	**12**
Site Name	Park Mills (site of)
HER Number	-
Period	Nineteenth century
NGR	387004, 398605
Source	OS 1893; OS 1908
Description	It is uncertain precisely when Park Mills were established, although the firm of Murray Sharp & Co is listed as manufacturers of 'checks, ginghams and mixed goods' at Park Mills in Bradford in trade directories from the early 1860s. The mill had been demolished, and the site redeveloped for housing by the time of the OS map of 1908.
Assessment	The heritage asset lies within the boundary of the Site Area, although the buried remains were excavated archaeological in 2010 prior to their ultimate removal during the site servicing works in 2011.

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Site Number	**13**
Site Name	Methodist Chapel (site of)
HER Number	-
Period	Nineteenth century
NGR	386718, 398445
Source	OS 1893; OS 1908; OS 1922
Description	A Wesleyan Methodist Chapel first shown on the Ordnance Survey map of 1893; the 1:500 edition mapping indicates that the chapel had seating for a congregation of 500. By 1908, a Sunday School had been built immediately to the north, and was probably associated with the chapel. Demolished in the late twentieth century.
Assessment	The heritage asset lies within the boundary of the Site Area, although the footprint of most of the buildings lies beneath the Etihad Stadium, and are likely to have been destroyed during the redevelopment of the site in 2002.

Site Number	**14**
Site Name	Beswick Goods Station (site of)
HER Number	-
Period	Nineteenth century
NGR	386840, 398600
Source	OS 1893; OS 1908; OS 1922
Description	A goods station and associated network of railway sidings established by the Lancashire & Yorkshire Railway Company in the mid-nineteenth century to serve the Bradford Iron Works.
Assessment	The heritage asset lies within the boundary of the Site Area, although the footprint of most of the buildings lies beneath the Etihad Stadium, and are likely to have been destroyed during the redevelopment of the site in 2002.

Site Number	**15**
Site Name	Beswick Goods Warehouse (site of)
HER Number	-
Period	Twentieth century
NGR	386675, 398560
Source	OS 1908; OS 1922
Description	A expansion of the goods yard that is first shown on the OS map of 1908.
Assessment	The footprint of the heritage asset lies within the boundary of the Site Area, and buried remains may survive *in-situ*.

