



**Bottling Wood,
Wigan
Greater
Manchester**

**Archaeological
Investigation**



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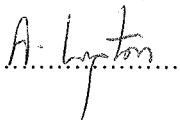
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SUMMARY

In March 2010, 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 Bottling Wood, Wigan (centred on NGR SD 58820 06650). The archaeological investigation was required as part of a scheme of flood defence works that are being carried out by The Environment Agency along the course 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 settlement in Bottling Wood, which developed as an industrial hamlet during the nineteenth century. However, the hamlet formed part of a designated Unhealthy Area that was outlined for clearance in the late 1920s by the Insanitary Houses and Conversions Committee of Wigan Borough Council, and was ultimately demolished in 1927-8.

In 2009, several trial pits were excavated in Bottling Wood for geo-technical purposes associated with the flood alleviation scheme. These excavations were monitored by an archaeological watching brief, which recorded some shallow foundations and the buried remains of floors of several workers' cottages. Following consultation with the County Archaeologist for Greater Manchester, who provides advice to Wigan Council on archaeological matters, it was concluded that these remains were of sufficient archaeological significance to merit a further programme of investigation to mitigate their ultimate loss as part of the proposed construction of the dam. It was recommended that, in the first instance, an informal access track that lay along a terrace cut into the slope of the valley in Bottling Wood should be subject to archaeological 'strip and record' excavation to expose and record any buried remains of the workers' housing in the area.

The excavation was carried out by OA North in March 2010, and an area measuring some 323m² within Bottling Wood was stripped of topsoil and modern overburden. The remains of six structures were exposed, representing several slightly different types of housing. Four major phases of construction were identified, with all the houses having been cut into, or constructed directly on top of the natural sandstone and shale bedrock. The earliest remains comprised the foundations of a sandstone building, which appeared to have been intended as a small workshop, that was perhaps modified subsequently for use as a dwelling. The second phase of construction comprised two brick-built houses, separated from the earliest building by a sandstone-flagged footpath. These two structures were very similar in construction, and appeared to represent a single build. The third phase comprised the construction of another building, divided into two properties, which may be dated on cartographic evidence to between 1851 and 1889-92. The construction of an additional building during the later nineteenth century, which again comprised two, two-roomed properties, represented the final phase of development.

A further watching brief was maintained during construction works that involved earth-moving works immediately to the west of the excavated area, across the footprint of another block of nineteenth-century housing depicted on historical mapping. However, no archaeological remains survived in this part of the site.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Amanda Stobbs of Axis for commissioning and supporting the project on behalf of The Environment Agency. Thanks are also due to Norman Redhead, the County Archaeologist for Greater Manchester, for his advice and guidance, and to Jonathan Corner and Ian Broadhurst of Morrison Construction for logistical support. OA North is also grateful to Greg Colley of Suave UAV Enterprises for taking the aerial photographs from an unmanned aerial vehicle.

The excavation was directed by Christina Robinson, who was assisted by Michal Kempski. The report was prepared by Christina Robinson and Chris Wild, the finds were examined by Seam McPhillips, and the illustrations were compiled by Marie Rowland. The report was edited by Ian Miller, who was also responsible for project management.

The project was funded entirely by The Environment Agency.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 In March 2010, 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 Bottling Wood, Wigan (centred on NGR SD 58820 06650). The archaeological work was required as part of a scheme of flood defence works that are being carried out by The Environment Agency along the course 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 settlement in Bottling Wood, which had been exploited for small-scale mining purposes and was occupied by workers' cottages during the late eighteenth and nineteenth centuries.
- 1.1.2 In January 2009, several trial pits were excavated in Bottling Wood for geotechnical purposes associated with the flood alleviation scheme (OA North 2009a). These excavations were monitored by an archaeological watching brief, which recorded some shallow foundations and the buried remains of floors of several workers' cottages in Bottling Wood (Plate 1). Following consultation with the County Archaeologist for Greater Manchester, who provides advice to Wigan Council on archaeological matters, it was concluded that these remains were of sufficient archaeological significance to merit a further programme of investigation to mitigate their ultimate loss as part of the proposed construction of the dam. It was recommended that, in the first instance, an informal access track that lay along a terrace cut into the slope of the valley in Bottling Wood should be subject to archaeological excavation to expose and record any buried remains of the workers' housing in the area.



Plate 1: The remains of workers' cottages exposed during the watching brief in January 2009

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. Bottling Wood (NGR SD 58820 06650) lies approximately 1km to the north-east of Wigan town centre, in the Whelley area, occupying land on the west bank of the River Douglas (Plate 2).



Plate 2: Recent aerial view of the site of the site prior to construction work

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).

2. METHODOLOGY

2.1 INTRODUCTION

- 2.1.1 The fieldwork undertaken followed the method statement detailed in the approved Updated Project Design (*Appendix 1*), and was consistent with the relevant standards and procedures provided by the Institute for Archaeologists, and their code of conduct.

2.2 EXCAVATION

- 2.2.1 The uppermost levels 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.
- 2.2.2 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 extensively used 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 THE DEVELOPMENT OF THE STUDY AREA

- 3.1.1 The earliest development of the study area was focused on Sutton Mill, which may have originated as a medieval fulling mill (Hannavy 1990, 34). The earliest cartographic depiction of this water-powered mill, however, 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. The plan does not show any houses in Bottling Wood, although this is by no means firm evidence for there not having been some settlement on the east bank of the river at that date.
- 3.1.2 Other industry was active in the area by 1800, by which date Bottling Wood Colliery had been established on the east bank of the River Douglas, and was being worked by Lord Balcarres (Grayson *et al* 1979, 9). The colliery mined coal from the Ince Four Foot seam and the Ince Seven Foot seam.
- 3.1.3 The first detailed survey of the area is provided by Mather's *Map of the Town of Wigan in the County of Lancaster*, which was published in 1827. This map depicts Sutton Mill as a rectangular structure on the west bank of the River Douglas, together with a weir across the river. Mather's plan also marks a few houses in Bottling Wood, suggesting that the hamlet had been established by that date. However, it seems likely that the settlement expanded over the following years, as several blocks of buildings are shown along a track or road through Bottling Wood on the Wigan tithe map of 1839 (Plate 3).



Plate 3: Extract from the Wigan tithe map of 1839

- 3.1.4 The road through the wood is mentioned in a newspaper article published in 1842, which refers to an elderly man who claimed to have walked the road over 60 years ago, and recalled the route to have been ‘open and uninterrupted’ (*Manchester Times and Gazette* 23 July 1842). Shortly after the publication of this article, it seems that a barrier was erected across the road through the wood, as a subsequent article noted that the barrier had been demolished by ‘workmen at a neighbouring establishment’. It was noted that these workmen ‘had long used the road as a convenience in proceeding to and from their place of labour’ (*Manchester Times and Gazette* 6 August 1842).
- 3.1.5 Some details of the properties in Bottling Wood shown on the tithe map of 1839 are provided in the accompanying schedule (LRO DRL 1/87). This indicates that there were 25 houses in Bottling Wood, several of which were occupied by their owners, whilst other properties were rented. It is evident that the Tarbuck family were of some importance in the hamlet, owning nine of the occupied houses (Table 1). It is also of interest that most of the properties are described as houses with gardens, suggesting that they may have been of a better calibre, for instance, than contemporary workers’ housing in Wigan town centre.

