



SUTTON MILL, COPPULL LANE, WIGAN

Archaeological Evaluation and Watching Brief



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SUMMARY

In August 2008, Oxford Archaeology North (OA North) was commissioned by Axis, acting on behalf of The Environment Agency, to carry out a programme of archaeological investigation in the vicinity of Coppull Lane, Wigan (centred on NGR SD 5878 0665). The investigation was required to inform a proposed scheme of flood defence improvements to the River Douglas, and its predicted impact on the archaeological resource of the area. The investigation was focused on the site of Sutton Mill, a former corn mill on the west bank of the River Douglas, but also examined an area in Bottling Wood, on the opposite side of the river, which had been exploited for small-scale mining purposes and was occupied by workers' cottages during the nineteenth century.

The first element of the archaeological investigation comprised a programme of documentary research. This concluded that the origins of Sutton Mill are unclear, and whilst the possibility that the site was occupied by a fulling mill during the medieval period cannot be discounted, firm evidence is lacking. Sutton Mill is first depicted on a plan of c 1712, and is also shown on William Yates' *Survey of the County Palatine of Lancaster*, which was published in 1786. Later, more detailed mapping shows it as a rectangular structure with two additional out buildings, and an associated weir across the River Douglas. References to a corn mill on Coppull Lane in nineteenth-century trade directories occur from 1828 onwards, although it had been converted for use as a farm by 1909. The building, together with numerous dwellings on the opposite side of the river in Bottling Wood, formed part of a designated Unhealthy Area, which was outlined for clearance in the late 1920s by the Insanitary Houses and Conversions Committee of Wigan Borough Council.

Following on from the documentary research, a programme of intrusive investigation of the site was carried out. In the first instance, this comprised a watching brief that was maintained during the excavation of geo-technical test pits across the study area, and was followed by the excavation of five evaluation trenches, which were targeted on the footprint of Sutton Mill and associated cottages. Both phases of intrusive investigation were carried out in February 2009.

The results obtained from the evaluation demonstrated that the demolition of the mill had been comprehensive, and that physical remains had been largely removed during the twentieth century. It is thus concluded that the construction of the proposed flood defences will not have a negative impact on any sub-surface remains of Sutton Mill. However, structural remains immediately beneath the modern ground surface were identified during the watching brief on the eastern bank of the River Douglas. These almost certainly represented the remains of eighteenth- or nineteenth-century workers' cottages in the former settlement of Bottling Wood, and are considered to be of some archaeological interest. It is likely that the groundworks required as part of the proposed scheme will result in the damage or destruction of these remains. An appropriate scheme of further archaeological investigation to allow a detailed record of the buried structures to be compiled in advance of development will therefore be required to mitigate the ultimate loss of the buried remains. Given the shallow depth of the remains, their effective recording could be achieved through a programme of strip and record.

ACKNOWLEDGEMENTS

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The watching brief was maintained by Sean McPhillips, who also directed the programme of evaluation trenching. The report was compiled by Sean McPhillips, and the illustrations were prepared by Marie Rowland. The report was edited by Ian Miller, who was also responsible for project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 In August 2008, Oxford Archaeology North (OA North) was commissioned by Axis, acting on behalf of The Environment Agency, to carry out a programme of archaeological investigation in the vicinity of Coppull Lane, Wigan. The investigation was required to inform a proposed scheme of flood defence improvements to the River Douglas, and its impact on the archaeological resource of the area. The investigation was focused on the site of Sutton Mill, a former corn mill on the west bank of the River Douglas, as design proposals allowed for the construction of a dam at this location, the construction of which will require deep earth-moving works. In addition, an area on the east bank of the river was also subject to investigation, targeted on the site of the former settlement at Bottling Wood.
- 1.1.2 Documentary research was carried out in the first instance, and aimed in particular to establish the origins and date of demolition of Sutton Mill. A programme of intrusive investigation was carried out subsequently, which commenced with an archaeological watching brief that monitored explorations for geo-technical purposes. This was coupled with an archaeological evaluation, which comprised the excavation of five trenches targeted on the footprint of Sutton Mill and associated cottages.

1.2 LOCATION AND GEOLOGY

- 1.2.1 Wigan lies close to the western boundary of the modern county of Greater Manchester, approximately midway between the rivers Mersey and Ribble (Fig 1). The town is situated on the northern bank of the River Douglas, a tributary of the Ribble. The site of Sutton Mill (NGR SD 5878 0665) lies approximately 1km to the north-east of Wigan town centre, occupying land on the north side of Coppull Lane, and immediately west of the River Douglas (Plate 1). The site comprises an area of improved grassland, bounded on the eastern edge by trees and scrub vegetation that lines the western bank of the River Douglas. The land slopes to the east, reflecting the natural topography of the river valley. The area of improved grassland is used for recreation purposes, although the wooded area is impenetrable. The eastern bank of the River Douglas comprises managed woodland, which incorporates many mature trees. The land rises to the east across the study area to the foot of outcropping solid geology, which forms a near-vertical cliff face.
- 1.2.2 The geology of the Wigan area forms part of the Lancashire Coal Measures, which extend from the Mersey Valley in the south to the Amounderness Plain in the North West (Countryside Commission 1998, 172). The solid geology comprises productive coal measures, with Bunter sandstone and marls to the south (Ordnance Survey 1951). The overlying drift geology consists of glacial and post-glacial tills, with fluvial deposits of gravel along the course of the River Douglas (Countryside Commission 1998, 128).



Plate 1: Recent aerial view of the study area

2. METHODOLOGY

2.1 WATCHING BRIEF

- 2.1.1 During the course of all earth-moving works associated with the geo-technical site investigations, a programme of field observation recorded the location, extent, and character of all surviving archaeological features and deposits. All excavation work was carried out either by hand, or using a 3.5 ton mechanical excavator fitted with a toothless ditching bucket. In total, 16 test pits and four trial trenches of varying sizes were excavated across the study area (Fig 2). All subsoil horizons exposed during the course of the groundworks were systematically examined, and all archaeological features and horizons were recorded on OA North *pro-forma* recording sheets.

2.2 EVALUATION TRENCHES

- 2.2.1 Five targeted trenches of varying dimensions were excavated across the study area, in accordance with the project design (*Appendix 1*). These comprised one trench of 30m length, two of 20m, one of 21m, and one of 17m, providing a combined length of 108m (Fig 2).
- 2.2.2 The uppermost levels of each trench were excavated by a machine fitted with a toothless ditching bucket. The same machine was then used to define carefully the extent of any surviving walls, foundations and other remains, after which all excavations were undertaken manually. All deposits were levelled and related to the Ordnance Datum and Ordnance Survey.
- 2.2.3 All information was recorded stratigraphically with accompanying documentation (plans, sections and both colour slide and black and white print photographs, both of individual contexts and overall site shots from standard view points). Photography was undertaken with 35mm cameras on archivable black-and-white print film, as well as colour transparency, all frames including a visible, graduated metric scale. Digital photography was used extensively throughout the course of the fieldwork for presentation purposes. Photographic records were also maintained on special photographic *pro-forma* sheets

2.3 FINDS

- 2.3.1 Finds' recovery and sampling programmes were carried out in accordance with best practice (following current Institute of Field Archaeologists guidelines), and subject to expert advice in order to minimise deterioration. All artefacts recovered from the evaluation trenches were retained.

2.4 ARCHIVE

- 2.4.1 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). The original record archive of project will be deposited with Wigan Museum Service.
- 2.4.2 The Arts and Humanities Data Service (AHDS) online database *Online Access to index of Archaeological Investigations* (OASIS) will be completed as part of the archiving phase of the project.

3. HISTORICAL BACKGROUND

3.1 MAP REGRESSION

- 3.1.1 Map regression analysis of the site was carried out by the University of Manchester Archaeological Unit (UMAU) in 2005 as part of an assessment of the River Douglas Flood Defence Scheme. Several sites of archaeological interest were identified within the study area of the scheme, including Sutton Mill and its associated weir and mill leat (UMAU 2005). As a result of this work, the site of the mill has been given a number in the Greater Manchester Historic Environment Record (13630.1.0), but the entry has no additional information on the mill.
- 3.1.2 The earliest cartographic depiction of the site is provided by a plan of the River Douglas, which was surveyed by Thomas Steers in *c* 1712 (LRO/DP 175) as part of a proposal to construct the Douglas Navigation between Wigan and the Ribble Estuary. Steers marked the position of water-powered mills on the river, as the construction of the Douglas Navigation would potential have an impact on their water supply. Whilst the plan is essentially schematic, and cannot be considered as an accurate survey, the location of 'Wild Miln' seems to correspond with the position of Sutton Mill (Plate 2).



Plate 2: Extract from a map of the River Douglas by Thomas Steers, *c* 1712 (LRO/DP 175)

- 3.1.3 The next map of the area is provided by William Yates' *Survey of the County Palatine of Lancaster*, which was surveyed during the 1770s, and published in 1786. Yates' survey is particularly useful as it marks the position of water-

powered mills in Lancashire, and one such mill is shown in the approximate location of Sutton Mill; Yates shows a mill adjacent to a road, thought to be Coppull Lane, on the west side of the River Douglas, with a channel to the north and south, diverted from the river.

- 3.1.4 The next available survey of the site is provided by Mather's *Map of the Town of Wigan in the County of Lancaster*, which was published in 1827. This map depicts the mill as a rectangular structure on the west bank of the River Douglas, which branches to the west forming a mill race running through the building, presumably powering a waterwheel. A weir across the river is also shown clearly, and the mill is marked as 'Sutton Mill'.
- 3.1.5 The next available map of the site is provided by Kellet's *Plan of the Town and Borough of Wigan*, which was published in 1837. This seemingly depicts the mill with additional buildings to those surveyed by Mather. This layout of the mill buildings is shown on subsequent maps from 1849, 1851, and 1856. The detail provided by the Ordnance Survey 25":1 mile plan of 1894 confirms the presence of a weir and mill race, and identified the site as Sutton Mill. The site is similarly marked as Sutton Mill on Platt's Plan of the County Borough of Wigan, published in 1907 (Plate 3), and on the Ordnance Survey 25":1 mile plan of 1909.



Plate 3: Extract from Platt's map of 1907

- 3.1.6 The next available Ordnance Survey map, surveyed in 1927/8 and published in 1930, appears to depict the mill as having been partially demolished; it is no longer annotated as Sutton Mill. The weir across the river is still shown. However, the subsequent edition of Ordnance Survey mapping, published in 1938, indicates all of the buildings to have been cleared, and the weir removed.