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Site Number	**16**
Site Name	Lock No 6, East of Forge Lane
HER Number	11721.1.0
Period	Eighteenth century
NGR	386890, 398790
Source	HER
Description	Canal lock, *c* 1792-99, for Manchester and Aston-under-Lyne Canal Company; renovated. Large blocks of millstone grit, with some red brick, wooden gates. Narrow type (chamber 7 feet wide), with covered overflow channel on south side; stone staircases flanking lower entry at west end, extended bullnose at top end of island. Grade II Listed Building.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**17**
Site Name	Lock No 7, with Roving Bridge
HER Number	11233.1.0
Period	Eighteenth century
NGR	386997, 398803
Source	HER
Description	Canal lock and associated roving bridge, *c* 1792-99, for Manchester and Ashton-under-Lyne Canal Company; renovated. Large blocks of millstone grit, wooden gates. Narrow type (chamber 7 feet wide); north jamb of lower gates inscribed "1865"; roving bridge over lower entry, with cobbled dog-legged ramp on north side, stone slab wall and cast iron fences. Forms group with lock-keepers cottage on south side and Mill Street Bridge attached at west end. Fifth in a series of 13 similar locks, all in working order. Grade II Listed Building.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**18**
Site Name	Ashton Canal Bridge No 9
HER Number	11233.2.0
Period	Nineteenth century
NGR	386972, 398801
Source	HER
Description	Public road bridge over Ashton Canal. Probably *c* 1800. Brown brick in English garden wall bond, with some sandstone ashlar and cast-iron beams. Broad pilasters, brick parapet with stone coping. East side of bridge is linked to roving bridge of Mill Street lock. Forms group with lock, and associated lockkeeper's cottage. Grade II Listed Building.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**19**
Site Name	Lock-keeper's Cottage
HER Number	10487.1.0
Period	Nineteenth century
NGR	386993, 398791
Source	HER
Description	The lock house which can be seen is not the original building. This is due to the date stone located above the door of the house. This gives a date of 1865 which, as the canal was finished in 1795, cannot correspond to an original structure. The house must have been the subject of major repair, been rebuilt or newly constructed in 1865. Brown brick in stretcher bond, with a band of black and white brick, painted sandstone dressings, and slate roof. Double-depth double fronted plan. Two storeys, a symmetrical two-window façade; central gabled porch with lintel dated "A.D.1865" and pitched roof with projected verges; transomed tripartite casement windows at ground floor and two-light casements at first floor with raised sills and large rectangular lintels; roof with overhanging eaves and verges, gable chimneys. Grade II Listed Building.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**20**
Site Name	Ashton Canal Lock No 4
HER Number	11444.1.0
Period	Eighteenth century
NGR	386531, 398763
Source	HER
Description	Canal lock built *c* 1792-9; renovated. Large blocks of millstone grit, wooden gates.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**21**
Site Name	Ashton Canal Lock No 5
HER Number	11445.1.0
Period	Eighteenth century
NGR	386618, 398775
Source	HER
Description	Canal lock built *c* 1792-9; renovated. Large blocks of millstone grit, wooden gates.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**22**
Site Name	Canal Basin and Canal Arm (site of)
HER Number	11443.1.0
Period	Eighteenth century
NGR	386466, 398750
Source	HER
Description	Triangular canal basin shown on the 1831 map with an arm leading from its southern end to what was then the vitriol works, later the pottery. Still shown on the 1845 map. By 1888-91 the LYR railway had been built across this arm. Immediately west of the railway the arm was no longer open where it was crossed by the yard of the Sanitary Sidings. South of that yard it remained open between Beswick Cotton Works and the pottery. The channel is also shown as open on the east side of the railway, by the canal. A similar arrangement is shown on the 1905 map. On the 1931 map the open arm by the cotton works is named as a reservoir.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**23**
Site Name	Bradford Old Hall (site of)
HER Number	11228.1.0
Period	Nineteenth century
NGR	386992, 398823
Source	HER
Description	A map of 1761 shows a moated site located just west of Mill Lane.This moated house is referred to in a rate book of 1717-18 but has been demolished subsequently. Local dating evidence for moated sites is scarce but it is suggested that the heyday for their construction was between the late thirteenth and mid-fourteenth century. It was possibly constructed between the 1330s and 1350s when the Bradford estate was owned by John de Salford of Wakerley (Worsley) and his wife Alice. In 1357 the manor was granted by the lord of Manchester to Thomas de Booth of Barton. He bought out the Wakerley family in the early 1360s and documents of the time refer to the Bradford estate as including a 'messuage' or dwelling, which may have been the moated site. Evaluation revealed some evidence for a moat and sandstone revetting wall. Further excavation revealed the remains of what is presumed to be the inner face of the eastern arm of the moat revetment which surrounded Bradford Old Hall. Its alignment was found to be approximately north-north-west to south-south-east, similar to that shown on a map of 1761. Two distinct methods of construction of the revetment were also recognised. To the south this took the form of a compacted rubble fill, while to the north the revetment was constructed of worked stone blocks.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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Site Number	**24**
Site Name	Philips Park Mills (site of)
HER Number	9693.1.0
Period	Nineteenth century
NGR	387210, 398793
Source	HER
Description	Shown on 1896 map as large complex of buildings on north side of Manchester & Ashton-under-Lyne Canal. 1n 1932 the site is labelled as 'Clayton Finishing Works'. The site is still marked as 'Works' on the OS 1987 1: 10,000 map. 'Philip's Park Mills (Flax & Hemp)' shown on 1889 OS map, comprising L-shaped block, with a smaller triangular block on the south side by the canal, and narrow elongated block on the east. Mill buildings still shown and named on the 1915 OS map, but these had been demolished by 1932.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**25**
Site Name	Reservoir Mill (site of)
HER Number	2056.1.0
Period	Nineteenth century
NGR	386510, 398709
Source	HER
Description	Marked on early mapping as a fulling mill and as a cotton mill on maps. The 1831 map shows two large rectangular buildings set side by side next to a canal basin, named on that map as Chappels Cotton Mills. On the 1845 map these buildings are identified as a fustian mill. On the 1888-91 map the site has been extended on the south west and is named as Reservoir Mill, a cotton mill. In the mid-1980s the main structure on the site was a brick built spinning mill of three storeys and six by three bays. It was demolished by 1993.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**26**
Site Name	Bradford Mill (site of)
HER Number	2067.1.0
Period	Nineteenth century
NGR	387251, 398681
Source	HER
Description	Marked as cotton mill on historical mapping. The spinning mill was late nineteenth century and brick built. The engine house was attached to the rear of the mill, facing the canal. Octagonal brick chimney with a stone crown and a brick-built boiler house. All these buildings have since been demolished.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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Site Number **27**
Site Name African Mills (site of)
HER Number 11229.1.0
Period Nineteenth century
NGR 387044, 398755
Source HER
Description Site vacant on 1845 map. L-shaped block, named as 'African Mills (Cotton)', shown here on the 1889 map. Still indicated as such on the 1915 map, but by 1932 is named as 'Philips Park Printing Works', and is similarly named on the 1951 map. Part of the northern boundary wall between the mill site and the canal tow path still stands to a height of *c* 2m, immediately to east of the Listed Lock-keeper's cottage. This wall is stone built, with some modern repair, and includes a window blocked with brick.
Assessment The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number **28**
Site Name Albion Works (site of)
HER Number 11446.1.0
Period Nineteenth century
NGR 386754, 398755
Source HER
Description Site vacant on 1845 map. L-shaped building shown here on the 1888-91 map and named as Albion Works, a colour works. Shown, but not named, on 1905 map. By 1931 had been demolished and new buildings erected on site, probably belonging either to Progress Bakery on its west (erected since 1905) or Gratix's Lead Mill, on its east (also shown on the 1888-9 map).
Assessment The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number **29**
Site Name Vulcanized India Rubber Works (site of)
HER Number 11231.1.0
Period Nineteenth century
NGR 387184, 398706
Source HER
Description Site vacant on 1845 map. Group of buildings between Gibbon Street and the Ashton Canal shown on 1889 map and named as 'Vulcanized India Rubber Works'. Still indicated as such on the 1915 map, but on the 1932 map the buildings are shown but not named. Some of the buildings had been demolished by 1951, when the site is named as part of 'Bradford Iron Works (Wire)'.
Assessment The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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Site Number	**30**
Site Name	Bleaching Croft (site of)
HER Number	11230.1.0
Period	Nineteenth century
NGR	387205, 398605
Source	HER
Description	Field Names 'Bowk House Farm' and ' Yarn Croft' are both on the 1761 map; ' Yarn Croft' is also in 1845 Bradford tithe award. The two fields are adjoining and their names suggest an area for bleaching textiles, the common method during this period being the use of natural alkalis as a bleaching agent and exposure to open air.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**31**
Site Name	Iron Works (site of)
HER Number	11227.1.0
Period	Nineteenth century
NGR	387230, 398474
Source	HER
Description	Site vacant on 1845 OS map. Small group of buildings shown here on 1889 OS map and named as Iron Works, and on 1906 OS map as Engineering Works. Similarly named on the 1915 OS map, but by this date the site had greatly expanded. Named as Iron Works on the 1932 OS map and again on the 1951 OS map; by the latter date, the building complex effectively filled the block between Ashton New Road, Queen Street, Upper Dover Street and Corbett Street.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**32**
Site Name	Bradford Tannery (site of)
HER Number	9835.1.0
Period	Nineteenth century
NGR	386990, 398188
Source	HER
Description	Johnson from Jonathon Holland - No 149 on map. The tannery is on the OS 1st Edition. It has an L-shaped building and a pond. The tannery no longer exists on the OS second edition, which shows the area to be built over for terraced houses.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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Site Number	**33**
Site Name	Pottery (site of)
HER Number	11442.1.0
Period	Nineteenth century
NGR	386415, 398655
Source	HER
Description	Site of easternmost of two large square complexes of buildings, divided by canal arm, which are shown on the 1845 map and named as pottery. The more westerly complex is shown on the 1831 map where it is named as a vitriol works; the easterly complex is also shown on the map but as a smaller L-shaped build. By 1931 much of the pottery complex had been removed. The remainder has since been demolished. A modern works unit occupies much of the site, which also includes the approach to the northern end of that works, and the adjacent part of New Viaduct Street.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**34**
Site Name	Sanitary Sidings Yard (site of)
HER Number	11441.1.0
Period	Nineteenth century
NGR	386394, 398705
Source	HER
Description	Triangular yard bounded on the west by the river [Medlock] and east by the railway and sidings shown on 1888-91 map. A long rectangular range of buildings ran along the south side of the yard. A narrower smaller range is also shown running along the eastern side of the yard, parallel to the rail tracks. These same buildings appear on the 1931 map. Since demolished. The eastern and central parts of the yard site are paved with setts, the western and northern sides are grassed over.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**35**
Site Name	Drinking Fountain in Philips Park
HER Number	9132.2.1
Period	Nineteenth century
NGR	386997, 398896
Source	HER
Description	This drinking fountain was erected in 1896 to commemorate the opening of Philips Park 50 years previously.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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Site Number	**36**
Site Name	Lodge in Philips Park
HER Number	9132.2.0
Period	Nineteenth century
NGR	386972, 398873
Source	HER
Description	The lodge for Philips Park stands on the south-western corner of the park. Though the building is Listed as Grade II it is badly damaged and neglected. The building has presumably been de-listed as no entry can be found for it in the National Heritage List. It no longer appears neglected.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**37**
Site Name	Terraced Housing (site of)
HER Number	16063.1.0
Period	Nineteenth century
NGR	387066, 398830
Source	HER
Description	
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

Site Number	**38**
Site Name	Methodist Chapel (site of)
HER Number	11226.1.0
Period	Nineteenth century
NGR	387222, 398386
Source	HER
Description	Site vacant on 1845 OS map. A Wesleyan Methodist Chapel had been built here by 1889. Still indicated on the 1932 OS map, but on the 1951 OS map the chapel appears to form part of the Iron Works complex.
Assessment	The heritage asset lies beyond the Site Area, and will not be directly affected by the development.

