# CONTENTS

CONTENTS...................................................................................................................................................... 1

SUMMARY .......................................................................................................................................................... 3

ACKNOWLEDGEMENTS..................................................................................................................................... 5

1. INTRODUCTION ........................................................................................................................................... 6
   1.1 Circumstances of Project .......................................................................................................................... 6
   1.2 Location, Topography and Geology .......................................................................................................... 7

2. METHODOLOGY ............................................................................................................................................ 8
   2.1 Introduction ................................................................................................................................................ 8
   2.2 Desk-Based Assessment ............................................................................................................................ 8
   2.3 Archaeological Survey .............................................................................................................................. 9
   2.4 Health and Safety ..................................................................................................................................... 9
   2.5 Archive ................................................................................................................................................... 10

3. BACKGROUND .............................................................................................................................................. 11
   3.1 Historical and Archaeological Background ............................................................................................ 11
   3.2 Development of the Study Area ............................................................................................................ 18
   3.3 Development of the Roch Bridges ......................................................................................................... 19
   3.4 Development of Concrete Bridge Technology ........................................................................................ 26

4. MEASURED SURVEY .................................................................................................................................... 28
   4.1 Introduction .............................................................................................................................................. 28
   4.2 Detailed Description of the Bridge Sections ........................................................................................... 28

5. DISCUSSION .................................................................................................................................................. 34
   5.1 Introduction .............................................................................................................................................. 34
   5.2 Phase 1 (Medieval) .................................................................................................................................. 34
   5.3 Phase 2 (to 1787) ................................................................................................................................... 35
   5.4 Phase 3 (1787 -1821) ............................................................................................................................ 35
   5.5 Phase 4 (1821 - 1824) ............................................................................................................................ 36
   5.6 Phase 5 (Late Nineteenth Century) ......................................................................................................... 37
   5.7 Phase 6 (Early Twentieth Century) ...................................................................................................... 37
   5.8 Phase 7 (Late Twentieth Century) ......................................................................................................... 38

6. SIGNIFICANCE OF THE REMAINS ............................................................................................................. 39
   6.1 Introduction .............................................................................................................................................. 39
   6.2 Conservation Areas .................................................................................................................................. 39
   6.3 Criteria .................................................................................................................................................... 39
   6.4 Significance ............................................................................................................................................ 41
   6.5 Priority 1 Structures ............................................................................................................................... 42
   6.6 Priority 2 Structures ............................................................................................................................... 43
   6.7 Priority 3 Structures ................................................................................................................................ 43
   6.8 Priority 4 Structures ................................................................................................................................ 43
7. RECOMMENDATIONS FOR FURTHER INVESTIGATION ............................................. 44
   7.1 Introduction ............................................................................................................ 44
   7.2 Archaeological Mitigation .................................................................................... 44

8. BIBLIOGRAPHY ............................................................................................................. 47
   8.1 Cartographic and Primary Sources ......................................................................... 47
   8.2 Secondary Sources .................................................................................................. 48

APPENDIX 1: PROJECT BRIEF .................................................................................... 51
Archive and Publication ................................................................................................. 54

APPENDIX 2: PROJECT DESIGN .................................................................................. 56

APPENDIX 3: GAZETTEER OF SITES ........................................................................ 63

ILLUSTRATIONS ............................................................................................................. 73
Figures ............................................................................................................................. 73
Plates ............................................................................................................................... 73
SUMMARY

In November 2010, Rochdale Metropolitan Borough Council (RMBC) commissioned Oxford Archaeology North (OA North) to undertake an archaeological desk-based assessment and laser-scan survey of Rochdale Bridge (NGR SD 8947 1323 to SD 8987 1342). The aim of the archaeological work was to inform the formulation of proposals by RMBC to expose the river by removing sections of the bridge, whilst maintaining the oldest elements of the structure.

Rochdale’s urban centre is of relatively recent growth, commencing in earnest during the seventeenth century. An important element in the growth of Rochdale during this period was an expansion of the local woollen industry, and the associated trans-Pennine trade in woollen goods. The significance of this trade is reflected in the numerous fine examples of Georgian merchant’s houses, warehouses and inns that survive in the Yorkshire Street area, which was essentially the terminus of the trade route across the Pennines before the inception of the canal and railway links. The bridge across the river Roch was at the heart of this early development.

Rochdale Bridge was probably constructed initially to supplement the fording point across the River Roch. The bridge connected the ancient church of St Chad’s and the historic core of the medieval town on the south side of the river, with the focus of post-medieval expansion on the northern bank of the river. It remained the principal crossing point across the River Roch until the early 1880s, when Wellington Bridge was built. The short section of the river between these two bridges was covered in several episodes during the early twentieth century. This process commenced in July 1904 and the final stretch was completed in 1924, the construction being mostly reinforced concrete using the Hennibique system. A section on either side of Rochdale Bridge was replaced in 1996.

The desk-based assessment comprised a search of both published and unpublished records held by the Greater Manchester Archaeology Unit Historic Environment Record (HER) in Manchester, the Local Studies Centre at Touchstones in Rochdale, the Lancashire County Record Office, the planning and engineering departments in RMBC, and the archives and library held at OA North. In addition, a site visit was carried out in order to provide a more thorough understanding of the study area, and assess the significance of the built heritage.

A survey of the bridge was undertaken by laser scanning between 29th November and 2nd December, when the water levels were sufficiently low to enable the recording. The survey created a cloud of hundreds of thousands of survey points covering the full extent of the under-bridge fabric. A full 3D model of the bridge can be displayed as plans, cross sections, elevations and isometric perspectives of the bridge structure. A photographic record was also maintained of the key historic elements of the bridges. Analysis of the bridge structure was implemented, and identified 12 bridge constructions (numbered 1 to 12 from west to east). The earliest Rochdale Bridge (Bridge 5) was potentially constructed during the medieval period. This was then progressively extended with the additions of Bridges 4 and 7 on either side. A new curved bridge section (Bridge 8) was constructed in 1821 following a disaster the previous year when part of the parapet collapsed during a bull bait. The Rochdale Bridge was then expanded further in 1864 (Bridge 3). A new bridge, Wellington Bridge, was constructed in the late nineteenth century, and comprised a flat deck carried on eight substantial I-section wrought iron beams of riveted plate construction. In the early twentieth century the area between the Rochdale and Wellington Bridges was in-filled, together with sections to the west and east, rendering a 450m long...
sealed river culvert through the centre of Rochdale. The bridges were constructed of reinforced concrete using a pioneering technique of structural engineering, and although there are clearly distinct phases of construction, between 1909 and 1923, they all have a broadly comparable design.

The scope and details of any archaeological mitigation required in advance of redevelopment should be devised in close consultation with the Greater Manchester County Archaeologist, and the Conservation Officer with RMBC, once detailed design proposals are known.
ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Paul Ambrose of Rochdale Metropolitan Borough Council (RMBC) for commissioning and supporting the project. OA North is grateful to Norman Redhead, the Greater Manchester County Archaeologist, for his support and advice, and Lesley Mitchell for providing information from the Greater Manchester Historic Environment Record. Thanks are also expressed to David Morris, the Conservation Officer for RMBC, for his advice and guidance on the built heritage in the study area. Further thanks are expressed to the staff at the Lancashire County Record Office in Preston, and the staff at Touchstones, Rochdale Local Studies Centre, for their assistance with this project.

OA North would also like to thank Tony Rogers and Tom Avery of APR Services Ltd for undertaking the laser scan survey of the bridge. We are particularly grateful to Mark Whittaker, and Mark Richards of the Environment Agency for providing the health and safety support while working in the confined space conditions of the bridge during the survey.

The historical research was carried out by Ian Miller, and the analytical field survey was by Jamie Quartermaine and Chris Wild. The report was compiled by Ian Miller, Chris Wild and Jamie Quartermaine, and the illustrations were produced by Anne Stewardson. The report was edited by Jamie Quartermaine, who was also responsible for project management.
1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 In November 2010, Rochdale Metropolitan Borough Council (RMBC) commissioned Oxford Archaeology North (OA North) to undertake an archaeological desk-based assessment and measured survey of Rochdale Bridge (Fig 1; SD 8966 1338 (centred)). The aim of the archaeological work was to inform the formulation of proposals by RMBC to expose the river by removing sections of the bridge, whilst maintaining the oldest elements of the structure. The scope of works was carried out in accordance with a Project Brief devised by the Greater Manchester Archaeological Unit (GMAU), who provides archaeological planning advice to Rochdale Metropolitan Borough Council (Appendix 1), and a project design compiled by OA North (Appendix 2).

1.1.2 Background: Rochdale’s urban centre is of relatively recent growth, commencing in earnest during the seventeenth century. An important element in the growth of Rochdale during this period was an expansion of the local woollen industry, and the associated trans-Pennine trade in woollen goods. The significance of this trade is reflected in the numerous fine examples of Georgian merchant’s houses, warehouses and inns that survive in the Yorkshire Street area, which was essentially the terminus of the trade route across the Pennines before the inception of the canal and railway links. The bridge across the River Roch was at the heart of this early development.

1.1.3 Rochdale Bridge was constructed initially as a replacement for a fording point across the River Roch. The bridge connected the ancient church of St Chad’s and the historic core of the medieval town on the south side of the river, with the focus of post-medieval expansion on the northern bank of the river. It remained the principal crossing point across the River Roch until the early 1880s, when Wellington Bridge was built. The short section of the river between these two bridges was covered in several episodes during the early twentieth century. This process commenced in July 1904 and the final stretch was completed in 1924, the construction being mostly reinforced concrete using the Henribique system.
Rochdale Bridge was formerly listed in the Guinness Book of Records as the widest bridge, as it bridges a 1460ft (446m) long section of the River Roch.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

1.2.1 Rochdale lies in the north-eastern part of the modern county of Greater Manchester, some 12km from the border with Yorkshire. The study area (stretching from NGR SD 89471323 to SD 89871342) is situated in the centre of Rochdale, straddling the River Roch. The site is bounded to the south by The Esplanade and South Parade, to the north by Yorkshire Street and The Butts, to the west by Town Meadows, and to the east by Smith Street. The archaeological survey is focused on Rochdale Bridge, which lies at the southern end of Yorkshire Street, and Wellington Bridge at the northern end of Drake Street (Plate 1).

1.2.2 Topographically, Rochdale is situated at the junction of the Pennine uplands and the Manchester Plain. The uplands of Rossendale and the Central Pennines rise to a height in excess of 450m above Ordnance Datum (aOD) to the north and east of the town, whilst the heavily urbanised lowlands of the Manchester Plain lie to the south and east.

1.2.3 The development as Rochdale was in no small part due to the topography of the area. The town developed at the junction of several key trade and communication routes. Important trans-Pennine routes via Blackstone Edge led to the north-east, with routes to the north heading off across the Rossendale Fells into central Lancashire, and westwards to Bury and Bolton. The valley of the River Roch narrowed around Rochdale, providing a convenient fording point for the route southwards to Manchester, and there even would have undoubtedly been of importance as packhorse ways by the medieval period (Tindall nd, 1).

1.2.4 The underlying solid geology consists of the Pennine Lower Coal Measures (Westphalian A) and millstone grit of the Carboniferous period. The predominant drift geology comprises glacial sands and gravels, with some alluvium (http://www.bgs.ac.uk/geoindex/beta.html).

Plate 2: Aerial view of the study area, showing approximate location of the two initial bridges
2. METHODOLOGY

2.1 INTRODUCTION

2.1.1 The desk-based assessment was undertaken in accordance with the Project Brief (Appendix 1), and in accordance with the relevant IfA and English Heritage guidelines (IfA 2001; English Heritage 2006).

2.2 DESK-BASED ASSESSMENT

2.2.1 Several sources of information were consulted as part of the assessment, to provide an understanding of the developmental history of the study area. The principal sources of information consulted were historical and modern maps, although published and unpublished secondary sources were also reviewed. The study has focused on the proposed development area, whilst information from the immediate environs has been summarised in order to place the results of the assessment into context. 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, fragility/vulnerability, diversity, and potential.

2.2.2 Archive sources that were consulted include:

- **Greater Manchester Sites and Monuments Record (SMR):** the Greater Manchester Sites and Monuments Record (SMR), held in Manchester, was consulted to establish the sites of archaeological interest already known within the study area. The SMR is a Geographic Information System (GIS) linked to a database of all known archaeological sites in Greater Manchester, and is maintained by the Greater Manchester Archaeological Unit (GMAU);

- **Lancashire County Record Office, Preston (LRO):** before the county boundaries were changed during the mid-1970s, Manchester lay within the county of Lancashire, and therefore most of the available published maps of the area are held in Lancashire Record Office in Preston. All available Ordnance Survey maps for the study area were examined;

- **Local Studies Centre, Touchstones, Rochdale:** the Local Studies Centre catalogue was searched for information relating to the study area. Historic mapping was obtained at the Local Studies Centre and a number of primary and secondary sources were consulted. The assessment also made use of the Local Studies Centre’s website (www.link4life.org);

- **British Geological Survey (BGS):** six borehole logs were obtained from the BGS for previous boreholes located in and around the study area;

- **Oxford Archaeology North:** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out in the vicinity.
2.3 **ARCHAEOLOGICAL SURVEY**

2.3.1 A measured survey was carried out to English Heritage guidelines (English Heritage 2006), by means of Laser Scanning, which provides an enormous density of 3d points which can then be viewed and manipulated in AutoCAD (using Cloudworks software) or viewed in Pointools software. Scanning was undertaken using a Faro photon laser Scanner when the water levels were low, and required multiple setups along the full length of the bridge. This enabled a density of points every 10mm or better on most surfaces enabling clear visualisation of the structure and masonry. Survey control was established by closed traverse along the underside and the top of the bridge which was located into the National Grid using survey grade differential GPS.

2.3.2 From the point cloud the following two dimensional drawings were obtained as follows:

- A scaled plan of the surveyed structures showing the location of each element and features of specific architectural and archaeological interest;
- Elevation drawings of the bridges showing stone by stone detail, of the upstanding walls and other elements;
- Cross sections across the Rochdale and Wellington Bridges.

2.3.3 *Fly Through Visualisation of the Model:* because the whole building was subject to laser scanning, producing a complete three dimensional model of the whole building, it was possible to provide a fly around version of the model.

2.3.4 *Photography:* in conjunction with the archaeological survey a photographic archive was generated, which will record significant features, as well as general views, using a high-quality digital SLR camera with 10 mega pixel resolution. The photography provided general views, and recorded the internal and external detail, including apertures, assembly marks and other significant features.

2.3.5 *Description:* a detailed description of the complex was carried out to English Heritage Level 3 guidelines as appropriate, utilising *pro-forma* sheets, providing for an analytical account of the bridges and their development.

2.4 **HEALTH AND SAFETY**

2.4.1 The survey was deliberately timed to occur during an extended period of a high pressure weather system, when there was very little precipitation, a very low risk of flash floods, and when the water levels were correspondingly low. Typically the water level was on average no more than 150mm during the survey minimising risk to survey staff.

2.4.2 The area underneath the bridges was defined as a confined space, and the infrastructure and support to enable confined space operations was kindly provided by the Environment Agency. Environment Agency operatives with respirator equipment were on site during all survey work beneath the bridges. Survey staff used harnesses and ropes at all times underneath the bridges to facilitate their evacuation in the event that they lost consciousness.
2.5 ARCHIVE

2.5.1 A full professional archive has been compiled in accordance with the project design (Appendix 1), and in accordance with current IfA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited with the Local Studies Centre at Touchstones in Rochdale. Copies of this report will be deposited with the Greater Manchester Historic Environment Record.
3. BACKGROUND

3.1 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

3.1.1 The following section presents a summary historical and archaeological background of the general area. This is presented by historical period, and has been compiled in order to place the study area into a wider archaeological context.

<table>
<thead>
<tr>
<th>Period</th>
<th>Date Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palaeolithic</td>
<td>30,000 – 10,000 BC</td>
</tr>
<tr>
<td>Mesolithic</td>
<td>10,000 – 3,500 BC</td>
</tr>
<tr>
<td>Neolithic</td>
<td>3,500 – 2,200 BC</td>
</tr>
<tr>
<td>Bronze Age</td>
<td>2,200 – 700 BC</td>
</tr>
<tr>
<td>Iron Age</td>
<td>700 BC – AD 43</td>
</tr>
<tr>
<td>Romano-British</td>
<td>AD 43 – AD 410</td>
</tr>
<tr>
<td>Early Medieval</td>
<td>AD 410 – AD 1066</td>
</tr>
<tr>
<td>Late Medieval</td>
<td>AD 1066 – AD 1540</td>
</tr>
<tr>
<td>Post-medieval</td>
<td>AD 1540 – c1750</td>
</tr>
<tr>
<td>Industrial Period</td>
<td>cAD1750 – 1901</td>
</tr>
<tr>
<td>Modern</td>
<td>Post-1901</td>
</tr>
</tbody>
</table>

Table 1: Summary of British archaeological periods and date ranges

3.1.2 Prehistoric and Roman periods: various remains of prehistoric date have been identified in the general area, particularly in the upland areas (Fishwick 1889). The discovery of remains from these periods within Rochdale, however, is severely limited, although several Roman coins have been found on the periphery of the urban area (Lewis 1848). The sparsity of archaeological evidence predating the medieval period in Rochdale is likely to be due to the level of redevelopment of the town during the nineteenth and twentieth centuries (Pearson et al 1985).

3.1.3 Medieval development: evidence for early medieval activity in the region as a whole is drawn largely from place-names (Newman 1996), although there is little firm evidence for activity in Rochdale during this period. Rochdale was recorded in the Domesday Survey of 1086 under ‘Recedham Manor’, and is one of only four places in the entire Hundred of Salford mentioned by name. It was held by Gamel, one of the 21 thegns of Salford Hundred, who was free of all customs except six; his holding was assessed as two hides or 12 plough-lands (Morgan (ed) 1978). The place-name ‘Recedham’ derives from the Anglo-Saxon ‘-ham’, which may be translated as ‘village’, compounded with either the British river name ‘Rached-’, or the Anglo-Saxon ‘reced-’, meaning ‘house’ or ‘hall’ (Tindall nd, 6).

3.1.4 By the late twelfth century, a motte-and-bailey castle had been established at the northern end of the triangular spur Castle Hill, half a mile to the south-west of Rochdale parish church. Whilst this site is now entirely destroyed and built over, nineteenth-century surveys show that it had consisted of an irregular bailey, some 30 x 35m, surrounded by an earthen ramparts probably originally surmounted by a wooden palisade (GMAU 2010, 30).

3.1.5 At this time, Rochdale may have been synonymous with the manor of Rochdale (Lewis 1848). There seems to have been only one manor properly so called, and the Holts of Stubley were the principal resident family. Most of the land, however, was
held by the Abbey of Whalley, and other ecclesiastical bodies; Rochdale was one of the largest ecclesiastical parishes in England, comprising several townships (Farrer and Brownbill 1911). At the centre of the parish of Rochdale was the church of St Chad’s; it is of note that the church served an enormous parish, rather than a substantial town (Hartwell et al 2004, 585). The oldest part of the existing church of St Chad, which occupies high ground on the south side of the town overlooking the river, dates to the thirteenth century (op cit, 588). However, there is some evidence to suggest that an earlier church occupied the same site, and fragments of Norman masonry are said to have been discovered during renovation in 1815 (Fishwick 1889, 12). It is certainly clear that considerable investment was expended in reconstructing the church during the thirteenth century; the present nave pillars are of that date and are probably in their original position. There is some evidence to suggest, however, that the thirteenth-century chancel was not particularly bigger than its predecessor (Farrer and Brownbill 1911), which may thus have been comparatively large, implying that Rochdale was a medieval settlement of regional importance.

3.1.6 By 1212, the whole manor had been assigned to the Lord of Clitheroe, and was held by Roger de Lacy, and several under-tenants. By 1251, Rochdale had become important enough to have been granted a charter for a weekly market, and an annual fair on the feast of St Simon and St Jude in October. It was probably during this period that a borough was also created, although the town continued to be governed through the manor court until 1825, when a Police Act was finally obtained (Fishwick 1889).