3.2 DOCUMENTARY RESEARCH

- 3.2.1 *Early history:* in the early fourteenth century, there were three fulling mills situated on the River Douglas in Wigan: Coppull Mill was located 'at or near the foot of the present day Coppull Lane'; the 'Old Mill at Wigan' lay 'slightly further downstream'; and Lorrington Mill was between Wigan and Ince (Hannavy 1990, 34). There were two corn mills powered by the River Douglas in Wigan during this period, which are described in the Victoria County History as 'ancient water mills'. These were 'situated at Coppull and a little lower down the river by the school'. The school was located at Parson's Walk, to the west of Wigan Lane and close to the town centre; it is possible that this mill is the same as the 'Old Mill' referred to by Hannavy (Hannavy 1990, 34). It remains uncertain, however, whether Coppull Mill occupied the same site as Sutton Mill (Farrer and Brownbill 1911, 68-78).
- 3.2.2 By the early seventeenth century, there were five corn mills in the area, the principal being on Millgate, and another situated at Lorrington or Clarrington Brook (*ibid*); the locations of the other mills are not specified.
- 3.2.3 *Millers at Sutton Mill:* the occupants of Sutton Mill during the nineteenth century can be traced through entries in available trade directories. The earliest such entry is in a directory for 1828-9, which lists a Richard Kay as a miller at Bottlingwood Mill (Pigot & Co 1828, 470). In total, 14 corn mills are listed for Wigan in a directory for 1854. None of these are listed as Sutton Mill, although a John Daglish is entered as a corn miller at Coppull Lane (Whellan & Co 1853, 1062), and it seems likely that this refers to Sutton Mill.
- 3.2.4 By 1869, Sutton Mill was occupied by Ellen Ambrose. The Ambroses were a corn-milling family in Standish, a short distance to the north of Wigan, who were associated with Jolly Mill on Chorley Road during the mid-nineteenth century; John Ambrose is documented as a miller there from c 1842 to c 1871 (Morris 1995, 44-5); the family also operated a corn mill at Upholland at a slightly earlier date (Pigot & Co 1828, 470). It seems possible that Ellen was part of this family.
- 3.2.5 Later entries in trade directories indicate that Sutton Mill was occupied by Thomas Charlson from 1881-7 (Table 1); in the 1869 *Wigan Directory*, Thomas Charlson is listed as a corn dealer on Commercial Road, and in 1881 and 1887 he is listed as miller at Sutton Mill. An almanac for Wigan from 1889 (reprinted as part of Blakeman 1990) includes Thomas Charlson in its list of companies in Wigan. According to this entry (Plate 4), Charlson was still operating Sutton Mill at that date, the mill being dedicated to the production of provender (animal feed). By 1890, however, he is listed at Dawber Street, and by 1891 he has businesses listed at Dawber Street and Queen Street. No subsequent entries for Sutton Mill were found in the trade directories consulted. In 1909, however, Edward Leather is listed as a farmer at Sutton Mill Farm; Leather is similarly listed in 1918 and 1924 (Table 1). This suggests that the mill went out of use for milling in the late 1880s, and the buildings were converted for use as a farm, despite being marked on maps as Sutton Mill until 1909 (*Section 3.1.4 above*).

YEAR	ENTRY	SOURCE
1828/9	Richard Kay, miller, Bottlingwood Mill	Pigot & Co 1828
1853	John Daglish, miller, Coppull Lane	Whellan & Co 1853
1869	Ellen Ambrose, miller, Sutton Mill, Bottlingwood	<i>Wigan Directory</i> 1869
1881	Miller: Thomas Charlson, Sutton Mill, Bottlingwood (House at Dawber Street)	Worrall 1881
1887	Miller: Thomas Charlson, Sutton Mill, Coppull Lane	Slater 1887
1890	Miller: Thomas Charlson, Dawber Street (nb, nothing listed for Mr Leather)	Slater 1890; Kelly 1890
1891	Miller: Thomas Charlson, Dawber Street and Queen Street (nb. nothing listed for Mr Leather)	Kelly 1891
1909	Edward Leather, farmer, Sutton Mill Farm	Kelly 1909
1918	Edward Leather, farmer, Sutton Mill Farm	Kelly 1918
1924	Edward Leather, farmer, Sutton Mill Farm	Kelly 1924

Table 1: Selected trade directory entries for Sutton Mill

3.2.6 A search was made for Thomas Charlson in contemporary newspapers. In 1890, a newspaper report gave details of an employees' day out to Blackpool held by Thomas Charlson. However, the article does not detail where or how the employees were employed (W/O 12/07/1890). Thomas Charlson had a son, also named Thomas, who died in 1913, aged 36. Details of his obituary name him 'a corn merchant of Wigan', and state that he was the only son of Thomas Charlson, also a corn merchant. No details of his place of employment are given in the obituary, therefore it is not known if the family business still ran Sutton Mill at this time (W/O 07/01/1913; W/O 11/01/1913). A later newspaper article, dating to 1974, announced the death of Dora Charlson, who is described as 'the last surviving member of the well-known Wigan corn-milling family' (W/O 20/12/74). Dora had been married to Thomas Charlson, owner of a corn mill on Dorning Street, and had taken responsibility of the firm for 18 months after his death. The obituary does not mention Sutton Mill, reinforcing the suggestion that the family were no longer occupying Sutton Mill at the time of Thomas' death in 1913.

- 3.2.7 *Demolition of Sutton Mill*: the minutes of the Insanitary Houses and Conversions Committee between 1922 and 1935 indicate that Sutton Mill lay in an area designated as the 'Bottling Wood Unhealthy Area'. In a meeting held on the 16th January 1923, it was reported that three houses numbered 29a, 31a and 33a in Bottling Wood had been served with a closing order and, on the 12th March 1923, it was reported that these houses had been partially demolished (A2/23/4 1922-3, 324 and 628). This appears to be the first documented change to the housing in the Bottling Wood area. In a subsequent meeting, held on the 9th July 1923, it was reported that Bottling Wood was to be dealt with as an Unhealthy Area. The implications of this would be that the housing would be demolished, although concerns were voiced at the meeting that those residents who would be displaced by the scheme should be re-housed, and that the scheme could not go ahead until this matter was addressed. It was agreed that this would be discussed in a meeting to be held by the Town Clerk, the Borough Engineer and the Medical Officer (*op cit*, 1012).
- 3.2.8 On the 10th December 1923 it was reported that, despite discussions between the Medical Officer and the Town Clerk, replacement housing had not been found for the Bottling Wood residents (A2/23/4 1923-24, 185). However, by 11th February 1924 it was announced that new housing was to be erected in the Bottling Wood area as soon as possible (*op cit*, 558). New housing, including Walnut Avenue; Rosemary Crescent; Cedar Drive; and Chestnut Road, is shown on the 1930 Ordnance survey map to the east and north-east of the original Bottling Wood housing (UMAU 2005, 15), presumably representing the first houses to be erected as part of the Bottling Wood Improvement Scheme.
- 3.2.9 On the 6th December 1926 it was reported that good progress had been made with the new housing at Bottling Wood and, on the 10th January 1927, it was reported that '34 tenants of houses in Bottling Wood Unhealthy Area were prepared to accept tenancies of the Corporation's A2 type houses; 18 tenants were prepared to accept tenancies of A3 type houses, and nine tenants had refused offers for tenancies' (A2/23/6 1927-28, 407). On the 25th January 1927, the Town Clerk reported that the Medical Officer, Borough Treasurer and himself had provisionally selected 12 tenants for 'A2 houses' and six tenants for 'A3 houses'. Amongst the 12 listed for the A2 houses is H Leather (*op cit*, 408-9), presumably a relation of the Edward Leather listed as a farmer at Sutton Mill Farm in the trade directories from 1909-24 (Table 1). The report goes on to say that once the Housing Committee had approved these tenants, the owners or agents of their current houses should be invited to attend the next meeting 'to show cause why Closing Orders should not be made in respect of the premises'. The Town Clerk 'suggested that the time was now opportune for the Committee to proceed with a scheme for the clearing of the Bottling Wood and Douglas Terrace Unhealthy Areas' (*op cit*, 409).
- 3.2.10 The progress made with clearing the 64 houses in the Bottling Wood Unhealthy Area is documented in the minutes of several meetings throughout 1927, and has been summarised in Table 2. The table shows that 62 of the 64 houses were vacated between June and December 1927, and 41 of these were

demolished. Given that H Leather of Sutton Mill Farm had been recommended as a tenant for new housing in January of 1927 (A2/23/6 1927-28, 408-9), it seems likely that Sutton Mill Farm was amongst the buildings vacated and possibly also demolished in this year.

Date / (ref)	Houses vacated	Houses still occupied	Houses demolished	Houses being demolished
13th June 1927 / (A2/23/5 1926-27, 1151)	34	29	-	7
7th July 1927 / (A2/23/5 1926-27, 1308)	43	21	7	5
6th August 1927 / (A2/23/5 1926-27, 1515)	59	5	11	7
12th September 1927 / (A2/23/5 1926-27, 1554)	61	3	30	7
10th October 1927 / (A2/23/5 1926-27, 1692)	62	2	31	10
15th November 1927 / (A2/23/6 1927-28, 52)	62	2	38	4
12th December 1927 / (A2/23/6 1927-28, 178)	62	2	41	1

Table 2: Summary of progress made on the clearing of the Bottling Wood Unhealthy Area during 1927

- 3.2.11 A report regarding the new houses in Bottling Wood was made to the committee on the 30th August 1927, following a visit to inspect 93 houses on the new site (A2/23/5 1926-27, 1518). A subsequent report, dated 11th June 1928 (A2/23/6 1927-28, 1093), provides details of the compensation to be paid to owners in respect of their interests in lands and premises (Plate 5).
- 3.2.12 The second entry on the list of those to be compensated (Plate 5) is Mr John T Leather, who owned five houses at Sutton Mill Common in Bottling Wood. It is assumed that there is a connection between John T Leather and H Leather, listed as a tenant prepared to move out of his property in 1927 (A2/23/6 1927-28, 408-9). It should be noted that the plan referred to here no longer exists.
- 3.2.13 On the 8th April 1929 it was reported that the total amount required for purchase money and compensation in connection with the Bottling Wood Improvement Scheme was £5,850 (A2/23/6 1929-30, 878-9). It should be noted that some 'old material' from the demolished buildings was being sold. The details of this are shown in Plate 6:
- 3.2.14 On the 8th July 1929, it was reported that a portion of the Bottling Wood Improvement Scheme Area was to be laid out as an open space, and as such should be transferred to the Markets and Parks Committee. This work was to be carried out under an Unemployment Committee Grants scheme, to create work for the locally unemployed (A2/23/6 1929-30, 1353). In the minutes of

the Markets and Parks Committee for the 10th December 1929 (A2/27/3 1929-32, 212), it was reported that the area of open space at Bottling Wood, now referred to as Bottling Wood Slope, was to be laid out as a small park. A brief report was made on the 5th June 1930 to say that this work had commenced (A2/27/3 1929-32, 1320).