Property No	Property Type	Owner	Occupier
466	House and garden	John Cox	John Cox
467	House and garden	Joseph Tarbuck	Henry Low
468	House	George Tarbuck	John Cass
469	Two houses	George Tarbuck	John Winstanley and others
470	House and garden	George Tarbuck	George Tarbuck
471	Six houses	John Stephenson	Nicholas Taylor and others
472	House and garden	John Lord	John Brack
473	Two houses and gardens	George Frost	George Frost
474	Garden	John Lord	William Horner
475	Five houses and gardens	John and Thomas Taylor	John and Thomas Taylor
476	House and garden	John Booth	John Booth
477	Four houses and gardens	Joseph Tarbuck	Thomas Ramsey
478	Garden	John Stephenson	John Stephenson
479	Meadow	The Right Honorable James, Earl of Crawford and Balcarres	John Hart

Table 1: Entries in the tithe schedule for 1839 for Bottling Wood (LRO DRL 1/87)

- 3.1.6 John Hart, named in the tithe schedule of 1839 as the occupier of a meadow in Bottling Wood, is similarly identified as having 1.5 acres of meadow in Bottling Wood in a newspaper article of 1848 (*Preston Guardian* 22 July

1848). In the same year, the rate payers of Bottling Wood sent a request to Wigan Town Council to have ‘gas lamps carried to their dwellings’ (*Preston Guardian* 28 October 1848).

- 3.1.7 Further information of the residents of Bottling Wood is provided by the available census returns, the earliest of which is for 1841. George Tarbuck is listed in this census as a 50 year-old nail maker, who lived with his wife and their 25 year-old daughter, a lead-shot maker. Joseph Tarbuck is also listed, and recorded as a 20 year-old engineer. Perhaps the most striking entry in the census returns for 1841, however, is that given for the Seddon household, which comprised two adults and their six children, living together with three adult lodgers and another child.
- 3.1.8 The census returns for 1851 record a range of occupations amongst the residents of Bottling Wood (HO 107/2199 Ff1-186). These include numerous coal miners, several bolt, screw and nail makers, farm labourers, a colliery engineer, a foundry engineer, an iron turner, a whitesmith, a bricklayer, cotton factory workers, a flagger and slater, a boiler maker and a dress maker.
- 3.1.9 By 1861, George Tarbuck had been superseded as the head of their household by his son, also called George. George Tarbuck junior clearly remained in, and perhaps expanded, the family business, as he is described as both a nail and bolt maker. He had a wife and four children, and was wealthy enough to employ a 16 year-old governess and a 13 year-old servant. Another branch of the family was headed by William Tarbuck, who was described as a master bolt and nail maker in the 1861 census returns. He lived with his wife, two sons and a daughter.
- 3.1.10 Entries in commercial trade directories provide further evidence for the character of Bottling Wood. The earliest directory available that provides pertinent information is for 1869. Entries in this directory indicate that Bottling Wood had a single public house and two shops. The only other businesses listed are nail, bolt and screw makers, and a pattern maker (Table 2); similar entries appear in a directory for 1872 (Worrall 1872).

Address Given	Name	Occupation
1, Bottling Wood	Thomas Dennis	Shopkeeper
Woodman Inn, Bottling Wood	Mary Foulkes	Publican
Bottling Wood	Catherine Hall	Shopkeeper
Bottling Wood	William Tarbuck	Bolt maker
Bottling Wood	James Tarbuck	Bolt maker
Bottling Wood	George Tarbuck	Nail, bolt and screw maker
Bottling Wood	Giles Walmesley	Pattern maker

Table 2: Entries for Bottling Wood in Worrall's trade directory for 1869

3.1.11 The detail provided by the Ordnance Survey 25" : 1 mile plan of 1894 shows that the settlement expanded during the second half of the nineteenth century, with the addition of more houses to the north of those established already.



Plate 4: Early twentieth-century view of Bottling Wood, looking north



Plate 5: Undated view of Bottling Wood looking south

3.2 DEMOLITION OF BOTTLING WOOD

- 3.2.1 The minutes of the Insanitary Houses and Conversions Committee between 1922 and 1935 indicate that the excavation site was within 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).
- 3.2.2 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, presumably representing the first houses to be erected as part of the Bottling Wood Improvement Scheme.
- 3.2.3 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'. 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).
- 3.2.4 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 3. This shows that 62 of the 64 houses were vacated between June and December 1927, and 41 of these were demolished.

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

3.2.5 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 1924-26, 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 (Table 4).

Name	Description of land and property	Amount of Compensation
Sir Albert Edward Naylor-Leyland	Ground rent issuing out of plot of land, Bottling Wood	£5 (plus legal costs)
John T Leather	5 houses (nos 1, 2, 3, 4 and 5, Sutton Mill Common, Bottling Wood)	£400 (plus legal costs)
T Worthington	6 houses (nos 10, 11, 12, 13, 14 and 15 Bottling Wood)	£17
Walter Cox	2 houses (nos 61 and 62 Bottling Wood and land)	£150 (plus legal costs)
IB Thompson	2 houses (nos 29 and 30 Bottling Wood)	£9
M Benson	1 house (no 28 Bottling Wood)	£5
Wm Rigby	2 houses (nos 52 and 52a Bottling Wood)	£110
Wm Rigby	4 houses (nos 53, 54, 55 and 54a Bottling Wood)	£375
Wm Rigby	Plot of land (site of nos 36, 37 and 38 Bottling Wood)	£5
Wm Rigby	3 houses (nos 31, 32 and 33 Bottling Wood)	£18
Wm Rigby	1 house (no 34 Bottling Wood)	£57

Table 4: Details of compensation to be made to owners of properties at Bottling Wood (A2/23/6 1927-8, 1093)

- 3.2.6 In addition, compensation was paid to Mr GW Makinson for the period from 28th May 1927 to June 1928, during which his premises at 31, 32, 33, 34, 36, 37, 38, 52 and 52a Bottling Wood had been empty. Compensation was also paid for his other properties at 53, 54, 54a and 55 Bottling Wood, which had been empty since 9th July 1927 (A2/23/6 1927-28, 1093).
- 3.2.7 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). Some three months later, on 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).
- 3.2.8 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 (A2/23/8 1933-34, 37).



Plate 6: Demolition of houses in Bottling Wood c 1927 (270/34)

4. EXCAVATION RESULTS

4.1 INTRODUCTION

4.1.1 An area measuring 323m² was stripped within Bottling Wood using a 13 ton tracked excavator. The exposed area formed a narrow strip along an existing track, which is cut into the steep escarpment of the Douglas Valley (Fig 1). The excavation targeted an area that was known to have workers' cottages established prior to 1838, and occupied until the 1920s, when demolition was undertaken (*Section 3.2 above*). The exposed remains comprised six structures, representing several different plan-types, and which appeared to have been constructed in four distinct phases.