3.1.7 The focus of the medieval activity in the area remains uncertain, and the pattern of settlement may have comprised a spread of innumerable folds, representing clusters of agricultural and proto-industrial buildings (Hartwell et al 2004, 585). Whilst the centre of the medieval town probably lay on the south side of the river, in proximity to St Chad’s church, firm evidence for this is lacking. Similarly, it seems possible that the ford across the River Roch, accessed on the northern side from The Butts as depicted in historical engravings of the area could be of medieval origin.

3.1.8 Post-medieval Rochdale: writing in 1582, Camden described Rochdale as ‘a market town well frequented’ (Holland (ed) 1610). The regional importance of the town at this time is implicit from the detail provided by Saxton’s map of Lancashire, which was published in 1577, and marks the town in bold letters (Plate 3). Manufacturing and mining industries became of increasing importance to the local economy during this period; the confiscation of the lands that had belonged to Whalley Abbey, and the general suppression of religious houses following the Dissolution of the Monasteries, produced a new breed of landlords, whose number was increased by the sale of Byron estates in the early part of the seventeenth century (Fishwick (ed) 1913). The town certainly began to expand significantly during the 1600s, indicated to some degree by the Hearth Tax Returns; in 1666, 228 hearths were recorded for Rochdale (ibid).
3.1.9 Celia Fiennes, writing in c 1700, described Rochdale as ‘a pretty neat town, built all of stone’ (Morris (ed) 1982), whilst some 25 years later Defoe (1971) considered it ‘a good market town, and of late much improved in the woollen manufacture, as are also the villages in its neighbourhood’ (Furbank et al 1991). By the end of the eighteenth century, Rochdale had developed a formidable reputation as a centre for the production of woollen cloth, and the town benefited from a lucrative export trade in woollen goods to Holland, Portugal, Spain, Italy, Russia and Germany (Aiken 1795, 248). Rochdale also became an important centre for the cross-Pennine trade in woollen cloth, represented by the numerous merchant’s houses, warehouses and inns that were established in the town during the late 1700s to service this trade. An important group of these buildings survives along Yorkshire Street and connected thoroughfares, reflecting the position of the area at the terminus of the Georgian trade route across the Pennines to Yorkshire (OA North 2009). The surviving warehouses in the town centre span the 1790s to the 1850s, and incorporate the innovative design features that were adopted during this key period in the evolution of structural engineering.

3.1.10 The layout of the town on the southern side of the River Roch is depicted on a Plan of the Rochdale Glebe, which was produced in 1754-7 (Plate 4). This shows the core of the town to have been focussed on the parish church, around Packer Street, King Street, and what is now Drake Street. Rochdale Bridge is annotated as ‘A Stone Bridge’, with a second river crossing a short distance to the west named ‘Cap Ogden Bridge’; the latter was a wooden footbridge (Section 3.3.13). The town is shown to have a similar layout on A Plan of the Vicarage of 1764, which also shows the ‘new’ settlement on the north bank of the river, with ribbon development extending northwards along Whitworth Road and north-eastwards along Yorkshire Street (Plate 5).

Plate 3: Extract from Saxton’s map of 1577, showing the main settlements in the region
Plate 4: Plan of the Rochdale Glebe in 1754-7

Plate 5: Extract from A Plan of the Vicarage, 1764
3.1.11 The *Plan of the Rochdale Glebe* (Plate 4) and *A Plan of the Vicarage* (Plate 5) also show Church Lane as a principal thoroughfare; this lane had superseded the medieval packhorse road northwards from the parish church. Church Lane provided a gentler gradient for wheeled traffic, although its broad sweep north-eastwards from the church necessitated a sharp westward dog-leg at the river, in order to connect with Yorkshire Street at Rochdale Bridge (Tindall nd, 12).

3.1.12 A flavour of the character of the settlement on the north bank of the River Roch, know as The Butts, in the late eighteenth and early nineteenth century, is provided by a painting of c 1780 (Plate 6) (reproduced in Taylor 1956) and print of c 1810 (Plate 7). These depict an array of building types, including small cottages, large Georgian town houses, warehouses, public buildings and industrial premises. Of particular note is the ford across the River Roch, depicted in the foreground. Yorkshire Street and Toad Lane represented the main thoroughfares to Yorkshire and Central Lancashire respectively. The market was held on the north bank of the river from at least the sixteenth century, and there were also water-powered corn mills and fulling mills in the area; it is possible, although unconfirmed, that both occupied the sites of medieval predecessors (Tindall nd, 13).
3.1.13 In 1771, Samuel Curwen visited Rochdale, and noted that it was ‘remarkable for (its) many wool merchants; it has a large woollen market, the merchants from Halifax etc, repairing hither weekly’. He also noted that ‘every considerable house is a manufactory, and is supplied with a rivulet or little stream, without which the business cannot be carried on’ (Fishwick 1889, 57-8). The power of the River Roch was also exploited as a source of power during this period, although it was subject to sudden flooding. A major flood, referred to locally as the Rushbearing Flood, occurred in 1798, when the river rose 10’ 8” above its usual level (Robertson 1875, 265-6).

3.1.14 Rochdale rapidly became a boomtown of the Industrial Revolution, and amongst the first ever industrialised towns. The Rochdale Canal, one of the major navigable broad canals of Great Britain, was a highway of commerce during this time used for the haulage of cotton, wool, and coal to and from the area. The canal was opened between Rochdale and Manchester by 1799, and was completed as the first trans-Pennine route in 1804 (Hadfield 1994). The growth of the population as Rochdale became a manufacturing centre led to the enlargement of the parish church, and the building of new ones: St Mary’s, Wardleworth, was consecrated in 1744; St James’s, Wardleworth, in 1821; St Clement’s, Spotland, in 1835; and Christ Church, Healey, in 1850 (Farrer and Brownbill 1911).

3.1.15 Rochdale rose to prominence during the nineteenth century as an important centre for the production of cotton goods, whilst maintaining a strong woollen industry, focusing in particular on the manufacture of flannel and baize. New cotton mills were established along the River Roch and, with the advent of steam power, throughout the town along the river valleys and canal banks. However, the town enjoyed a ‘golden age’ during the Cotton Famine of the 1860s, when woollens became once more price-competitive with cotton goods; the population of the town increased by over 60% during this period (Williams with Farnie 1992, 43). The socio-economic change brought by the success of Rochdale’s textile industry in the nineteenth century led to its rise to borough status and it remained a dominant settlement in its region; a charter granted to the town in 1856 made Rochdale a Municipal Borough.

3.1.16 In 1858, the newly elected Council raised the idea of building a new town hall. Land was purchased on the south bank of the River Roch in November 1863 and, in January 1864, a competition was announced for the designs of the building. This competition was won by William Henry Crosland of Leeds, and the foundation stone was eventually laid in March 1866. The grand building was provided with a spacious esplanade in front, and a steep wooded slope as a backdrop (Sharples nd, 1). During this period, the Council decided to construct an elaborate drinking fountain (Site 10) adjacent to the south bank of the river at the bottom of Drake Street. The fountain was erected in 1863, and comprised a square base covered with stone-coloured canvas, with the monogram ‘A.E’ exhibited in block letters on two sides, and ‘A.C.’ placed on the opposite sides. The centre piece of the fountain was in the form of a vase, from which emanated the principal jet of water. Five smaller jets were placed around the main jet, with another three jets set at each of the four corners of the fountain (Rochdale Observer March 1863).

3.1.17 The magnificent gothic hall was completed in 1871, and set the tone for Rochdale’s town centre (Plate 8). However, this new symbol of the town’s civic pride overlooked the River Roch, which was little more than an open sewer; a prominent visitor to Rochdale in 1857 described the town as having ‘a little bridge that spans
like a rocking horse an imaginary stream in which there is nothing liquid but mud...the town is in the shape of a tea-cup, with a gutter at the bottom’ (quoted in Milne 1977). In redressing this situation, a decision was taken to gradually cover the river and, by July 1904, the first phase of this ambitious project, from Yorkshire Street to Wellington Bridge, was completed (Cole 1988, 35). The entire scheme was completed in 1924, combining seven bridges.

3.1.18 A tramway centre is shown on the Ordnance Survey map for 1910, located at the junction of the tramways on Smith Street, Drake Street and The Esplanade. This was constructed on the area of covering over the River Roch, which had been under construction from 1903. Two buildings labelled ‘Tramway Shelter’ (Site 12) are located in this area. The two shelter buildings were still depicted on the Ordnance Survey mapping of 1938, but are not shown after this date.

3.1.19 During the 1990s, the bridge was subject to inspection, investigation and assessment; the resultant weight restrictions that were imposed had serious consequences on the town centre. Between October 1995 and April 1997, a scheme to replace, strengthen and refurbish the bridges, costing £3.4 million, was carried out. Two bridges were replaced, and four were strengthened and refurbished (Clapham and Rowe 1999, 195).
3.2 DEVELOPMENT OF THE STUDY AREA

3.2.1 The following section presents an overview of the development of the study area, and is based largely on a regression analysis of the available historical maps, together with other available primary documentation. This is followed by a detailed account of the development of the various bridges across the River Roch.

3.2.2 The earliest detailed map of Rochdale is provided by Swire’s survey of 1824, which was produced at a scale of 9": 1 mile (Plate 9; Fig 2). This map shows Rochdale Bridge to have been the principal thoroughfare connecting the medieval core of Rochdale on the south bank of the river with the expanding settlement on the north bank.

3.2.3 The map also shows another bridge situated some distance to the west of Rochdale Bridge, carrying New Road across the river and Town Meadows. This bridge was known subsequently as Manchester Road Bridge, and was opened in 1824. Swire’s map also shows two footbridges: one at Spring Gardens situated between Rochdale Bridge and Manchester Road Bridge; and Captain Ogden’s Bridge, situated to the east of Rochdale Bridge, close to the end of Drake Street.

3.2.4 The next available plan of Rochdale is that provided by Wood’s survey of 1831, which was produced at a scale of 1": 5 chains (Fig 3). Whilst this survey was carried out within a few years of Swire’s plan, several changes in the layout of the area and the crossing points of the river can be discerned. Notably, a new footbridge (Walk Bridge) is shown to have been erected across the river a short distance to the east of Rochdale Bridge. In addition, a close comparison of Swire’s survey with that of Wood seems to show that Rochdale Bridge had been widened slightly to the east. However, the small scale of the maps does not allow this to be confirmed with complete confidence.
3.2.5 In 1851, the Ordnance Survey published the first edition 1:1056 town plan of Rochdale, which provides a detailed map of the area (Fig 4). This shows the areas on both sides of the river to have been densely developed with a mixture of industrial, retail, and domestic buildings. This map also marks the ford across the River Roch a short distance upstream from Walk Bridge. The Ordnance Survey also depict the size and layout of Rochdale Bridge as broadly similar to that shown on Swire’s map of 1824 (Fig 2), although slightly smaller than that upon Wood’s plan of 1831 (Fig 3). However, this is probably largely a reflection of the accuracy of the earlier mapping.

3.2.6 The next available detailed mapping is provided by the Ordnance Survey second edition 1:1056 town plan of Rochdale (Fig 5), which was surveyed in the early 1890s. This shows Rochdale Bridge to have been expanded considerably relative to the 1851 map, and included a widening to both the western and eastern sides of the bridge. Wellington Bridge is also shown to have been constructed, whilst the absence of the ford implies that this had been abandoned.

3.2.7 The map also shows the new town hall to have been erected, which evidently necessitated the clearance of numerous buildings along the western side of Packer Street to allow Town Hall Square to be laid. Similarly, buildings lining the southern bank of the River Roch to the west of Rochdale Bridge have also been cleared and replaced with The Esplanade. The scale of the new town hall, its associated square and The Esplanade reflect the considerable civic pride of Rochdale at this time.

3.2.8 The Ordnance Survey second edition 25”: 1 mile map of 1910 (Fig 6) shows further significant changes to the townscape, specifically the covering of the River Roch between Rochdale Bridge and Wellington Bridge, a development that necessitated the removal of Walk Bridge. The resultant surface over the river was developed immediately as a new tramway centre, with new shelters for passengers to replace those that had formerly overhung the river.

3.2.9 The Ordnance Survey map of 1930 (Fig 7) shows the major scheme of covering the river to have been completed, having been extended westwards from Rochdale Bridge and eastwards from Wellington Bridge. The extent of the local tramway system is also shown to have been expanded, with a new line having been laid along Newgate, which had been widened considerably.

3.2.10 By the time of the 1959 Ordnance Survey map (Fig 8), the tramway system had been abandoned, and the lines removed or buried beneath resurfacing of the roads. The layout of the actual bridges, however, is shown as unchanged.

3.3 Development of the Roch Bridges

3.3.1 Rochdale Bridge (Site 01): the date at which the first bridge across the River Roch in Rochdale was constructed is not known; it seems likely that it existed by 1324, as a document of that date refers to ‘John of the Brig’, which may be associated with a bridge (Taylor 1956). In addition, it is likely that there was also a ford across the river during the medieval period; a ford is referred to in early seventeenth-century documents, including James I’s of 1610 (Currer, 1610), and Sir Robert Heath’s Survey of the Manor of 1626 (Fishwick (ed), 1913). This ford was almost certainly located at The Butts, and remained in active use until the late nineteenth century, by which date it ‘was often made so deep by heavy rainfall as to become both inconvenient and dangerous’ (Robertson 1881, 5-8).
3.3.2 John Leland (1539-1546) (Chandler 1993) spent much of his travels through Tudor England examining bridges, and would have potentially provided an invaluable early source; however, he apparently did not visit Rochdale. However, Rochdale Bridge was certainly in existence by the early seventeenth century, as it is referred to in surviving documents. Moreover, some seventeenth-century documents state that the bridge was in need of repair, suggesting that it may then have been of some antiquity. The 1626 Survey of the Manor, for instance, notes that the bridge to the west of the ford was ‘in decay’, although it was not known who was responsible for the repairs (Fishwick (ed) 1913). Greater detail is provided by the Lancashire Quarter Session records dated April 1632 (LRO/QSB/1/103(62)):

‘This Courts doth intreats Rauphs Ashston of Myddleton and Robert Hoults of Stubley, Esquires, that they would take with them workmen of skill and view the bridge called Rochdale bridge now presented to be in decays and certify (sic) this Court at the next Sessions the defects thereof, and what chardge will repairs and fynish the same’

3.3.3 This was evidently carried out, as a subsequent entry concludes: ‘We haved vewed (sic) the said Rachdall bridge with sufficient workmen according to this order and doe fynd it much decaied and doe thinke £13.13s.4d will do no more than repair it’. It seems that no remedial repairs were carried out upon receipt of the report, as later records in the Lancashire Quarter Sessions, dated 23 July 1663, make further reference to the perilous state of the bridge (LRO/QSP/244/1):

‘We whose names are subscribed inhabitants of the said town do humbly certify the present decay of the Bridge of Rochdale in the walls and battlements and more especially the foot thereof which of late years by divers overflowings of the river is very much washed away, and if not speedily prevented will bring on a very great charge upon the Hundred, which we humbly conceive may be prevented by allowance of ten pounds for present repairs thereof’.

3.3.4 The Lancashire Quarter Sessions of October 1676 make further reference to monies expended by Gabriel Gartside and Joseph Dearden on repairs to the bridge, which amounted to £75 5s 2d (QSP/457/7). The bulk of the costs incurred were for transporting ‘free stone’, indicating that the bridge was of stone construction. Their itemised expenditure included:

- Hewing and setting the bow of the arch £13
- Timber for the frame £3 4s
- Lyme (sic) £3 5s 4d
- For breaking the free stone and getting it on the moors £3 4s
- Draughtes for leading 140 loads of free stone from the common £24 10s
- 40 loads of wallstone at the pitt £2

3.3.5 A useful description of Rochdale Bridge in the late eighteenth century is provided by Edmond Holme in 1787. The bridge formed part of the road from Manchester to Halifax, and consisted of three arches. The dimensions were given (Holme 1787, 54):

- Span of north arch 27’
- North pier 9’
- Span of centre arch 27’
- South pier 6’ 6”
3.3.6 Holme also noted that there was a very dangerous turn from Church Lane on the New Wall (South Parade), and is shown clearly on a drawing of c 1820 (Plate 10). A Mr Thomas Smith, a lessee under the vicar, offered to take down the old buildings and remove them so far back as to make the road easy and convenient for £30. An undated footnote added subsequently to Holmes’ transcript notes that, in 1802, ‘the north-east wing was totally taken down and a new one made in lieu thereof’.

3.3.7 According to Butterworth (1828, 102-3), Rochdale Bridge was widened and improved in 1821 ‘by which the communication between the parts of the town, lying on opposite sides of the river, has been much facilitated. It at present consists of three arches of stone, substantially built’. The improvement works were necessitated by an accident that occurred on 8th November 1820, during which the battlement of the bridge partially collapsed (Mattley 1899, 12). This had been caused by a ‘great concourse of people who pressed thereon to witness the old English amusement, a bull bait, which took place in the bed of the river, by which fatal accident, eleven persons lost their lives’ (Butterworth 1828, 46); this was the last bull bait to be held in the river.

Plate 10: Artist’s impression of c 1820, showing the bull bait, Rochdale Bridge and the ford
3.3.8 At a subsequent unspecified date further improvements were introduced which consisted of the addition of an extension, seven feet in width on the easterly side, and the style was changed from the peaked to the circular arch (Robertson 1881, 5-8). Prior to these improvements, the roadway represented more the character of a peaked saddle, being elevated on one side and depressed on the other, and the centre was several yards higher than the level of the street on either side. However, these improvements still proved to be insufficient, and another extension of 10 feet was erected on the western side (Robertson 1881, 5-8).

3.3.9 In 1832, the north wing of the bridge was considered to be dangerous. This was eventually repaired by Mr Dearden of The Orchard, which was adjacent to the bridge. He was told that the Hundred of Salford was not liable for the costs of repair, although this was proven in court subsequently to be incorrect, and Dearden received some recompense for his expenditure on the bridge repairs.

3.3.10 Rochdale town centre was affected by the flooding of the River Roch in August 1856. The event was reported in the local newspaper, which noted that ‘the improvements which are in progress adjoining the bridge, for the purpose of widening The Butts, were pretty well tested. The new arches, eight in number, which run along the side of the river, though only five were completely finished’. The report also noted that the flood waters ‘rose to the iron beams upon which [the arches] are erected’, and that ‘the narrowing of the bed of the river has had the effect of increasing the velocity of the water’ (Rochdale Observer 16 August 1856).

3.3.11 In 1864, the General Purpose Committee recommended that the ‘old bridge’ should be widened again on its west side ‘to the extent of 12 feet, and rounding the corners in to the Wood Estate’, with a total estimated cost of £240 - £250 (Rochdale Observer 3 September 1864). During the discussions, Alderman Moore noted that the bridge was composed of five fragments of bridges, comprising four widenings of the original structure (ibid).
3.3.12 A newspaper report of January 1869 noted that ‘the widening of the bridge is now on the point of completion. The river wall with its elegantly massive stone parapet is also far advanced. Two polished granite memorial stones, each surmounted by the Corporation arms, have been placed in the parapet walls of the bridge’ (*Rochdale Observer* 2 January 1869). As part of these engineering works, it seems that iron girders were also added on each side of the bridge, and the completed structure had ‘a fine roomy appearance, combined with strength and durability’ (Robertson 1881, 5-8).

3.3.13 *Captain Ogden’s Bridge (Site 02):* a wooden footbridge crossing the river upstream of Rochdale Bridge was in place by the early nineteenth century. This bridge was originally called Captain Ogden’s Bridge, and known subsequently as Hamer’s Bridge and then Theatre Bridge (Robertson 1881, 5-8). However, it is marked on the Ordnance Survey map of 1851 as Wellington Foot Bridge, and is noted to have been of metal construction (Fig 4).

3.3.14 *Walk Bridge (Site 03):* in 1825, an iron footbridge leading over the river to The Walk was constructed by Mr Vavasour (Heywood 1931, 46); it was the first of two footbridges that bridged the river. Known as Walk Bridge, this was situated a short distance to the east of Rochdale Bridge. It was described by Butterworth (1828, 103) as ‘a neat iron bridge, for foot passengers alone; it has been thrown over the river to expedite the communication of the pedestrian travellers, from the South Parade to the bottom of Yorkshire Street’. The original Walk Bridge was substituted for a wider, iron-girder bridge in November 1884 (Taylor 1956, 121), which is shown on a photograph of c 1903 (Plate 12).