- 3.2.15 A report of the Insanitary Houses and Conversions Committee made on 13th November 1933 notes that a small area of cleared land was purchased by the committee, but had not been used in the Bottling Wood Improvement Scheme, as it was considered to be too low-lying to be included in the Bottling Wood Slope park area. The report goes on to explain that this was the land of Sutton Mill and Hermitage Farm (to the south-west of Sutton Mill), and it was to be held by the Estates Committee until the Markets and Parks Committee decided to appropriate the land (A2/23/8 1933-34, 37).

3.3 PHOTOGRAPHIC SOURCES

- 3.3.1 Wigan Archives Service holds three photographs of Sutton Mill (Plates 4, 5 and 6). A later note has been made on the back of photograph 671311/2 (Plate 5), which reads 'The old corn mill Coppull Lane, Cooper Photo'. No date is given for the photograph, although the image was reproduced in the *Wigan Observer* in 1958 (W/O 04.07.1958 – ix p.287), with the caption: 'Here is the old corn mill which stood on the bank of the River Douglas at the foot of Coppull Lane off Wigan Lane, Wigan. The buildings along with much of the adjacent property were demolished many years ago. The farm of which the corn mill formed part was last tenanted by Mr Leather. The story goes that there was a water wheel at the corn mill powered by the current of the River Douglas. This picture was taken about half a century ago'.



Plate 4: Sutton Mill in c 1908 (671311/2)

- 3.3.2 The photographs show that the principal structure of the corn mill comprised a double-pitched gable building, seemingly of brick construction with slate roofing. Conversely, the adjacent building, which appears to have been a dwelling house, is of stone construction. Another building is visible to the west, abutting the main part of the corn mill, although detail is obscured. The photographs do not provide any evidence for the waterwheel or associated water-management features, suggesting that the wheel was housed internally, and the leat was at a lower level to the surrounding ground surface. A subsequent photograph (270/34; Plate 6) also has a note written on the back, which reads: 'old corn mill Coppull Lane c 1930'. This photo is of particular interest as it shows the main element of the corn mill to have been partially demolished, although the dwelling survives extant. This suggests that the photograph was taken in c 1927, providing good evidence for the date of demolition.



Plate 5: Sutton Mill c 1908 (W156 188/24)



Plate 6: Sutton Mill c 1927 (270/34)

4. WATCHING BRIEF

4.1 INTRODUCTION

- 4.1.1 A watching brief was maintained during the excavation of 16 test pits and four trial trenches across the study area for geo-technical purposes (Fig 2). The test pits along the western side of the site (Test Pits 101 to 108) generally proved to be archaeologically sterile. However, excavation of the test pits (Test Pits 109 to 114) and trial trenches (AD 1, 2 and 3) on the eastern side of the river exposed structural remains of probable late eighteenth- or nineteenth-century date. The position of some of the exposed remains corresponds with buildings depicted on the *Area of the Borough of Wigan* plan of 1851, and the 1893 Ordnance Survey map (Figs 3 and 4), although the remains exposed in Trench AD 2 were possibly associated with an entrance to a mine that is not depicted clearly on historical mapping; mining activity in Bottling Wood is represented on the 1849 Ordnance Survey map, which shows several coal pits in proximity to the present study area. Only those test pits and trenches containing archaeological remains are described below; summary details of the other test pits is presented in *Appendix 2*.
- 4.1.2 The test pits and trial trenches along the eastern side of the river were accessed along a track within Bottling Wood. This track formerly provided access to the Bottling Wood properties shown on historical mapping, but since the clearance of houses in the area during the 1920s, the track has become overgrown. A series of brick walls forming a structure (Building **104**) associated with one of the demolished properties was exposed in the northern part of the existing track. These are described in *Section 4.4* below.



Plate 7: View of the track through Bottling Wood, looking south

4.2 TEST PIT RESULTS

- 4.2.1 **Test Pit 111:** this test was placed at the north-eastern boundary of the study area on the eastern side of the river. No remains of archaeological interest were identified in the test pit, although the foundations of a north/south-aligned stone wall (**101**) was exposed immediately below the modern ground surface at a distance of 4m to the west (Plate 8). The wall possibly represented a relict boundary, and its position corresponded broadly with a boundary depicted on the Ordnance Survey map of 1893 (Fig 2).



Plate 8: Wall **101**, looking east

- 4.2.2 **Test Pit 112:** this test pit was placed some 25m to the south-west of Test Pit 111 (Fig 2). An east/west-aligned wall (**102**) was exposed immediately below the modern ground surface in the northern part of the test pit, with a north/south-aligned return present along the eastern side of the test pit (Figs 3 and 4). Another wall (**103**) was exposed at a similar depth some 3m to the north-east of the test pit (Fig 6). Wall **103** was aligned north/south, and was one brick skin wide. All of the exposed walls comprised hand-made brick (each measuring 240mm x 120mm by 90mm) bonded with lime mortar, typical of late eighteenth- and early nineteenth-century construction.
- 4.2.3 **Test Pit 115:** this test pit was placed in the southern part of the area, and measured 2m²; it was excavated by machine, and was intended to further expose remains identified in AD 2 (Section 4.3.4 below). An east/west-aligned stone wall (**107**), measuring 0.3m wide, was exposed across the northern part of the test pit (Plate 9). This wall may have been associated with the structure identified in AD 2, although firm evidence is lacking. The western end of the wall was abutted by a north/south-aligned brick wall (**108**).



Plate 9: Test Pit 115 looking north, showing fragment of stone wall 107

4.3 TRIAL TRENCH RESULTS

- 4.3.1 **AD 1:** this shallow trench was excavated into the bank of the natural slope along the eastern boundary of the study area at the foot of the cliff face, and aimed to establish the location of a mine entrance. The topsoil in the trench was up to 1m thick, and sealed a dump of bricks and rubble. This material had seemingly been discarded from the top of the rock face during clearance for twentieth-century construction. No firm evidence for the mine entrance was identified.
- 4.3.2 The earliest feature identified in the trench comprised a north/south-aligned drain (**109**), which had been cut into the natural yellow clay geology (**110**), and was situated less than 0.5m to the east of the cliff face. The drain comprised two parallel walls of hand-made bricks (each measuring 250mm x 130mm x 80mm) bonded with lime-based mortar, each wall being one brick-skin wide and surviving to a height of two courses high. The channel between the two walls was lined with slate. The nature of the components used in the build of the drain are indicative of a late eighteenth- or early nineteenth-century date for construction, whilst its location suggests that it may have serviced buildings depicted in the vicinity on historical mapping.
- 4.3.3 A semi-circular cut (**III**) into the rock face along the northern side of the test pit possibly represented mining activity. Feature **III** measured 1.6m high and 0.8m wide, and was cut into a seam of shale and mudstone. No diagnostic evidence of workings around the edge of the cut, such as pick marks, were identified.



Plate 10: View of cut **III**, facing east

4.3.4 **AD 2:** this east/west-aligned trench measured 2.7m long and 2.3m wide, and was excavated to a maximum depth of 1.6m; the natural geology was not exposed in the trench due to the presence of archaeological features, which were left *in-situ*. The earliest remains encountered included two brick walls (**113** and **114**) and part of a brick floor (**112**), which seemingly represented elements of a single structure that had been built against the cliff face (Fig 4). The position of the structure corresponded with a structure depicted on the Ordnance Survey map of 1893. The structural remains were overlain by a 1m thick band of yellow clay mixed with demolition debris, which was sealed by the topsoil horizon (Plate 11).



Plate 11: AD 2; showing exposed structural remains

4.3.5 The structure comprised a north/south-aligned wall (**114**) of mixed stone and brick construction, which measuring 0.20m wide and was exposed to a depth of three courses in the eastern part of the trench. The bricks were all hand made, and were bonded with a lime-based mortar, suggesting a late eighteenth- or nineteenth-century date for construction. The southern end of the wall was keyed into an east/west-aligned wall (**113**) of the same width, and of similar construction. The western end of wall **113** was seemingly marked by a stone block (**115**), which may have represented the foundation of a doorway (Plate 11). The stone block was abutted by the remnants of an evenly laid stone-flagged floor (**112**), which survived intact for a distance of 0.8m² across the western part of the trench, and seemingly continued beyond the limit of excavation at the northern side of the trench (Fig 5). It seems possible that the remains may have been part of the mine, although it is unclear whether this afforded access to a mine or a standing structure built against the rock face.

4.3.6 **AD 3:** this trench measured 2m², and was excavated to a maximum depth of 2.5m against the rock face (Plate 12). No firm evidence for a mine entrance was identified, although the remains of two walls were identified in the northern (**116**) and southern (**117**) sides of the trench. The simple stratigraphic sequence overlying walls **116** and **117** comprised a 1.6m thick band of yellow clay, which was sealed by a layer of topsoil measuring less than 0.10m thick.



Plate 12: AD 3; view of wall **116**, facing north-east

4.3.7 Wall **116** was aligned east/west at a distance of 1m from the cliff face, and was cut into the natural yellow clay geology. Wall **116** was composed of machine-pressed red bricks, which were bordered at the eastern end by a thin stone slab, perhaps representing the foundation of a threshold. The bonding material of the bricks and stone slab comprised light red cement based mortar, indicative of a construction date no earlier than the late nineteenth century.

- 4.3.8 Wall **117** was exposed in the north-facing section of the trench, and comprised fragmentary remains of loosely stacked stone blocks that survived to a maximum height of 1m. The wall appeared to be aligned north/south across the trench, parallel and 0.9m to the south of wall **116** (Fig 6). The surviving stone blocks were situated 1m to the west of the cliff face, and had been cut into the natural yellow clay geology.
- 4.3.9 **AD 4**: the trench measured 2m², and was placed within the central part of the access track, south of Test Pit 112 (Figs 3 and 4). It was excavated to a maximum depth of 1m through a thin layer of topsoil and dense rubble, onto a surface of a bricks (**118**). Surface **118** was seemingly aligned north/south across the trench, measured at least 0.60m wide, and was composed entirely of hand-made bricks (Plate 13). The surface was not excavated.



*Plate 13: AD 4; view of brick surface **118**, facing north*

4.4 BUILDING 104

- 4.4.1 The remains of a brick structure were exposed immediately beneath the modern ground surface near Test Pits 112 and 113 (Fig 6). The structure comprised a series of single-skin wide (0.26m), north/south-aligned brick walls (**105**, **106**, **119**, and **120**) of varying lengths, which were keyed into a 11m long east/west-aligned wall (**102**) of a similar thickness (Plate 14). Wall **102** abutted a two-skin wide (0.40m) wall (**121**), which represented the external wall of the structure. A short, east/west-aligned wall (**122**) was keyed into walls **120** and **121**, forming a small room that measured 3m x 2.7m. The component bricks of all the exposed walls were mostly hand-made, although some machine-pressed variants were noted. All bricks were bonded with a lime-based mortar. No remains of an internal floor were exposed, although excavation did not proceed beneath the upper surface of the walls.