4.2 RESULTS

4.2.1 Four major phases of construction were identified, with all the structures being cut into, or constructed directly on top of the natural sandstone and shale bedrock (**1010**). There was little drift geology due to the steep escarpment, although the loose upper fragments of shale and sandstone were bound within a matrix of mid-brown, silty plastic clay, typical of the glacial deposits of the region (*Section 1.2.2, above*).

4.2.2 **Phase 1:** the earliest remains excavated comprised the foundations of a sandstone building (**1002** (Plate 7)), located at the southern end of the excavation area. This was only excavated partially, as the majority of the structure lay beyond the eastern limit of excavation (Fig 2). The remains comprised two walls (Plate 7), forming the northern and western external walls of the building. These were exposed for lengths of 2.3m and 4.73m respectively, with both continuing beyond the limit of excavation. Both were constructed of irregular, angular, fragments of sandstone, which varied considerably in size, and appeared only to be faced on the external side. Each wall was approximately 0.5m (1'6") wide, and survived to between two and three courses in height (to a maximum height of 0.27m), and were partially of dry-stone construction and partly bonded with a pale lime mortar. At the southern exposed end of the west wall, three broken stone fragments appeared dressed, and almost certainly represented the remains of an entrance threshold of a doorway measuring approximately 4' (1.22m) wide (Plate 8). A possible internal partition, of similar construction survived in very fragmentary form, 1.1m (3'6") from the north wall (Fig 2), suggesting that the structure contained a narrow room, or store, at its northern end. Two large stone slabs at the southern extent of the exposed structure may have represented the base of a similar wall, dividing the structure to the immediate south of the doorway. The eastern of these two large slabs was butted on its southern side by a hand-made brick pier, of a full-brick width (Plate 7). This possibly represented the cheek of a fireplace, probably a subsequent addition to the structure. A row of bricks, comprising one stretcher, and three edge-set, hand-made bricks, butted the north wall of building **1002**, in a similar position to those to the south, again suggesting the insertion of a fireplace.



Plate 7: Building 1002



Plate 8: Threshold step in building 1003

- 4.2.3 **Phase 2:** this second phase of construction comprised two brick-built structures (**1003** and **1004** (Fig 3)), divided from structure **1002** by a 0.65m (2'1") wide, sandstone-flagged footpath (**1013** (Plate 9)). These two structures were very similar in construction, and appeared to represent a single build. The well-preserved west wall was of a full-brick thickness, constructed of hand-made brick, laid in stretcher bond, in a pale lime mortar matrix. Two 1.22m (4') long, dressed sandstone threshold steps were incorporated into the wall, the southern example positioned at the southern end of the wall, whilst the other was placed immediately to the north of an internal partition (Fig 4). Both steps were heavily worn, and had square-section sockets for door-framing, whilst the southern example also had two smaller housings for cane bolts, suggesting a double-door in this position.
- 4.2.4 The dividing wall between the two rooms comprised a single skin of broken, or possibly half-bat, hand-made bricks, at its eastern end (Fig 3), and as a stone slab foundation for the western 3.3m (10'8"). Both rooms retained areas of sandstone flag flooring (Plate 9). Those within Structure **1003** were laid directly onto exposed, levelled bedrock, whereas those within Structure **1004** were bedded in a layer of re-deposited natural clay. A row of three hand-made bricks abutting the southern side of the partition between Structures **1003** and **1004** almost certainly represented the base of a fireplace cheek, whilst a patch of stone rubble 0.81m (2'8") to the east (Fig 3) appeared to represent the base of the other cheek of an approximately 4' (1.22m) wide fireplace.



Plate 9: Structures **1003** (top) and **1004** (bottom)

- 4.2.5 Neither of these structures (**1003** and **1004**) were exposed fully, due to the narrow limit of excavation (Fig 4), and also because the northern end of the buildings was heavily truncated prior to excavation, presumably during their demolition during the 1920s. However, it was possible to ascertain that the southern of the two structures (**1003**) was 3.7m (12'1") wide.
- 4.2.6 **Phase 3:** this phase comprises the construction of another building, divided into two properties (**1005** and **1006**) by a passageway (Plate 10), and may be dated on cartographic evidence to between 1851 and 1889-92. This new building was placed *c* 5' (1.52m) to the north of the extrapolated end of the Phase 2 structures, and was also offset to the west by a similar distance (Fig 4). The construction of the building necessitated the excavation of a large foundation trench (**1010**), cut into the bedrock, presumably to produce a level building platform. This extended 1.35m to the north of the north wall, and was cut by the Phase 4 building to the north (*Section 4.2.12, below*). This terracing of the bedrock placed the foundational level of this new building at 5' (1.52m) below the Phase 2 structures to the south.
- 4.2.7 The building was 30'6" wide (9.30m) along its western frontage, and was 25'9" (7.85m) deep at its northern end (Fig 4). Although only a small portion of the back rooms was revealed, it appeared that the front rooms were larger, measuring 12'6" (3.86m) deep, as opposed to 10'6" (3.26m). The front room of the northern of the two properties (**1006**) was significantly wider (13'3" (4.05m)) than property **1005** to the south (11'6" (3.51m)); this discrepancy was partly to accommodate a 3'6" (1.06m) wide passageway between the two properties (Plate 10). The presence of a brick from the east wall of **1005** extending beyond the north wall, and evidence from the detail shown on historical mapping, suggest that the passage terminated at this point, with the rooms to the rear presumably having been accessed via their side or rear elevations.
- 4.2.8 Once the internal and external foundation walls had been built to floor height the foundations were backfilled with re-deposited natural (**1009**), which features were then built upon. The only surviving features at this level were brick plinths within property **1005**. There was one which ran along the eastern wall and consisted of a header bond with a stretcher bond forming a double skin to the internal wall. The other plinth was formed in the centre of the room as a single skin of header bricks (2.13m (6')), aligned north/south which butts with a short section (0.66m (2'1")) of header bond bricks aligned east/west. This short east/west-aligned section then abutted another section of north/south-aligned header-bond bricks (1.08m (3'5.4")) that appeared to form one side of the fireplace.
- 4.2.9 All the walls comprised hand-made bricks, bonded with a pale lime mortar, with the continuous external walls being constructed to a full-brick thickness in English Garden Wall bond. All internal partitions were of a single-skin thickness, but were observed to have an offset plinth of a full-brick thickness at their bases (Fig 4; Plate 10), and survived to a depth of ten courses, keyed into the external walls.



Plate 10: The front rooms of properties 1005 (right) and 1006 (left)

- 4.2.10 Property **1005** had the remains of a fireplace on the northern wall, situated slightly off centre. The fireplace measured 1.72 x 0.57m (5'6.4" x 1'8.7"), but had been badly damaged by a later intrusion. The passageway between **1005** and **1006** measured 1.10m (3'6") wide, was aligned east/west, and probably continued through the entire property.
- 4.2.11 Property **1006** had both the front and back rooms exposed; the front room measured 4.05 x 3.84m (13'2.8" x 12'6"), and the back room measured 4.05 x 3.26m (13'2.8" x 10'7"). Both rooms in this property contained fireplaces on the northern wall (Plate 11). The fireplaces were keyed in as two protruding buttresses, and were roughly the same size (1.06 x 0.40m (3'4.7" x 1'3")), despite the rooms being of different dimensions.
- 4.2.12 External to the building was a small 'L'-shaped structure, which was visible extending off the most northerly internal wall of the passageway, but was not keyed into the external wall. The structure survived to a height of at least five bricks deep, and was composed of hand-made bricks, bonded with a lime-based mortar. A single flagstone survived within the structure, presumably representing a floor.