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5. SIGNIFICANCE OF THE REMAINS

5.1 INTRODUCTION

5.1.1 In total, 38 sites of archaeological interest have been identified within the study area, of which 15 (Sites **01**–**15**) lie within the indicative boundary of the Site Area (Fig 2). Most of these heritage assets developed as a direct result of the development of Bradford as a key industrial suburb to Manchester from the mid-nineteenth-century, although two sites are potentially of a slightly earlier date (Table 7). None of the heritage assets within the proposed Site Area have legal designations, although four buildings within a 250m radius are afforded statutory designation as Listed Buildings, together with a small component of a Grade II Registered Park and Garden.

Period	No of sites	Sites
Prehistoric	0	-
Roman	0	-
Medieval	0	-
Post-medieval	3	**01**, **02**, **04**
Industrial	12	**03**, **05**, **06**, **07**, **08**, **09**, **10**, **11**, **12**, **13**, **14**, **15**

Table 7: Number of heritage assets within the Site Area by period

5.2 CRITERIA

5.2.1 Where sites do not possess a statutory designation their value as a heritage asset has been determined with reference to the Secretary of State's criteria for assessing the national importance of monuments, as contained in Annexe 1 of the policy statement on scheduled monuments produced by the Department of Culture, Media, and Sport (2010). These criteria relate to period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity, and potential. The heritage assets within the Site Area (Sites **01**-**15**) have been considered using the criteria, with the results below.

5.2.2 ***Period:*** it is likely that any buried archaeological remains that survive across the Site Area will pertain to the Industrial Period, spanning the period of Manchester's rapid development as one of the world's leading manufacturing centres between the late eighteenth and twentieth centuries. Only three sites (Sites **01**, **02** and **04**) are potentially earlier, although these are unlikely to survive due to the redevelopment of the area during the nineteenth century.

5.2.3 ***Rarity:*** the buildings that occupied the site in the nineteenth century comprised a range of industrial and residential properties, few of which have a high rarity value. However, the sites of the two blocks of back-to-back houses (Sites **08** and **09**) have some rarity value as late examples of back-to-back housing, whilst the Site **05** is a rare example of the early infrastructure of the Manchester and Salford Water Works Company.

5.2.4 ***Documentation:*** the historical development of the study area from the late eighteenth century can be traced reasonably well from cartographic sources and from entries in the available commercial trade directories. Further documentary research may furnish additional evidence, including more precise dating of the construction of the relevant buildings, although this is unlikely to alter the outline presented in this assessment.

5.2.5 ***Group Value:*** the sites within the Site Area represent characteristic elements of the early urban industrial townscape of Bradford, which made a significant contribution to the industrial prowess of Manchester from the mid-nineteenth century onwards. The sites include some large industrial premises, packed around groups of residential properties, and elements of the local transport infrastructure. As such, the heritage assets identified in the Site Area have a high group value.

5.2.6 ***Survival/Condition:*** the majority of the heritage assets identified in the Site Area will almost certainly have been damaged or destroyed previously. In some cases, this is likely to have occurred during redevelopment in the later nineteenth century, including Sites **01**, **02** and **12**, which have probably been destroyed entirely. Other sites are known to have been destroyed entirely more recently, including all those in the western part of the Site Area (Sites **03**, **04**, **06**, **07**, **10** and **12**). These heritage assets were subject to archaeological investigation in 2010 prior to their ultimate removal during the programme of remediation and site servicing works carried out in 2011. Other sites of archaeological interest were almost certainly destroyed during ground works undertaken during the preparation of the area to host the Commonwealth Games in 2002.

5.2.7 The buried remains of a few heritage assets in the Site Area, however, may survive *in-situ*. These include the mid-nineteenth-century back-to-back housing (Site **08**) adjacent to the North Stand, small elements of the Bradford Iron Works (Site **11**), part of a reservoir built by the Manchester and Salford Water Works Company, and a late nineteenth- or early twentieth-century railway goods warehouse (Site **15**). The extent to which buried remains of these sites survive is unknown.

5.2.8 ***Fragility/Vulnerability:*** any buried archaeological remains, should they be survive *in-situ*, are vulnerable to damage or destruction during any earth-moving works across the site. However, the design proposals allow for very limited ground-breaking works across the whole Site Area, with the focus of development being concentrated immediately adjacent to the existing stadium.

5.2.9 ***Diversity:*** the remains relate mainly to the industrial expansion of the area, and the associated development of domestic housing. None of the sites within the Site Area are considered to be significant due to diversity.

5.2.10 ***Potential:*** there are no prehistoric sites within the Site Area or its environs, and the potential for prehistoric remains is considered to be very low. Similarly, there are no known Roman, medieval or post-medieval sites within the Site Area or its immediate environs, and the potential of remains from these periods is considered to be low.

5.3 SIGNIFICANCE

5.3.1 When assessing the potential significance of buried archaeological remains, it is important to consider the extent to which individual sites have been damaged or disturbed previously. With this in mind, the majority of the heritage assets identified within the indicative boundary of the Site Area are considered to be of Low Local importance, as they are likely to have been so badly damaged that too little remains to justify inclusion into a higher grade (*Section 2.2.3 above*).

5.3.2 A few heritage assets in the Site Area are considered to be potentially of Local/Borough importance, pending the extent to which buried remains survive. These include the site of the mid-nineteenth-century back-to-back housing immediately adjacent to the North Stand (Site **08**), the early nineteenth-century reservoir (Site **05**), and a small part of the former Bradford Iron Works (Site **11**). Any surviving remains of the late nineteenth- or early twentieth-century railway goods warehouse (Site **15**) would potentially be of Low Local importance due to its low rarity value, and the significance of the data that could be yielded by any surviving physical remains.

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6. LIKELY IMPACT OF DEVELOPMENT

6.1 INTRODUCTION

6.1.1 Current planning policy guidance for the historic environment, embodied in NPPF (DCLG 2012), advises that archaeological remains are an irreplaceable resource. It has been the intention of this study to identify the archaeological significance and potential of the Site Area, and assess the impact of proposed development, thus allowing the policy stated in NPPF (DCLG 2012) to be enacted upon.

6.1.2 It should be noted that the present assessment has focused on sub-surface archaeological resource of the Site Area. Indirect impacts on the settings of adjacent standing buildings have not been assessed in detail, although this is unlikely to be greater than negligible given the nature of the proposed development. The results are summarised in Table 8.

6.2 IMPACT

6.2.1 The extent of any previous disturbance to buried archaeological levels is an important factor is assessing the potential impact of any proposed scheme of development. In some instances, the identified heritage assets within the Site Area will almost certainly have been destroyed by previous development. Sites **01** and **02**, for instance, are likely to have been destroyed entirely during late nineteenth-century redevelopment, whilst all those sites to the west of the Etihad Stadium (Sites **03**, **04**, **06**, **07**, **10** and **12**) were subject to archaeological investigation in 2010 and are know to have been removed during the remediation and site servicing works that were carried out subsequently. It is similarly most likely that Sites **09**, **13** and **14** will have been destroyed completely during the preparation of the area in advance of the Commonwealth Games in 2002.