- 4.4.2 The position of the building corresponds with a structure shown on the 1893 Ordnance Survey map, depicted as a row of square-shaped units. The building is absent from the Ordnance Survey map of 1849, indicating that its construction date was in the second half of the nineteenth century.



Plate 14: Part of building 104, facing west

5. EVALUATION

5.1 INTRODUCTION

- 5.1.1 In total, five trenches of varying sizes were excavated across the site (Fig 2). These were targeted on the footprint of Sutton Mill and associated cottages, and were intended to assess the presence or absence of buried remains pertaining to the former mill.

5.2 TRENCH 1

- 5.2.1 Trench 1 was aligned north-west/south-east along the footprint of Sutton Mill and the adjacent mill cottage, and was excavated for a length of 30m (Plate 15). The earliest deposit exposed was a light brown silty-clay, seemingly representing the natural geology, which was exposed at a depth in excess of 2m in a machine-excavated sondage. However, this deposit contained fragments of bricks, indicating that it had been sustained some disturbance. It was overlain by a series of deposits that all contained stone and brick rubble, which appeared to represent made ground derived from the demolition of the building. Several fragments of dressed stone were revealed in the north-western part of the trench, possibly representing elements of the demolished mill. However, none of these fragments were *in-situ*, and there was no indication for any surviving structural remains within the trench. The demolition material was sealed by a 0.4m thick deposit of orange sandy-clay, which incorporated fragments of tarmac and other modern inclusions. This was sealed by a 0.2m thick layer of topsoil.



Plate 15: General view of Trench 1, facing north-west

5.3 TRENCH 2

- 5.3.1 Trench 2 was aligned north east/south west across the width of Sutton Mill, and was excavated to a length of 20m (Fig 2). It was excavated initially to a maximum depth of 2.5m, although the natural geology was not encountered. The earliest deposit excavated was a brown silty-clay, which contained numerous inclusions of stone and brick fragments; it is most likely that this deposit represent material derived from the demolition of the mill in the 1920s. This layer was sealed by a 0.2m thick horizon of orange clay, and a 0.4m thick deposit of mid-brown-orange clay, both again containing fragments of brick rubble. The topsoil was the same as that excavated in Trench 1. No structural remains of the mill were exposed in the trench.



Plate 16: General view of Trench 2, facing south-west

5.4 TRENCH 3

- 5.4.1 Trench 3 was placed to the north-east of Trench 1 and Trench 2, and was aligned north-west/south-east across the line of the headrace to the mill. The trench was excavated for a length of 17m, and to a maximum depth of 2.3m. No firm evidence for the headrace was identified, although several large fragments of sandstone within a matrix of yellowish-red clay were exposed at the base of the excavated trench. The sandstone did not form a coherent structure, although the possibility that it represented the vestiges of the headrace cannot be discounted entirely. However, there was no indication of any organic or waterlogged deposits that would usually be associated with a headrace channel.

- 5.4.2 The overlying deposits comprised a thick layer of compacted grey clay, containing fragments of tarmac and rubble inclusions, and a 0.2m thick deposit of mid-brown silty-clay with brick and stone inclusions, again indicative of modern demolition material. The upper horizon comprised a 0.3m thick deposit of topsoil (Plate 17).



Plate 17: Trench 3, south-west-facing section

5.5 TRENCH 4

- 5.5.1 Trench 4 was placed to the south-west of the mill, and was aligned north-north-east/south-south-west along the footprint of a row of cottages shown on the Ordnance Survey map of 1849. The trench was excavated to a length of 20m, and to a maximum depth of 2.4m in several machine-excavated sondages placed at intervals along the trench (Plate 18). The natural geology was exposed at the base of these sondages, and was overlain by mixed deposits of demolition material. This material contained fragments of brick, tarmac and concrete, indicative of modern deposition. No structural remains survived in the trench, demonstrating that the former cottages had been destroyed entirely, presumably during the documented clearance of the late 1920s. The uppermost deposit exposed in the trench was the topsoil, which had an average depth of 0.2m.



Plate 18: Trench 4; general shot of trench, facing south south-west

5.6 TRENCH 5

- 5.6.1 Trench 5 was aligned north-north-west/south-south-east, and was placed across the footprint of a detached building depicted on the 1851 plan. The trench was excavated to a length of 21m, and to a maximum depth of 2m (Plate 19). The natural geology was exposed in the base of the excavated trench, and was overlain by a thin layer of silty-clay. This was in turn overlain a deposit of brick rubble in an orange clay matrix, and a deposit of compacted stone and brick rubble. The uppermost horizon comprised a 0.2m thick deposit of topsoil.



Plate 19: The southern end of Trench 5

6. FINDS

6.1 INTRODUCTION

- 6.1.1 In total, 29 fragments of artefacts were recovered from essentially unstratified deposits across the site. These included fragments of pottery (10), glass bottles and vessel (5), ceramic building material, (5) glazed wall tile (5), a copper kettle, and a coin, which collectively generally date between the eighteenth and twentieth centuries. A summary catalogue is presented as *Appendix 4*.

6.2 POTTERY

- 6.2.1 The bulk of the small pottery assemblage was dominated by eighteenth- and nineteenth-century tablewares, including transfer-printed wares, a lustre ware teapot, and a creamware bowl. These were supplemented by occasional sherds of utilitarian black-glazed red earthenware, and Nottingham-type stoneware, which have a similar eighteenth- to nineteenth century date range.

6.3 GLASS

- 6.3.1 The glass assemblage comprised a homogeneous group of late nineteenth- and early twentieth-century storage vessels, mainly mineral water bottles. Many of the fragments are from embossed machine-blown types. Two of the bottles had the typical constricted neck of Codd bottles. The latter, patented in 1870, were out of use in Britain by *c* 1935 (Talbot 1974), and provide a broad date range for most of the vessel glass from the site.

6.4 CERAMIC BUILDING MATERIAL

- 6.4.1 This group included a single, hand-made, wire-cut brick of possible eighteenth-century date, recovered from demolition material in Trench 1. In addition, several small brick or tile fragments had a similar date, although these were too small to ascribe an accurate date with confidence.

6.5 GLAZED WALL TILE

- 6.5.1 In total, three fragments of glazed tile were recovered from demolition deposits in the vicinity of the mill. These generally dated to the twentieth century, and had little intrinsic value for dating the site.

6.6 COPPER ALLOY

- 6.6.1 A single worn Victorian penny recovered from the east side of the River Douglas during the watching brief possibly derived from the former Bottling Wood properties. In addition, a broken copper kettle recovered from Trench 1, was possibly manufactured in the nineteenth century.

6.7 CONCLUSION

- 6.7.1 The evaluation produced only a few artefacts and, given that these were derived entirely from recent demolition deposits, are of little archaeological interest.

7. IMPACT AND MITIGATION

7.1 IMPACT

- 7.1.1 The test pits and trial trenches excavated during the geo-technical site investigations did not provide any evidence for archaeological remains of Sutton Mill or associated structures on the western side of the River Douglas. This was reinforced by the results obtained from the archaeological evaluation, which have demonstrated that the foundations of Sutton Mill were destroyed entirely during the twentieth century. It thus seems unlikely that the development works associated with the proposed scheme of flood defence improvements will have any impact on the archaeological resource on the western side of the river.
- 7.1.2 Conversely, buried remains of buildings situated on the eastern side of the River Douglas provided evidence for a community that probably co-existed with the mill, at least during the late eighteenth and nineteenth centuries, and are considered to be of archaeological interest. Some evidence for mining activity was also recovered from the watching brief, although the character, extent and date of this activity is unclear. These archaeological remains, moreover, were exposed immediately beneath the modern ground surface. Whilst the eastern side of the river lies beyond the focus of the development works associated with the proposed scheme, any earth-moving works in this area are likely to have a substantial impact on the buried remains, involving their damage or destruction. An appropriate scheme of further archaeological investigation will therefore be required to allow a detailed record of the buried structures to be compiled to mitigate their ultimate loss.

7.2 MITIGATION

- 7.2.1 The precise scope of a mitigation strategy will need to be devised in consultation with the County Archaeologist for Greater Manchester. In broad terms, however, given the shallow depth of the remains, their effective recording could be achieved through a programme of 'strip and record'. This would involve the removal of topsoil to expose the buried remains, followed by manual cleaning and recording of the remains.
- 7.2.2 The area of archaeological interest incorporates a strip of land measuring up to 72m long and 32m wide, and is targeted on the former workers' houses shown on historical mapping (Fig 7). Any ground disturbance that will be generated within this area by the development should be subject to further archaeological investigation.

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APPENDIX 1: PROJECT DESIGN

**Oxford
Archaeology
North**

January 2009

SUTTON MILL, COPPULL LANE, WIGAN



REVISED ARCHAEOLOGICAL EVALUATION PROJECT DESIGN

Proposals

The following revised Project Design is offered in response to a request by Amanda Stobbs of AXIS, acting on behalf of the Environment Agency, for a scheme of archaeological evaluation at Sutton Mill, Wigan.

1. INTRODUCTION

1.1 BACKGROUND

- 1.1.1 AXIS, acting on behalf of the Environment Agency, is preparing a scheme of works as part of the flood defences of the River Douglas. An element of this scheme allows for the construction of a dam and associated infrastructure on the site of a former corn mill, known as Sutton Mill, near Wigan, Greater Manchester. The construction of the dam will necessitate deep earth-moving works, which will have a negative impact on any sub-surface remains of the mill and associated cottages. In order to establish the extent of any buried remains of archaeological significance that may be affected by the proposed scheme of works, Oxford Archaeology North (OA North) was requested by AXIS to prepare an appropriate programme of archaeological investigation.
- 1.1.2 The presence of the mill was noted in an archaeological desk-based assessment that was carried out on behalf of AXIS in 2005 by the University of Manchester (UMAU 2005). Research carried out subsequently concluded that a water-powered mill had occupied the site since at least *c* 1712, with some potential for the mill to have originated in the medieval period (OA North 2008). More recently, a geophysical survey of the site was carried out, although this was unable to define clearly the footprint of Sutton Mill or the precise line of the associated mill race. It was concluded that the lack of coherent responses from the geophysical survey was due to a combination of the construction materials used within the fabric of the mill, and the redistribution of structural material as part of the post-demolition landscaping (GSB 2008). The nature of the buried remains of the mill that survive *in-situ* can thus only be established by intrusive investigation which, in the first instance, will comprise an archaeological evaluation.
- 1.1.3 It is envisaged that the results obtained from the evaluation will inform the final design of the proposed dam, and will allow an appropriate scheme of archaeological works to be devised that will mitigate the ultimate loss of any buried remains of significance.