3.3.15 *Wellington Bridge (Site 04):* this was the second bridge across the river in the town centre, and was constructed at the bottom of Drake Street in c 1882. It consisted of wrought-iron girders and brick jack arches (Fig 5).

3.3.16 In May 1903, the covering of the River Roch from Yorkshire Street to the Wellington Bridge commenced (Plate 13). This was completed by Leeds-based contractors D Jones & Company in July 1904, and was the first portion of the river to be covered (Heywood 1931, 168).

3.3.17 In April 1909, construction began on extending the covering of the river from Yorkshire Street to the west side of Newgate (Fig 6). This was completed in July 1910, the work having been carried out by Yorkshire Hennebique Company (*Rochdale Observer*), and is demonstrated on a photograph dated 1913 (not reproduced: neg 2942, Touchstones Local Studies Library).
Plate 12: View of Walk Bridge in c 1903, with Rochdale Bridge to the rear and the tram shelters overhanging the river

Plate 13: Wellington Bridge in c 1905, with Butts Mill to the rear
3.3.18 In June 1922, a further extension from Newgate to Theatre Street (called Town Meadows Bridge) was started, and completed in June 1923 (Figs 7 and 8; Plate 14). The stage of the works was carried out by R and T Howarth, who were local contractors.

3.3.19 In October 1923, the covering of the river from Wellington Bridge to Weir Street started, and was carried out by JT Blackburn & Company of Winton (Rochdale Observer). The bridge was completed by July 1925 and was opened officially on 30 January 1926 (Figs 7 and 8).

3.3.20 Repairs were carried out to the bridge length constructed in 1909 by the cement gun method, undertaken by Direct Labour and a report on this work (Lo 3591RC) says that little consolidation by tamping was carried out upon the concrete forming the bottom of the beams, and the tamping of the remaining portion of beams has not been well carried out. In addition, all the shear steel in the design consisted of hoop iron stirrups as against the present practice of round bars, and the broken stone used in local flagrock. Consequently, water gained access through the porous concrete of the beam bottom to the hoop iron steel; this having a very large area for unit volume meant that the rusting was very rapid. The consequent expansion and formation of the rust resulted in the bursting off or loosening of the outer concrete skin of the beam, thereby exposing the main bars to possible corrosion. It was considered necessary to remove the cover from the beams, clean all the exposed steel and concrete faces, place additional reinforcement in the ‘Gunite’ to prevent it cracking under shrinkage and temperature stresses, and to assist its key with the old concrete. The decking slab was considered to be in good order throughout, and only required very minor repairs. Gunite is composed of ferrocrete, Mersey grit sand and water. The finished work had a hard and uniform and rough-glazed surface.

3.3.21 Other bridges: in his description of the crossing across the River Roch, Butterworth (1828, 102-3) mentions a stone-built bridge of a single arch situated
approximately a quarter of a mile downstream. This bridge connected Town Meadows with Pinfold.

3.3.22 In 1863, the construction of John Street New Bridge, situated upstream of Wellington Bridge, was begun. This bridge was intended as a replacement for a footbridge, and was opened for traffic on 27 September 1864 (Heywood 1931, 59; 168). In December 1879, Dane Street Bridge was opened, which was situated downstream of Rochdale Bridge, and was completed at a cost of £10,578, and included the purchase of buildings for widening purposes (Heywood 1931, 76).

3.4 DEVELOPMENT OF CONCRETE BRIDGE TECHNOLOGY

3.4.1 The earliest example of a concrete bridge in Britain is that built across the River Waveney at Homersfield on the border of Suffolk and Norfolk. This 50ft-span structure was built in 1870 by T & W Philips, and comprised a wrought-iron cage infilled with concrete. However, few other bridges of this type were built in Britain subsequently until the first decade of the twentieth century, when the introduction of foreign systems led to a rapid expansion in the use of reinforced concrete for bridge construction (Chrimes 2001, 212).

3.4.2 The principal system of reinforced-concrete construction was that introduced by French engineer Francois Hennebique. Having been impressed with Joseph Monier’s technique of making tubs and tanks with concrete reinforced with wire mesh that was exhibited at the Paris Exposition in 1867, Hennebique determined to apply this method to building construction. In 1879, he introduced reinforced-concrete floor slabs, and progressed to a complete building system that was introduced in 1892. This used structural beams of concrete reinforced with stirrups, and longitudinal bars designed to resist the tensile forces against which ordinary concrete was weak. He expanded his design subsequently from one patent to another to all branches of construction, whereby reinforced concrete could advantageously replace conventional masonry or metal structures (Ragot 1996, 214).

3.4.3 The British agents for the Hennebique system were LG Mouchel and Partners, who constructed the earliest examples of reinforced-concrete bridges in Britain. The first of these was built at Chewton Glenn in Hampshire in 1901. This had an 18ft span skew arch with the concrete ribs concealed behind brickwork. In the following year, Mouchel designed a beam and slab bridge over Sutton Drain in Hull, which had a 40ft span but was 60ft wide.

3.4.4 By 1918, this firm had been involved in the construction of 33 bridges, viaducts and similar structures, representing approximately 80% of the reinforced concrete bridges in the country at that date (op cit, 215). Most of the bridges were of a modest span (6 – 18m), and were characterised by monolithic construction methods which ensured that all the structural elements were combined, with reinforcement of main girders anchored in adjoining members, and stirrups used to help bind the structure together.

3.4.5 Mouchel was also responsible for the bridge across the River Roch, which comprised reinforced concrete slab vaults, and was the first such structure not to include ribs or beams in its construction. The bridge was also the first of its type with abutments and foundations that were also all in reinforced concrete.
3.4.6 Other examples of reinforced-concrete bridges built using the Hennebique system include Queens Park Road bridge, which spans the River Roch a short distance to the south-east of Rochdale. This bridge was built in 1932, and comprises a continuous slab deck between continuous longitudinal edge beams and a central stringer, all carried by massive cross beams cantilevering beyond the edge beams.
4. MEASURED SURVEY

4.1 INTRODUCTION

4.1.1 The present Rochdale Bridge measures 533m in width, and comprises 12 distinct elements (Figs 9 and 10). The span of the bridge varies between elements and ranges from 11m to 30m at its widest point. The majority of the structure was constructed on a north-west/south-east alignment, effectively creating a large south-west/north-east-aligned tunnel (Figs 10 and 12). For the majority of its width, the bridge has a reinforced concrete beam construction, supported on either one or two rows of columns, whilst the earliest surviving Rochdale Bridge comprised several sections of three-span arch construction.

4.1.2 The different elements of bridge construction are numbered from the western end of the bridge (Figs 10 and 11), but are described in chronological sequence, starting with the earliest (Bridge 8) and ending with the latest (Bridge 9). The earliest surviving Rochdale Bridge (Bridge 8) has three arches, and these have been numbered from the north (Figs 12 and 13). A chronological sequence of construction will be discussed in Section 6, below.

4.2 DETAILED DESCRIPTION OF THE BRIDGE SECTIONS

4.2.1 Bridge 1 (Site 07 – Town Meadows Bridge): this is the westernmost section of the overall bridge structure, and measured 175m in width, with a span of c 11m, comprising a reinforced concrete beam bridge, with the deck and concrete joists, carried on a central row of concrete columns (Plate 15). All elements of the bridge were crudely rendered, with the exception of the bases of the columns, where the unrendered concrete was visible; this perhaps reflects that the water level was higher when the columns were rendered. This render was a modern proprietary polymer modified sprayed concrete that was applied during the 1995-1997 repair work (Clapham pers comm). Each column is rectangular in plan but with tapering up and downstream faces for the lowest c 1m, creating an irregular hexagonal profile at the base. The thickly rendered lower parts of the columns are essentially oval in profile, suggesting that the render was applied as a spray, rather than by hand.

4.2.2 The basic structure comprises transverse concrete beams, spanning the entire deck, and placed on 8m centres, each supported at its mid-point by a column (Plate 16). Although obscured by the heavy rendering, it appears that the beams are cast onto the columns, which continue outside the width of the beam, up to deck level (Plate 15). Each of the beams has eight perpendicular joists jointed into each face, further supporting the deck above (Plate 15). Again, the render obscures the detail of construction, but it appears that the joists were simply cast in-situ into the beams, with strengthening rods linking beams and joists.

4.2.3 The north abutment is also rendered, making it impossible to determine the fabric of the construction beneath. The south abutment however, is not rendered, and comprises regularly coursed, rock-faced rubble sandstone blocks (Plate 15). This wall pre-dates the concrete element of the bridge, and represents an earlier retaining wall of the culverted river.
4.2.4 **Bridge 2:** this shorter 64m bridge is on a similar alignment to Bridge 1 (Figs 10 and 12), which it butts on its south-western side. It was only recently constructed, in 1996, and is of typical late twentieth-century steel-girder bridge construction, comprising a mixture of concrete beams, cast *in-situ*, and I-section steel joists placed 3m apart (Plates 17 and 18); it replaced the earlier Esplanade Bridge, which was constructed in 1909. The steel joists appear continuous across the entire bridge, which is split into two spans by a 1.2m wide concrete pier, which runs the full width of the bridge, and has a tapering cutwater at its western, downstream end. Each beam is supported on mechanical bearings and located on a reinforced concrete pedestal (P Clapham pers comm). At its eastern end, the bridge butts the earlier stone bridge (Bridge 4), which comprises three spans (Fig 12).

4.2.5 The pier of Bridge 2 butts and overlies the downstream cutwater wall of Bridge 3, between Arches 2 and 3 (Plate 19; Section 4.2.6). To the north of this cutwater, Bridge 2 widens to meet a drystone wall that was constructed beneath Arch 1 of Bridge 4 (Fig 11). The southern masonry abutment is a continuation of that from Bridge 1, without joint, and clearly predates the construction of Bridge 2, but on top of it is a concrete beam that is part of the Bridge 2 construction. The north abutment is a pre-cast concrete block, and contains the outflow of a storm drain from the roadway above. A contemporary concrete beam has been placed against the face of the earlier Bridge 3, and forms a joint between the two structures.

4.2.6 **Bridge 3:** this bridge section was an extension of the Rochdale Bridge providing a curved slipway for trams crossing the bridge, but only partly survives (Plate 19); it comprises a pair of cutwater walls extending westwards and downstream out from each of the piers of Bridge 4 (Section 4.2.9). That between Arches 2 and 3 was of the full 4’ (1.22m) width of the bridge pier and was 33’ (10.06m) long, whilst the wall extending from the northern pier was only 23’ (7.01m) long, and had a 3m long triangular section spanning the angle to the southern edge of the significantly smaller Arch 1 (Figs 10 and 12). This almost certainly reflects the course of the river downstream, which would appear to have narrowed on its northern side. Both cutwaters support a 4’ (1.22m) wide buttress, truncated to a height of four, well-dressed regular courses, and extend the full length of the cutwater wall. On top of both walls are the large concrete beams of the later Bridge 2. The northern cutwater wall terminated in an ashlar pilaster (Plates 20 and 21), which appears to have comprised mouldings within each of the end blocks, rather than separate elements, presumably making them less susceptible to water erosion.

4.2.7 The lowest block of the pilaster had a tapered foot, rising to a cylindrical. The block above transferred the cylindrical section through a base of three diminishing tori, to a plain, more slender, shaft, formed by the upper two extant drum blocks (Plates 20-22). To the north of the dividing wall, between Arches 1 and 2, a smaller rectangular-section buttress on a simple rectangular-section plinth projects out from the spandrel wall face. This buttress, which also houses a benchmark, represents the original style of buttress, situated on a smaller isometric triangular downstream cutwater. It is evident that a cutwater wall was originally located between Arches 2 and 3, extending to the west; it is probable that the former cutwater in that position also terminated in a pilaster. The 1908 OS 2nd edition map depicts what appears to be a pilaster in this location (Fig 5).

4.2.8 The two cutwater walls extending from the bridge piers on either side of Arch 2 were bridge supports for a curved bridge extension, which allowed traffic, and particularly trams, to feed diagonally across the Rochdale Bridge. The curved
extension is a later modification as it is first shown on the 1892 1st edition OS map and probably corresponds to the bridge works of 1864 (Section 3.3.11). The cutwater wall on the east side of Bridge 8 (beneath Bridge 9) is part of the same construction, having an identical pilaster terminal.

4.2.9 **Bridge 4:** this was the westernmost section of the arched masonry Rochdale Bridge, and was between 9’ and 9’4” (2.74 to 2.84) wide. It comprises three arches, the southern two of broadly similar size, with a smaller arch on the northern side (Figs 12, 14 and 15). The bridge was a western extension of Bridge 5, and butts onto the spandrel face of the earlier structure (Section 4.2.12). The bridge has been subsumed entirely into later structures on either side, leaving only the barrel, abutments, and small sections of the spandrel wall, on the western side visible (Plates 23-25). These are formed of well-dressed, coursed regular sandstone blocks, of almost ashlar quality. The floor of the bridge in Arch 1 is raised above those of the adjacent arches, and is edged by a low retaining wall extending out from the dividing pier. At the time of survey, when the water levels were low, the floor under this arch was dry while the main flow of the river was through Arches 2 and 3.

4.2.10 The ring-stones of each semi-circular barrel are typically 4’6” (1.37m) in length and 1’ (0.30m) wide. On the face of each arch, decoration is simple and comprises alternate blocks projecting 1” (0.03m) beyond the face of the spandrel wall. The spandrel wall itself is constructed of similarly dressed coursed sandstone blocks, although with much greater variety in the height of each course and length of each block.

4.2.11 A low drystone wall extends inboard of the edge of Arch 1 and formed a narrowing of the river channel. It measures only 3’6” (1.37m) high and narrowed the channel within Arch 1 by 9’ (2.74m). It extends from the inner face of the abutment of Bridge 8 to the western face of Bridge 4, where it was butted by the later Bridge 2, having presumably originally returned flush with the face of the arch to the northern abutment of Bridge 4. It is of uniform construction, representing a single build, and was presumably constructed to prevent backwash against the spandrel wall of the significantly narrower Bridge 8.

4.2.12 **Bridge 5:** this bridge is of regular 13’3” (4.04m) width, and was constructed as a free-standing structure. Unfortunately, subsequent extensions on either side obscure all but the barrels of each arch, and the lowest portion of the facing voussoirs, which project below the slightly higher Bridge 4 to the west (Figs 12, 14 and 15; Plate 28). The two outer arches are of identical construction style (although Arch 1 is smaller), comprising circular arches of dressed sandstone rubble ring-stones, similar to those used in Bridge 4, but slightly less well-dressed (Plate 26). The central arch (Arch 2), however, was formed of almost ashlar-quality blocks, set upon a projecting plinth and forming a four-centred Gothic arch (Plate 27; Figs 14 and 15). The masonry of the southern arch (Arch 3) is of a different construction to that of Arches 1 and 2, utilising much smaller stone blocks, and possibly reflects that the arch reflects a different phase of construction or rebuild.

4.2.13 **Bridge 6:** this narrow structure formed an extension to the eastern side of Bridge 5 (Plates 27-28), measuring between 3’10” and 4’ (1.15 - 1.22m). The southern arch (Arch 3) has a similar circular profile to Bridge 5, which is immediately adjacent to the west; the only difference in its construction being that it was constructed using higher quality dressed stones, similar in quality to those used within the barrel of Arch 2 in Bridge 5 (Plate 31). The central arch (Arch 2), was of similar quality, and
was built in the same gothic style as the earlier structure to the west (Plate 30). Arch 1 was also of well-dressed sandstone, and appears to represent an attempt to modernise the architectural style of the bridge, as it incorporates a slightly pointed arch profile. As a consequence, it rises slightly higher at its crown than the corresponding arch of Bridge 5, even though it springs from a similar level (Plate 29). It also has a protruding dressed block extending out from the vault, which slopes to the east, and has its end flush with the western face of the bridge. The purpose of the protruding block is unclear, but is probably a voussoir stone that has partially dropped; if so it dropped in antiquity as it is now mortared into its present position. Significantly the bridge is broader to the south than it is to the north, and has a slightly tapering plan, being 2.07m wide at the southern end and only 1.2m wide at the northern end. The reason for this is not particularly obvious but could reflect the presence of an existing structure, such as a bridge, that restricted the construction of a wide bridge at the northern end of the bridge.

**4.2.14 Bridge 7:** this structure seemingly represents a narrow fillet, infilling a wedge-shaped gap between the enlarged western bridge (Bridges 4-6) and Bridge 8. At its northern end, in Arch 1, it tapers to a single-stone width (Fig 12 Plate 32), and is only 2’ (0.61m) wide; the arch here is set slightly wider than Bridge 6, and has a circular profile, similar to that of Bridge 8 to the east. The central arch (Arch 2) also has a circular profile, and is narrower than the bridges on either side, possibly reflecting the difficulty in construction (Plate 33). The southern arch (Arch 3) of Bridge 7 has similar quality stonework to that of Bridge 6, unlike the arches to the north, and is almost certainly due to the tapering nature of the structure, where only Arch 3 is of sufficient width to allow any uniformity of construction (Plate 34).

**4.2.15 Bridge 8:** this bridge comprising much coarser quality sandstone blocks than the bridges to the west, and has uniformly-sized blocks with a rock-faced finish (Plate 36). The bridge is 17’7” wide (5.40m), and constructed on a slightly different alignment to the bridges to the west (Figs 12-15). The key characteristic of the bridge is that it has a curved plan, which evidently was intended to facilitate the movement of vehicles onto the bridge from the east. There is a very marked curve on the eastern face of the bridge, but only a gentle curve on its western side; as such the plan is eccentric and unusual for a bridge of eighteenth or nineteenth century date. In addition the arches are markedly flatter than those immediately to the west, making it extremely difficult to integrate them with those of the neighbouring bridges.

**4.2.16** Arch 1 has a very different profile to the other bridges (Fig 16), comprising 3’ (0.91m) high vertical facing walls to the abutment and pier, with a shallow segmental arch above (Plate 35). This arch is asymmetrical, with the crown offset to the south of the centre, skewing the arch, and making it steeper on the southern side (Fig 18). The arch also splays slightly, making it wider on its eastern, upstream, face. The blocks forming the wall of the abutment and pier are rough-faced, but are large and regular in size, each measuring 3’30” x 18” (0.99 x 0.45m), whilst the similarly-rusticated voussoirs are a uniform 4’1” x 15” (1.24 x 0.38m), and bonded with lime mortar, reflected in the large quantity of stalactites that have formed from the crown of the arch.

**4.2.17** Arch 2 is of similar fabric to the rest of Bridge 8, with voussoirs typically 3’ x 16” (0.91 x 0.41m). It has a similar profile to that of Arch 3 (**Section 4.2.18**), springing from river bed level as a circular arch (Fig 16); it has a wider span than Bridge 7 immediately to the west, extending further on its northern side and, consequently,
4.2.18 Arch 3 is of similar construction to Arch 2, and is significantly wider than the bridges to the west, also having a lower crown (Plate 37). The southern side of the arch incorporates a drain, just above its springing point, presumably serving the roadbed above.

4.2.19 Bridge 9: this is a late twentieth century structure re-utilising elements of a late nineteenth century bridge. It comprises the use of similar construction to Bridge 2, with beams cast in-situ, but has no evidence for steel joists within the deck, which appears to comprise cast reinforced concrete sheets. This is probably due to the triangular-plan shape of the bridge (Fig 12), which is only 13m at its widest point, and narrows, almost to a point at the southern end. The concrete beams supporting the western edge of the deck have been set into the historic fabric of Bridge 3, between Arches 1 and 2.

4.2.20 A high masonry wall runs from the east side of Arch 2 of Bridge 8 and is beneath Bridge 9; it buts the north abutment of Bridge 10, where it curves to the south-east. On the northern side of a kerb forming the line between Arches 1 and 2, the river bed has been infilled to a higher level, with a concrete channel, which is itself embanked on its outer northern side (Fig 13). This effectively transforms the northern arch into a floodwater bypass, its concrete flooring was a product of the earlier phase of construction and was not altered in the course of the construction of Bridge 9 (P Clapham pers comm).

