

Ingersley Vale Mill, Bollington, Cheshire

Archaeological Building Investigation



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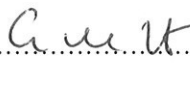
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SUMMARY

Cheshire County Council has granted outline planning permission for a redevelopment of Ingersley Vale Mill at Ingersley Vale, Bollington, Cheshire (centred on NGR SD 942 773). The proposed scheme of works allows for the demolition of several buildings surrounding the central spinning mill and waterwheel house, which are to be renovated for re-use within the proposed housing development.

In order to secure archaeological interests, the Development Control Officer (Archaeology) responsible for Cheshire East recommended that a programme of archaeological investigation was carried out to support and inform the planning application. It was recommended that the scope of archaeological investigation should comprise an English Heritage Level I-type survey of the majority of the buildings, coupled with an appropriate level of historical research. This was followed by an archaeological watching brief that was to monitor the first phase of demolition. Following the necessary demolitions, an English Heritage Level II-type survey of the spinning block and waterwheel house was also undertaken.

The building survey has provided an archaeological record of the buildings prior to both the demolition and any future development of the remaining structures. The survey was intended to ensure a record of the mill and its associated structures was made for archive and research purposes.

The complex has been heavily remodelled during its evolution from a cotton-spinning mill into a bleachworks, and the several phases of construction identified reflect both changes in ownership and function of the complex. The earliest extant fabric comprises the early nineteenth-century spinning block, which was typical of the period, comprising a slender stone structure with timber floors and a fireproof stair tower. This was heavily remodelled in the late nineteenth century to house bleaching kiers, involving the complete removal of the first floor.

The mill was originally water-powered, and the most striking feature of the complex is the extant waterwheel house, which contained a 56' diameter cast-iron wheel, which was added to the western side of the spinning block in the mid-nineteenth century. This was almost certainly a backshot wheel, with a leat supplying water from the River Dean.

The watching brief revealed the buried remains of foundations for three boilers, which were previously unknown. Whilst the earlier of these appear to have been associated with a steam engine, providing supplementary power for the mill, the primary role of the later boiler was to provide hot water for the bleaching process, which heralded a rapid expansion of the complex during the late nineteenth century.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) is grateful to Brian Elwell of Brian Ewell and Company, for commissioning and supporting the project, and to Cheshire Demolition for their assistance and support during all phases of the fieldwork. OA North is also grateful to Mark Leah, Development Control Officer (Archaeology) responsible for Cheshire East, for his advice and consultation.

The building survey was undertaken by Liz Murray, Chris Wild and Lewis Stitt, and the watching brief was maintained by Chris Wild and Graham Mottershead. The report was written by Chris Wild and Liz Murray, and the drawings were prepared by Chris Wild. The report was edited by Ian Miller, who was also responsible for project management.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Ingersley Vale LLP has submitted a proposal for a large re-development of the Ingersley Vale Mill site in Bollington, Cheshire. The proposed scheme of works allows for the demolition of several of the outlying buildings of the mill complex along with the re-development of the central spinning mill, the waterwheel house and the associated water-management systems running from a weir into the mill via an elevated leat.
- 1.1.2 In order to secure archaeological interests, the Development Control Officer (Archaeology) responsible for Cheshire East recommended that a programme of archaeological investigation was carried out to support and inform the planning application. It was recommended that in the first instance the scope of archaeological investigation should comprise an English Heritage Level I-type survey of the majority of the buildings, coupled with an appropriate level of historical research. Following this there was to be a watching brief undertaken during the first phase of demolition works to mitigate for the potential of finding any surviving water management systems. This was to be followed by a Level II-type survey on the original spinning block, the waterwheel house, and the leat that adjoins the waterwheel house at roof height. It was intended that the historical research would aid an interpretation of the results obtained from the building survey, and also inform a decision as to the extent of any further archaeological investigation that would be required in advance of development. The precise scope of works was specified in a Project Design that was devised by Oxford Archaeology North (OA North) in November 2009 (*Appendix 1*).