Plate 11: Fireplace in front room of structure 1006

4.2.13 **Phase 4:** an additional building, again comprising two, two-roomed properties (**1007** and **1008**), was added to the north of **1006** during the later nineteenth century (Plate 12). The foundation trench for this new building cut that for properties **1005** and **1006**, demonstrating it to have been a later build. As with the earlier properties, this new building was composed of hand-made bricks bonded with lime-based mortar. The layout of these two properties was almost identical, with a side passage on the most southerly side of the properties, and front and back rooms with a central stair between the two. Within each of the rooms a fireplace was located centrally on the northern wall.



Plate 12: Structures 1007 and 1008

- 4.2.14 Each property (**1007** and **1008**) was 4.27m wide and 8.87m deep (14' x 29'1"), with the front rooms measuring 3.21 x 3.55m (10'5.3" x 11'6.4"), and the back rooms 4.27 x 3.76m (14' x 12'3.3"). The side passage measured 1.06m wide (3'4.7") and is likely to have run only to the eastern wall of the stair, with the stair aligned north/south and measured 3.27 x 0.74m (10'7.2" x 2'4.2").
- 4.2.15 Two styles of fireplace were identified in each property. A rectangular, single-skinned fireplace was placed centrally on the northern walls in the front rooms, and measured from 0.94-1.13m x 1.05-1.34m (Plate 13). At the rear of the properties the fireplaces were represented by two buttresses, similar in construction to those in **1006**. These were keyed into the northern walls of each property (**1007** and **1008**), and measured 0.57-0.6m x 1.71-1.89m.
- 4.2.16 The external walls for both properties (**1007** and **1008**) were multi-skinned, with the northern wall of **1006** beginning used as the southern wall for **1007**. The western wall was three-skins thick, and appeared to be laid in a stretcher bond and keyed into the western wall of **1006**. The northern wall of building **1008** and the eastern wall of both properties (**1007** and **1008**) were two-bricks wide and laid in stretcher bond. Another 'L'-shaped structure was present to the west of **1007**, with a double skin of bricks keyed into the main exterior wall. This is likely to have run across the front of properties **1007** and **1008** as the return for this 'L'-shape was present at the end of **1008**. The internal walls were all single skinned, including the dividing wall between the two properties.



Plate 13: Fireplace in front room of structure **1007**

4.3 WATCHING BRIEF

4.3.1 Following on from the completion of archaeological excavation, the adjacent area was subject to earth-moving works associated with the construction of the flood defences. This part of the scheme area had similarly been occupied by a row of workers' cottages in the nineteenth century, as depicted on historical mapping. A watching brief was therefore maintained to record any significant archaeological remains that were exposed during the earth-moving works. However, all structural remains in this part of the site had been destroyed entirely, presumably during clearance of the properties in the 1920s, and no surviving archaeological remains were encountered.

4.4 FINDS

4.4.1 In total, 64 were artefacts recovered from the excavation. The bulk of the assemblage dates to the nineteenth century, with lesser amounts dating to the eighteenth and twentieth century. Pottery (34 fragments) dominated the assemblage, with lesser amounts of clay tobacco pipe (18), iron objects and nails (8), building material and shell. Small amounts were recovered from stratified deposits (**1009** and **1012**) within buildings in the southern part of the site. However, the bulk of the assemblage was derived from demolition layers and, as such, is considered as unstratified. Most of the objects were domestic in function and of relatively low status, typical of finds commonly recovered from workers' cottages, although some of the iron may have derived from a workshop. A summary finds catalogue is included as *Appendix 2*.

4.4.2 **Ceramic:** a small group of pottery, comprising eight fragments, was recovered from building **1006 (1009)** and two sherds were recovered from building **1007 (1012)**, whilst the remainder of the assemblage was derived from demolition deposits. The pottery was in reasonable condition, with only two sherds bearing surface erosion. The group comprised tableware and kitchenware vessels, with a limited range of fabric types represented. The earliest datable fabric comprised a single sherd of abraded green-glazed red earthenware, which could date to the eighteenth century. However, for the most part, the pottery dated to the nineteenth century, and comprised numerous factory-made slipwares in a variety of styles, including 'cats eye' and plain annular wares, in addition to cups, gravy jugs, plates and bowls in a variety of transfer-printed patterns, including Willow and Asiatic Pheasant. The remainder comprised part of an English porcelain saucer, glazed white earthenwares, including blue shell-edged plates, and fragments from a large light-brown stoneware vessel, which date collectively from the early to mid-nineteenth century.

4.4.3 **Clay tobacco pipe:** the assemblage included two fragments from stratified deposits, the remainder from demolition layers. These included three bowls including an undecorated type of a nineteenth-century date. The other two bowls retained leaf design along the seam, of a style used commonly during the nineteenth century. Of these an almost complete a small, brittle, thin-walled type with leaf decoration along the upper and lower seam, quite possibly dates to c 1830 (Oswald 1975). The remainder comprised unstamped, smoothed white clay stems of narrow- and medium-bored types, typical of the

nineteenth century, although a single thick stem may date to the eighteenth century.

- 4.4.4 **Iron:** all of the iron retained dense corrosion products. The objects included an axe blade and a chisel tool, both of probable nineteenth-century date (recovered from **1012**), a hook, and several small square-shafted wood and large masonry nails.
- 4.3.1 **Building material:** a single incomplete piece of sandstone peg tile with a circular-shaped hole was recovered from a demolition layer. The fragment was undiagnostic and offered little to the interpretation of the site.
- 4.3.2 **Conclusion:** the finds assemblage as a whole is of limited archaeological significance, although it does provide broad dating for the occupancy of the structures exposed during the excavation. In all probability, the finds represent the dumping of domestic refuse and suggest an occupation of the site from the early nineteenth century.

5. DISCUSSION

5.1 INTRODUCTION

5.1.1 The archaeological investigation in Bottling Wood has provided a detailed record of buried archaeological remains of high local significance in advance of their ultimate loss. The results obtained from the excavation inform several of the initiatives for archaeological research of the industrial and modern periods stated in the current *Archaeological Research Framework for North West England* (Newman and McNeil 2007; McNeil and Newman 2007). In particular:

- *Initiative 7.6*: ‘A study of the development of workers’ housing in Greater Manchester and East Lancashire should be undertaken to examine the development of different housing types...’ (McNeil and Newman 2007, 139);
- *Initiative 7.7*: ‘Study the material culture of industrial workers’ households...’ (*ibid*);
- *Initiative 7.25*: ‘Where threatened with possible redevelopment excavations are required of now undeveloped and cleared former working class areas regarded as slums’ (*op cit*, 147);
- *Initiative 7.41*: ‘The retention of later period artefacts and their routine analysis as part of all archaeological excavation projects’ (*op cit*, 156).