1.2 LOCATION

- 1.2.3 The site of Sutton Mill (NGR SD 5878 0665) lies approximately 1km to the north-east of Wigan town centre, occupying land on the north side of Coppull Lane, and immediately west of the River Douglas. The mill was demolished completely in the late 1920s, and the site has not been developed since. The area currently supports improved grassland, and is used for recreational purposes.
- 1.2.4 The solid geology of the area comprises productive coal measures, with Bunter sandstone and marls to the south (Ordnance Survey 1951). The overlying drift geology consists of glacial and post-glacial tills, with fluvial deposits of gravel along the course of the River Douglas (Countryside Commission 1998, 128).

1.3 HISTORICAL BACKGROUND

- 1.3.1 The origins of Sutton Mill are unclear, and whilst the possibility that the site was occupied by a fulling mill during the medieval period cannot be discounted, firm evidence is lacking. Sutton Mill is first depicted on a plan of c 1712, whilst later, more detailed mapping, shows the mill as a rectangular structure with two additional out buildings, and an associated weir across the River Douglas.
- 1.3.2 References to Sutton Mill in nineteenth-century trade directories occur from 1828 onwards, and include entries for Thomas Charlson, who was the leading corn dealer in Wigan at this time and, by 1889, owned at least three mills in the area. By 1909, however, the mill had been converted for use as a farm. In the late 1920s, it formed part of the Bottling Wood Unhealthy Area, outlined for clearance by the Insanitary Houses and Conversions Committee of Wigan Borough Council. In total, 64 properties were demolished as part of this clearance scheme, including Sutton Mill, which was demolished in 1927-8. The site of the mill was held subsequently by the Estates Committee, until the Markets and Parks Committee decided to appropriate the land. The site of Sutton Mill remains open ground, used for recreational purposes.

2 OBJECTIVES

- 2.1 The main research aim of the evaluation will be to assess the presence or absence of any archaeological remains across the site, and to ensure the long-term preservation of the archaeological information by the production and deposition of a report and an ordered project archive.
- 2.2 The specific objectives of the project may be summarised as follows:
- to expose and determine the presence, character, and level of survival of the external walls of Sutton Mill and the adjacent manager's cottage;
 - to establish any evidence for phasing, or indications of a medieval predecessor to the documented mill, and determine or confirm the approximate date or date range of any remains;
 - to establish the presence, character, and level of survival of the mill's power features, and to establish whether the mill was powered by one or two waterwheels;
 - to expose and determine the level of survival of floors within the mill;
 - to establish the presence, character, and level of survival of the cottages situated a short distance to the south-west of the mill;
 - to determine whether further archaeological investigation in advance of development work would be appropriate.
- 2.3 The required stages to achieve these ends are as follows:

- 2.4 **Evaluation:** the primary aim of the evaluation trenching is to determine the character, extent, integrity and, where possible, the date of the surviving archaeological resource within the extent of the study area. The evaluation is also intended to establish the extent of any further work, if any, which will be required in advance of the groundworks associated with the construction of the proposed dam.
- 2.5 It is proposed that the site is evaluated in the first instance via the excavation of five targeted trenches (Figure 1). Excavation will entail mechanical excavation of overburden to the upper level of sensitive/significant archaeological structures or deposits. Thereafter, all excavation will proceed stratigraphically by hand. All interested parties will be invited to view the excavated trenches once completed, and a decision will be reached as to the requirement for further investigation.
- 2.6 **Report and Archive:** a report will be produced for the Client within four weeks of completion of the fieldwork. The report will assess the significance of the data generated by the evaluation trenching within a local and regional context.
- 2.7 An archive for the project to the specification provided in *Appendices 3 and 6* of English Heritage's *Management of Archaeological Projects, 2nd edition (MAP 2)*, and in accordance with the *Guidelines for the Preparation of Excavation Archives for Long-Term Storage* (Walker 1990), will be prepared during the evaluation programme, and supplemented as necessary during any phase of analysis. The archive will be prepared to professional standards for deposition in an appropriate repository.

3 METHOD STATEMENT

3.1 INTRODUCTION

- 3.1.1 The area required for the proposed scheme of works on the west bank of the River Douglas will comprise an area extending approximately 200m to the north of Coppull Lane, and 125m from the river. The primary area of interest lies in the footprint of the former mill and associated cottage, which will be investigated via two trenches. In addition, trenches will also be placed across the footprint of former buildings, presumed to be cottages, to the south-west and north-west of the mill, and across the line of the mill's head race. Any significant archaeological remains that do survive *in-situ* could then be targeted for further investigation as a second stage of archaeological investigation. This would be intended to produce a detailed record of any buried remains of the mill and its associated hamlet, to mitigate their ultimate loss during the construction of the proposed dam. In particular, it is considered likely that elements of the mill's water-power system, including waterwheel pit(s), may survive *in-situ*, although this can only be confirmed by intrusive investigation.
- 3.1.2 The site of the former mill and associated cottages lie mostly on open land, although a small part of the study area is colonised by Japanese knotweed. That part of the site containing the knotweed will be treated as a contaminated

area, and all reasonable precautions will be taken to prevent the spread of this invasive species. The knotweed will be removed mechanically to a depth of 1.5m, providing that this does not have a negative impact on any buried archaeological remains. It will then be relocated to an adjacent temporary waste management area/stockpile, which will be lined with a geotextile membrane to prevent rhizomes spreading. Once the mechanical excavator has entered the contaminated area, it will not leave until all of the contaminated material has been relocated. The machine will then be cleaned chemically before being transported away or used elsewhere. Similarly, all staff working within this contaminated area will clean off their footwear and any hand tools used. The knotweed will be returned to the excavated site upon completion of the archaeological work, and buried with the backfilled material.

- 3.1.3 It is envisaged that a small number of trees will have to be removed in advance of development work. In total, five trees lie along the south-eastern edge of the mill cottage, and comprise four poplars and one willow. It is anticipated that these trees would have to be felled in order to expose the entire footprint of the former mill, should it survive. The position of the evaluation trenches, however, has been designed to avoid any impact on the trees,

3.2 EVALUATION TRENCHING

- 3.2.1 The following work programme is submitted in line with the aims and objectives summarised above. The programme of evaluation trenching will establish the presence or absence of any archaeological deposits and, if established, will then test their date, nature, depth and quality of preservation.

- 3.2.2 In the first instance, it is proposed that a total of five evaluation trenches will be excavated across the study area. Trenches will be excavated by a tracked mechanical excavator of appropriate power using a toothless ditching bucket, followed by hand cleaning and recording, with selective excavation to determine depth and character of features and deposits. All arisings from the excavation of the trenches will stockpiled temporarily adjacent to the trenches, and will be backfilled upon completion of the archaeological works. The proposed location of the trenches is shown on Figure 1.

- *Trench 1:* this trench will measure 30m by 2m, and will be excavated along the length of the footprint of the former mill and associated mill cottage. This element of the study area represents the main area of archaeological interest, and is intended to allow those areas that require further investigation to be identified;
- *Trench 2:* will be measure 20m by 2m, and will be placed across the north-western part of the former mill.
- *Trench 3:* will be placed a short distance to the north-east of Trench 1, and will be targeted on the headrace to the mill. The trench will measure 10m by 2m.
- *Trench 4:* will measure 25m by 2m, and will be placed some 11m to the south-west of Trench 1. It will be targeted on the range of buildings shown on mid nineteenth-century mapping, presumed to be workers' cottages;

- *Trench 5:* will be targeted on the detached building shown on mid nineteenth-century mapping, situated some 28m to the north-west of Trench 1. The trench will measure 20m by 2m.
- 3.2.3 **Methods:** prior to excavation, the precise location of each trench will be surveyed, and located according to Ordnance Survey (OS) co-ordinates. All information will be tied in to Ordnance Datum.
- 3.2.4 Excavation of modern overburden/demolition material will be undertaken to the top of the first significant archaeological level by a mechanical excavator of appropriate power, fitted with a toothless ditching bucket. The work will be supervised closely by a suitably experienced archaeologist. Spoil from the excavation will be stored adjacent to the trench, and will be backfilled upon completion of the archaeological works.
- 3.2.5 Machine excavation will then be used to define carefully the extent of any surviving walls, foundations, and other remains. Thereafter, structural remains will be cleaned manually to define their extent, nature, form and, where possible, date. If the excavation is to proceed below a depth of 1.2m, then the trenches will be widened sufficiently to allow the sides to be stepped in or battered back to a safe angle of repose.
- 3.2.6 Any investigation of intact archaeological deposits will attempt not to destroy their integrity, and will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in-situ*.
- 3.2.7 **Recording:** all information identified in the course of the site works will be recorded stratigraphically, using a system adapted from that used by the Centre for Archaeology Service of English Heritage. Results of the evaluation will be recorded on *pro-forma* context sheets, and will be accompanied with sufficient pictorial record (plans, sections and both black and white and colour photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 3.2.8 A full and detailed photographic record of individual contexts will be maintained and similarly general views from standard view points of the overall site at all stages of the evaluation will be generated. Photography will be undertaken using 35mm cameras on archivable black and white print film, and all frames will include a visible, graduated metric scale. Extensive use of digital photography will also be undertaken throughout the course of the fieldwork. Photographs records will be maintained on special photographic *pro-forma* sheets. Accurate large-scale plans and sections will also be produced at an appropriate scale (1:50, 1:20 and 1:10).

- 3.2.9 **Finds policy:** finds recovery and sampling programmes will be in accordance with best practice (following current Institute of Field Archaeologists guidelines) and subject to expert advice in order to minimise deterioration. Finds storage during fieldwork and any site archive preparation will follow professional guidelines (UKIC). The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner and an appropriate recipient museum prior to the work taking place.
- 3.2.10 **Environmental Sampling:** the strategy for palaeo-environmental sampling will be developed on site, in consultation with appropriate specialists, as necessary. The environmental sampling strategy will therefore evolve from a discussion between those specialists and the field team and will be in accordance with current best practice. In broad terms, however, the sampling strategy will be aimed at recovering palaeo-botanical, palaeo-zoological and pedological evidence. It is anticipated that environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). Column samples may be required to establish the changing environment through time, if appropriate sequences are observed. An assessment of any samples taken from the evaluation will be defined as a contingency.
- 3.2.11 **Human remains:** human remains are not expected to be present, but if they are found they will, if possible, be left *in-situ* covered and protected. If removal is necessary, then the relevant Home Office permission will be sought, and the removal of such remains will be carried out with due care and sensitivity as required by the *Burials Act 1857*.
- 3.2.12 Any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996.

3.3 POST-EXCAVATION

- 3.3.1 Post-excavation work will comprise the following:
- checking of drawn and written records during and on completion of fieldwork;
 - production of a stratigraphic matrix of the archaeological deposits and features present on the site, if appropriate;
 - cataloguing of photographic material and labelling of slides, which will be mounted on appropriate hangers;
 - cleaning, marking, bagging and labelling of finds according to the individual deposits from which they were recovered. Any finds requiring specialist treatment and conservation will be sent to an appropriate Conservation Laboratory. Finds will be identified and dated by appropriate specialists;

- assessment of all artefacts, biological samples and soils recovered from the site. Consideration will be given to possible investigative procedures such as pottery residue analysis and glass composition;
- assessment of any technological residues recovered will be undertaken.