6.2.2 The development proposals allow for very limited ground-breaking works across the entire Site Area. It is thus unlikely that any buried remains that do survive *in-situ* will sustain any substantial impact from the proposed development, with the possible exception of Site **08**.

6.3 IMPACT ASSESSMENT

6.3.1 Following on from the above considerations, the impact on the heritage assets within the Site Area has been largely determined as slight/minor to negligible, based on an assumption that there will be limited earth-moving works associated with the development in the immediate vicinity of the North and South stands. In a single case, specifically Site **08**, the impact may be intermediate (Table 8). The impact on those heritage assets outwith the indicative Site Area boundary, but within the wider study area, are considered to be negligible or neutral.

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Site Number	Site Name	Importance	Impact	Significance of Impact
01	Post-medieval Building	Low Local	Negligible	Neutral
02	Post-medieval Coal Pit	Low Local	Negligible	Neutral
03	Bradford Colliery	Low Local	Negligible	Neutral
04	Post-medieval Building	Low Local	Negligible	Neutral
05	Manchester and Salford Water Works Reservoir	Local/Borough	Negligible	Neutral
06	Bradford Branch Canal	Low Local	Negligible	Neutral
07	Workers' Housing	Low Local	Negligible	Neutral
08	Workers' Housing	Local/Borough	Moderate	Intermediate
09	Workers' Housing	Low Local	Negligible	Neutral
10	Bradford Iron Works	Low Local	Negligible	Neutral
11	Bradford Iron Works	Local/Borough	Negligible	Neutral
12	Park Mills	Low Local	Negligible	Neutral
13	Methodist Chapel	Low Local	Negligible	Neutral
14	Beswick Goods Station	Low Local	Negligible	Neutral
15	Beswick Goods Warehouse	Low Local	Moderate	Minor

Table 8: Assessment of the impact significance on each site within the Site Area during development

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7. RECOMMENDATIONS

7.1 INTRODUCTION

7.1.1 The *National Planning Policy Framework* instructs that in the case of heritage assets which either have designated status or are non-designated but are of a significance demonstrably comparable with a Scheduled Monument, *ie* of national importance, the general assumption should be in favour of conservation. Where the loss of the whole or a part of a heritage asset's significance is justified by a development, the developer should be required first to record that asset and advance understanding of its significance, in a manner proportionate to their importance and the impact (NPPF, p 32 para 141). Development also has the potential for enhancing heritage assets. This might include the consolidation and display of excavated below-ground remains, or the reference to heritage assets within the design. NPPF encourages developments which change the setting of a heritage asset so as to better reveal it significance

7.1.2 None of the known heritage assets identified within the Site Area are afforded statutory designation, and are thus not considered to be of national importance that would require preservation *in-situ*. A few heritage assets in the Site Area are potentially of local/borough importance, which may merit preservation by record should they be damaged of destroyed by future development. However, the current proposals will have very limited, if any, direct impact on any buried remains of these heritage assets that do survive; the potential impact on heritage assets is limited to the site of mid-nineteenth-century back-to-back housing (Site **08**).

7.2 RECOMMENDATIONS

7.2.1 The requirement for any further archaeological investigation of the Site Area in advance, or during, the proposed developed would be based on a recommendation by the Greater Manchester Archaeological Advisory Service, which provides advice on planning applications to Manchester City Council. However, pending final design proposals for the extension to the North and South Stands, and additional and associated infrastructure, it may be anticipated that a limited programme of archaeological investigation may be merited. This could be in the form of a watching brief during development works. This should be targeted specifically on the site of the mid-nineteenth-century back-to-back housing (Site **08**), should the footprint of these buildings be subject ultimately to ground-breaking works as part of the proposed development.

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ILLUSTRATIONS

FIGURES

Figure 1: Site location map

Figure 2: Location of heritage assets and areas excavated in 2010

Figure 3: Site Area superimposed on Johnson's *Plan of the Parish of Manchester* of 1820

Figure 4: Site Area superimposed on the Ordnance Survey 6": 1 mile map of 1848

Figure 5: Site Area superimposed on the Ordnance Survey 25": 1 mile map of 1893

Figure 6: Site Area superimposed on the Ordnance Survey 25": 1 mile map of 1908

Figure 7: Site Area superimposed on the Ordnance Survey 25": 1 mile map of 1922

Figure 8: Site Area superimposed on the Ordnance Survey 1:2500 map of 1951

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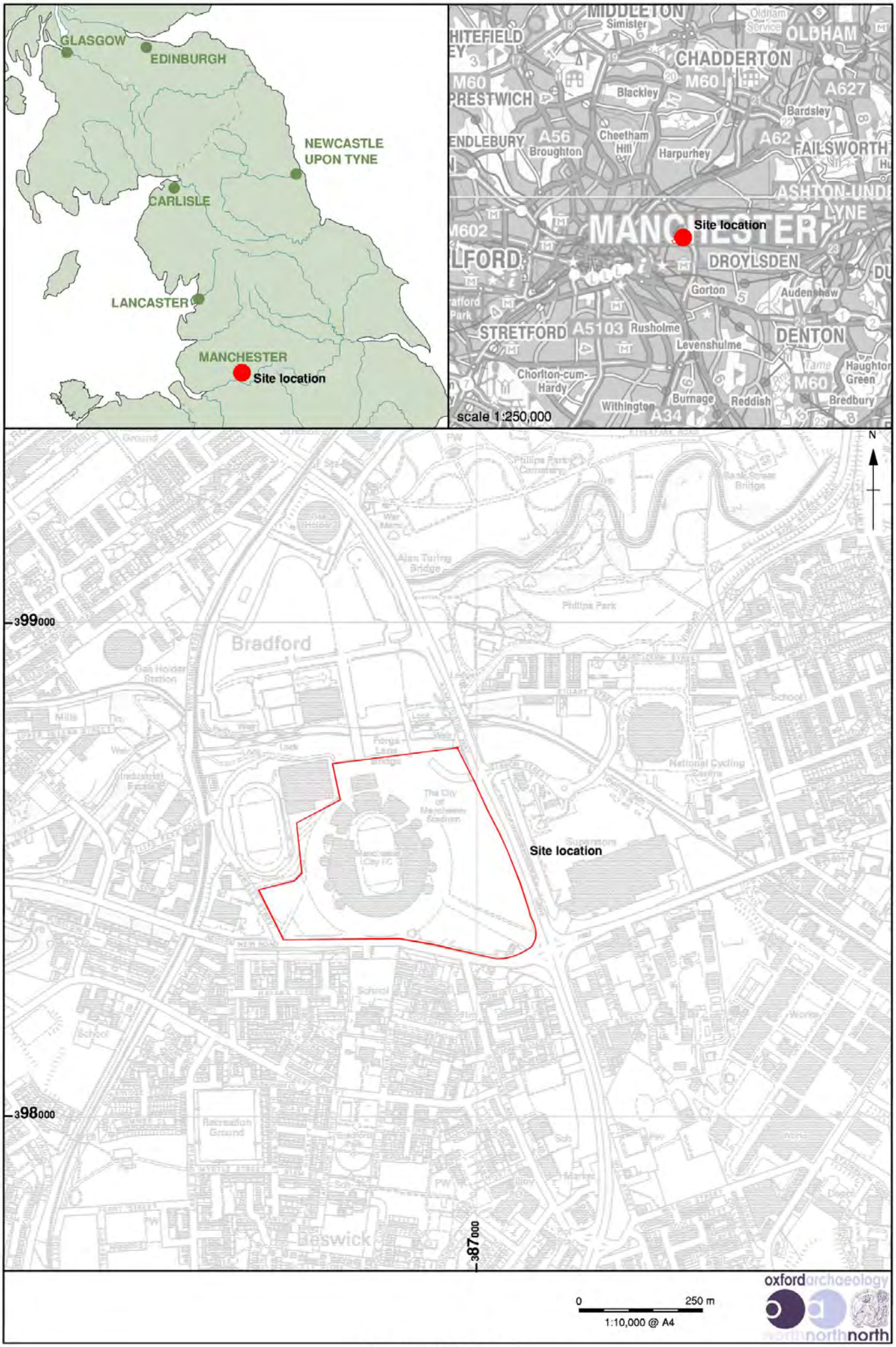