The earlier nineteenth century element of the bridge is a pier extending out from between Arches 2 and 3 of Bridge 8, which overlies elements of a small, but earlier cutwater. The pier is 30’ (9.14m) long which terminated in a moulded pilaster, similar to that on the equivalent pier of Bridge 3. The pilaster base was obscured by a raft of vegetation, but it survived to it full seven-course height, terminating in a capital that mirrored the base of the pilaster observed on the cutwater wall of Bridge 3. This is a survival of a bridge extension that extended east from Bridge 8 and was contemporary to a similar extension (Bridge 3) out from the western side of Bridge 4. This bridge was first shown on mapping in 1892 and may correspond to documented bridge works of 1864 (Section 3.3.11).

4.2.21 Bridge 10 (Site 05 - Butts Bridge): this is a reinforced concrete beam bridge, measuring 112m in width, and is the earliest section of the Hennebique-type concrete bridge structure (Figs 19). Its design is slightly simpler than that of Bridge 1 to the west, as the large transverse beams are haunched onto a double row of columns (Plate 38), which are of square-section construction, each with a triangular cutwater facing up stream (east). The columns supported eleven longitudinal beams, which appear to have been cast jointed onto the main beams. The columns and beams were again heavily rendered. using a modern proprietary polymer modified sprayed concrete during the 1995-1997 repair work (Clapham pers comm). Whilst the documentary evidence suggests that it had concrete abutments, the inner faces of the abutments were both of stone construction, almost certainly representing the retaining walls of the earlier canalised water-course.
4.2.22 **Bridge 11 (Site 04 - Wellington Bridge):** this wrought iron girder bridge was constructed in 1882, at an angle across the River Roch, on a north-east / south-west diagonal alignment, as a free-standing structure (Fig 19). The deck is carried on eight substantial I-section wrought iron beams of riveted plate construction (Plate 39), each beam being 18” (0.46m) wide, and 3’8” (1.12m) high). These are supported by rectangular-section columns, each with a triangular cutwater section facing upstream (each 0.4m x 0.28m in plan), and narrowing to a square-section capital at the top, where they are capped with wrought-iron expansion joints (Fig 20). It is probable that the concrete represents later encasement of earlier cast-iron, cylindrical-section columns, more typical of the period. The underside of the deck is lined with convex curved wrought-iron plates, again heavily riveted. Near its junction with Bridge 12, the three easternmost I-section beams have their webbing in-filled with concrete and have further concrete in-filling between them, presumably overlying the wrought-iron plates. This would appear to represent strengthening or repair to the beams, which are otherwise identical to those to the west.

4.2.23 **Bridge 12 (Site 08 - Bus Station Bridge):** this bridge is of similar construction to Bridge 1, except that it comprises two rows of columns, reflecting the much wider span of the bridge (Plate 40). It measures some 140m in width, and curves sharply at its eastern end, around a natural bend in the river (Fig 19).

4.2.24 The eastern end of Bridge 12 has a parapet and its lower part is heavily rendered (Plate 41). It comprises a corbelled string course below the parapet wall, and it has four diminishing buttresses on its outer face; those at either end being overlain by the retaining walls of the river to the east (Fig 21). The majority of the parapet wall is of dressed ashlar, with a short section towards the northern side comprising balusters and a crenellated rail, somewhat similar in style to the pilasters of the large piers butting Bridges 3 and 8.
5. DISCUSSION

5.1 INTRODUCTION

5.1.1 Rochdale Bridge is a unique structure, representing several phases of crossings of the River Roch that developed successively from the medieval period to the Edwardian era. The present structure essentially serves as an underground culvert, rather than a bridge, carrying the river beneath the town centre, as undertaken in many other towns and cities. However, whilst the majority of such culverts represent a single, and often late phase of construction, significant elements of the original bridges have been fossilised within the present fabric, encapsulating a heritage asset of considerable archaeological and historical importance.

5.1.2 The earliest extant parts of the bridge cannot be dated with precision. Whilst substantial elements had almost certainly been constructed by the early seventeenth century, the possibility that the present structure incorporates medieval fabric cannot be discounted. The bridge was clearly subject to several phases of modification and expansion in the nineteenth century, designed to cater for the demands of a substantial increase in traffic associated with Rochdale’s rise to prominence as a key locus of textile manufacturing and distribution. The structural evolution of the bridge continued into the Edwardian period, when the bridge was extended in successive phases to an incredible width of 450m utilising the pioneering technique of reinforced-concrete construction, introduced by Francois Hennebique; Rochdale Bridge represents one of the earliest examples of a bridge constructed using this technology.

5.1.3 There is considerable uncertainty as to the sequence of construction of the various elements of the Rochdale Bridge as well as their chronology, but a tentative chronological development is proposed below.

5.2 PHASE 1 (MEDIEVAL)

5.2.1 Bridge 5: the earliest extant phase of construction seemingly comprises Bridge 5, which is a 13’ (3.96m) wide structure, built on a conventional perpendicular alignment with respect to the river and with a generally polite architectural styling, comprising almost ashlar-quality stonework, particularly in the central arch. This arch was constructed in a Gothic style, with a clearly defined pointed arch. The form of the ashlar-faced voussoirs and the pointed gothic arch are characteristics of earlier bridges between AD 1200 and 1600 (Harrison 2004, 97), and may be an indication that the present structure includes elements of the medieval bridge. Given that Bridges 4 and 6 abut either side, it is difficult to establish the character of the original facades without intrusive investigation.

5.2.2 The earliest reliable historical reference to the bridges was that of Edward Holme (1787), who provides a detailed description of the bridge and, more importantly, gives dimensions. The width of the arch spans and piers correspond with those of Bridges 4 to 7, and are fairly precise to within half a foot, which provides confidence as to the accuracy of his measurements. Significantly, these dimensions exclude the possibility that Bridge 8 was in place at this time. The only dimension that can be taken to discriminate between bridges 4 to 7 is that for the roadway (18’2” (5.5m)) which corresponds quite closely to the combined width of Bridges 5
and 6. This would suggest that these were the earliest of the bridges and that they were both in place by this date. Certainly the engraving of 1780 (Plate 6) shows a single bridge with a broad roadway that is perpendicular to the line of the roadway, which again excludes Bridge 8.

5.2.3 Robertson (1881) suggests, on the basis of a visual examination, that the earliest of the bridges was Bridge 6; however, he did not have the benefit of accurate laser scan data which clearly shows that the bridge tapers towards the north and at its narrowest was only 1.2m (3.9’) in width. As such this is inconsistent with a free standing bridge, but would certainly accord with a bridge extension.

5.2.4 The description of ‘repair’ work referred to from 1676 (Section 3.3.4) was evidently a massive undertaking particularly given the 140 loads of free stone used at this juncture. It is possible that the works entailed either the rebuilding of parts of the bridge; and given that Arch 3 was in a very different style from the other two arches, it can be argued that this arch was rebuilt, possibly as a result of this documented episode.

5.3 PHASE 2 (TO 1787)

5.3.1 Bridge 6: Bridge 6 is a tapering bridge extension to the eastern side of Bridge 5 and is between 2.07m and 1.2m width, and matches Bridge 5 in having a pointed central arch (Arch 2). The description of Holme (1787) (Section 5.2.1) suggests that by 1787 both Bridges 5 and 6 were in place. Whilst this may appear to have represented a significant undertaking for only a small expansion, it almost certainly allowed carriages to pass in either direction on the deck of the bridge, and reflects the growth of the town in the late eighteenth century.

5.3.2 The reason for the taper towards the north is uncertain. It could be explained if there was an existing bridge or structure immediately to its east constraining the construction, but Holme does not mention another bridge in 1787 and the 1780 engraving (Plate 6) does not show any structures in this location. In consequence there is no apparent explanation for this subtle taper.

5.4 PHASE 3 (1787 - 1821)

5.4.1 Bridge 4: the western extension to Bridge 5 dates from this period and on the evidence of the 18’ 2” roadway dimension provided by Holme (Section 5.2.1) this extension was not in place in 1787, but was seemingly the next sequential phase of construction. It is referred to by Robertson (1881) as being a 10’ extension to the west that followed the one to the east (Bridge 6), and is in actuality 9.5’ (2.9m) wide (Section 3.3.8). However, Robinson was writing long after most of the bridges had been established and was probably basing his phasing on the same physical evidence available to the present survey.

5.4.2 Bridge 4 had 3m cutwaters, each with simple, mainly decorative buttresses, and dentillated voussoirs to each arch. The reversion to circular-arch profiles is significant in that it reflects a period of rejection of the Gothic style that had preceded it, although the style again re-emerged later in the century, with the new Town Hall of 1870, only metres to the west, providing a fine example of such architecture.
5.5 Phase 4 (1821 - 1824)

5.5.1 Bridges 7 and 8 appear to belong to the period of rebuilding in the 1820s following the collapse of the parapet during the bull bait on 8th November 1820. Butterworth (1828) refers to the widening of the bridge in 1821 to ‘facilitate the communication between the parts of the town on opposite sides of the river’ and can be taken to mean that the dangerous turn from Church Lane was eased (Section 3.3.6). The shape and form of Bridge 8 was clearly intended to provide a gentle curved approach from New Wall on the southern side and the Butts on the northern side. Swires map of 1824 shows a very marked curved eastern side of the bridge and straight sided western side and demonstrates that Bridge 8 was in place by that date.

5.5.2 Bridge 8 comprised three arches of diminishing size, from south to north, with the northern example being small enough to warrant a different construction technique. Given the small width of the arch, it was not possible to construct a more classical-style circular arch, as this would not give sufficient clearance for flood water, so the pier walls were extended vertically, and capped with a shallower segmental arch. The piers of the bridge appear to have originally had small cutwaters, which probably housed small buttresses against the face of the spandrel wall. The rock-faced, uniform stonework suggests that it is unlikely to date from the medieval period, and could potentially date from the nineteenth century, but is out of character with the other ashlar constructed elements of Rochdale Bridge.

5.5.3 The very anomalous bridge, however, is Bridge 7 which is a severely tapering bridge between Bridges 6 and 8. At its northern end it diminishes to almost nothing, and has no fascia stones, instead there are only a series of stones packed between the facades of Bridges 6 and 8, but at the southern end it is a substantial ashlar bridge incorporating a significant bridge fascia. Given its northern characteristics it has the appearance of a filler bridge intended to provide in fill between two existing bridges. The date of this bridge is uncertain, but it was certainly in place by 1864, when the Rochdale Observer refers to the bridge comprising five fragments of bridges, comprising four widenings of the original structure (Section 3.3.11). No gap between bridges is shown in the cartographic representation of Swires map of 1824 or Woods plan of 1831, and may be a reflection that Rochdale Bridge was infilled by those dates or that the maps did not provide sufficient detail to represent what would only have been a narrow gap. The latter option is perhaps less probable given that both maps are sufficiently accurate to show the eastern curved plan of Bridge 8 and are therefore likely to also depict any gap if there was one. If both bridges were in place by 1824 then it is possible that it was part of the construction process, whereby Bridge 8 was initially constructed free-standing and then at a short time later the gap was infilled with Bridge 7, but if that was the case it would seem peculiar to revert to the ashlar style reminiscent of Bridge 4.

5.5.4 The other possibility is that Bridge 7 preceded Bridge 8, but when Bridge 8 was constructed its northern fascia was dismantled to accommodate the construction of the curved bridge, hence the infill characteristics of the northern arch. However, there is no indication that Bridge 8 was bonded with Bridge 7, so there is no clear explanation as to why they did not but Bridge 8 against the existing facade of Bridge 7 as was undertaken with all the other bridges. There is clearly some uncertainty as to the phasing of construction between these bridges and highlights that further investigation is required in order clarify the relationship.
5.6 Phase 5 (Late Nineteenth Century)

5.6.1 Bridge 3: it is noteworthy that the river channel abutments butt the arched Rochdale bridges indicating that the retaining wall of the river channel through Rochdale was rebuilt subsequent to the stone bridges, but before the construction of the reinforced concrete bridges of the early twentieth century. The cutwater walls, and decorative pilasters, to the west of Rochdale Bridge 4, and one to the east of Bridge 8, supported a curved feeder bridge (Bridge 3). This was a flat-decked bridge represented on the 1892 OS map, and its description appears to correspond to the bridge constructed in 1864 (Section 3.3.11). The profile of the plinths of the pilasters facing the cutwaters are of identical design to those incorporated into Tower Bridge in London, and designed by Sir Horace Jones, the City Architect in 1884.

5.6.2 Bridge 11: in 1881, Rochdale was granted an order under an amendment of the 1870 Tramways Act to construct a tramway in the town (London Gazette 29 November 1881). This necessitated a new bridge across the River Roch, as the saddle-backed Rochdale Bride was clearly unsuitable for carrying a tramway. The demand was met by Wellington Bridge (Bridge 11), which was constructed with the primary function of carrying the tramway over the river. It was built in 1882, and was placed on an angled alignment to the river. Construction was undertaken in typical railway engineering materials, with the heavy use of riveted steel beams, brick jack-arches, and sandstone abutments.

5.7 Phase 6 (Early Twentieth Century)

5.7.1 This phase is represented by the enclosure of the majority of the river beneath the town, and was undertaken using technology and materials only then newly available. It was undertaken in four episodes, from 1903 until 1924, with all elements, except the short 1909 section of Esplanade Bridge to the west of the earlier stone bridge, still surviving (Fig 9).

5.7.2 This early use of reinforced concrete had a very different structural perspective to the metal and brick engineering principles that evolved through the nineteenth century, and appears to revert to simple principles associated with timber construction, with all three extant elements clearly reminiscent of floor beams and joists. All the reinforced concrete beam and slab sections for these bridges phase were cast in-situ to a design by LG Mouchel and Partners using the Hennebique system (Clapham and Rowe 1999, 96-7).

5.7.3 Bridge 10: the first bridge of this type was constructed on The Butts in 1904 as an extension to infill the gap between Rochdale and Wellington bridges. It represents one of the earliest examples of the use of reinforced concrete in girder bridge construction, as such it is of architectural significance.

5.7.4 Esplanade Bridge (Site 06) was constructed shortly after, in 1909, to form a 50m wide extension on the western side of Rochdale Bridge in order to form a road junction with Newgate. Esplanade Bridge was completely destroyed by bridge renewal works undertaken in 1996.

5.7.5 Bridges 1 and 12: further extensions of the bridge cover on the River Roch to its full current extent were undertaken between 1923-4. Town Meadows Bridge (Bridge 1) (built 1923) was constructed to the west of Esplanade Bridge whilst Bus
Sta
tion Bridge (Bridge 12) (built 1924) was constructed to the east of Wellington Bridge.

5.8 **Phase 7 (Late Twentieth Century)**

5.8.1 *Bridges 2 and 9*: in 1996, the former Esplanade Bridge (Site 06) and a Rochdale Bridge widening were demolished and replaced with new concrete cast bridge sections (Bridges 2 and 9). Thus, this phase actually represents a short period of repair, replacing elements that had become unsound.

5.8.2 The earlier concrete bridges 1, 10 and 12 are preserved beneath a 250mm thick reinforced concrete slab, that was inserted in the 1990s above the bridge deck to increase the strength of the bridges (P Clapham pers comm).
6. SIGNIFICANCE OF THE REMAINS

6.1 INTRODUCTION

6.1.1 The assessment has identified a total of 29 sites of archaeological interest within the study area and immediate environs (Fig 9; Appendix 3). This included seven Listed Buildings, one Grade I Listed (Site 23) and six Grade II Listed (Sites 20-22 and 24-26), along with 11 sites recorded in the HER (Sites 01, and 20-29). The study area also lies within the Town Hall Conservation Area.

6.2 CONSERVATION AREAS

6.2.1 A local planning authority may designate a section of land or buildings with special architectural or historic interest as a conservation area. This is designed to enhance or preserve the character or appearance of an area under section 72 (1) of the Planning (Listed Buildings and Conservation Areas) Act 1990. Although a local designation, a conservation area may be of national importance and significant developments may be referred to English Heritage. Any development within a conservation area may require Conservation Area Consent.

6.3 CRITERIA

6.3.1 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.

6.3.2 Period: the study area was in the heart of Rochdale in the eighteenth and nineteenth centuries and, as such, is significant to this period of Rochdale’s history. This is reflected in the gazetteer sites, which are dated predominantly to the Industrial Period. Earlier exceptions to this are the market cross (Site 22), the ford (Site 09) and the earliest surviving Rochdale Bridge (Site 01), which probably dates from at least the seventeenth century. In addition, there are nine sites (Sites 06-8, 11, 12, 15, 16, 24 and 27) that date to the twentieth century.

6.3.3 The Georgian period is well represented by numerous standing buildings, which contribute a high value to the historic townscape. The range of buildings includes merchants’ houses, warehouses, and inns, representing an important group of Georgian buildings, albeit dispersed across the study area. It is important to note that the importance of this group is increased by the presence of other Georgian buildings that survive in the town centre, but outside the boundary of the present study area.

6.3.4 The Industrial Period sites are probably best represented towards the end of this period on the 1892 Ordnance Survey map, and include many of the bridge structures, as well as textile mills, such as the Bowling Green Mill (Site 29) and the Bottom o’ the Hill Mill (Site 28), although these buildings have been demolished.
6.3.5 **Rarity:** Rochdale Bridge (Site 01) is a rare example of an early urban bridge, and as such has a high rarity value despite being encased in later structures. Similarly, the Butts Bridge (Site 05) has a rarity value as one of the first reinforced concrete bridges of this type to be built. Other up-standing remains in the study area are predominantly Industrial Period buildings and, as such, are not significant due to rarity.

6.3.6 **Documentation:** the historical development of the study area from the late eighteenth century can be traced reasonably well from cartographic sources. Further documentary research may furnish additional evidence, including more precise dating of the construction and details of the appearance of the buildings across the study area, although this is unlikely to alter the outline presented in this assessment. There is good documentation for the development of the bridges from the early nineteenth century. A search of photographs held by the Local Studies Centre in Rochdale, a selection of which have been included within this assessment, proved particularly useful in providing information on the sequence of bridges and other buildings within the study area, and it is possible that further useful photographs would come to light during additional searches.

6.3.7 **Group Value:** the gazetteer sites can be grouped into broad categories, the most notable being the remarkable grouping of the 11 bridges that extend over the River Roch through the centre of Rochdale, as well as the early ford (Sites 01-09). These sites reflect a long and complex history of the development of communications across the Roch and, collectively, give the sites considerable group value. Other site groups include the mills (Sites 28 and 29) and the former tramway remains (Sites 12, 15 and 16). Some of the gazetteer sites can be considered to be of significance due to their inclusion in one of these groups.

6.3.8 **Survival/Condition:** the survey has demonstrated a good survival of the earlier bridge structures extending over the River Roch, although there are several documented bridges which do not appear to have survived (e.g. Captain Ogden’s Bridge (Site 02), the Walk Bridge (Site 03) and the 1909 constructed Esplanade Bridge (Site 06)). The extent to which any buried archaeological remains survive beneath the modern ground surface is unknown and, in particular, it is not known how much of upper structures of the Rochdale and Wellington Bridges survive beneath the present tarmac surfaces of the Esplanade and The Butts. The redevelopment of the study area in the 1970s and 1980s would have impacted on the below-ground remains of the gazetteer sites, although the extent of this impact will depend on the construction methods employed at the time.

6.3.9 **Fragility:** there are five extant bridges constructed across the River Roch that could potentially be impacted upon by any future development (Sites 01, 04-05 and 08). In addition, there are seven sites of potential buried remains within the study area (Sites 10-12, 15-16 and 28-9), associated with known buildings, and infrastructure identified on historic mapping, that may be impacted upon by any future development.

6.3.10 In total, three sites (Sites 02-03 and 09) are considered unlikely to be impacted by any future development, as they have been heavily disturbed or destroyed by bridge construction in the twentieth century.

6.3.11 There are also ten areas of standing buildings or structures (ranging from single structures to groups of buildings) within the study area that are either listed or are contained within a conservation area (Sites 14, 17-19, 21-22 and 24-7), four of
which are Grade II Listed Buildings (Sites 22 and 24-7). It is important to note that the Grade I Listed town hall (Site 23) lies just outside of the study area, but its setting will potentially be affected by any future development, although this would not necessarily be a negative impact. The removal of modern river coverings, for instance, would reinstate the original setting of the town hall overlooking the river, which could be seen as a positive impact.