5.1.2 The following section discusses the phased development of the site, based on the results of the archaeological investigation. This is coupled with relevant documentary and cartographic evidence, upon which the broad dating ascribed to each of the identified phases has been largely derived.

5.2 PHASE 1 (LATE EIGHTEENTH/EARLY NINETEENTH CENTURY)

5.2.1 The earliest remains excavated comprised the foundations of a sandstone building (**1002**), located at the southern end of the excavation area. The precise date at which this property was erected remains uncertain, although it is likely to have been during the late eighteenth or early nineteenth century. Settlement in the area during this period was focused on Sutton Mill, which may have originated as a medieval fulling mill. The position of the mill is annotated on Yates’ *Map of the County Palatine of Lancaster*, which was surveyed during the early 1780s and published in 1786. Whilst this map was produced at a small scale, and thus cannot be relied upon for details of individual buildings, it does not depict any development within Bottling Wood other than Sutton Mill, suggesting that the excavated property had not been erected (Plate 14). However, Mather’s *Map of the Town of Wigan in the County of Lancaster*, published in 1827, does depict a few houses within the study area, indicating that the hamlet in Bottling Wood had been established by that date.



Plate 14: Extract from Yates' map of 1786

- 5.2.2 The exposed remains of building **1002** had clearly been remodelled during the nineteenth century, making it difficult to elucidate the true function and character of the original structure. It seems possible, however, that it may have been intended as a domestic workshop, representing an early stage in the development of Bottling Wood as a local centre for the domestic nail-making industry (Blakeman 2006).
- 5.2.3 Nails were among the first metal objects made by mankind, indispensable for such everyday items as doors and roof coverings, shoes, buckets and barrels (Jenkins 1972, 110). Early nails were usually square in section, and were individually forged by hand. The head of the nail was formed either by simply turning it over to form an L-shape, or by striking a hand-held mould or 'bore' over the end of the shank to produce a shaped end such as a 'rose-head', a simple four-sided pyramid shape. Being hand-forged, the variety of shapes and forms were infinite, but they were expensive to produce and were used sparingly.
- 5.2.4 The manufacture of iron nails was entirely a domestic industry well into the seventeenth century, being made in small workshops either attached to, or close to, the nailer's house. It was mainly a part-time occupation along with agriculture, with nails being made in times of bad weather and in winter. Nails had to be split by hand, a very laborious task that often required the nails to be chiselled from a sheet of wrought iron (Butler 1954, 6). Nail rods were

sometimes imported from the continent to eliminate this process, but these were expensive.

- 5.2.5 The process of manufacturing nails was partially industrialised with the introduction of the iron slitting mill. In essence, a slitting mill had two rolls, placed horizontally and arranged one above the other, each driven by a separate waterwheel. Iron bars were sheared into short sections and fed through the rolls and flattened into strips. These flat strips were then fed through a pair of slitting cutters, which were again on two rolls, and cut the iron into narrow strips. The resultant narrow strips of iron were used primarily for making nails, and their introduction eliminated the laborious process of splitting wrought iron bars by hand (Butler 1954, 6). This reduced the cost of nails, allowed a dramatic expansion of production, and helped to stimulate the nail-making trade (Jenkins 1972, 111-2). Thus, following the introduction of the slitting mill to the region, the manufacture of nails became one of the most important industries in Warrington, and also formed a significant element of the local economies of towns such as Wigan, Leigh, and Atherton (Lunn 1971).
- 5.2.6 One of the earliest slitting mills to be put into operation in the area was that at Brock Forge (*Wigan Examiner*, 2 May 1856). This was established a short distance to the north of Bottling Wood by Spencer & Co in 1665 in the narrow valley of the river Douglas (Blakeman 2006). Another slitting mill was established on the river Douglas in Wigan during the eighteenth century. Whilst the date at which this mill commenced remains uncertain, it is mentioned in documentary references in 1747, when it was owned by Thomas Titley (OA North 2009b).

5.3 PHASE 2 (EARLY TO MID-NINETEENTH CENTURY)

- 5.3.1 During the early nineteenth century, two houses (**1003** and **1004**) were built immediately to the north of building **1002**. These three structures are depicted as a single building on the tithe map of 1838. In contrast to building **1002**, however, houses **1003** and **1004** were constructed of brick. They also appeared to be of a slightly poorer-quality construction. The flagstones forming the internal floors, for instance, were laid directly onto the solid bedrock, rather than incorporating a levelling deposit, as had been used in the earlier property. Both of the new houses incorporated a fireplace, implying that they had been intended as domestic properties.
- 5.3.2 Details provided by the census' returns for 1851 and 1861, together with entries in trade directories for the 1860s and 1870s, indicate that some of the houses in the study area were occupied by nail makers. It seems likely that this was a domestic-based industry, and nails were actually being manufactured in the excavated houses. The principal family engaged in this trade appears to have been the Tarbucks, and it is interesting to note that the row of excavated houses was referred to locally as 'Tarbuck Cottages'. It is also interesting to note that there was still a domestic-based industry active in the area during the mid-nineteenth century, despite the gradual introduction of fully automated nail-making machinery after 1800.

5.4 PHASE 3 (SECOND HALF OF THE NINETEENTH CENTURY)

5.4.1 By the end of the nineteenth century, further development in Bottling Wood had resulted in the erection of at least 64 properties, as shown on the 1893 Ordnance Survey map (Fig 4). This included the addition of one building within the excavated area, which was divided into two properties (**1005** and **1006**), which were separated by a passageway. The construction of these properties demanded the excavation of a level terrace, which was cut into the steep escarpment of the valley side. Consequently, the floor level of these properties was some 1.5m lower than the Phase 2 houses.

5.5 PHASE 4 (LATE NINETEENTH CENTURY)

5.5.1 The final stage in the development of the excavated area was the addition of another building to the north of structure **1006**. This new building was again divided into two properties (**1007** and **1008**), both of which contained two rooms. These had been erected by the end of the nineteenth century, and are depicted on the Ordnance Survey map of 1892, but evidence generated during the excavation demonstrates them to be stratigraphically later than structure **1006**.

5.5.2 Many of the houses were demolished by 1923. Landscaping of Bottling Wood was undertaken after the demolition of the properties, and the tenants were rehoused as part of the Bottling Wood Improvement Scheme. The material from these buildings had largely been removed, although remnants were used to form made ground during the new plantation of trees which lined the former access track, thus forming a park known as Bottling Wood Slope. Other sources of made-ground derived from waste material dumped against the rock face during construction of a new housing estate across the top of the slope.

6. CURATION AND CONSERVATION

6.1 RECIPIENT MUSEUM

- 6.1.1 The Museum of Wigan Life has been nominated as the ultimate repository for the archive:

Museum of Wigan Life

Library Street

Wigan WN1 1NU

- 6.1.2 Arrangements were made with the Museum prior to the commencement of the excavations for the deposition of the complete site archive, and the Museum Curator has acknowledged her willingness to accept the archive.