3.4 ARCHIVE/REPORT

3.4.1 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the CSMR (the index to the archive and a copy of the report).

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

3.4.3 **Report:** four bound and one unbound copy of a written synthetic report will be submitted to the archaeological curator (GMAU) for comment within four weeks of completion of fieldwork. The report will include

- a title page detailing site address, NGR, author/originating body, client's name and address;
- full content's listing;
- a non-technical summary of the findings of the fieldwork;
- a description of the archaeological background;
- a description of the topography and geology of the study area;
- a description of the methodologies used during the fieldwork;
- a description of the findings of the fieldwork;
- plans of each of the trenches showing the archaeological features exposed;
- an overall phased plan with sections of the excavated archaeological features;
- interpretation of the archaeological features exposed and their context within the surrounding landscape;
- specialist reports on the artefactual/ecofactual/industrial remains from the site;
- appropriate photographs of specific archaeological features;
- a consideration of the importance of the archaeological remains present on the site in local, regional and national terms.

3.5 OTHER MATTERS

- 3.5.1 **Health and Safety:** archaeological staff and visitors will respect Health and Safety provisions and site-specific safety regulations. It is the policy of OA North ('the Employer') to conform fully with the requirements of the Health and Safety at Work Act (1974), and all site procedures will be in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). Attention will also be paid to the requirements of more recent legislation, including the provision and use of Work Equipment Regulations (1992), the Management of Health and Safety at Work Regulations (1992), and the Construction (Design and Management) Regulations (1994).
- 3.5.2 In furtherance of the duty of care imposed by the Health and Safety at Work Act (1974), the Employer shall make available to his employees whatever reasonable facilities are required by particular circumstances, *eg* appropriate protective clothing, safety equipment, rest breaks for specialised tasks, etc.
- 3.5.3 A written risk assessment will be undertaken in advance of project commencement, and copies will be made available on request to all interested parties.
- 3.5.4 **Confidentiality:** the report is designed as a document for the specific use of the Client, for the particular purpose as defined in the project design, and should be treated as such; it is not suitable for publication as an academic report, or otherwise, without amendment or revision. Any requirement to revise or reorder the material for submission or presentation to third parties beyond the project design, or for any other explicit purpose can be fulfilled, but will require separate discussion and funding.
- 3.5.5 **Insurance:** evidence of Public Liability Insurance to the minimum value of £5m, and Professional Indemnity Insurance to the minimum of £2m, will be provided prior to the commencement of the archaeological works.
- 3.5.6 **Project Monitoring:** the aims of monitoring are to ensure that the archaeological works are undertaken within the limits set by the Project Design, and to the satisfaction of the curatorial archaeologist at the Greater Manchester Archaeological Unit (GMAU). The curatorial archaeologist will be given at least five days' notice of when work is due to commence, and will be free to visit the site by prior arrangement with the project director.

4 WORK TIMETABLE

- 4.1 Five working days should be allowed to complete the excavation of the five trenches.
- 4.2 A draft report will be completed within four weeks following completion of the fieldwork, and submitted for comment to the archaeological curator.

APPENDIX 2: WATCHING BRIEF TEST PIT SUMMARY

Test Pit	Trial Trench (AD)	Archaeological horizon	Description
101		Sterile	Loose weathered sandstone bedrock exposed at a depth of 0.45m, overlaid with friable brown topsoil
102		Sterile	Loose weathered sandstone bedrock exposed at a depth of 0.85m, sealed by clay and 0.4m thick topsoil
103		Dump/tumble	Weathered sandstone bedrock exposed at a depth of 0.75m, sealed by topsoil containing brick fragments
104		Sterile	Bedrock exposed at a depth of 0.4m, sealed by loose clay and weathered stone, overlaid by 0.25m thick topsoil
105		Dump/made ground	Weathered clay exposed at a depth of 1.2m, sealed by rubble and brick up to 0.8m thick, sealed by humic topsoil
106		Made ground	Bedrock exposed at a depth of 0.82m sealed by concrete lumps and rubble, overlaid with mid grey sandy clay. Demolition rubble located in close proximity
107		Sterile	Weathered sandstone exposed at a depth of 1.36m, overlaid with yellow sandy clay measuring 1m thick, which in turn was overlaid with light grey silty clay
108		Made ground	Bedrock exposed at a depth of 0.94m, sealed by grey sandy clay containing abundant broken sandstone. Demolition rubble located in close proximity
109		Sterile, although building remains identified within 8m (See <i>Section 4.2</i>)	Yellow-red clay representing a natural geological horizon exposed at a depth of 1.25m. This was overlaid with broken weathered sandstone up to 0.8m in thickness, which was in turn sealed with 0.4m thick topsoil/overburden containing brick rubble within loose brown soil matrix
110		Sterile	Solid sandstone bedrock exposed at a depth of 1m, sealed by dark brown subsoil containing broken sandstone measuring 0.8m thick which was in turn sealed by mid brown-grey topsoil measuring 0.25m thick

111		See Section 4.2	Weathered sandstone mixed with sandy clay, measuring up to 1.3m deep. No topsoil survived.
112		See Section 4.2	Original site of test pit was provisionally located 4m west. The excavation of this pit was hindered by dense rubble intrusion. New site of pit positioned 2m south-east. Pit excavated to a maximum depth of 1.05m onto the surface of sandstone bedrock. This was sealed by mixed yellow clay and sandstone measuring 0.50m thick sealed with loose brown topsoil.
113		See Section 4.2	Weathered sandstone exposed at a depth of 1.05m sealed by demolition rubble
114		Sterile	Sandstone bedrock exposed at a depth of 0.6m, sealed by topsoil and rubble overburden/hill wash
115		See Section 4.2	Located 4m west of AD 2. Loose rubble exposed at a depth of 0.5m, sealed by 0.20m thick topsoil
116		Sterile	Sandstone bedrock exposed at a depth of 1m, sealed by weathered sandstone and topsoil
	AD 1	See Section 4.3	
	AD 2	See Section 4.3	
	AD 3	See Section 4.3	
	AD 4	See Section 4.3	

APPENDIX 3: CONTEXT LIST

Context	Site sub div	Description
101	Test Pit 111	North/south-aligned stone wall
102	Test Pit 112	East/west-aligned brick wall
103	Building 104	North/south-aligned brick wall near Test Pit 112, butting wall 102
104	Building group number	Structure located along the eastern side of the river, close to Test Pits 112 and 113
105	Building 104	North/south-aligned brick wall butting wall 102
106	Building 104	North/south-aligned brick wall butting wall 102
107	Test Pit 115	East/west-aligned stone wall
108	Test Pit 115	North/south-aligned brick wall butting wall 107
109	AD 1	North/south-aligned drain
110	AD 1	Yellow weathered clay
111	AD 1	Semi-circular cut/mine addit into the rock face along the eastern side of the river
112	AD 2	Stone floor butting stone block 115
113	AD 2	East/west-aligned brick wall keyed into wall 114
114	AD 2	North/south-aligned brick wall, northern return of wall 113
115	AD 2	Stone block keyed into the western end of wall 113
116	AD 3	East/west-aligned brick wall across the northern end of the trench
117	AD 3	East/west-aligned stone wall across the southern end of the trench
118	AD 4	North/south-aligned brick wall (one brick thick/partition?)
119	Building 104	North/south-aligned brick wall (one brick thick/partition?) butting wall 102
120	Building 104	North/south-aligned brick wall (one brick thick/partition?) butting wall 102
121	Building 104	North/south-aligned brick wall (external wall) butted by wall 102
122	Building 104	East/west-aligned brick wall butting walls 120 and 121

APPENDIX 4: SUMMARY FINDS CATALOGUE

Context	Site sub-division	Material	Count	Description	Period
Unstratified	Trench 5	Pottery	3	Dark glazed red earthenware (coarse) storage jar	18 th -19 th century
Unstratified	Trench 1	Glass	1	Crystal-cut fragment from a probable vase	19 th -20 th century
Unstratified	Trench 2	Pottery	1	Lustre ware tea-pot lid	19 th century
Unstratified	Trench 2	Pottery	2	Willow patterned blue transfer printed plate	18 th -20 th century
Unstratified	Trench 1	Ceramic Building Material	1	Hand-made dense orange brick	18 th -19 th century
Unstratified	Trench 4	Ceramic	1	Glazed wall tile	20 th century
Unstratified	Trench 4	Ceramic Building Material	4	Brick fragments	19 th -20 th century
Unstratified	Trench 1	Ceramic	4	Glazed wall tile	20 th century
Unstratified	Trench 1	Pottery	2	Creamware bowl, Nottingham type stoneware	18 th -19 th century
Unstratified	AD 1	Copper Alloy	1	Coin; penny	1899
Unstratified	Trench 2	Ceramic	2	Glazed wall tile	20 th century
Unstratified	Trench 2	Pottery	1	Willow patterned blue transfer printed plate	18 th -20 th century
Unstratified	AD 1	Pottery	1	Dark brown glazed red earthenware (coarse)	19 th -20 th century
Unstratified	AD 1	Glass	1	Bottle; embossed with manufacturer Rothwell & Sons, Arkwright Street, Bolton. Firm producing soda water	19 th century
Unstratified	AD 2	Glass	1	Bottle; 'coin operated' manufactured by T & R Smith, a mineral water firm based at Congress Street, Chorley throughout the 19 th century. The company produced soft drinks until 1967,	19 th century

Unstratified	Trench 2	Glass	1	Bottle; embossed with manufacturers marked Rodwell	19 th century?
Unstratified	Trench 1	Glass	1	Clear unlabelled bottle	20 th century?
Unstratified	Trench 1	Copper	1	Kettle	19 th -20 th century

ILLUSTRATIONS

FIGURES

Figure 1: Location map

Figure 2: Test pit and evaluation trench location plan

Figure 3: Test pit and mine addit trial trench location plan superimposed on the Area of the Borough of Wigan map, produced in 1851

Figure 4: Test pit and mine addit trial trench location plan superimposed on the Ordnance Survey map of 1893

Figure 5: AD 2, detailed excavation plan

Figure 6: Building **104**, superimposed on the 1894 Ordnance Survey map

Figure 7: Area of archaeological interest, superimposed onto the 1893 Ordnance Survey map