Figure 1: Site location

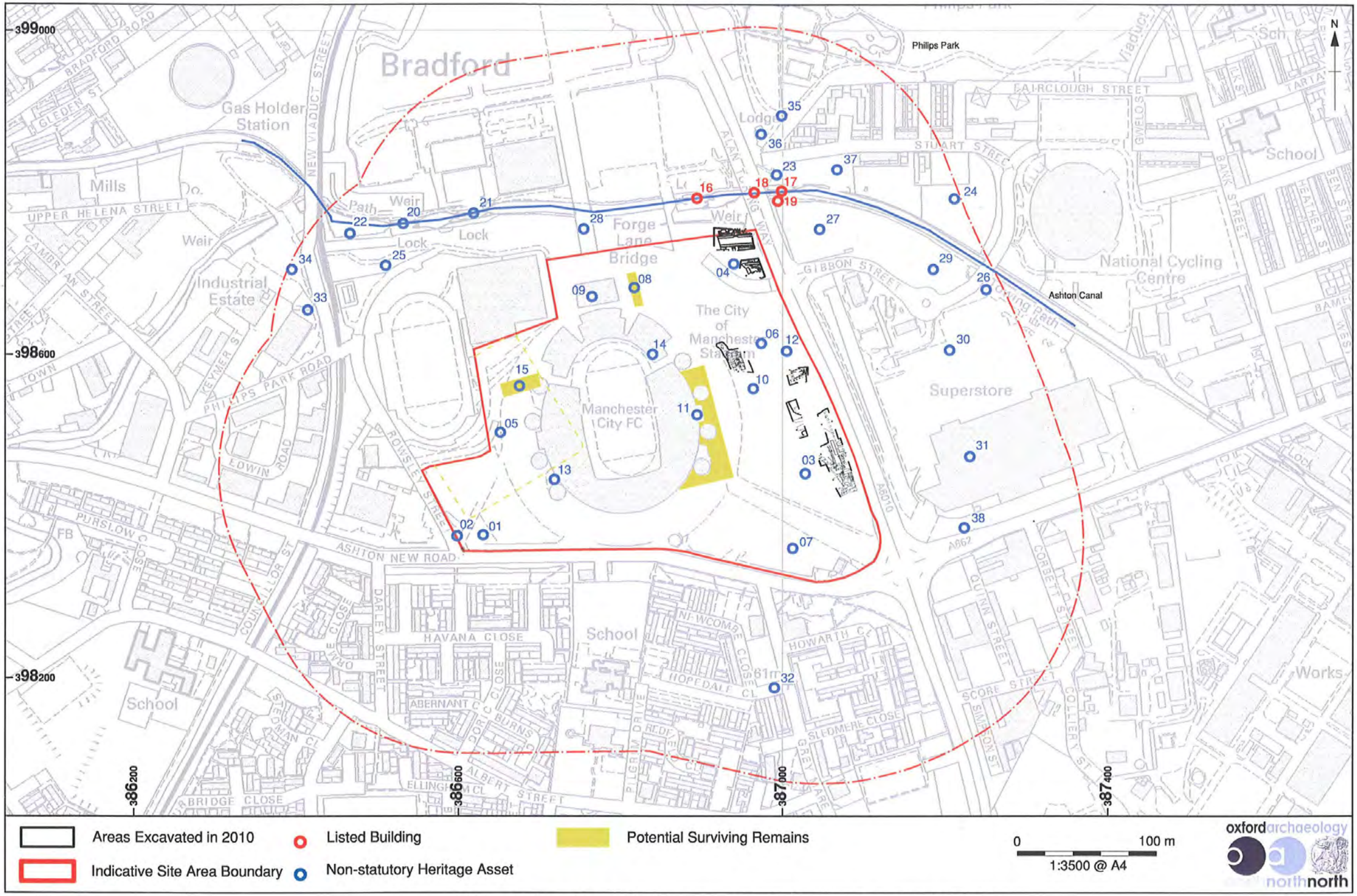

Figure 2: Location of heritage assets and areas excavated in 2010

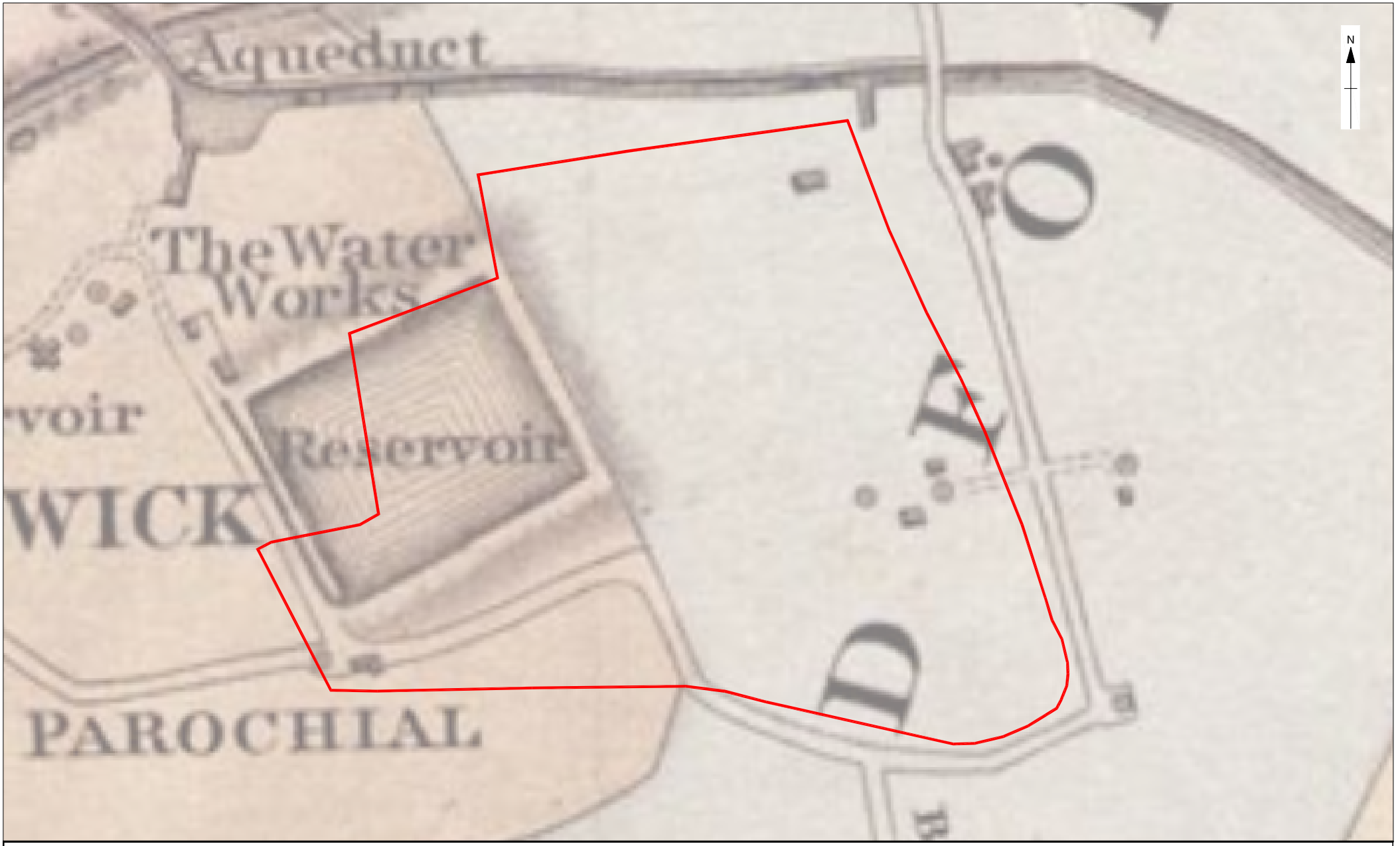

Figure 3: Site Area superimposed on Johnson's map of 1820