6.2 CONSERVATION

- 6.2.1 There are no conservation requirements.

6.3 STORAGE

- 6.3.1 The complete project archive, which will include written records, plans, black and white and colour photographs, and artefacts, will be prepared for long-term storage following the guidelines set out in *Environmental standards for the permanent storage of excavated material from archaeological sites* (UKIC 1984, Conservation Guidelines 3), and *Guidelines for the preparation of excavation archives for long-term storage* (Walker 1990).

6.4 DISSEMINATION

- 6.4.1 The results obtained from the archaeological investigation at Bottling Wood are incorporated in this final excavation report. In addition to The Environment Agency, copies of the report will be forwarded to Wigan Heritage Service, and the Greater Manchester Historic Environment Record.
- 6.4.2 The issue of the publication of archaeological reports and public accessibility to data has been stressed in the *North West Region Archaeological Research Framework* (Brennand 2007). Whilst this is a problem for the entire archaeological community, the visual nature of industrial period remains, and its link to the present population, increases the significance of publication of studies of this nature. In order to address this issue, it is proposed that the results of the excavation are summarised for inclusion in an academic publication that is being prepared presently by OA North, and concerns several recent archaeological excavations in Wigan.
- 6.4.3 In addition, the results from the excavation should be used to inform the design and content of a permanent information board. This should be installed permanently on site to celebrate the social and industrial heritage of the area.

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APPENDIX 1: PROJECT DESIGN

**BOTTLING WOOD,
WIGAN,
GREATER
MANCHESTER**

**Archaeological
Investigation**

Project Design

(Version 2.1)

Oxford Archaeology North

October 2009

AXIS

Proposals

The following Project Design is offered in response to a request by Amanda Stobbs of AXIS, acting on behalf of the Environment Agency, for an archaeological strip and record excavation at Bottling Wood, Wigan.

1. INTRODUCTION

1.1 BACKGROUND

- 1.1.1 AXIS, acting on behalf of the Environment Agency, is to deliver of a scheme of flood defence works along the course of the River Douglas. An element of this scheme allows for the construction of a dam and associated infrastructure on the site of the former Sutton Mill and adjacent hamlet of Bottling Wood, near Wigan, Greater Manchester (centred at NGR SD 5878 0665). The presence of Sutton 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 provided detailed information on the mill, and also highlighted the archaeological importance of the former settlement in Bottling Wood, which had been exploited for small-scale mining purposes and was occupied by workers' cottages during the late eighteenth and nineteenth centuries. The settlement formed part of a designated Unhealthy Area, which was outlined for clearance in the late 1920s.
- 1.1.2 The construction of the dam and associated infrastructure 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 nature and 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. In the first instance, this comprised a scheme of evaluation trenching, which was targeted on the site of the former Sutton Mill, and was coupled with a watching brief that monitored the excavation of geo-technical trial pits in Bottling Wood.
- 1.1.3 The results obtained from the evaluation demonstrated that the mill had been destroyed completely when it was demolished in the late 1920s. Conversely, the excavation of the geo-technical trial pits in Bottling Wood exposed the shallow foundations and floors of several late eighteenth- and nineteenth-century houses. Following consultation with the County Archaeologist for Greater Manchester, who provides advice to Wigan Council on archaeological matters, it was concluded that the remains exposed in Bottling Wood were of sufficient archaeological significance to merit a further programme of investigation to mitigate their ultimate loss as part of the proposed development.
- 1.1.4 This Project Design is for an appropriate scheme of archaeological investigation, which will provide a detailed record of any buried remains that survive *in-situ* in Bottling Wood. In the first instance, the informal access path that lies north/south along a terrace cut into the slope of the valley will be subject to 'strip and record'. This will be coupled with an archaeological watching brief, that monitors any earth-moving works on the steeply sloping areas in Bottling Wood adjacent to the informal access path. It is envisaged that the watching brief may be required to monitor exploratory works intended to expose the entrance to any mine workings.

2 OBJECTIVES

- 2.1 The main research aim of the investigation will be to expose and record the buried remains of the former eighteenth- and nineteenth-century workers' housing in Bottling Wood, 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 record the external walls of housing in Bottling Wood;
 - to expose and record surviving floors within the houses;
 - to establish any evidence for phasing, and determine or confirm the approximate date or date range of any remains.
 - to produce a fully illustrated report and project archive.
- 2.3 The required stages to achieve these ends are as follows:
- 2.4 *Strip and Record*: the primary aim of the fieldwork is to expose and compile a detailed record of the buried remains that will be disturbed by the proposed scheme of works, and determine their character, extent, integrity and, where possible, date. It is proposed that the fieldwork will be focused on the north/south-aligned access track across the slope in Bottling Wood (Plate 1), which crosses the approximate centre of the former houses (Plate 2). The path extends for a distance of some 75m, and has an average width of 5m. Those parts of Bottling Wood immediately to the east and west of the access track lie of steep slopes and are heavily wooded; any earth-moving works in these areas during the proposed scheme will be monitored by a watching brief.



Plate 1: Looking north along the informal access path through Bottling Wood

- 2.5 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 exposed remains once the mechanical stripping has been completed.