6.3.12 Diversity: the sequence of bridges represents a range of construction techniques, and in this respect have a diversity value. The other remains in the study area relate mainly to the Industrial Period development of Rochdale. They include industrial buildings, such as mills and warehouses, to commercial buildings, public buildings, and housing. These sites are not diverse in themselves, and are not significantly diverse as a group.

6.3.13 Potential: there are no sites of prehistoric or Roman date within the study area, which would suggest that the potential for sites of this date is low. This, however, may be due to a lack of previous archaeological work in Rochdale, so that the opportunity for making such discoveries has not arisen.

6.3.14 There are no confirmed medieval sites within the study area, although it seems probable that The Butts would have formed part of the medieval settlement, and there may have been a ford (Site 09) in its present position in the medieval period. Similarly, the property divisions in the eastern part of the study area, and the narrow passages linking Yorkshire Street with The Butts are potentially of medieval origin. In addition, the Rochdale Bridge (Site 01) which possibly dates from the seventeenth century, and represents an old crossing point of the River Roch with Yorkshire Street, heading from the crossing to the north/north-east. The area of The Butts, immediately north of the river, has some potential for medieval and post-medieval archaeological remains.

6.3.15 The Industrial Period sites within the study area are well documented and evident on the historic mapping. Any redevelopment of the area therefore has potential for revealing buried remains of former structures across the site, including earlier bridge remains. Excavation and recording of these sites would add considerably to the archaeological record in Rochdale, which has seen very little archaeological investigation previously.

6.4 SIGNIFICANCE

6.4.1 Table 3 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.

<table>
<thead>
<tr>
<th>Importance</th>
<th>Examples of Site Type</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>Scheduled Monuments (SMs), Grade I and II* Listed Buildings</td>
<td>To be avoided</td>
</tr>
<tr>
<td>Regional/County</td>
<td>Conservation Areas, Registered Parks and Gardens (Statutory Designated Sites), Grade II Listed Buildings Sites and Monuments Record/Historic Environment Record</td>
<td>Avoidance recommended</td>
</tr>
</tbody>
</table>
### Importance

<table>
<thead>
<tr>
<th>Importance</th>
<th>Examples of Site Type</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/Borough</td>
<td>Sites with a local or borough value or interest for cultural appreciation</td>
<td>Avoidance not envisaged</td>
</tr>
<tr>
<td></td>
<td>Sites that are so badly damaged that too little remains to justify inclusion into a higher grade</td>
<td></td>
</tr>
<tr>
<td>Low Local</td>
<td>Sites with a low local value or interest for cultural appreciation</td>
<td>Avoidance not envisaged</td>
</tr>
<tr>
<td></td>
<td>Sites that are so badly damaged that too little remains to justify inclusion into a higher grade</td>
<td></td>
</tr>
<tr>
<td>Negligible</td>
<td>Sites or features with no significant value or interest</td>
<td>Avoidance unnecessary</td>
</tr>
</tbody>
</table>

*Table 3: Criteria used to determine Importance of Sites*

6.4.2 There are no sites of National Importance within the study area, although the Grade I Listed town hall (Site 23) lies immediately adjacent to the study area. In total, 24 sites are considered to be of Regional/County importance, due to their location within a Conservation Area, Grade II Listed Building status, or inclusion within the HER (Sites 01, 05-07 and 10-29). Four sites are considered to be of Local/Borough importance (Site 02-04 and 09), and one site is considered to be of Low Local importance (Site 08).

6.4.3 The above conclusions are based on the current state of knowledge and the subsequent discovery of additional features or evidence relating to these sites could alter their assessed levels of significance.

6.4.4 This assessment of significance is not intended to be a definitive report on the structures within the study area, and has been based on a very rapid inspection, undertaken broadly to English Heritage Level I-type survey standards.

6.4.5 The study area as a whole can be defined as being of *Outstanding Significance*, incorporating a wide range of structures, of differing *Rarity* and *Survival*, with an extremely high *Group Value* and archaeological *Potential*, and forming a rare and iconic representation of developing communications from the seventeenth century onwards. However, the individual elements which form the study area have varying significance within the overall scheme, and accordingly, assessments have been made for individual structures.

### 6.5 Priority 1 Structures

6.5.1 Those elements of the study area considered to be of *Outstanding Significance* are:

- **Rochdale Bridge (Site 01) (Bridges 4-8)**: the original bridge (possibly Bridge 5) was first documented here in 1324, although it is not known how much of this bridge is original. The surviving stone arched bridge was documented as needing repair in the early seventeenth century and was repeatedly extended over the subsequent centuries.

- **Town Hall (Site 23)**: built in 1866-71 in elaborate Gothic revival form with a tower constructed 1883. The whole façade is richly carved with naturalistic foliage in the style of Southwell Minster. The setting of the Grade I Listed building will be affected, though not necessarily adversely.
6.6 **Priority 2 Structures**

6.6.1 Those elements of the study area considered to be of Great Significance are:

- *The Butts Bridge (Site 05 (Bridge 10))*: constructed in 1904 is a very early example of a ferro-concrete bridge construction and as such is of particular significance (six-inch thick ferro-concrete slabs lie beneath the road surface).

6.7 **Priority 3 Structures**

6.7.1 Those elements of the study area considered to be of Some Significance are:

- *Wellington Bridge (Site 04 (Bridge 11))*: constructed c 1882 of wrought-iron girders and brick jack arches.

6.8 **Priority 4 Structures**

6.8.1 Those components of the study area that may be considered to be of Lesser Significance are:

- *Town Meadows Bridge (Site 07 (Bridge 1))*: constructed in 1923 with a lattice of reinforced concrete beams, supported by reinforced concrete columns and overall supporting a reinforced concrete deck. It has a reinforced concrete abutment to the south and a stone abutment to the north.
- *Bus Station Bridge (Site 08 (Bridge 12))*: constructed in 1924 with a lattice of reinforced concrete beams, supported by reinforced concrete columns and overall supporting a reinforced concrete deck.
- *Sites of Bowling Green Mill and Bottom o’ Lane Mill (Sites 28-9)*: two post-medieval mills located on the River Roch; possible sub-surface archaeological deposits may survive.
- *Sites of Tram Stop Shelter (Site 12), Tramways (Sites 15-16), and Water Fountain (Site 10)*: possible sub-surface archaeological deposits may survive.
- *Sites of Walk Bridge (Site 03), Ford (Site 09) and Captain Ogden’s Bridge (Site 02)*: all are identified as having been destroyed by the construction of The Butts Bridge, but may survive as below ground features.
- *Esplanade Bridge (Site 06 (Bridge 2))*: constructed 1909 with a lattice of reinforced concrete beams, supported by reinforced concrete columns and overall supporting a reinforced concrete deck. It was of similar construction as the earlier Butts Bridge, but was demolished and replaced by the present RSJ bridge in 1996. There is the potential that elements of the earlier bridge survive within the present structure.
7. RECOMMENDATIONS FOR FURTHER INVESTIGATION

7.1 INTRODUCTION

7.1.1 Current legislation draws a distinction between archaeological remains of national importance and other remains considered to be of lesser significance. Those perceived to be of national importance may require preservation in-situ, whilst those of lesser significance may undergo preservation by record, where high local or regional significance can be demonstrated.

7.1.2 Buried remains: no sites have been identified within the area that may be considered as being of national importance and therefore merit preservation in-situ. However, the study area has the potential to contain in-situ buried remains of Regional/County and Local/Borough importance, which may be directly negatively impacted by groundworks associated with the proposed redevelopment.

7.1.3 Standing Buildings: there are a number of standing buildings of historical interest in the study area, and would require archaeological mitigation should they be directly impacted by any future scheme of development. In addition, those buildings of Regional/County importance not directly impacted by the development should be assessed for in-direct impact, which may also require mitigation.

7.2 ARCHAEOLOGICAL MITIGATION

7.2.1 The scope and details of any archaeological mitigation required in advance of redevelopment would be devised in close consultation with the Planning Archaeologist with the Greater Manchester Archaeological Unit, and the Conservation Officer for Rochdale Metropolitan Borough Council, once detailed design proposals are known.

7.2.2 Buried remains: the presence, character, date, and extent of buried remains across the study area, which would require preservation by record should they be directly affected by future development proposals, should be investigated via an appropriate programme of archaeological work in order to provide sufficient information to fully mitigate the impact of the redevelopment. This could be achieved through the excavation of targeted evaluation trenches in advance of any proposed development, or as a watching brief during development in the case of remains deemed to be of lesser importance. Depending upon the results of evaluation trenching, further recommendations for mitigation may be forthcoming, should the design proposals for redevelopment necessitate the destruction of significant archaeological remains. This may constitute an open-area excavation, or a watching brief during groundworks. The need for any further work would be discussed with the Planning Archaeologist following the evaluation.

7.2.3 Standing Buildings: there are seven Listed Buildings, one Grade I Listed (Site 23) and six Grade II Listed (Sites 20-22 and 24-26) within the study area, which therefore have legal protection against modification or redevelopment. Advice should be sought from English Heritage with regards to any proposed plans for the Grade 1 Listed building.

7.2.4 The study area includes a Conservation Area designated by the RMBC - Town Hall Conservation Area, that includes Sites 01, 03, 05-07, 09-20, and 22-26. Advice should be sought from the development control officers at RMBC with regards to
any proposed development in these areas, as Conservation Area Consent may be required.

7.2.5 **Rochdale Bridge**: in the proposed development select sections of the bridges are to be removed providing a canalised river section through the town. Some sections are of greater historic importance than others and, in particular, it is recommended that three bridge sections are not impacted by the development, which are Rochdale Bridge (Site 01 (Bridge 4-8)), Wellington Bridge (Site 04 (Bridge 11)) and Butts Bridge (Site 05 (Bridge 10)). The significance of Butts Bridge is that it was one of the first bridges in the world to be constructed of reinforced concrete beams. The other reinforced concrete bridge sections do not have the same historic importance and do not warrant the same level of preservation. Whilst the historic Rochdale Bridge (Bridge 4-8) should be retained within the proposed scheme, the removal of late elements and inevitable repairs to earlier fabric, will have potential impact on this valuable archaeological resource.

7.2.6 It is clearly important that any contractors undertaking work to the bridge are fully appraised of the importance of the Phase 6 concrete bridges, especially Bridge 10 (Butts Bridge). The removal of Bridge 9 will have a potential impact upon Bridge 10, and also upon the important Bridge 8. It is therefore recommended that any such work be undertaken under strict archaeological supervision, by specialist contractors. The removal of Bridge 2 will also have a potential impact on Bridge 4, and a similar methodology is recommended.

7.2.7 The removal of these two structures will potentially reveal previously unrecorded historic fabric, relating to the spandrel walls of the 1864 constructed Bridges 3/9. A further programme of archaeological survey should be undertaken in order to identify and record such structures.

7.2.8 Any repairs to the Phase 5 Wellington Bridge, and the Phase 6 Butts Bridge concrete structures should also be undertaken under archaeological Watching Brief conditions, to allow any new information to be recorded. Any removal of the road bed, or metal plating of Wellington Bridge may reveal evidence for its brick-arch internal construction, and this may similarly be identified for the construction of the deck of the various elements of Rochdale Bridge (Bridges 4-8) if any groundworks are to be undertaken in this area. In the event of groundworks to the surface of Rochdale Bridge or Wellington Bridge it is recommended that a programme of archaeological trial trenching be undertaken to identify evidence of former bridge remains and road surfaces, and in particular may resolve the uncertain phasing between Bridges 7 and 8.

7.2.9 It is likely that the columns of Wellington Bridge comprise cast-iron within the present concrete casing. It is recommended that any work to the columns be undertaken under archaeological supervision. Similarly, the columns and beams of the Butts Bridge concrete bridges are covered with a heavy render. If this is to be removed in any locations, this may provide an ideally opportunity to further record and analyse the construction methodologies used in their construction.

7.2.10 The removal of the modern bridge sections on either side of Rochdale Bridge will leave the historic bridge once again free standing, and will enhance the public’s awareness of the historic character of Rochdale. It is therefore recommended that the opportunity is taken to provide outreach materials to educate the local population and visitors as to the history of the bridges and the city centre. This can take the form of a series of interpretation panels set up near the Rochdale and.
Wellington Bridges and also a booklet which can be distributed through local museums and libraries.
8. BIBLIOGRAPHY

8.1 CARTOGRAPHIC AND PRIMARY SOURCES

Maps

Saxton, 1577 Map of the County of Lancashire
W Yates, 1786 Survey of the County Palatine of Lancashire
W Swire, 1824 Plan of Rochdale, 9": 1 mile
J Wood, 1831 Plan of Rochdale, 1": 5 chains
Ordnance Survey, 1851, 1:1056, Lancashire Map, first edition Series, Sheet 89
Ordnance Survey, 1892, 1: 500, Lancashire Sheets 89.1.11, 89.1.12, 89.1.17
Ordnance Survey, 1893, 1:2500, Lancashire Map, Second Edition, Sheet 89.1
Ordnance Survey, 1910, 1:2500, Lancashire Map, Third Edition, Sheet 89.1
Ordnance Survey, 1930, 1:2500, Lancashire Map, Fourth Edition, Sheet 89.1
Ordnance Survey, 1928 (with additions in 1938), 1:10560, Lancashire Map, Sheet 89 NW
Ordnance Survey, 1931, 1:10560, Lancashire Map, Sheet 89 NW
Ordnance Survey, 1931 (emergency edition, 1938), 1:10560, Lancashire Map, Sheet 89 NW
Ordnance Survey, 1959 1:2500 Plan SD 8813/ SD 8913 and Plan SD 8813/8913
Ordnance Survey, 1972 1:1250 Plan SD 8913 NE
Ordnance Survey, 1975 1:1250 Plan SD 9013 NW and Plan SD 9013 SW
Ordnance Survey, 1978 1:1250 Plan SD 8913 SE
Ordnance Survey, 1990 1:1250 Plan SD 8913 SE and Plan SD 8913 NE

Touchstones Local Studies Centre:

A Plan of the Rochdale Glebe 1754-7

A Plan of the Vicarage, 1764

Partial view of Rochdale Bridge in c 1780 from the south-west corner of South Parade

The ford across the River Roch at The Butts, c 1810

Perspective of the Town Hall by Edward Walker, 1875, showing Rochdale Bridge

Artist’s impression of c 1820, showing the bull bait, Rochdale Bridge and the ford

View of Walk Bridge in July 1904, with Wellington Bridge to the rear

Wellington Bridge in c 1905, with Butts Mill to the rear

Town Hall and Esplanade c 1930
Lo 3591RC County Borough of Rochdale 1935 *Repairs to the reinforced Concrete River crossing by means of Cement Gun*

**Trade Directories**

Anon, *Rochdale County Borough Directory*, 1938, Leeds
Duncan, 1894-5 *Directory of Rochdale*, Rochdale
Kelly, 1905 *Directory of Lancashire*, London
Kelly, 1918 *Directory of Lancashire*, London
Kelly, 1924 *Directory of Lancashire*, London
Pigot, J, 1822, *Directory of Lancashire*, Manchester
Slater, I, 1861 *Directory of Lancashire*, Manchester
Slater, I, 1869 *Directory of Lancashire*, Manchester
Worrall, J, 1885 *Commercial Directory of Rochdale*, Manchester

**Newspapers**

*London Gazette* 29th November 1881 (no. 25042, p. 6272)
*Rochdale Observer* 16 August 1856
*Rochdale Observer* March 1863
*Rochdale Observer* 3 September 1864
*Rochdale Observer* 2 January 1869

**Lancashire Record Office (LRO)**

QSB/1/103(62) Lancashire Quarter Session records dated April 1632
QSP/244/1 Lancashire Quarter Sessions, dated 23 July 1663
QSP/457/7 Lancashire Quarter Sessions of October 1676

**8.2 SECONDARY SOURCES**

Aiken, J, 1795 *A Description of the County from Thirty to Forty Miles Round Manchester*, London
Aldrich, M, 1994 *Gothic Revival*, London
Butterworth, J, 1828 *A Description and Directory of the Town of Rochdale*, Manchester
Chrimes, MM, Shipway, JS, and Cox, RC, 1997 The Development of Concrete Bridges in the British Isles Prior to 1940, *Proceed Instit of Civil Engineers*, 122 (4), 499-500
Clapham, P, and Rowe, A 1999 The Reconstruction and Refurbishment of Rochdale Town Centre Bridges, Proc Inst Civ Engrs Mun Engr, 133, 195-206

Cole, J, 1988 Rochdale Revisited: A Town and its People, Littleborough


Defoe, D, 1971 A Tour Through the Whole Island of Great Britain (1724-6), Harmondsworth


Farrer, W, and Brownbill, J, 1911 A History of the County of Lancaster, 5, London

Fishwick, H, 1889 The History of the Parish of Rochdale, London

Fishwick, H (ed), 1913 The Survey of the Manor of Rochdale, 1626, Chetham Society, new series, 7, 1


GMAU, 2010 Rochdale Urban Historic Landscape Characterisation: Interim Report, unpubl doc

Hadfield, C, 1994 British Canals: The Inland Waterways of Britain and Ireland, 8th edn, Stroud

Harrison, D, 2004 The bridges of Medieval England, Transport and Society 400-1800, Oxford


Heywood, TT, 1931 New Annals of Rochdale, Rochdale


Holme, E, 1787 An Account and Admeasurement of the Public Bridges with the Hundred of Salford, Manchester

Institute of Field Archaeologists, 2001 Standards and Guidance for archaeological Desk-based Assessments, Reading


Mattley, RA, 1899 Annals of Rochdale, Rochdale

McBeth, D, 1998 Francois Hennebique (1842-1921) - Reinforced concrete pioneer, Proc Inst Civil Engineers, 867-95

Milne, J, 1977 Rochdale As it Was, 3rd edn, Nelson

Morgan, P (ed), 1978 Domesday Book: Cheshire, Chichester

Morris, C, 1982, The Illustrated Journeys of Celia Fiennes c1682-c1712, Exeter


OA North, 2009 *Rochdale Town Centre, Rochdale, Greater Manchester: Desk-based Assessment*, unpubl rep


Robertson, W, 1875 *The History of Rochdale Past and Present*, Rochdale

Robertson, W, 1881 *Old and New Rochdale*, Rochdale

Rochdale Metropolitan Borough Council (RMBC), 2008 *Town Head, Rochdale, Townscape Heritage Initiative First Round Bid*, unpubl doc

Sharples, J, nd *Rochdale Town Hall: An Illustrated Guide*, RMBC, Rochdale

Taylor, RP, 1956 *Rochdale Retrospect*, Rochdale

Tindall, A, nd *Rochdale: Areas of Archaeological Interest*, GMAU unpubl rep

Williams, M, with Farnie, DA, 1992 *Cotton Mills in Greater Manchester*, Preston

**Websites**

www.bgs.ac.uk/geoindex/beta.html

www.link4life.org - website for Rochdale Local Studies Centre at Touchstones

www.rochdale.gov.uk
APPENDIX 1: PROJECT BRIEF

BRIEF FOR ARCHAEOLOGICAL DESK BASED ASSESSMENT AND SURVEY FOR ROCHDALE BRIDGE, ROCHDALE

Background

The River Roch runs through the centre of Rochdale but is hidden from view under what was once described in the Guinness Book of Records as the ‘widest bridge in the world’. Today, there is a growing public interest in re-exposing sections of the river and perhaps the oldest section of the bridge which was at the heart of Rochdale’s early development. Rochdale MBC wish to explore this idea by commissioning an archaeological study to provide the historic framework and archaeological evidence base necessary to take the scheme forward. The bridge runs from SD89471323 on the west to SD89871342 on the east (see attached modern plan).

The original bridge replaced a traditional fording point of the River Roch (a ford is shown c 60 metres east of the bridge on the 1848 large scale OS map) and remained the major crossing point until the late 19th century when Wellington Bridge was erected. The bridge connected the post medieval expansion of the town to the north of the river with the densely packed housing of the medieval core on the south side of the river leading up to the ancient church of St Chad’s. In the 1860s this area saw major changes when the Town Hall was erected, set within an extensive and varied civic space. The covering of the Roch began in July 1904 and the final stretch was completed in 1924, the construction mostly being reinforced concrete using the Hennibique system. This sideways joining of bridges allowed for a town centre road system along and across the Roch. Extracts from the OS 6 inch maps of 1848 and 1923 are attached to show the bridge changes.