1.2 SITE LOCATION

- 1.2.1 The Ingersley Vale Mill complex (centred on NGR SJ 942 773) lies in the bottom of the Dean Valley (Fig 1), and is bounded to the north and south by the River Dean, which also flows under the main mill complex. To the west is a metalled trackway stepped into the steep valley slope, whilst to the east is the valley of Ingersley Clough.
- 1.2.2 The majority of the buildings were used until recently, by a number of small firms, principally in the textile trade. However, since these companies departed, the site has undergone some vandalism and many of the buildings were inaccessible due to fire damage or anti-vandalism measures.

2. METHODOLOGY

2.1 BUILDING SURVEY

- 2.1.1 The building survey occurred in several phases, with an initial English Heritage Level I-type survey of the buildings that were due to be demolished under the development plans. Following this was a watching brief on Buildings marked A-G (Fig 2), to allow for the potential to record any water management systems that may be uncovered during this scheme of works, along with a managed demolition of Building E, an almost extant boiler housing. This was to be followed by an English Heritage Level II-type survey of the original spinning block, waterwheel house, leat and other structural elements of the water-management system.
- 2.1.2 The initial Level I building survey aimed to provide a photographic record of the historic fabric and key architectural features of the buildings, and to provide an archive record of the structures and location prior to redevelopment. It has provided a photographic and textual record of the buildings to English Heritage (2006) Level I standard. Records were made of all external principal building elements, and internal where possible, as well as any features of historical or architectural significance. These records are essentially descriptive, although interpretation was carried out on site as required. All work was carried out in accordance with the Project Design (*Appendix 1*), and was consistent with the relevant standards and procedures provided by the Institute for Archaeologists (IfA), and generally accepted best practice.
- 2.1.3 **Photographic Survey:** a photographic archive of all the buildings was compiled, consisting of both general and detailed exterior photographs, which were captured using both digital and black and white 35mm formats. General photographs of the interior elevations were also taken where possible in digital and 35mm format.
- 2.1.4 **Site Drawings:** An architects plan has been annotated to show the buildings within the survey. Further drawings were produced by REDM survey. These drawings include a plan of the spinning block and waterwheel house (Buildings H and I), and a plan of the boilers uncovered during the watching brief. These have been annotated to show the form and location of any structural features of historic significance
- 2.1.5 **Interpretation and Analysis:** a visual inspection of the exterior of the building was undertaken and a description maintained to English Heritage (2006) Level II. These records are essentially descriptive, and provide a systematic account of the origin, development and use of the building.

2.2 WATCHING BRIEF

- 2.2.1 Whilst the initial aim of the watching brief was to monitor any impact on the water-management systems, none were disturbed during this phase of the project. However, the initial Level I survey identified the potential for extant sub-surface remains of a boiler house, and following discussions with the client, it was agreed that a watching brief be maintained during clearance within this area.
- 2.2.2 Excavation of the overburden was undertaken using a mechanical excavator under the supervision of an archaeologist. Further deposits were then removed with a small toothless ditching bucket, again under archaeological supervision. Further excavation was undertaken by hand, to identify and record the key features of the Watching Brief trench, and a plan and written description of the site was generated, accompanied by a photographic archive.

2.3 ARCHIVE

- 2.3.1 A full archive of the work has been prepared to a professional standard in accordance with current English Heritage guidelines (1991) and the *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC 1990). The archive will be deposited with the Stockport Museum on completion of the project. In addition, a copy of the report will be forwarded to the County Historic Environment Record (HER).

3. BACKGROUND

3.1 INTRODUCTION

- 3.1.1 An understanding of the historical background of a site provides the local context within which the extant structures can be assessed archaeologically. The following section provides a chronological account of the development of the mill complex, and has been compiled largely from secondary sources and the sequence of available historic maps; there is little primary documentation on the mill available, and there are no known surviving company records.
- 3.1.2 Although not a listed building, the spinning block of Ingersley Vale Mill is the oldest surviving mill in Bollington, and one of the earliest surviving examples in Cheshire. The waterwheel house originally held the second largest water wheel in Britain, although this has since been removed.
- 3.1.3 This work draws heavily on an earlier desk-based assessment, which included a full map-regression, accompanying a documentary account of the development of the complex (UMAU 2004).