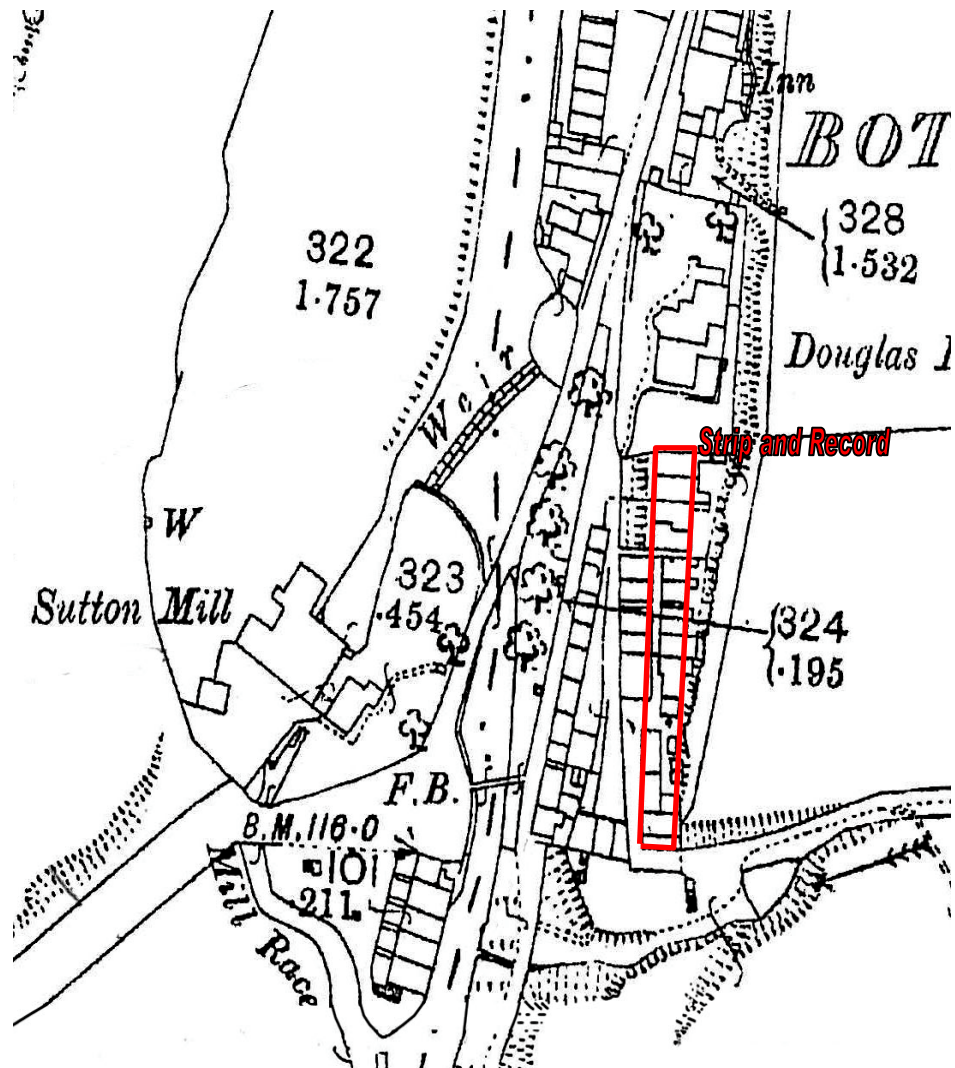


Plate 2: Proposed area for 'strip and record', on the Ordnance Survey map of 1894

- 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 investigation 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 programme of archaeological works, 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 It is proposed that an area in Bottling Wood, on the eastern side of the River Douglas, and measuring approximately 75m by 5m, will be subject to an archaeological strip and record. The primary area of interest lies in the footprint of former workers' cottages. The archaeological work is intended to produce a detailed record of any buried remains of the former hamlet, to mitigate their ultimate loss during the construction of the proposed dam and associated infrastructure. It is anticipated that the development programme within Bottling Wood will commence immediately upon completion of the archaeological works.

3.2 STRIP AND RECORD

3.2.1 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.

3.2.2 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.

3.2.3 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*.

3.2.4 **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 strip and record excavation 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.

3.2.5 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 investigation 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).

- 3.2.6 **Watching brief:** any earth-moving works in Bottling Wood that are necessitated by the proposed scheme of works will be monitored by a watching brief. During this phase of works, if required, a programme of field observation will accurately record the location, extent, and character of any surviving archaeological features and/or deposits within the proposed ground disturbance. This work will comprise observation during the excavation for these works, the systematic examination of any subsoil horizons exposed during the course of the groundworks, and the accurate recording of all archaeological features and horizons, and any artefacts, identified during observation.
- 3.2.7 Putative archaeological features and/or deposits identified by the machining process, together with the immediate vicinity of any such features, will be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and where appropriate sections will be studied and drawn. Any such features will be sample excavated (*ie* 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).
- 3.2.8 **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 during the investigation will be agreed with the legal owner and an appropriate recipient museum prior to the work taking place.
- 3.2.9 **Environmental Sampling:** the strategy for palaeo-environmental sampling will be developed on site, in consultation with appropriate specialists, as necessary. In broad terms, however, the sampling strategy will be aimed at recovering palaeo-botanical, palaeo-zoological and pedological evidence.
- 3.2.10 **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*.
- 3.2.11 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;
- 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 six 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;
- plan of the trench 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 Client and the curatorial archaeologist at the Greater Manchester Archaeological Unit (GMAU). The Client and the curatorial archaeologist will be given at least ten days' notice of when work is due to commence, and will be free to visit the site by prior arrangement with the project director. It is envisaged that both parties will be invited to at least one monitoring meeting during the course of the works.

- 3.5.7 **Contingencies:** if there are more complex or generally deeper deposits than can be anticipated from the evidence available, there may need to be a corresponding increase in costs, which will be subject to agreement with the Client and the archaeological curator. Similarly, there will be a recourse to a contingency if there is any requirement to fully excavate any human remains that may be present. These contingency costs are in accordance with the Institute of Field Archaeologists guidance.

4 WORK TIMETABLE

- 4.1 Ten working days should be allowed to complete the strip and record excavation.
- 4.2 A draft report will be completed within four weeks following completion of the fieldwork, and submitted to the Client for comment. Once it has been approved by the Client, the draft report will be forwarded to the archaeological curator for further comment and approval.

APPENDIX 2: SUMMARY FINDS CATALOGUE

Context	OR no	Count	Material	Description	Period
1009	1000	3	Shell	Cockle	Undated
1009	1001	1	Clay tobacco pipe	Stem; narrow bored, smooth	19 th century
Unstrat	1002	1	Clay tobacco pipe	Bowl fragment with leaf decoration on seam	Late 18 th /19 th century
Unstrat	1003	12	Ceramic	Industrial slipware (7 frags); 'cats eye'-type and a variety of striped annular types, blue transfer ware (3), glazed white earthenware (3)	Early 19 th century
Unstrat	1004	6	Clay tobacco pipe	Bowl; almost complete with leaf decoration along the upper and lower seam. Stems; varying bore sizes, all smoothed	Late 18 th /19 th century
1009	1005	2	Ceramic	Porcelain saucer foot ring, abraded green glazed light red earthenware	18 th /19 th century
1009	1006	2	Clay tobacco pipe	Stems; narrow bored	19 th century
1012	1007	1	Clay tobacco pipe	Stem; narrow bored (smoothed)	19 th century
1012	1008	1	Iron	Tool; square-shafted implement resembling wide chisel	19 th century
Unstrat	1009	7	Clay tobacco pipe	Bowl fragment (undec), stems; Narrow and medium bored and thick and small type	Late 18 th /19 th century
Unstrat	1010	1	Iron	Axe blade; square shafted	18 th -20 th century
Unstrat	1011	3	Iron	Nails (two square-shafted), spike or hook	19 th /20 th century
Unstrat	1012	1	Building Material	Sandstone roof peg tile; incomplete	19 th century?
Unstrat	1013	2	Ceramic	Glazed white earthenware, dark glazed red earthenware	19 th century
1009	1014	6	Ceramic	Blue shell-edged saucer fragment,	19 th /20 th

				glazed white earthenware (3 fragments), green glazed hard buff ware	century
Unstrat	1015	3	Iron	Nails; including large square-headed masonry, and undiagnostic type	19 th /20 th century
Unstrat	1016	10	Ceramic	Stoneware (light brown demi-john fragments x4), transfer printed wares (5) including; press moulded gravy bowl spout, panelled sugar bowl, bowl and cup fragments. Glazed white earthenware	18 th -20 th century
1012	1017	2	Ceramic	Blue shell-edged bowl rim	Late 18 th /19 th century