A scheme of replacement, strengthening and refurbishment was undertaken at a cost of £3.4 million between October 1995 and April 1997. This work was the subject of an excellent article published in the Proceedings of the Institute of Civil Engineers, Municipal Engineer in 1999 – written by Rochdale’s Principal Engineer for Bridges Peter Clapham (who is still at the Authority) and Carillion’s Project Manager Adrian Rowe: ‘The reconstruction and refurbishment of Rochdale town centre bridges’.

There are actually seven sections of bridges forming a width of 455.5m. They are:

- Rochdale Bridge and Rochdale Bridge Widening: c 1600 and widened at various times up to 1866, originally comprising a narrow three arched stone span bridge with abutments, the last phase being wrought-iron beams and brick jack arches;
- Wellington Bridge: 1882 and strengthened in 1931, stone abutments, wrought iron plate girders and plates, reinforced concrete (RC) beams added;
- The Butts Bridge: 1904, RC beam and slab on RC piers and stone abutments;
- Esplanade Bridge: 1909, RC beam and slab on RC piers, RC abutment to south and stone abutment to north;
- Town Meadows Bridge: 1923, RC beam and slab on RC piers, RC abutment (south) and stone abutment (north);
- Bus Station Bridge: 1924, RC beam and slab on RC abutments and piers.

The engineering article provides a history and description of the various bridges, then goes on to look at the structural problems and how they were resolved as part of the mid-1990s repair scheme. It provides a useful review of the health and safety issues. The river
is concrete lined under the bridges which facilitated easier access, however variable water flow levels were an issue. The river is not deep and can be easily waded unless significant rain has fallen. A gauge was fitted and water levels measured over a year’s duration to determine when access was safe. The air under the bridges changes constantly depending on atmospheric conditions – it was not classified as a ‘confined space’ but was a ‘gas check area’. Communication by sight and sound was difficult because of the geometry, darkness, echoes and river noise, and it was found that radios were the best method of communication.

The archaeological study should be undertaken in stages:

1) A desk based assessment

2) Survey of the underside of the original Rochdale Bridge with its various phases going up to the late 19th century, together with Wellington Bridge. A photographic record, written description, laser scan survey, and comparative analysis will be undertaken for Rochdale Bridge. Wellington Bridge will be studied in the same way but without the laser scan survey.

3) Archaeological evaluation through trial trenching to expose the top of the early bridge.

The nature of the final stage (3) will be dependent on the findings and recommendations of the first two stages.

The desk based assessment will examine historic maps, historic documents, local history and archaeology publications, aerial photos, the Greater Manchester Historic Environment Record, material from the 1990s repair scheme held by Rochdale MBC (including archive, reports, photographs, and oral evidence) and it will include a walk-over to relate research findings to the modern landscape. The study will focus on the bridge but must put this in the context of the growth of Rochdale historic town centre by studying adjacent areas either side of the river. The DBA will provide a clear understanding of the nature and location of heritage assets and their significance. The DBA will combine with the survey report to give clear guidance on evaluation potential and where surface investigations may reasonably be undertaken.

The desk based assessment and survey should be priced separately, with the laser scan also priced separately in case it is impossible to implement. The combined report will contain recommendations for the third phase evaluation works.

Brief

This study will include the areas marked in red and blue but recommendations for mitigation will focus on the area marked red.

1) The **desk based assessment** will take the following form:

- Undertake a historic map regression exercise to produce scaled-up maps showing the bridges’ evolution. A colour coded map will be produced at an appropriately large scale showing the phasing of former and extant features in relation to the modern site plan;
- Analysis of readily accessible historical documentation will be undertaken to inform interpretation. It will be important to describe the historical context of the study area, proving an understanding of the way the surrounding townscape changed through time. Sources of information to be examined include: Rochdale Local Studies Library, Lancashire Record Office, Rochdale MBC records held by the planning and engineering departments, the Greater Manchester Historic
Environment Record*;

- There should be a gazetteer linked to a plan listing all sites and structures of archaeological/historical interest relating to the bridges and a 20 metre corridor alongside;

- There will be a site inspection of the whole development area to relate research findings to the existing landscape;

- There will be a discussion section examining the relative significance of the bridge structures, putting them in the local and wider context, identifying areas of below-ground archaeological potential, a discussion of issues and opportunities relating to opening up the early bridge and river

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

- A summary statement of the study’s findings;
- The background to the study including location details;
- An outline of the methodology of the study;
- A section charting the historic development of the bridges and surrounding townscape, supported by detailed map evidence and old photographs;
- A discussion section examining the relative significance of the bridge structures, putting them in the local and wider context;
- A discussion of the below-ground archaeological interest, relative significance, context and potential;
- An account of the issues and opportunities relating to opening up the early bridge and river;
- A gazetteer showing all sites of archaeological interest, linked to a location plan;
- Recommendations for further archaeological investigation;
- A catalogue of archive items, including a list of photographs;
- A copy of the brief.

2) The survey of Rochdale and Wellington Bridges will take the following form:

- The plan of the bridge structures and extensions will be plotted by measured survey at a scale of 1:20. This will be matched to a modern plan;

- There will be a detailed annotated photographic record of the visible elements of the bridges. Photographs will be taken as a mixture of medium and high resolution digital. Show viewpoint directions on plans and produce a catalogue;

- A written description, to include: an analysis of the structures’ plan, form, fabric, key architectural features, age and development sequence and of the evidence supporting this analysis (illustrate with historic map sequence, reduced plans, elevations (from digital scan if available) and photographs;

- Produce a plan showing the phasing of the bridges and identify key elements which contribute to their significance;

- A scaled ‘sketch’ elevation will be produced for each phase indicating the possible external appearance of each phase prior to it being hidden by a subsequent phase. This will include representation of parapet styles based on comparative studies. There will need to be a best guess date to accompany each phase drawing.
3) Undertake a laser scan of Rochdale Bridge at a maximum of 5mm spaced intervals. It will be necessary during the earlier stages of work to assess the practicalities of carrying out such a survey in terms of creating a stable platform. This may depend on fixing points, river flow levels etc. The archaeological contractor will be expected to consult with a laser scan specialist and present a methodology and price for approval by the client. Once the survey is complete, it will be necessary to add details including evidence for blocking, repair, joints, fittings and fixtures, and key architectural features.

4) For the whole survey a report should be produced to an agreed timetable. It will be spliced with the desk based assessment and include:

- A summary statement of the survey’s findings;
- The background to the survey including location details;
- An outline of the methodology of the survey;
- An account of the phasing, blocking, repair, joints, fittings and fixtures, and key architectural features, supported by reduced measured survey drawings and photographs;
- An assessment of the significance of the fabric and features of the bridges;
- The identification of areas that are currently obscured or unsafe which might hold key information to inform our understanding of the bridges’ origin and development;
- A discussion of the bridge remains in their local, regional and national context;
- A catalogue of archive items, including a list of photographs;
- A copy of the brief.

ARCHIVE AND PUBLICATION

An ordered site archive will be deposited with Rochdale Local Studies Library within 6 months of completion.

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

The study will be published to an appropriate level commensurate with the significance of the survey results.

Other Considerations

1) The County Archaeologist and Conservation Officer will be consulted on a draft report and recommendations for further investigation.
2) The archaeological contractor will abide by the Institute of Field Archaeologists Bye-Laws of Approved Practice.

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

4) Hard and digital copies of the survey report will be sent to:

The client (x2 hard copies), the County Archaeologist (GMAU) to lodge with the Greater Manchester Historic Environment Record, Rochdale Planning Officer, Rochdale Conservation Officer, Rochdale Local Studies Library,

Norman Redhead

County Archaeologist

GMAU – 15th October 2010

* Standard visit to the HER at GMAU office by appointment: £75.00 per day (Includes up to 2 hours officer time and desk-space for the duration of the visit)
APPENDIX 2: PROJECT DESIGN

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Rochdale MBC wish to revitalise the town centre by re-exposing sections of the River Roch, that runs through the city but which is now largely covered over. There is a requirement to provide an archaeological record of the extant fabric of the Rochdale Bridge, which covers the river and, measuring 455m wide, has been described by the Guinness Book of Records as the widest bridge in the world. Preserved within the present structure are surviving elements of the earlier post-medieval bridges, but which are only evident from beneath the present 'bridge'. OA North have been requested to put forward proposals for a survey and a desk-based assessment in accordance with a Project Brief supplied by the Greater Manchester Archaeological Unit. It is anticipated there will be a further requirement for a programme of archaeological evaluation to expose the top of the early bridges, but that will be subject to the conclusion drawn from the proposed survey and associated desk-based assessment, and is not addressed in the present Project Design.

1.2 HISTORICAL BACKGROUND

1.2.1 Rochdale Bridge was constructed initially as a replacement for a fording point across the River Roch. The bridge connected the ancient church of St Chad’s and the historic core of the medieval town on the south side of the river, with the focus of post-medieval expansion on the northern bank of the river. It remained the principal crossing point across the River Roch until the early 1880s, when Wellington Bridge was built. The short section of the river between these two bridges was covered in several episodes during the early twentieth century. This process commenced in July 1904 and the final stretch was completed in 1924, the construction being mostly reinforced concrete using the Hennibique system.

1.2.2 The development of the Rochdale Bridge comprised the following principal stages:

- Rochdale Bridge: constructed and widened between 1600 and 1866;
- Wellington Bridge: constructed 1882;
- Butts Bridge constructed 1904 - Reinforced concrete slab, piers and stone abutments;
- Esplanade Bridge constructed 1909 - Reinforced concrete slab, piers and stone abutment to north;
- Town Meadows Bridge constructed 1923 - Reinforced concrete slab, piers and stone abutment to north;
- Bus Station Bridge constructed 1924, - Reinforced concrete slab, piers and abutments.

1.3 OXFORD ARCHAEOLOGY NORTH

1.3.1 Oxford Archaeology North has considerable experience of sites of all periods, having undertaken a great number of small and large-scale projects throughout Northern England during the past 30 years. One of the foremost specialists in building recording, OA North has been undertaking detailed fabric survey of buildings since 1984 and has particular and considerable experience of the investigation, recording and analysis of standing ancient monuments, historic buildings and other elements of the industrial heritage of the area, including a large number of mill complexes throughout the region. These include the large nineteenth-century Burley Mill, Leeds and the major complex of Murray Mills in Manchester. OA North has also been involved in the major fabric survey of Backbarrow Ironworks, which included the detail survey of the pug mill there and its hydro-electric turbine station. OA North undertook a detailed survey of the water-powered Howk bobbin mill at Caldbeck, which entailed the production of a detailed record of the mill race, wheel pit and drive train of the mill. Recent projects of relevance include a Level 3 and 4 building recording of the sixteenth-century Grade II* Two Lions public in Penrith, Level 3 building
recording and excavations at Clitheroe Castle, and building recording and excavations at the Grade
I listed fourteenth-century Ordsall Hall in Salford, the latter by laser scanning.

1.3.2 OA North has developed recording and analytical techniques over the years in order to improve
the efficiency and quality of the surveys. This culminates with the use of 3d Laser scanning, which
provides accurate, very detailed 3d modelling by very economic means and the model can then be
used for the creation of 2d drawings as required. However, it also provides for detailed
computerised models which, by means of fly through and isometric perspectives, can considerably
enhance the visual understanding, interpretation and presentation of the building. It is proposed to
use this technique for the present recording programme. OA North has the professional expertise
and resources to undertake the project detailed below to a high level of quality and efficiency. OA
North is an Institute for Archaeologists (IFA) registered organisation, registration number 17,
and all its members of staff operate subject to the IFA Code of Conduct (1994).

2. AIMS AND OBJECTIVES

2.1 The programme of recording is intended to provide a mitigative record of the bridges and
abutments in advance of works, and to provide details of the historic form of the bridges in order
to inform the proposed restoration works along the route. The following been designed to best
meet the work required as defined in the Project Brief:

- **Documentary research**: comprising a collation and review of accessible sources, that will
  present the historic context of the bridges and will provide graphic information as to the
  former character of the bridges;

- **Measured Survey**: the buildings will be subject to English Heritage Level 3 measured
  survey standards (English Heritage 2006), which will provide a basis for an understanding
  of the bridges in terms of their history and their conservation requirements, and will allow:
  the identification of archaeological and historical features and an assessment of their
  conservation importance; a detailed pre-intervention record of the site complex; and
  information for the purposes of display and interpretation;

- **Reporting, dissemination and archiving**: following completion of the fieldwork, the data
  will be collated, processed and interpreted to produce: a written and illustrated report
  assessing the significance of the data generated by this programme; and recommendations
  for further work, urgent conservation works, etc.

3. METHODS STATEMENT

2.4 DOCUMENTARY RESEARCH

3.1.1 A programme of desk-based research will examine all the available primary and secondary sources
pertinent to the development of the bridges and their immediate environs to produce a detailed
narrative of the historical development of the area. The study will focus on the development of the
bridges, but will also examine the historical evolution of the adjacent areas either side of the river
to place the study area in the context of the growth of Rochdale’s historic town centre. The desk-
based work will be coupled with a visual inspection of the site, which will aim to relate the
research findings to the modern landscape. This will provide a framework for an understanding of
the site, and allow an assessment of the relative significance of the bridge structures.

3.1.2 The principal sources of information will include historical and modern maps, allowing for a
detailed map-regression exercise to be carried out to chart the bridges’ chronological development.
This exercise will inform the production of a colour-coded map showing the phasing of former and
extant features in relation to the modern site plan.

3.1.3 Archive repositories to be visited as part of the research will include:

- **Greater Manchester Historic Environment Record (HER)**: the Greater Manchester
  Historic Environment Record (HER), held in Manchester, will be consulted to establish the
  sites of archaeological interest already known within the study area. The HER is a
  Geographic Information System (GIS) linked to a database of all known archaeological
  sites in Greater Manchester, and is maintained by the Greater Manchester Archaeological
  Unit (GMAU);
Lancashire County Record Office, Preston (LRO): before the county boundaries were changed during the mid-1970s, Rochdale lay within the county of Lancashire, and therefore most of the available published maps of the area are held in Lancashire Record Office in Preston. All available Ordnance Survey maps for the study area were examined;

Local Studies Centre, Touchstones, Rochdale: the Local Studies Centre catalogue in Rochdale will searched for information relating to the study area. Historic photographs and other sources of primary documentation will be consulted;

Rochdale MBC: any records pertaining to the construction and use of the sequence of bridges held by the planning and engineering departments in Rochdale MBC will be consulted;

Oxford Archaeology North: OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out in the vicinity.

2.5 MEASURED SURVEY

2.5.3 Introduction: the measured survey will be carried out to English Heritage guidelines (English Heritage 2006), with the level of recorded varying from building to building as presented in Table 1.

2.5.4 Laser Scanning: OA North proposes that the Level 3 survey be undertaken by means of Laser Scanning. This is a relatively recent technique, which entails the automated recording of literally millions of survey points, across the surface of the structures and provides an enormous density of 3d points which can then be viewed and manipulated in AutoCAD (using Cloudworks software) or using Pointools software. The density is such (typically 5mm separation between points) that views of the survey point clouds have photographic-like realism. The technique can produce a detailed survey of the bridges in a short amount of time. The resultant point data can be used as a record in its own right, or can be enhanced by drawing around the salient features within AutoCAD to produce 2d drawings, or by rendering the point cloud to create a model. The advantage of the technique is that it provides considerable amounts of surface detail data, which can be re-interrogated at any stage to provide further information as required, such as new cross-sections or plans. The scanning will capture all architectural details (and the stonework surrounding them), jambs, cills, string courses and lintels, columns, quoin stones, voussoirs, openings, rainwater and sewage outfalls, outlines of masonry, positions of pipework, and any significant visible structural cracks.

2.5.5 OA North has been using the technique on a broad range of different buildings over the last five years and has seen considerable developments in both the hardware and the software for manipulating the clouds of survey points (Appendix 3). It is our opinion that the technique provides the most appropriate and economic means to undertake a Level 3 survey of the Rochdale Bridge. Laser scanning provides data from multiple set ups that can be used to fill in any detail that is obscured by obstructions. It is therefore possible, for example, to provide reasonable quality data by surveying between columns, as long as multiple scanner set ups are used. The other considerable advantage is that it provides a detailed and accurate depiction of the stones, and therefore reduces the requirement for extensive and time consuming drafting of the stone detail.

2.5.6 For the most part the masonry abutments are only on one side of bridge channel, the other being concrete. In these instances the emphasis of the scanning will be on recording the historic masonry, and will mean that the set ups for the scanner will be on the exposed masonry side of the central columns. The impact of this is that there will be some limited shadows of the columns on the concrete side of the channel, but not on the masonry side. In the area of the Rochdale and Wellington Bridges additional scanner setups will be implemented to ensure that all detail in, around and under these structures is comprehensively recorded.

2.5.7 The survey will be undertaken when the water levels are low, and will require multiple setups along the full length of the bridge. There is a 75m long section where there are concrete abutments on both sides of the channel, and in this instance a greater separation between scanner set ups will be employed. A small inflatable dingy will be utilised in the course of the survey to provide dry storage of equipment in the course of the works. The scanner will be set up on a tripod on the concrete floor of the channel.
Once the point data for the bridge has been obtained, horizontal and vertical slices through the model will be obtained to produce accurate plans, and cross-sections and elevations as required. These can be obtained shortly after the survey, and so there will be elevations and plans immediately available for the condition survey, structural engineers, and any contractors to work with. A further stage of manual enhancement will be undertaken to ensure that the plans reflect all appropriate plan detail and the drawings will be output within a CAD environment. The survey will produce the following final drawings:

- A scaled plan of the surveyed structures showing the location of each element and features of specific architectural and archaeological interest;
- Elevation drawings of the bridges showing stone by stone detail, of the upstanding walls and other elements;
- Cross sections across the Rochdale and Wellington Bridges.

The survey will entail multiple set-ups of the scanner sufficient to record the external and internal faces of the structures and components. The survey will be undertaken using either a Faro Photon or Reigl VZ400 laser scanner to produce an internal point cloud (in pod format) with a resolution of 5mm.

Horizontal survey control will be established by closed traverse and will be tied into Ordnance Survey co-ordinates using differential GPS or to site control. Vertical control will be to Ordnance Survey Datum or site datum.

Fly Through Visualisation of the Model: because the whole building will be subject to laser scanning, there will be produced a complete three dimensional model of the whole building. This means that it will be possible, as an option, to provide a fly around version of the model. This will help understand the phasing of the bridges and is a powerful interpretation tool.

Photography: in conjunction with the archaeological survey a photographic archive will be generated, which will record significant features as well as general views. This photographic archive will be maintained using high-quality digital cameras with 10 mega pixel resolution. The use of a digital camera provides very effective manipulation of photographic images, and these will be used in the report. The use of photography in this way considerably enhances the usability of a database and greatly assists the analysis of the monument. The photography will provide general views, and wider context. It will record then internal and external character, internal and external detail, including apertures, assembly marks and other significant features. A metric scale will be used for all photographs.

Description: a detailed description of the complex will be carried out to English Heritage Level 3 guidelines as appropriate, utilising pro-forma sheets. This provides for a comprehensive analytical account for buildings of special importance and the following methodology will be followed.

The written account will provide the understanding required in order to place the building in its historical, architectural and cultural context. The descriptive record will include the following accounts:

- A general description of the structures, which will include details of the plan, form and function. Allied to this, a detailed description of the materials used and development sequence and phasing, including any alterations, repair and rebuilding, will be provided;
- An account of the wider context within which the buildings are situated. For example, its relationship to places and buildings within the local area, as well as its historical relationship to the area;

Lighting: the survey will be undertaken by torchlight, and because of the poor lighting conditions the scanning will not be able to use integrated digital photography. To compensate for this a higher resolution laser scanning will be undertaken to ensure sufficient detail of all the masonry.