3.2 SECONDARY SOURCES

- 3.2.1 The earliest reference to a cotton-spinning mill at Ingersley is noted as 1792 or 1793 and occurs in an account of mills in the Bollington and Rainow area by a William Richardson, millwright, from August 1806 (Longden 2002, 40). He states that originally the mill had a very small reservoir, which didn't hold water for more than a few hours (Longden 2002, 40). This early reservoir was possibly located to the south of the current spinning block, although there are no visible remains present. The owner or occupier of the mill is unclear as the Rainow Land Tax returns do not mention any textile mills at all (CRO Rainow Land Tax Returns). However, it seems likely that Ingersley Vale Mill was held by the occupiers of land described as 'Lower Ingersley'. In 1793-4 this was Thomas Snelson, between 1795 and 1800 it was Edward Sharpley, and from 1801 Edward Collier.
- 3.2.2 Edward Collier is the first occupier directly associated with the mill and it is his initials, along with the date of 1800, that are carved on the parabolic weir (now a Grade II Listed Structure) constructed across the River above Waulkmill Farm. This weir created Clough Pool, which had a depth of roughly seven feet, from which water was brought to Ingersley Vale Mill via the leat terraced into the western side of the valley.
- 3.2.3 This new system of water management is mentioned by Richardson, although he states that the pool was built in 1803, and he noted that the new reservoir and leat provided water for two water wheels at the mill, "the one being placed above the other, and the water which turns the uppermost empties into and turns the lower one." He also mentions an 18hp steam engine for use "when the water is scarce and the reservoir replenishes." It is not clear whether this engine functioned solely for the purpose of pumping water into the reservoir

or whether it also powered machinery in the mill (Longden 2002, 40). The stair tower of the mill, located on the southern elevation of the main spinning block, bears an inscription 'E 1809 C', suggesting that much of this structure was built around this date. However, by 1811 Collier was bankrupt, perhaps because of the expense of all these works (Longden 2002, 40). Despite this, the Commercial Directory for 1814-15 and 1816-17 still recorded an Edward Collier of Ingersley under its list of cotton spinners and manufacturers. However, it is known that by 1819 the mill was under a new occupier. Reports from the Macclesfield Courier of a fire in the mill, in 1819, it is recorded that the mill had been latterly occupied by Messrs Chadwick, Clogg & Co of Manchester. The fire occurred on the night of Thursday 29 April 1819 although it is unclear from the newspaper account the extent of the damage (*Macclesfield Courier*, 1 May 1819). The sale of household furniture and other effects from the premises adjoining the mill the following month provides another account of the extent of the complex at this date. The site included the manufacturer's house, a warehouse, a smithy, and an apprentice house for at least 30 pauper apprentices (Longden 2002, 41; *Macclesfield Courier*, 22 May 1819).

3.2.4 The mill must have been repaired or re-built by August 1821, because at this time Thomas Gaskell of Tower Hill, the owner of the site, leased the mill for 21 years to the partnership of Martin Swindells I and Thomas and John Fearnley. Swindells was to become the founder of one of the great textile mill families of Bollington and the Fearnleys were already renting the nearby Rainow Mill, for £450 per annum (Wilmslow Historical Society 1973, 35). The lease included references to a steam engine, engine house and dwelling houses. Thomas Fearnley was replaced in the partnership in 1825 by James Fearnley and according to reports in the Macclesfield Courier (6 May 1826) by 1826 this new partnership had installed 330 power looms for weaving cotton at Ingersley Clough. The partnership between Martin Swindells I and the Fearnleys was dissolved in 1830 (Wilmslow Historical Society 1973, 35), resulting in Swindells taking over complete control of both Ingersley Vale and Rainow Mills. On October 1832 he also leased Higher Mill, Lower Mill and new Lower Mill for 15 years. His son Martin was a partner by this time and in 1834 Joseph Brooke also became a partner in Ingersley Vale Mill. According to Pigot's 1834 Directory of Cheshire, Brooke was living at Ingersley Clough House – presumably Clough House, although by 1841 Martin Swindells II was resident at Ingersley Clough House (Pigot & Slater Cheshire Directory 1841). The Swindells & Brooke partnership did not renew their leases on Ingersley Vale and Rainow Mills, which expired at the end of December 1842.