ILLUSTRATIONS

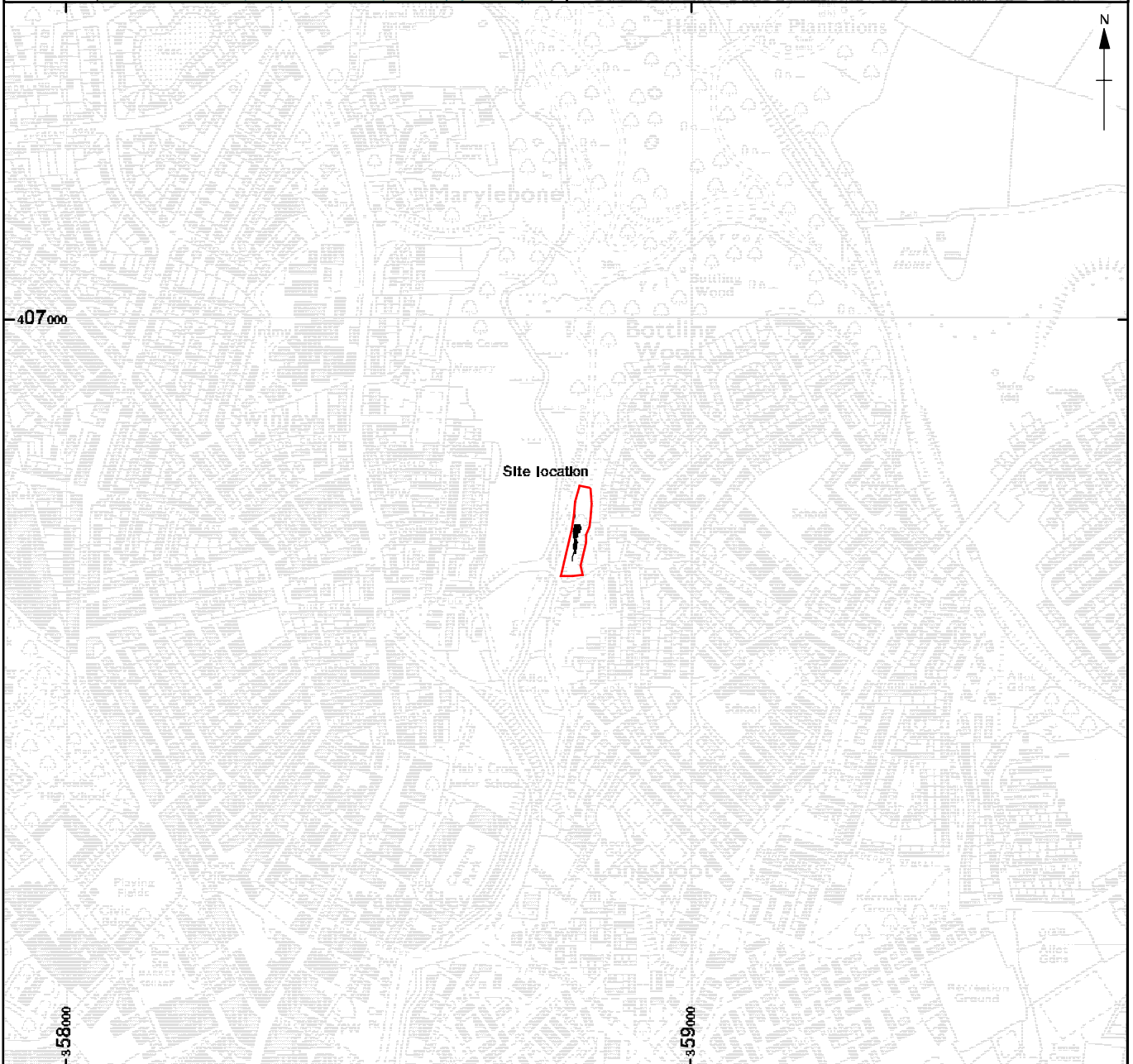
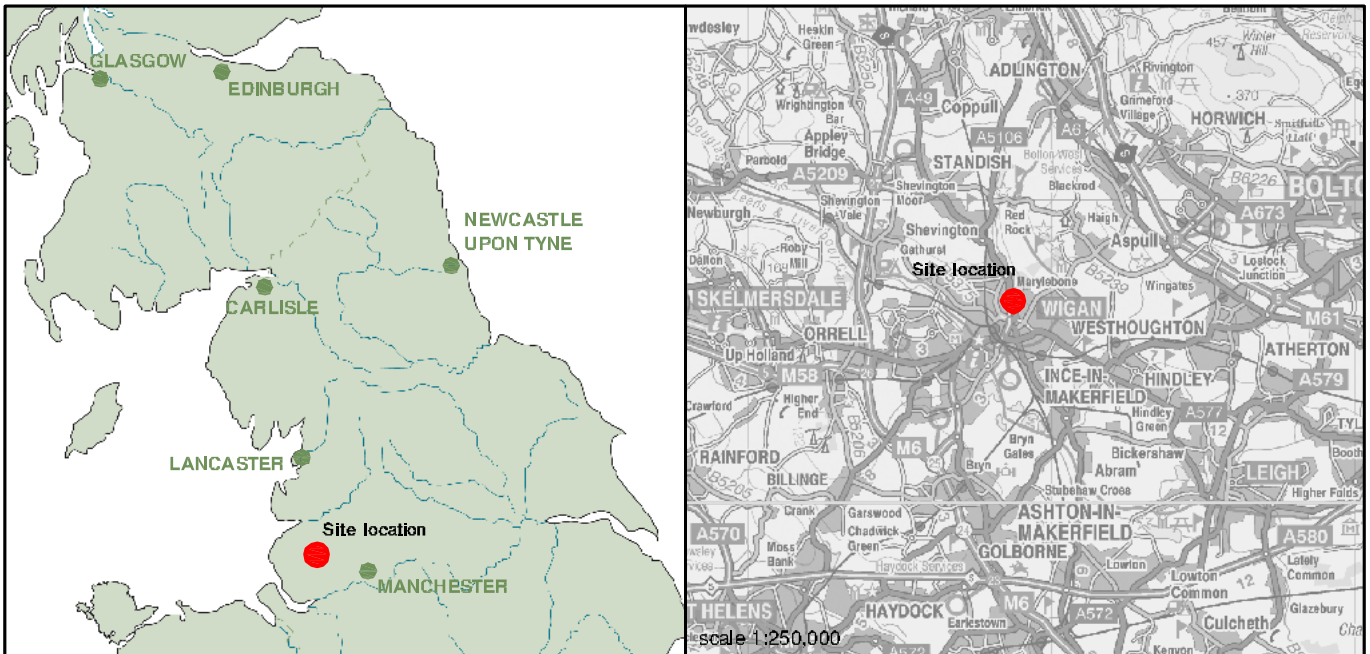
FIGURES

Figure 1: Location map

Figure 2: Excavated area superimposed on the Wigan tithe map of 1838

Figure 3: Excavated area superimposed on the 1851 map of Wigan

Figure 4: Excavated area superimposed on the Ordnance Survey map of 1889-92



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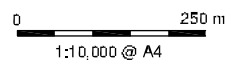


Figure 1: Site location



Figure 2: Excavated area, superimposed on the Wigan tithe map of 1838



Figure 3: Excavated area superimposed on the 1851 map of Wigan



Figure 4: Excavated area superimposed on the Ordnance Survey map of 1889-92