3.3 REPORT PRODUCTION

Final Report: a draft version of a written synthetic report will be submitted within eight weeks of completion of the final stage of works. The final report, incorporating any comments, will be in the
same basic format as this project design and will present a well-ordered synthesis of the programme of investigation, and will include the following:

- a site location plan related to the national grid;
- the dates on which the fieldwork was undertaken and by whom;
- a concise, non-technical summary of the results;
- table of contents;
- acknowledgements;
- the precise location, address and NGR of the site;
- project background and historical context;
- a description of the methodologies employed, work undertaken and results obtained;
- an appropriate description of the results of the investigation, including the physical characteristics and condition of each site component;
- an account of phasing, blocking, repair, joints, key architectural features, illustrated by appropriate figures or plates
- an overall interpretation of the generated data and preliminary conclusions reached;
- an assessment of the significance of the bridge fabric, and an assessment of the bridges within their wider context;
- identification of areas that are currently obscured or unsafe which might hold information as to the bridges origin and development;
- recommendations for further work;
- plans, elevations, section drawings and photographs at an appropriate scale;
- the report will also include a complete bibliography of sources from which data has been derived;
- appendix/gazetteer of raw data for each site component generated during the investigation, illustrated as appropriate;
- a copy of the project brief will be included in the appendices;
- a copy of this project design in the appendices, and indications of any agreed departure from that design;
- a summary of the project archive;
- copies of any appropriate photographs and drawings in the archive.

3.3.2 Prior to the dissemination of the final report, plans, elevations and/or data will be made available to the client during the course of the works. Four bound copies will be submitted (including one for the Greater Manchester HER and two copies of the final version in pdf format will be submitted on CD. CAD files in AutoCAD.DWG format, including the final versions of the Laser Scanning, will be included on the discs.

3.3.3 Publication: a summary of the results will be submitted as part of the OASIS project and will be competed online.

3.6 ARCHIVE

3.6.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (Management of Archaeological Projects, 2nd edition, 1991) standards. The project archive represents the collation and indexing of all the data and material gathered during the course of the project. OA North conforms to best practice in the preparation of project archives for long-term storage. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the GMAU HER (the index to the archive and a copy of the report). The archive will contain:
• copies of relevant documentary material (bibliographic, cartographic and pictorial sources) arranged in date sequence
• survey control information, including a diagram showing traverses and control network; list of co-ordinates, control points and traverse stations; digital survey data;
• Field and final drawings;
• Photographs and pro-forma written accounts of site components and individual contexts;
• Structured catalogues and indices of site documents, drawings, photographs, etc
• Any appropriate project management records.

4. HEALTH AND SAFETY

4.1.1 OA North complies with the Heath and Safety at Work Act, 1974, provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A risk assessment will be completed in advance of any on-site works and copies will be made available on request to all interested parties. The principal archaeologist on site will hold a copy of the risk assessment at all times. It has been assumed that the client and/or principal contractor will have produced risk assessments and any induction procedures must be made available to OA North prior to commencement of work. All project staff will be CSCS qualified.

4.1.2 The area under the bridge is not defined as a confined space as it has adequate ventilation and there is more than one escape route from it. The main concerns are that work should not be undertaken during high river levels. Staff should not work alone and there should be adequate radio communications between those working under the bridge and those on the surface. OA North staff will assess the risks during the survey and if unacceptable health and safety risks arise, the OA North project manager will be informed and work will cease until measures taken to negate those risks can be arranged. Precautions against hypothermia will be taken and full waders will be work at all times under the bridge.

5 PROJECT MONITORING AND COMMUNICATION

5.1.1 Access: liaison for site access during the evaluation will be arranged with the client unless otherwise instructed prior to commencement of the archaeological investigation. There is a requirement to use a ramp to gain access at the eastern end of the bridge, but this is presently closed off behind locked hoardings. It is assumed the client will ensure access to this area during the course of the survey.

5.1.2 Monitoring and communication: GMAU will be notified a week in advance of the commencement of the fieldwork. Whilst the work is undertaken, they will be kept fully informed of the work and its results through regular email and telephone updates, as appropriate. These can include details of staff deployed and the level of progress. The presence and location of any significant findings, risks, etc, identified during the course of the works will be communicated to the Client as soon as they have been reasonably confirmed. Any proposed changes to the project design will be agreed with GMAU.

6 QUALITY ASSURANCE

6.1.1 OA is a Registered Archaeological Organisation with the Institute for Archaeologists (no 17). OA is not at present ISO certified but operates an internal QA system governed by standards and guidelines outlined by English Heritage and the Institute of Field Archaeologists.

6.1.2 Standards: it is OA’s stated policy to adhere to current professional standards set by IFA, English Heritage, Association of Local Government Archaeological Officers, Museums Organisations.

6.1.3 OA helps the profession to develop and establish standards by serving on national working parties (eg recently on archives). OA conforms with current legislation and national and local policy standards for archaeology health and safety and other relevant matters. OA has established technical manuals, procedures and policies which control its work covering field recording, finds retention and discard,
finds storage and handling, environmental sampling and processing, archiving and post-excavation. These have been developed to conform with best professional practice.

6.1.4 **Staff:** OA ensures that its staff are fairly recruited, fairly employed, and properly qualified for their work whether by formal qualification or by established and verifiable experience. OA ensures that staff remain committed and enhance their abilities using annual staff appraisals, supporting formal and informal training and educational courses. OA have established terms and conditions of employment and a system of staff representation to ensure regular consultation on employment matters. To ensure that staff are kept informed of OA's activities OA has a quarterly staff newsletter and regular meetings of staff at all levels to deal with issues of technical quality control and management.

6.1.5 **Procurement of services and materials:** OA procures subcontracted work on the basis of value for money, considering quality, track record and service, as well as cost. OA regularly reviews quality of subcontracted work and uses tendering procedures for major sub-contracts. Procurement of materials is on the basis of quality and availability, as well as cost, especially in respect of long-term storage of archives (OA adheres to archive quality photographic materials and processes, archive quality boxes etc).

6.1.6 **Working Practices:** management procedures ensure that all work conducted within the Company and all end product reports to clients are monitored and evaluated whilst they are in progress, during compilation, and after completion.

6.1.7 **Data Acquisition and Security:** in gathering data from other sources OA has procedures to ensure that a record is made of all sources consulted (whether productive of information or not), the limits of search, and the date of search. Data is filed according to the project to which it relates. For fieldwork projects OA always removes records and finds from site every day, and ensures equipment is secured. OA has a networked computer system. In addition to providing standardised software suites for use by all personnel, the computer administration facility monitors logs and checks all activity on the network to ensure that operating quality is maintained. OA has daily backup of all computer systems and up-to-date anti-virus software. OA routinely arranges for microfilming of primary fieldwork archives.

6.1.8 **Archives:** OA has standard procedures for archiving records to professional archival standards, and has well established procedures for making arrangements with landowners and recipient institutions for the deposit of archives and finds in appropriate publicly accessible institutions.

6.1.9 **Post-excavation and Publication of Field Projects:** OA has written procedures and guidelines for the execution of post-excavation projects, and each project is divided into specific tasks which are rigorously defined on the basis of their contributing to the final product. Gantt charts are produced for each project, providing OA with the ability to track each project in detail, ensuring that work is completed to the requisite professional standard and within time and budgetary constraints.

7. **STAFFING PROPOSALS**

7.1 The project will be under the direct management of Jamie Quartermaine BA Surv Dip MIIfA (OA North Senior Project Manager) to whom all correspondence should be addressed. The desk-based research will be carried out by Ian Miller BA FSA (OA North Senior Project Manager). Ian has particular knowledge of the historical development of Lancashire and Greater Manchester, and has carried out several detailed archaeological studies of Rochdale.

7.2 The project will be directed by Chris Wild BSc (OA North Project Officer). Chris has extensive experience in the recording and analysis of historic buildings throughout the North West.

7.1 The laser scan survey will be carried out by APR Services Ltd, which is a long established laser scanning and survey company. APR have carried out many types of surveying including laser scanning and have undertaken laser scanning at buildings such as Shakespeare’s Globe Theatre, Kenilworth Castle, St Albans Cathedral and even a scan of the Kitty Hawk aircraft for archive purposes.

7.2 The curriculum vitae of the OA North staff involved are included in Appendix 1.
### APPENDIX 3: GAZETTEER OF SITES

<table>
<thead>
<tr>
<th>Site number</th>
<th>Site name</th>
<th>NGR</th>
<th>Site type</th>
<th>Period</th>
<th>SMR No</th>
<th>Stat. Designation</th>
<th>Sources</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Rochdale Bridge</td>
<td>SD 89662 13383</td>
<td>Bridge</td>
<td>Post-medieval</td>
<td>13733.1.0</td>
<td>Conservation Area</td>
<td>HER</td>
<td>It is likely that the bridge existed by 1324, as a document of that date refers to ‘John of the Brig’, which may be associated with a bridge (Taylor 1956). Surviving documents attest to the existence of the bridge by the early seventeenth century, but also state that it was in need or repair (QSB/1/103(62)). The Lancashire Quarter Sessions of October 1676 make further reference to monies expended by Gabriel Gartside and Joseph Dearden on repair the bridge, which amounted to £75 5s 2d (QSP/457/7). According to Butterworth (1828, 102-3), Rochdale Bridge was widened and improved in 1821, comprised the erection of a new structure, which was 14 feet wide with a circular arch and was added to the eastern side of the original bridge. In 1832, the north wing of the bridge was considered to be dangerous, and was eventually repaired by Mr Dearden of The Orchard, which was adjacent to the bridge. In consideration of the shortcomings of the ford, a new bridge was erected close to the original one on the westerly side. This bridge was 13 feet wide, of stone construction with peaked arches. Improvements were subsequently made with the addition of a seven feet in width on the easterly side of the new bridge, and the style was changed from the peaked to the circular arch. However, these improvements still proved to be insufficient, and another extension of 10 feet was erected on the western side (Robertson 1881, 5-8). A newspaper report of January 1869 noted that 'the widening of the bridge is now on the point of completion. A late nineteenth-century description noted that Rochdale Bridge 'exhibits the several changes that have taken place from time to time in order to afford the necessary accommodation which the growth of the town required' (Robertson 1881, 5-8). This confirmed that the original structure still existed, comprised three peaked stone arches and was only six feet wide.</td>
</tr>
<tr>
<td>02</td>
<td>Captain Ogden’s Bridge</td>
<td>SD 8975 1340</td>
<td>Footbridge (Site of)</td>
<td>Post-medieval</td>
<td>-</td>
<td>-</td>
<td>Plan of Rochdale Glebe (1754); Swires Plan of Rochdale (1824)</td>
<td>A wooden footbridge crossing the river upstream of Rochdale Bridge, which was in place by the early nineteenth century. This bridge was originally called Captain Ogden’s Bridge, and known subsequently as Hamer’s Bridge and then Theatre Bridge (Robertson 1881, 5-8). However, it is marked on the Ordnance Survey map of 1851 as Wellington Foot Bridge, and is noted to have been of metal construction.</td>
</tr>
<tr>
<td>03</td>
<td>Walk Bridge</td>
<td>SD 8966 1338 (centred)</td>
<td>Footbridge (Site of)</td>
<td>Post-medieval</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>The bridge is no longer extant.</td>
</tr>
</tbody>
</table>
### HER No 04
**Site name**: Wellington Bridge  
**NGR**: SD 89746 13407  
**Site type**: Bridge  
**Period**: 1882  
**HER No**: -  
**Stat. Designation**: Conservation Area  
**Description**: This was the second bridge across the river in the town centre, and was constructed at the bottom of Drake Street in c. 1882. It consisted of wrought-iron girders and brick jack arches.  
**Assessment**: The bridge is extant, and any future development of the bridge coverings of the river could have an impact on the archaeological remains.

### HER No 05
**Site name**: Butts Bridge  
**NGR**: SD 8969 1339 (centred)  
**Site type**: Bridge  
**Period**: 1904  
**HER No**: -  
**Stat. Designation**: Conservation Area  
**Description**: On the 6th of June 1903, the *Rochdale Observer* reported the Borough Surveyor's proposals for the covering of the River Roch between The Butts and South Parade. This was on the site of a traditional fording point of the River Roch. The bridge is an early example of a ferro-concrete construction (six-inch thick ferro-concrete slabs lie beneath the road surface). The covering of the Roch began in July 1904 and the final stretch was completed in c. 1924. This engineering feat gave Rochdale the claim to have the widest bridge in the world. Repairs were carried out in 1995.  
**Assessment**: The bridge is extant, and any future development of the bridge coverings of the river could have an impact on the archaeological remains.

### HER No 06
**Site name**: Esplanade Bridge  
**NGR**: SD 8961 1335 (centred)  
**Site type**: Bridge  
**Period**: 1909  
**HER No**: -  
**Stat. Designation**: Conservation Area  
**Description**:  
**Assessment**: The bridge is extant, and any future development of the bridge coverings of the river could have an impact on the archaeological remains.
<table>
<thead>
<tr>
<th>Site number</th>
<th>07</th>
<th>08</th>
<th>09</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Town Meadows Bridge</td>
<td>Bus Station Bridge</td>
<td>Ford</td>
<td>Fountain</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 8955 9847 (centred)</td>
<td>SD 8981 1342 (centred)</td>
<td>SD 8969 3665</td>
<td>SD 8970 6998</td>
</tr>
<tr>
<td>Site type</td>
<td>Bridge</td>
<td>Bridge</td>
<td>Ford (site of)</td>
<td>Drinking Fountain (Site of)</td>
</tr>
<tr>
<td>Period</td>
<td>1923</td>
<td>1924</td>
<td>Medieval</td>
<td>1863</td>
</tr>
<tr>
<td>HER No</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
<td>-</td>
<td>Conservation Area</td>
<td>-</td>
</tr>
<tr>
<td>Description</td>
<td>A bridge constructed with a lattice of reinforced concrete beams, supported by reinforced concrete columns and overall supporting a reinforced concrete deck. It has a reinforced concrete abutment to the south and a stone abutment to the north.</td>
<td>A bridge constructed with a lattice of reinforced concrete beams, supported by reinforced concrete columns and overall supporting a reinforced concrete deck. It has a reinforced concrete abutment to the south and a stone abutment to the north.</td>
<td>It is likely that there was a ford across the river during the medieval period, and which is referred to in early seventeenth-century documents, including James I’s <em>Inquisition of Rochdale</em> of 1610, and Sir Robert Heath’s <em>Survey of the Manor</em> of 1626. This ford was almost certainly located at The Butts, and remained in active use until the late nineteenth century, by which date it ‘was often made so deep by heavy rainfall as to become both inconvenient and dangerous’ (Robertson 1881, 5-8).</td>
<td>The site is no longer extant.</td>
</tr>
<tr>
<td>Assessment</td>
<td>The bridge is extant, and any future development of the bridge coverings of the river could have an impact on the archaeological remains.</td>
<td>The bridge is extant, and any future development of the bridge coverings of the river could have an impact on the archaeological remains.</td>
<td>The site is no longer extant.</td>
<td></td>
</tr>
</tbody>
</table>
### HER No
- 
### Stat. Designation
- 
### Sources
OS, 25”, 1893

### Description
An elaborate drinking fountain was constructed adjacent to the south bank of the river at the bottom of Drake Street in 1863. It comprised a square base covered with stone-coloured canvas, with the monogram ‘A.E’ exhibited in block letters on two sides, and ‘A.C.’ placed on the opposite sides. The centre piece of the fountain was in the form of a vase, from which emanated the principal jet of water. Five smaller jets were placed around the main jet, with another three jets set at each of the four corners of the fountain (*Rochdale Observer* March 1863).

### Assessment
The site is no longer extant.

---

### Site number
11

### Site name
Cabman’s Shelter

### NGR
SD 8979 1340, 8961 6458

### Site type
Building (Site of)

### Period
Nineteenth century

### SMR No
-

### Stat. Designation
Conservation Area

### Sources
OS, 25”, 1893

### Description
Two cabmen’s shelters shown on the OS second edition 25” 1893 map. They are no longer extant.

### Assessment
The site is no longer extant.

---

### Site number
12

### Site name
Tram Stop Shelter

### NGR
SD 89676 13386

### Site type
Tramway Centre (Site of)

### Period
Modern

### SMR No
-

### Stat. Designation
Conservation Area

### Sources
OS, 25”, 1910; OS, 25”, 1930; OS 6” 1931

### Description
A tramway centre is shown on the OS map for 1910, located at the junction of the tramways on Smith Street (Site 43), Drake Street and The Esplanade. Two buildings labelled ‘Tramway Shelter’ are located in this area. The tramway was not extant by the time of the OS mapping from 1931; the two shelter buildings were still depicted on the OS mapping of 1938, but are not shown after this date.

### Assessment
The site lies within the study area, but although there are no surface remains any future development could have an impact on buried archaeological remains.

---

### Site number
13

### Site name
Former YMCA, Butts Avenue

### NGR
SD 89671 13434

### Site type
Club

### Period
Industrial

### SMR No
-

### Stat. Designation
Conservation Area

### Sources

### Description
A building labelled ‘Young Men’s Christian Association’ is shown on the south side of Butts Avenue on the OS map of 1892, and was possibly extant in 1851 as a building is shown but not labelled in this location on the OS map. The building is labelled ‘club’ on the 1910 OS mapping and is located within the Town Hall Conservation Area.

### Assessment
This building lies outside the study area, and survives extant. It is unlikely to be affected by the development.
<table>
<thead>
<tr>
<th>Site number</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Bank, Yorkshire Street</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89641 13400</td>
</tr>
<tr>
<td>Site type</td>
<td>Bank</td>
</tr>
<tr>
<td>Period</td>
<td>Industrial</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
<tr>
<td>Description</td>
<td>A building on the north-east side of Yorkshire Street is labelled ‘Bank’ on the OS map of 1910. A smaller building is shown in this area on the OS mapping for 1851 and 1893, on the south side of an alley. The 1910 building (and also a building to its east (Site 87)) was built over the earlier alley and therefore either replaced the earlier building, or was an extension to it. On the 1959 OS map, this and Site 87 were shown as one building, and the building is still in use as a bank, located within the Town Hall Conservation Area.</td>
</tr>
<tr>
<td>Assessment</td>
<td>This building lies within the study area, and survives extant, but is unlikely to be affected by the development.</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Site number</td>
<td>15</td>
</tr>
<tr>
<td>Site name</td>
<td>Tramway – the Butts</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89706 13395</td>
</tr>
<tr>
<td>Site type</td>
<td>Tramway</td>
</tr>
<tr>
<td>Period</td>
<td>Modern</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
<tr>
<td>Sources</td>
<td>OS, 25&quot;, 1910; OS, 25&quot;, 1930; OS 6&quot; 1931</td>
</tr>
<tr>
<td>Description</td>
<td>A tramway is shown on the OS map from 1893. The tramway is not shown on the OS map of 1931.</td>
</tr>
<tr>
<td>Assessment</td>
<td>The site lies within the study area and any future development could have an impact on buried archaeological remains.</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Site number</td>
<td>16</td>
</tr>
<tr>
<td>Site name</td>
<td>Tramway, Smith Street</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89918 13457</td>
</tr>
<tr>
<td>Site type</td>
<td>Tramway (Site of)</td>
</tr>
<tr>
<td>Period</td>
<td>Modern</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
<tr>
<td>Sources</td>
<td>OS, 25&quot;, 1893; OS, 25&quot;, 1910; OS, 25&quot;, 1930</td>
</tr>
<tr>
<td>Description</td>
<td>A tramway on Smith Street is shown on the OS map from 1893. On the OS map for 1910 the tramway joins the tramway centre at the west end of Smith Street (Site 41), and the tramway on John Street (Site 46). The tramway is not shown on the OS map of 1931.</td>
</tr>
<tr>
<td>Assessment</td>
<td>The site lies outside the study area and any future development is unlikely to impact any buried archaeological remains.</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Site number</td>
<td>17</td>
</tr>
<tr>
<td>Site name</td>
<td>Buildings on The Walk</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89648 13416</td>
</tr>
<tr>
<td>Site type</td>
<td>Buildings</td>
</tr>
<tr>
<td>Period</td>
<td>Industrial</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
</tbody>
</table>
### Sources
Murphy, 1831; OS, 6", 1851; OS, 1: 500, 1892; OS, 25", 1893; OS, 25", 1910; OS, 25", 1930; OS 6" 1931; OS 6" 1931 (emergency edition 1938); OS, 1:2500, 1959; OS, 1:1250, 1978; OS, 1:1250, 1990

### Description
Two rows of small buildings are fronting the north-west and south-east sides of The Walk, off Yorkshire Street. The buildings were extant by the time of Murphy’s map of 1831 and are now located within the Town Hall Conservation Area.