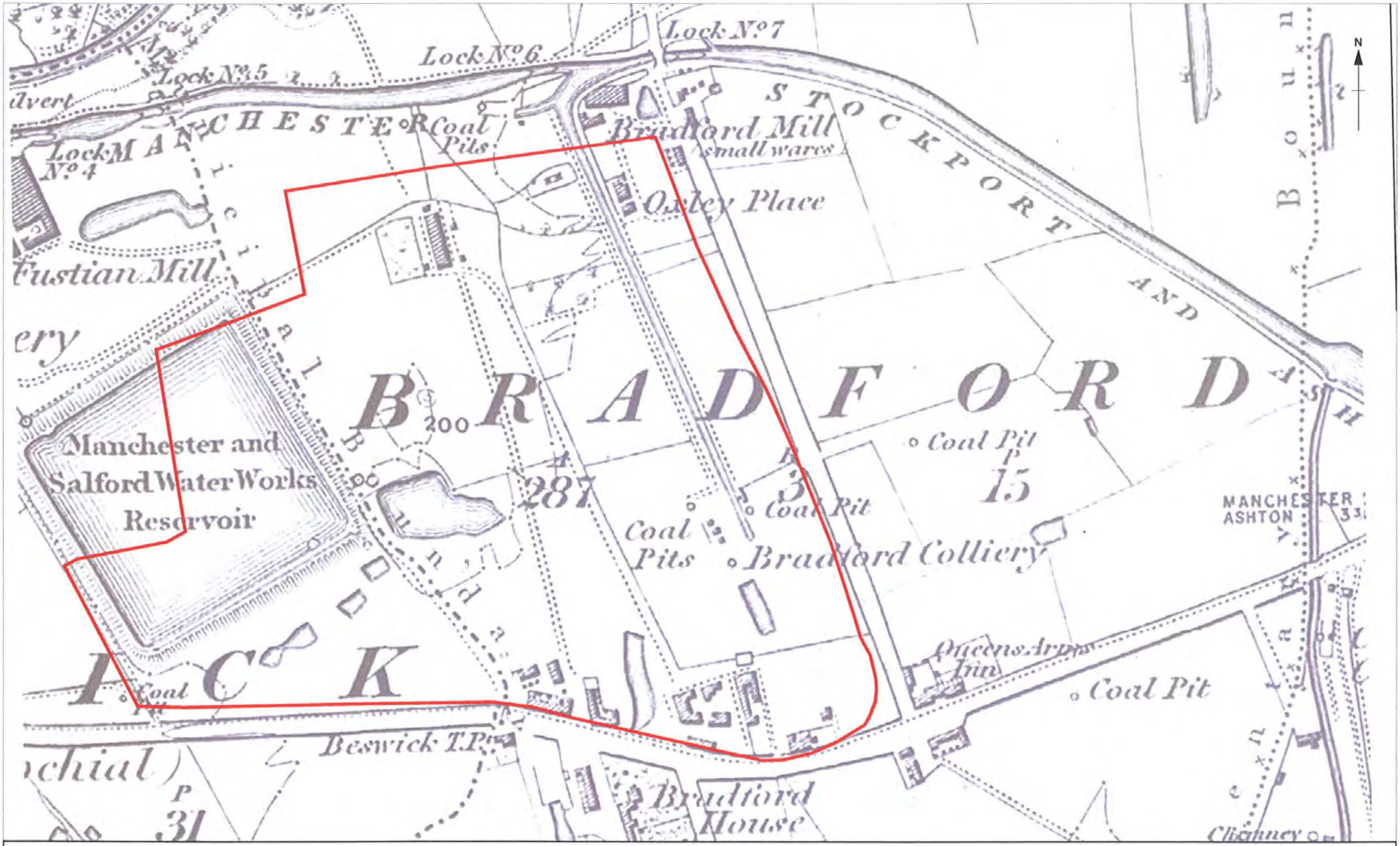

Figure 4: Site Area superimposed on the Ordnance Survey 6":1 mile map of 1848

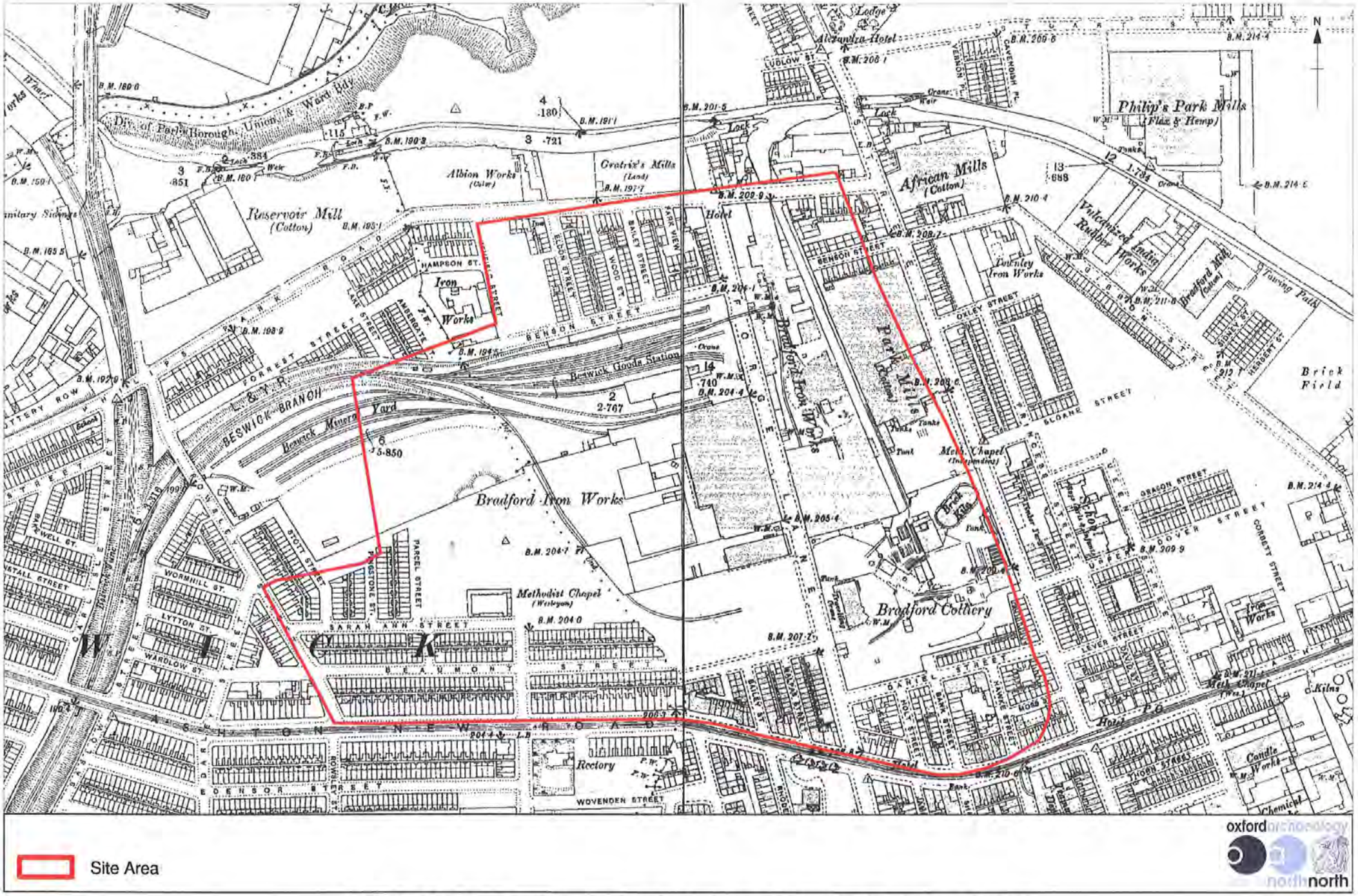