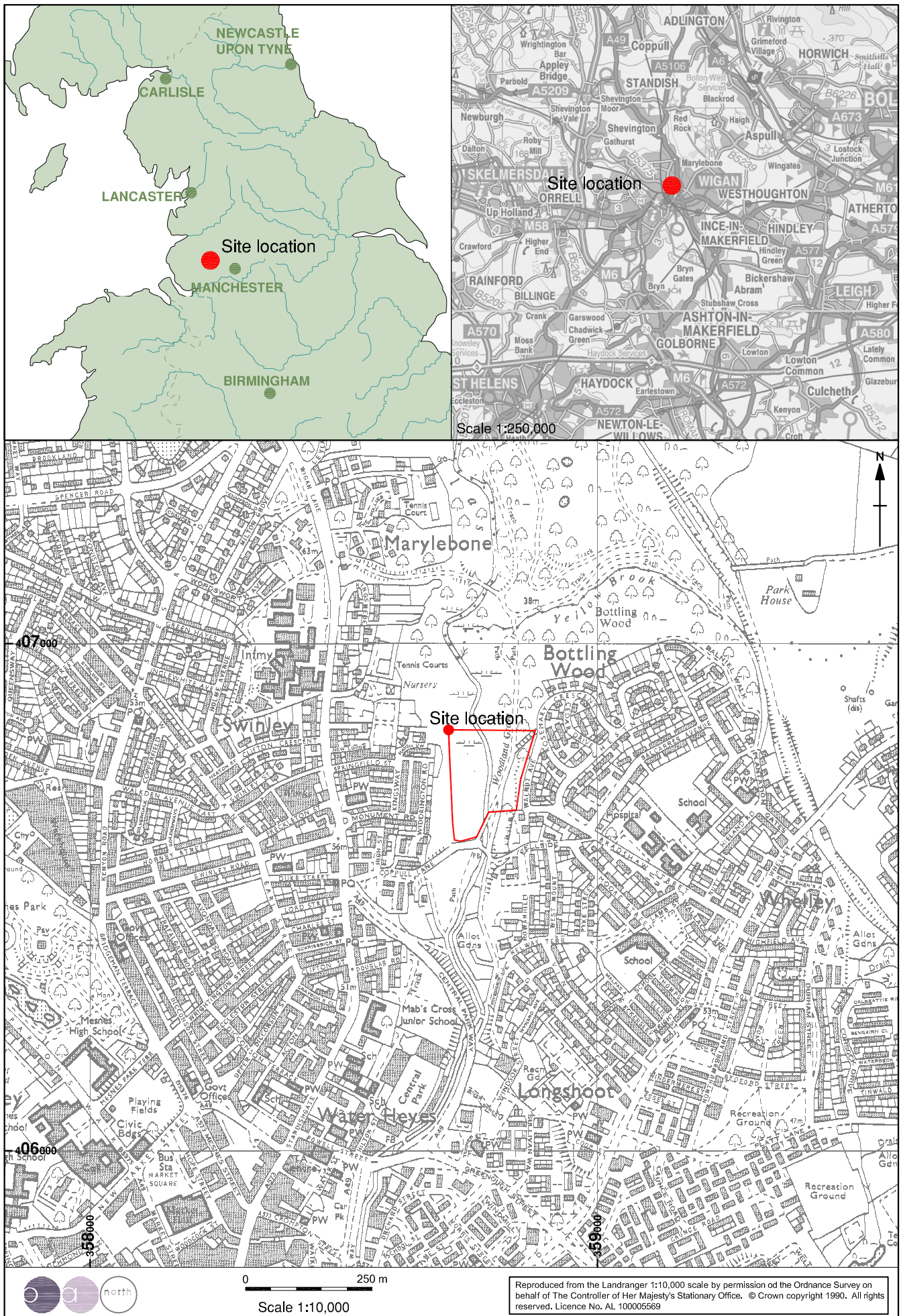


Figure 1: Site Location

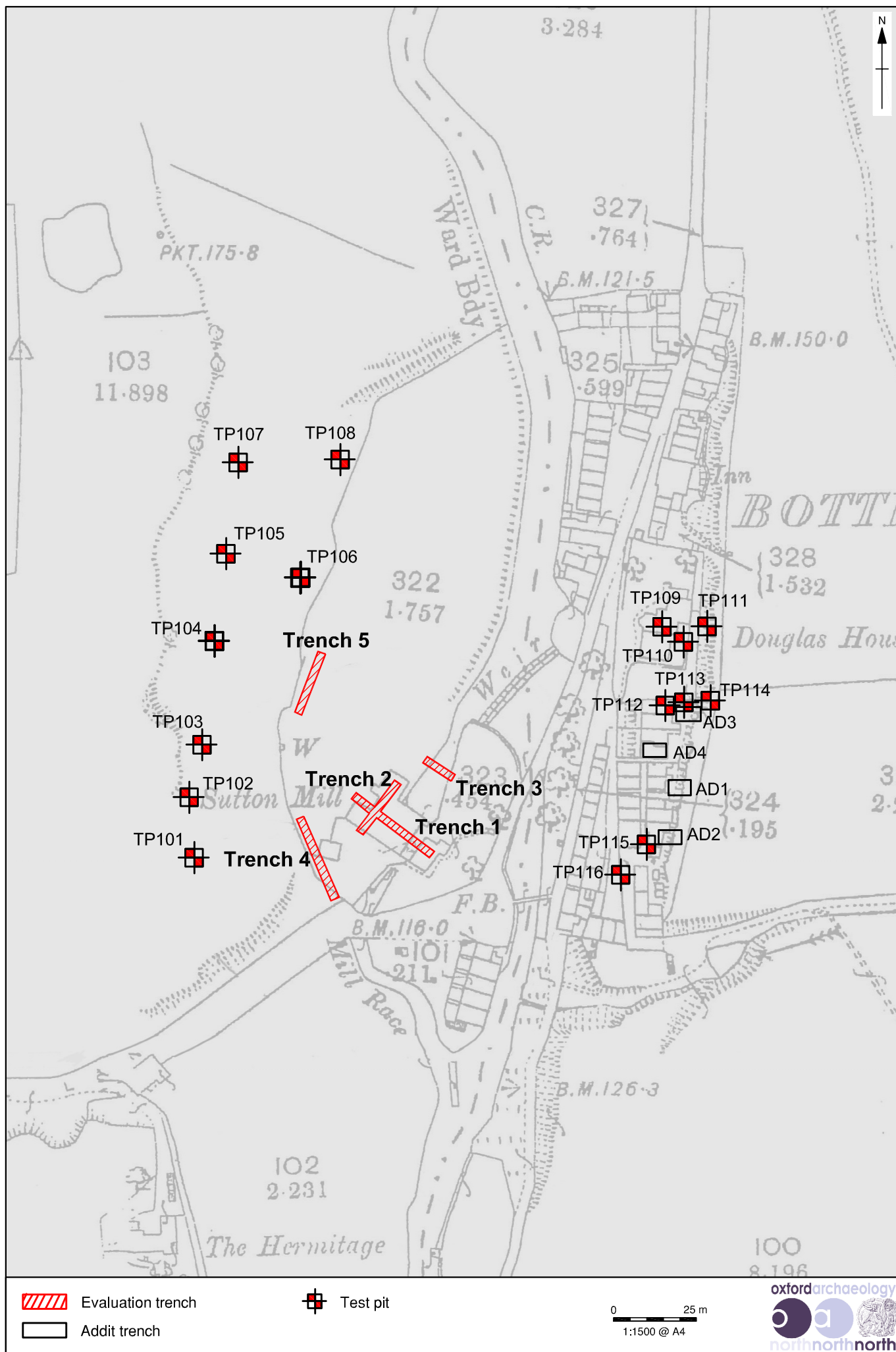


Figure 2: Test pit and trench location plan superimposed onto the 1893 Ordnance Survey map