### Assessment
These buildings lie on the edge of the study area, but is unlikely to be impacted by the development.

<table>
<thead>
<tr>
<th>Site number</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Nos 2-14 Yorkshire Street</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89625 13406</td>
</tr>
<tr>
<td>Site type</td>
<td>Buildings</td>
</tr>
<tr>
<td>Period</td>
<td>Industrial</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
<tr>
<td>Sources</td>
<td>Murphy, 1831; OS, 6&quot;, 1851; OS, 1: 500, 1892; OS, 25&quot;, 1893; OS, 25&quot;, 1910; OS, 25&quot;, 1930; OS 6&quot; 1931; OS 6&quot; 1931 (emergency edition 1938); OS, 1:2500, 1959; OS, 1:1250, 1978; OS, 1:1250, 1990; Duncan 1894-5</td>
</tr>
<tr>
<td>Description</td>
<td>A group of buildings fronting Yorkshire Street, at its southern extent, located within the Town Hall Conservation Area. These buildings are first shown on Murphy’s map of 1831, with a building at the west end labelled ‘Messrs Fentons and Roby’s Bank’ (no. 16 on map). The northernmost of these buildings was labelled ‘Central Conservative Club’ on the OS map for 1892. Duncan’s Directory of 1894-5 lists the other buildings as being occupied by a tailor, prudential assurance, a coffee house and a painter.</td>
</tr>
<tr>
<td>Assessment</td>
<td>This building lies within the study area, and survives extant, but is unlikely to be affected by the development.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site number</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Buildings on The Butts</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89650 13401</td>
</tr>
<tr>
<td>Site type</td>
<td>Building</td>
</tr>
<tr>
<td>Period</td>
<td>Industrial</td>
</tr>
<tr>
<td>SMR No</td>
<td>-</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Conservation Area</td>
</tr>
<tr>
<td>Sources</td>
<td>Murphy, 1831; OS, 6&quot;, 1851; OS, 1: 500, 1892; OS, 25&quot;, 1893; OS, 25&quot;, 1910; OS, 25&quot;, 1930; OS 6&quot; 1931; OS 6&quot; 1931 (emergency edition 1938); OS, 1:2500, 1959; OS, 1:1250, 1978; OS, 1:1250, 1990</td>
</tr>
<tr>
<td>Description</td>
<td>A building shown fronting The Butts on the OS map of 1910. A smaller building is shown in this area on Murphy’s map of 1831 and the OS mapping for 1851 and 1892, on the south side of an alley. The 1910 is built over the alley and therefore is either a replacement of the earlier building, or shows an extension to it. On the 1959 OS map, this and the adjacent building are shown as one building, labelled as a bank, and the building is still in use as a bank, located within the Town Hall Conservation Area.</td>
</tr>
<tr>
<td>Assessment</td>
<td>These buildings lie within the study area, and survive extant, but they are unlikely to be affected by the development.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site number</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>21 Butts Avenue (Bank Chambers) Staircase block</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 8968 1344</td>
</tr>
<tr>
<td>Site type</td>
<td>Building</td>
</tr>
<tr>
<td>Period</td>
<td>Industrial</td>
</tr>
<tr>
<td>SMR No</td>
<td>11554.1.0</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Grade II Listed Building (358865); Conservation Area</td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
</tr>
<tr>
<td>Description</td>
<td>Building only houses a staircase which gives access to the upper floor of Williams &amp; Glyn's Bank, c 1800. Brick with stone dressings and slate roof. Narrow frontage with</td>
</tr>
</tbody>
</table>
central door, inner door and three-flight staircase, apparently part of a former building. The two-storey building has an Ionic doorcase with attached columns, open modillioned pediment, semicircular enriched fanlight, a six-panel door, and rises from a flight of bowed steps. The upper floor has a sash window with gauged brick head and a modillioned timber eaves cornice. The inner doorcase has an enriched plaster cornice and architrave. The openstring staircase has iron balustrading and a timber handrail. The listing does not apply to the Bank Chambers themselves nor to the stone built bank building to the left.

Assessment
This building lies outside the study area, and survives extant, but is unlikely to be affected by the development.

---

Site number 21
Site name Drake Street Hotel
NGR SD 8980 1340
Site type Building
Period Industrial
SMR No 691.1.1
Stat. Designation Grade II Listed Building (358874); Conservation Area
Sources HER
Description In Drake St are examples of what appear to be former domestic workshops, the Hotel included Wellington Hotel now restaurant and nightclub (1). 1810, Brick built, appears to be of various dates. 5 bays double pile with 3 storeys. The original glazing pattern and some original brickwork is seen in the gable. Between 1825 and 1839 the Commissioners of Police met there (2).
Assessment This building lies within the study area, and survives extant, but is unlikely to be affected by the development.

---

Site number 22
Site name Market Cross
NGR SD 8950 1322
Site type Building
Period Eighteenth Century
SMR No 5306.1.0
Stat. Designation Grade II Listed Building (358928); Conservation Area
Sources HER
Description Market cross. Date uncertain but probably eighteenth century. Stone. Heavy moulded stone base with tall shaft. The cornice and ball finial above the shaft collar are replacements for the cross itself.
Assessment This building lies within the study area, and survives extant, but is unlikely to be affected by the development.

---

Site number 23
Site name Town Hall
NGR SD 8959 1326
Site type Building
Period 1866-71
SMR No 115343.1.0
Stat. Designation Grade I Listed Building (358886); Conservation Area
Sources HER
Description Town Hall. 1866-71, W.H.Crossland; tower 1883 by A. Waterhouse. Ashlar, Westmoreland slate roof. Gothic revival in an elaborate form with Continental antecedents. Façade of 14 bays is asymmetrical but balanced with linking bay and tower added to left. Outer bays have triangular gables and are of 3 storeys. The next 2 on left and 3 on right have an arcade across the ground floor, then tiers of plate glass windows, mostly mullioned with cusped heads, and end above a corbelled balcony in a stepped gable richly panelled with blind tracery. The central 7 bays are flanked to left by a slim octagonal stair turret with stone spirelet and to right by an octagonal stair tower with tall 2-light pointed windows and a steep pyramidal slate roof with cresting. The central 3
bays have a heavily buttressed porte-cochere supporting heraldic beasts and acting as a balcony to the Hall which is lit by tall 3-light windows with geometric tracery. The whole façade is richly carved with naturalistic foliage in the style of Southwell Minster. This building lies outside the study area, and survives extant, and will not be affected by the development.

### Assessment

<table>
<thead>
<tr>
<th>Site number</th>
<th>24</th>
<th>Site name</th>
<th>Post Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGR</td>
<td>SD 8957 1334</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site type</td>
<td>Building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period</td>
<td>1920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMR No</td>
<td>11553.1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Grade II Listed Building (358882); Conservation Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Post Office. 1920. E. Lutyens. Portland stone with Westmorland slate roof. &quot;L&quot; shaped plan with single storey appendage to rear enclosing a yard. In a restrained Baroque style. 2 storeys plus attic with a 9-bay façade, the central 7 being brought forward. The ground floor is rusticated, has a projecting plinth, semi-circular headed openings with coved surrounds and large &quot;S&quot; shaped scroll keystones. The first floor sash windows have architraves, and sills and cornices supported by console brackets. Rusticated quoins and a modillion eaves cornice with egg and tongue moulding and carved lion heads. Steeply pitched roof with pedimented dormer windows. The side elevations are treated similarly but in a more restrained manner. Many of the internal fittings and finishes remain intact. A similar building was to be erected on the other side of the war memorial (q.v.) but was abandoned due to cost.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>This building lies within the study area, and survives extant, but is unlikely to be affected by the development.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

89666 13145

### Assessment

<table>
<thead>
<tr>
<th>Site number</th>
<th>25</th>
<th>Site name</th>
<th>War Memorial</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGR</td>
<td>SD 8953 1331</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site type</td>
<td>War Memorial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period</td>
<td>1922</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMR No</td>
<td>5306.1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Grade II Listed Building (358884 and 358885); Conservation Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>War Memorial and Great War Stone. 1922. E.Lutyens. Granite rectangular pier which recedes as it rises to a smaller pier with stout semi-columns. The abacus carries a further plinth which supports a catafalque with draped lying figure. Against plinth rest carved wreaths enclosing the arms of Rochdale. From the lower plinth project four carved flags painted in appropriate colours. Plinth is inscribed &quot;They were a wall unto us both by night and by day&quot;. Wide stylobate also supports The Great War Stone standing in front of the memorial. The memorial is strongly reminiscent of the Whitehall Cenotaph which was also designed by Lutyens.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>This building lies within the study area, and survives extant, but is unlikely to be affected by the development.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Assessment

<table>
<thead>
<tr>
<th>Site number</th>
<th>26</th>
<th>Site name</th>
<th>The Blue Bell Hotel</th>
</tr>
</thead>
<tbody>
<tr>
<td>NGR</td>
<td>SD 8959 1339</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site type</td>
<td>Former Hotel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Period</td>
<td>18th to 20th centuries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMR No</td>
<td>11590.1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>Grade II Listed Building (358964); Conservation Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Hotel (Blue Bell) now Yates's Wine Lodge. The building has two facades, the one on Yorkshire Street dated 1749 on a rainwater head, the one on Newgate inscribed &quot;Wine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Lodge 1911”. Yorkshire Street: brick with stone dressings and slate roof, Newgate: ashlar. The long plan is cranked and has an entrance to each street. The 5-bay, 3-storey Yorkshire Street elevation has a central doorway, C20 glazing to all but the ground floor which has Victorian sashes to the left and C20 shopfront to the right, stone sills and keystones, a modillion eaves cornice and an ornate lead rainwater head. The 5-bay single-storey Newgate elevation is in an Edwardian Baroque style. Gables over the two side bays and central three. Semicircular headed window and door openings with keystones and leaded glass. Pilasters rise from the corbels at impost level. "Rochdale Vintners Wine Co. Ltd." on frieze with cornice above. Semi-circular pediments to each gable with elaborate cartouches the central one engraved "Wine Lodge 1911" and having a grapevine surround.

Assessment
This building lies within the study area, and survives extant, but is unlikely to be affected by the development.

<table>
<thead>
<tr>
<th>Site number</th>
<th>27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Electric House</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89832 13405</td>
</tr>
<tr>
<td>Site type</td>
<td>Former Hotel</td>
</tr>
<tr>
<td>Period</td>
<td>Early 19th century</td>
</tr>
<tr>
<td>SMR No</td>
<td>15497.1.0</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>-</td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
</tr>
<tr>
<td>Description</td>
<td>Electric House is a multi-phased building complex that dates to the early 19th century, with up to five different phases of construction. The frontage was constructed in 1930. However there may be the remnants of earlier building activity located within the basement, associated with a seed mill. The building was completed and officially opened on 15th December 1930 and was constructed of steel framing. The building was grandiose and the plush internal fixtures and fittings were typical of this time. An entrance hall located within the NW corner of the Smith Street frontage led to a staircase and lift and to a series of display halls. During the latter part of the 20th century, the Rochdale Corporation was integrated into a larger company Norweb and became a district office. However, by 1972 the company had vacated Electric House. Rochdale Council purchased the building from Norweb in 1974 but the ground floor showrooms were leased back to Norweb. The building was demolished to make way for the new bus station and is no longer extant.</td>
</tr>
<tr>
<td>Assessment</td>
<td>This building is no longer extant.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site number</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Bottom o’ the Lane Mill</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89838 13413</td>
</tr>
<tr>
<td>Site type</td>
<td>Mill</td>
</tr>
<tr>
<td>Period</td>
<td>Early 19th century</td>
</tr>
<tr>
<td>SMR No</td>
<td>15497.1.0</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>-</td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
</tr>
<tr>
<td>Description</td>
<td>Bottom O' the Lane Mills, a corn and seed mill. First shown on the Plan of Rochdale 1824. The Mill had been demolished by 1930.</td>
</tr>
<tr>
<td>Assessment</td>
<td>This former building lies within the study area, and is no longer extant.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site number</th>
<th>29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name</td>
<td>Bowling Green Mill</td>
</tr>
<tr>
<td>NGR</td>
<td>SD 89837 13449</td>
</tr>
<tr>
<td>Site type</td>
<td>Mill</td>
</tr>
<tr>
<td>Period</td>
<td>Early 19th century</td>
</tr>
<tr>
<td>SMR No</td>
<td>15502.1.0</td>
</tr>
<tr>
<td>Stat. Designation</td>
<td>-</td>
</tr>
<tr>
<td>Sources</td>
<td>HER</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Bowling Green Mill (Cotton) first depicted on the OS 1st edition 1851 map. Shown as a warehouse on the 1930 OS map.</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td>This former building lies within the study area, and is no longer extant.</td>
</tr>
</tbody>
</table>
ILLUSTRATIONS

FIGURES

Figure 1: Site location map
Figure 2: Extract from Swire’s Plan of Rochdale, 1824
Figure 3: Extract from Wood’s Plan of Rochdale, 1831
Figure 4: Extract from the Ordnance Survey first edition 1: 1056 map of 1851
Figure 5: Extract from Ordnance Survey 1: 500 maps of 1892 and 1908
Figure 6: Extract from Ordnance Survey 1: 10560 map of 1910
Figure 7: Extract from Ordnance Survey 1: 10560 map of 1930
Figure 8: Extract from Ordnance Survey 1: 2500 map of 1959
Figure 9: Location of Rochdale town centre bridges and other sites on 1960’s mapping
Figure 10: Plan of overall bridge viewed schematically from above
Figure 11: Plan of overall bridge at water level, superimposed on 1:2500 map of 1959
Figure 12: Plan of Rochdale Bridge viewed schematically from above
Figure 13: Plan of Rochdale Bridge at water level
Figure 14: Isometric views of Rochdale Bridge
Figure 15: Isometric view of reverse face Rochdale Bridge, tunnel 1
Figure 16: Isometric view of Arch, Rochdale Bridge
Figure 17: Inverted Isometric view of Rochdale Bridge
Figure 18: Cross section through Bridges 4, 5 and 8
Figure 19: Plan of eastern section of overall bridge, including Wellington Bridge (Bridge 11)
Figure 20: Cross section across Wellington Bridge
Figure 21: Elevation of eastern entrance to Bridge 12

PLATES

Plate 1: Plaque recording the significance of the Rochdale Bridge
Plate 2: Aerial view of the study area, showing approximate location of the two initial bridges
Plate 3: Extract from Saxton’s map of 1577, showing the main settlements in the region
Plate 4: Plan of the Rochdale Glebe in 1754-7
Plate 5: Extract from A Plan of the Vicarage, 1764
Plate 6: Partial view of Rochdale Bridge in c 1780 from the south-west corner of South Parade
Plate 7: The ford across the River Roch at The Butts, c 1810
Plate 8: Perspective of the Town Hall by Edward Walker in 1875, showing Rochdale Bridge
Plate 9: Swire’s plan of Rochdale, surveyed in 1824
Plate 10: Artist’s impression of c 1820, showing the bull bait, Rochdale Bridge and the ford
Plate 11: View of the pilasters of Bridge 3 extension, possibly constructed 1864-1869, looking east
Plate 12: View of Walk Bridge in July 1904, with Wellington Bridge to the rear
Plate 13: Wellington Bridge in c 1905, with Butts Mill to the rear
Plate 14: Town Hall and Esplanade c 1930
Plate 15: Bridge 1, looking east
Plate 16: Detail of typical Bridge 1 column
Plate 17: Bridge 2 deck and steel superstructure against the façade of Bridge 4, Arches 1 and 2
Plate 18: Bridge 2 steel beams in front of façade of Bridge 4, Arch 3
Plate 19: Deck of the recent Bridge 2 construction partly supported by walling of Bridge 3
Plate 20: Image of Bridge 3 pilaster taken prior to the rebuilding of Bridge 2
Plate 21: Image of Bridge 3 pilaster taken prior to the rebuilding of Bridge 2
Plate 22: Eastern pilaster of Bridge 3 on the eastern side of Rochdale Bridge, partly obscured by accumulated debris
Plate 23: Arch 1, Bridge 4 façade, with Bridge 5 visible beyond – looking east
Plate 24: Arch 3, façade of Bridge 4, with Bridge 5 visible beyond – looking east
Plate 25: Arch 3, façade of Bridge 4, with Bridge 5 visible beyond, looking east
Plate 26: Arch 1, Bridge 5 in the foreground, with Bridge 6 visible beyond, looking east
Plate 27: Arch 2, the gothic arched Bridge 5, with Bridges 6 and 7 visible beyond Bridge 8, looking east
Plate 28: Arch 3, Bridge 5 in the foreground, with Bridges 6-8 visible beyond, looking east
Plate 29: Arch 1, Bridge 6, with protruding block, looking east
Plate 30: Arch 2, Bridge 6, with Bridges 7-8 beyond, looking east
Plate 31: Arch 3, Bridge 6, with bridge 5 in the foreground and beyond Bridges 7 and 8, looking east
Plate 32: Arch 1, the narrow filler Bridge 7, up against the façade of bridge 8, looking west
Plate 33: Arch 2, the narrow filler Bridge 7, second from the right, looking north-west
Plate 34: Arch 3, the exposed façade of Bridge 7, looking west
Plate 35: Façade of Arch 1, Bridge 8, and concrete support walls of Bridge 9, looking west
Plate 36: Arch 3, façade of Bridge 8, looking west
Plate 37: Arch 3, Bridge 8, with Bridge 7 beyond, looking west
Plate 38: Typical concrete column of Bridge 10
Plate 39: Wrought iron beams of Bridge 11 (Wellington Bridges)
Plate 40: Columns and deck beams of Bridge 12, looking north
Plate 41: Eastern entrance to Bridge 12, looking west
Figure 16: Southern elevation of Arch 1, Roschild Bridge
Plate 15: Bridge 1, looking east

Plate 16: Detail of typical Bridge 1 column
Plate 17: Bridge 2 deck and steel superstructure against the façade of Bridge 4, Arches 1 and 2

Plate 18: Bridge 2 steel beams in front of façade of Bridge 4, Arch 3
Plate 19: Deck of the recent Bridge 2 construction partly supported by walling of Bridge 3, showing the western pilaster

Plate 20: Image of Bridge 3 pilaster taken prior to the rebuilding of Bridge 2
Plate 21: Image of Bridge 3 pilaster taken prior to the rebuilding of Bridge 2

Plate 22: Eastern pilaster of Bridge 3 on the eastern side of Rochdale Bridge, partly obscured by accumulated debris
Plate 23: Arch 1, Bridge 4 façade, with Bridge 5 visible beyond – looking east

Plate 24: Arch 2, Bridge 4 façade, with Bridge 5 – looking east

Plate 25: Arch 3, façade of Bridge 4, with Bridge 5 visible beyond – looking east
Plate 26: Arch 1, Bridge 5 in foreground, with Bridge 6 visible beyond – looking east

Plate 27: Arch 2, the gothic arched Bridge 5, with Bridges 6 and 7 visible beyond – looking east

Plate 28: Arch 3, Bridge 5 in the foreground, with Bridges 6-8 visible beyond – looking east
Plate 29: Arch 1, Bridge 6, with protruding block – looking east

Plate 30: Arch 2, Bridge 6, with Bridges 7-8 beyond, looking east

Plate 31: Arch 3, Bridge 6, with Bridge 5 in the foreground and beyond Bridges 7 and 8, looking east
Plate 32: Arch 1, the narrow filler Bridge 7, up against the façade of Bridge 8, looking east

Plate 33: Arch 2, the narrow filler Bridge 7, second from the right, looking north-west

Plate 34: Arch 3, The exposed façade of Bridge 7, looking west
Plate 35: Arch 1, Façade of Bridge 8, and concrete support walls of Bridge 9, looking west

Plate 36: Arch 3, Façade of Bridge 8, looking west

Plate 37: Arch 3, Bridge 8, with Bridge 7 beyond, looking west
Plate 38: Typical concrete column of Bridge 10

Plate 39: Wrought iron beams of Bridge 11 (Wellington Bridge)
Plate 40: Columns and deck beams of Bridge 12, looking north

Plate 41: Eastern entrance to Bridge 12, looking west