Figure 5: Site Area superimposed on the Ordnance Survey 25":1 mile map of 1893

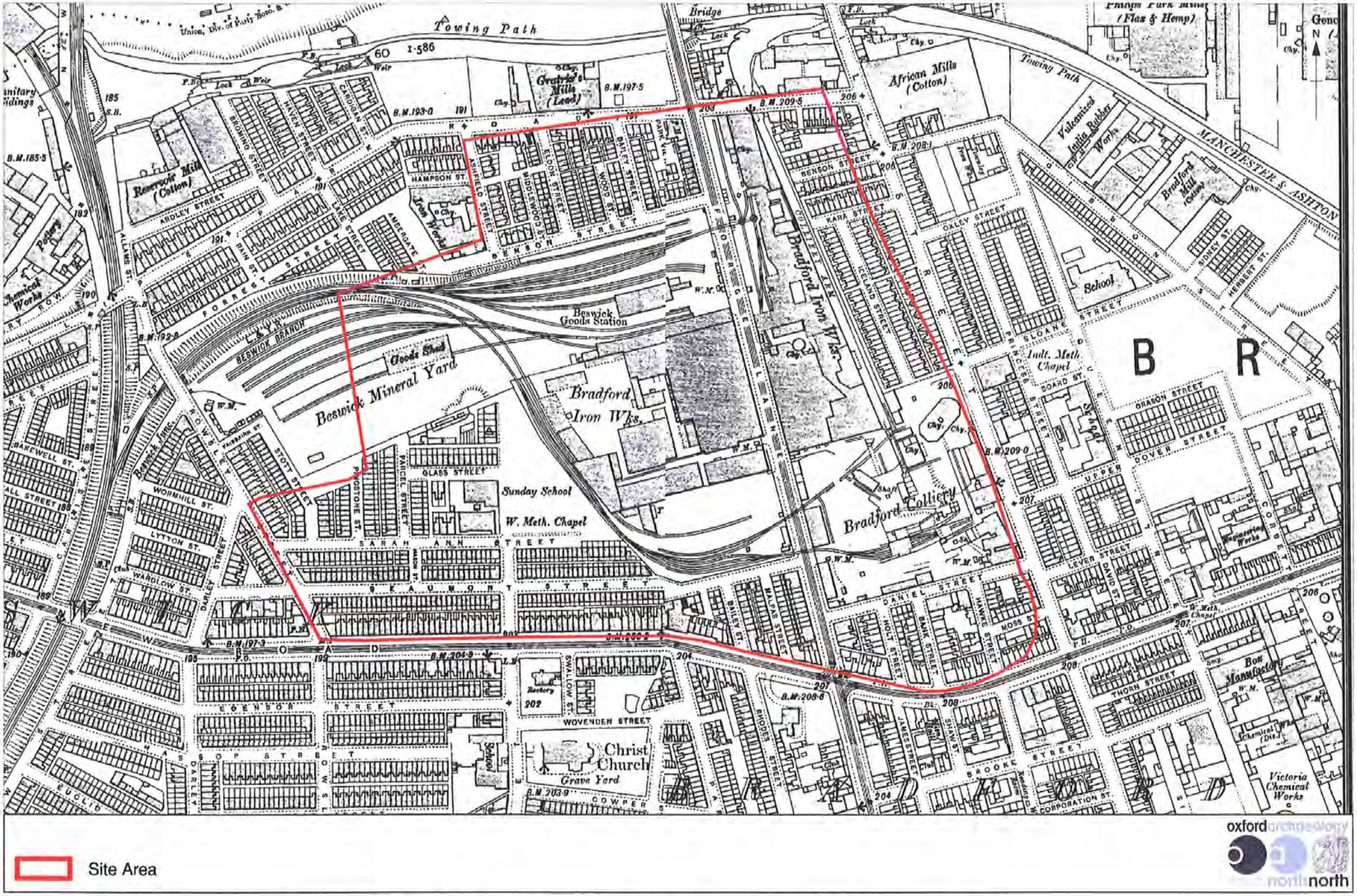

Figure 6: Site Area superimposed on the Ordnance Survey 25":1 mile map of 1908

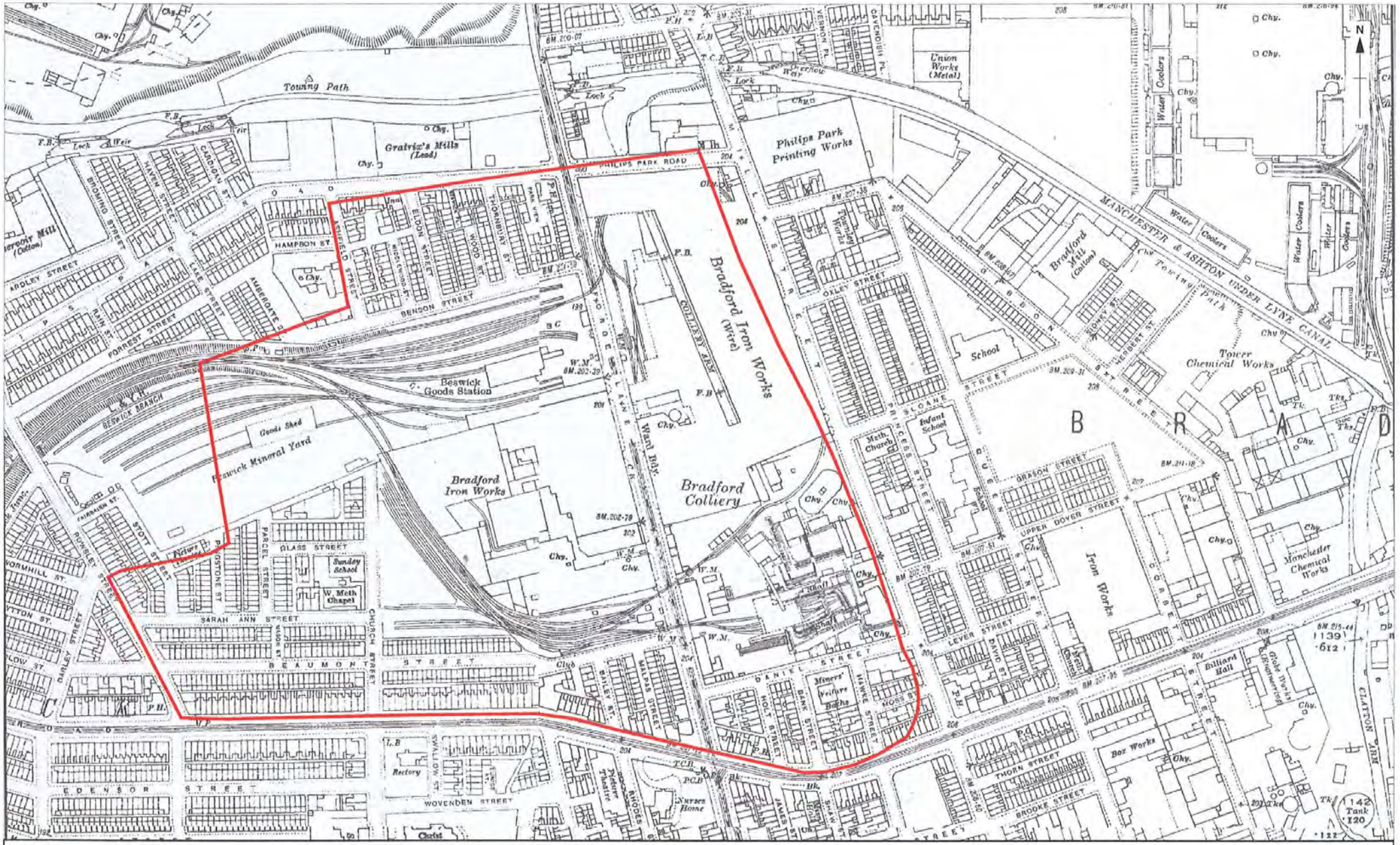