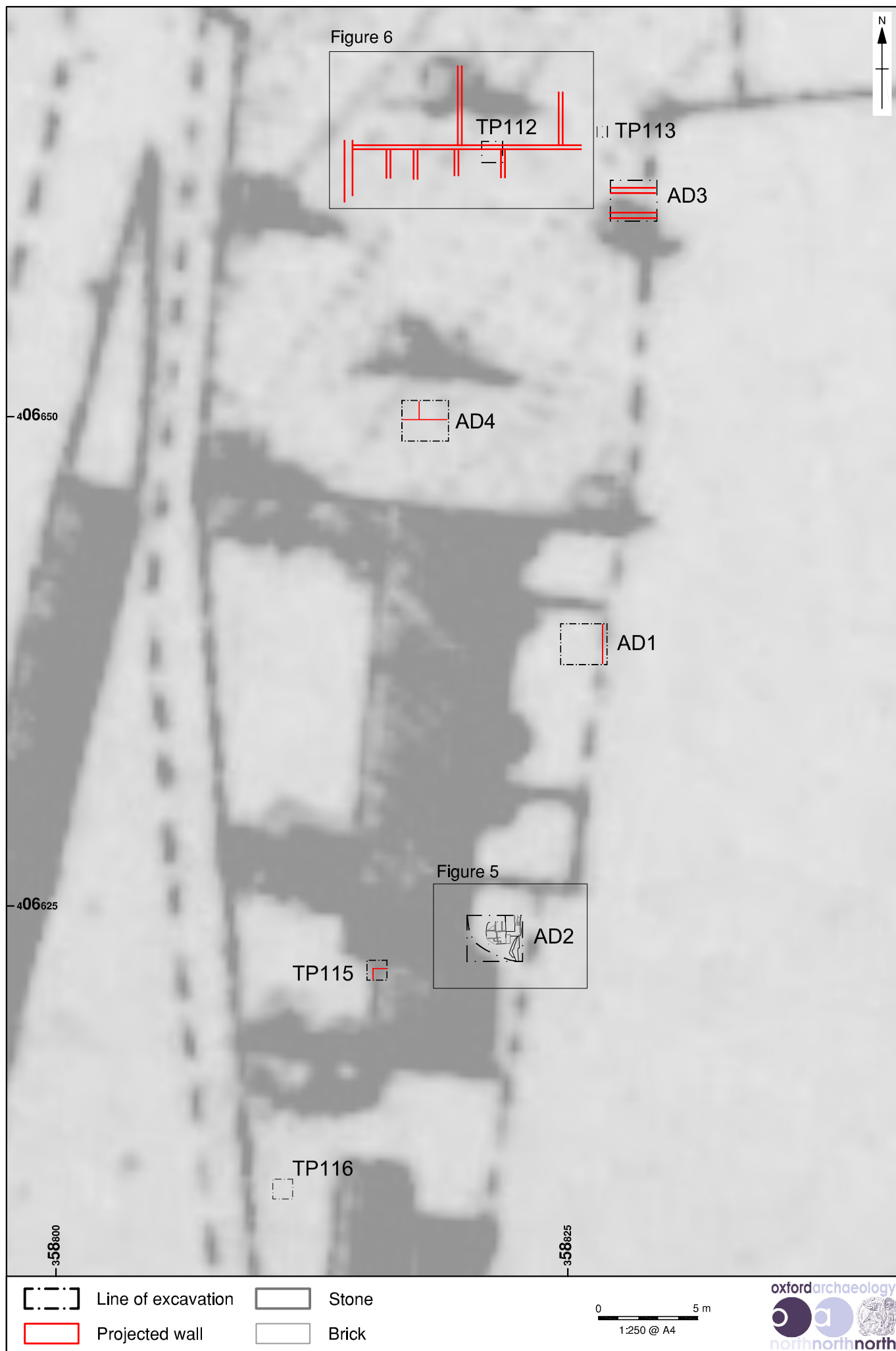


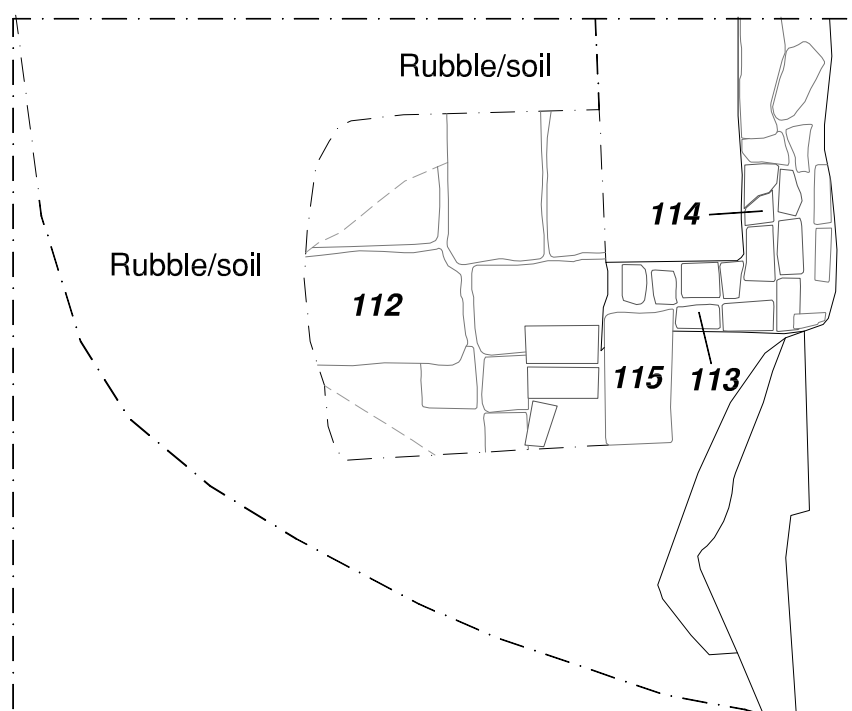
Figure 3: Test pit and additional trench location plan superimposed onto the Map of the Borough of Wigan, produced in 1851



Figure 4: Test pit and additional trench location plan superimposed onto the Ordnance Survey map of 1894



406625



358820

0 0.5 m
1:25 @ A4



Line of excavation



Brick



Stone

0 5 m
1:250 @ A4

Figure 5: AD2, detailed excavation plan

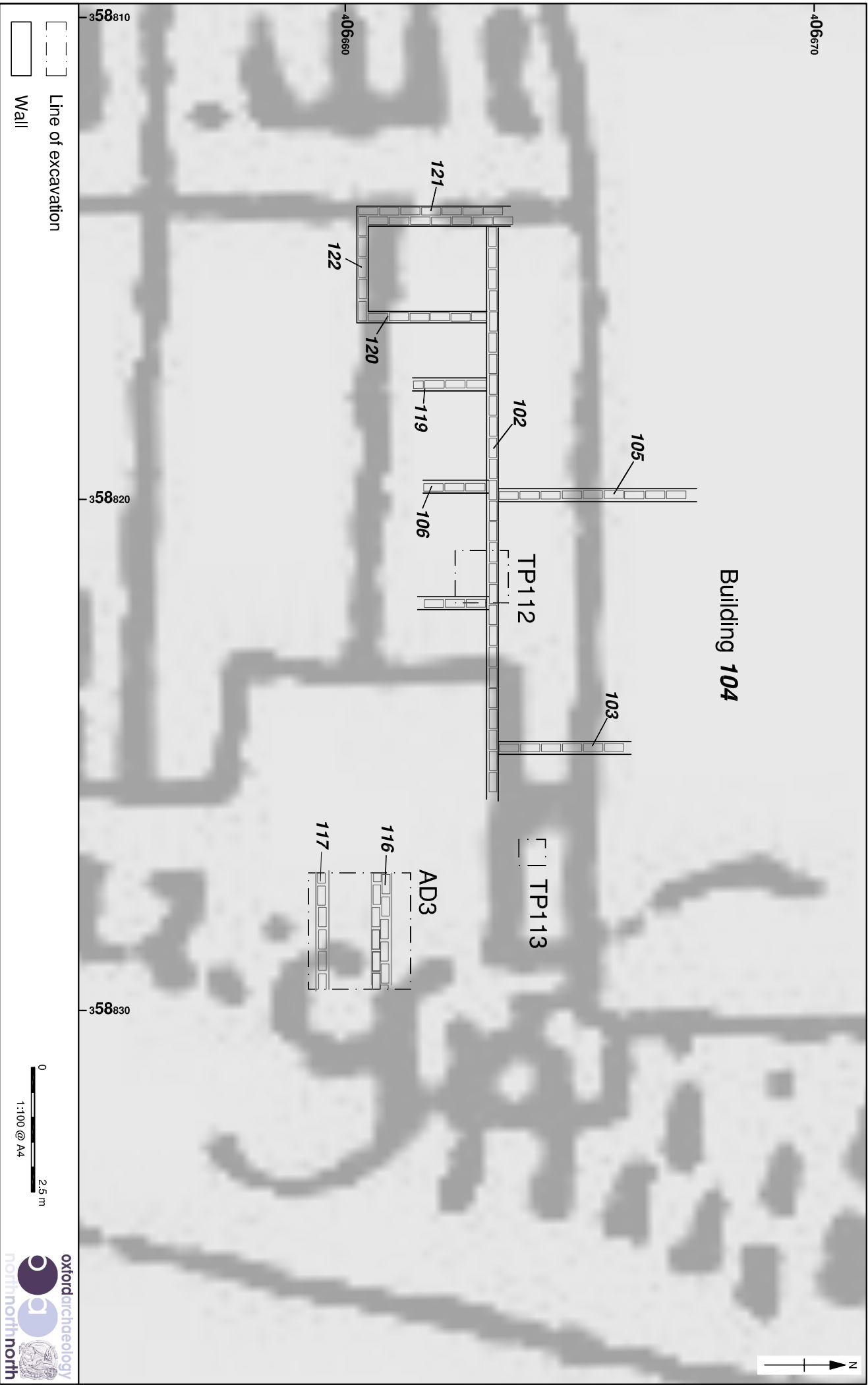


Figure 6: Building **104** superimposed onto the 1893 Ordnance Survey map

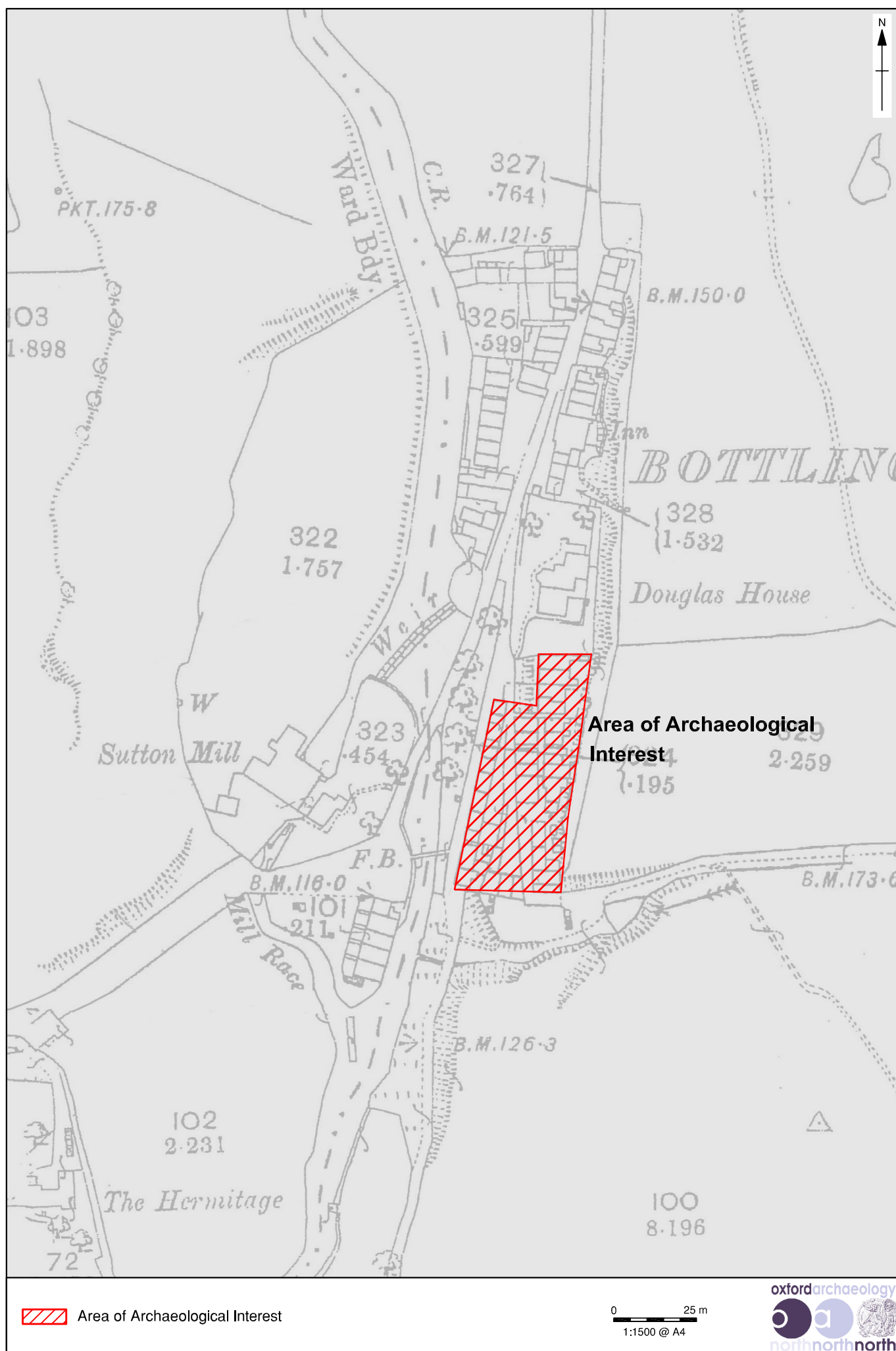


Figure 7: Area of archaeological interest, superimposed onto the 1893 Ordnance Survey map