Figure 7: Site Area superimposed on the Ordnance Survey 25":1 mile map of 1922

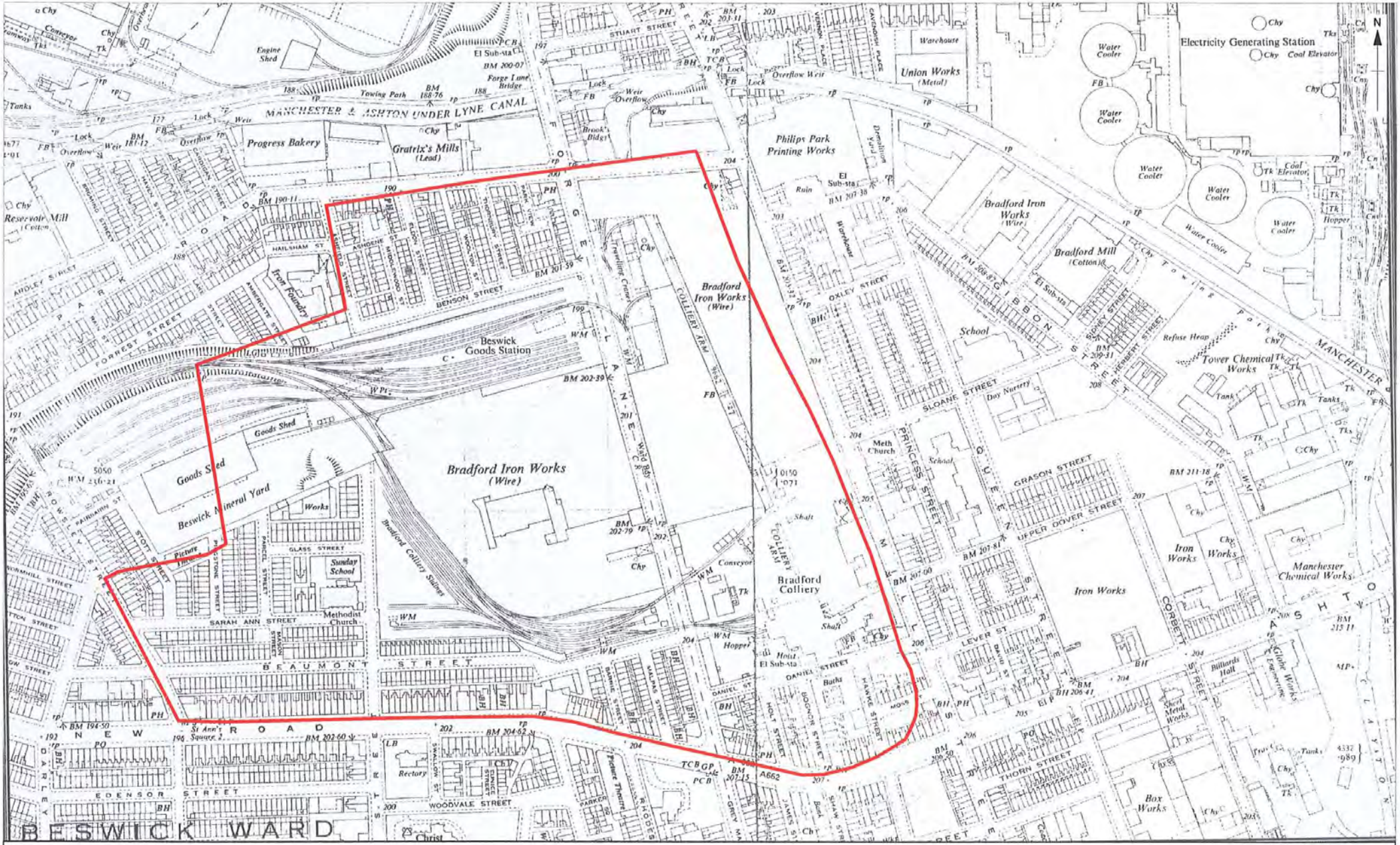

Figure 8: Site Area superimposed on the Ordnance Survey map of 1951