3.2.5 By 1844 both mills were occupied by James Leigh, a cotton spinner (Longden 2002, 41). This does not appear to have been a lengthy occupation as by 1848 the mill was in dual occupation by John Brier & Co, calico printers, and Ludwig Dyhrenfurth, also a calico printer (Pigot & Slaters Directory of Cheshire 1848). By 1850 only John Brier is still listed as a calico printer (Bagshaw's Directory of Cheshire 1850) and in 1856 Brier expanded his business by building the nearby Oak Bank print works (Longden 2002, 41). It is probably to John Brier that the building of the new wheel house and the installation of the large suspension water wheel should be attributed. Brier was

still at the mill in 1860, when it was described as the Ingersley Vale Printworks (Whites Directory of Cheshire 1860). However, he appears to have transferred his business to the Oak Bank printworks soon after. Little seems to be known about the immediate successors of Brier at Ingersley Vale Mill but by 1874 the mill was occupied by Anthony Scott & Co, dyers and yarn polishers (Longden 2002, 42).

- 3.2.6 By 1878 the mill had been taken over by the firm of Bates and King (Kelly's Directory of Cheshire 1878), and were still attested here in 1883 (Slaters Cheshire Directory 1883). In 1887-88 William King & Co were occupying the site (Worrall 1888); followed by A J King & Co from 1892 (Kelly's Cheshire Directory 1892). The firm merged with 53 other finishing companies in 1900 to become part of the Bleachers' Association. Their headquarters were in Manchester but individual sites such as Ingersley retained their existing name and management. A J King & Co, as part of the Bleachers' Association, remained at Ingersley Vale Mill until 1929, when the mill appears to have been sold to the new firm of Messrs Slater, Harrison & Company manufacturers of 'plain and coated pasteboards for litho and letterpress printing, showcard embossing, ticket writing and printing, and numerous other uses' (Longden 2002, 42). Slater Harrison moved to Lowerhouse Mill, Bollington, in 1937. Thereafter the mill complex was often in multiple occupancy. Eric Britton Ltd, manufacturer of bias binding, corded piping, and other edgings and tapes for the clothing industry, used the mill from 1946 to 1954. From 1952 W & A E Sheratt, dyers and printers, occupied part of the complex. In the 1970s and 1980s Astrand Printing Ltd, screen printers of warp knitted and woven fabrics, was based at the mill. In the 1990s the site was also used by 'Chameleon Dyers Ltd, Bleachers Dyers and Finishers' and by Deepcourt Ltd, and their name can still be seen on signage around the mill complex.
- 3.2.7 The destruction of the interior of the early-nineteenth century cotton spinning block on Wed 17th November 1999 appears to have brought an end to textile finishing production on this site. Following the fire the site has stood empty and has undergone numerous episodes of vandalism making many of the structures unsafe for access.

4. RESULTS

4.1 INTRODUCTION

4.1.1 The Level I archaeological building survey was targeted at those buildings due to be demolished under the proposed scheme of works. The subsequent Level II survey recorded the extant spinning block in greater detail. Buildings have been identified by an existing lettering system, as shown on Figure 2. Whilst the initial aim of the Watching Brief was to monitor any impact on the water-management systems, none were disturbed during this phase of the project. However, the initial Level I survey identified the potential for extant sub-surface remains of a boiler house, and following discussions with the county archaeology service and the client, it was agreed that a watching brief be maintained during clearance within this area.

4.2 LEVEL-I BUILDING SURVEY

4.2.1 **Building A:** this structure, situated at the northern end of the complex (Fig 2) comprised, a two-storey gabled building of machine-made brick, dating to the 1950s. The roof comprised corrugated asbestos sheeting, with additional corrugated plastic roof lights and a single centrally placed vent to the apex of the roof. The building was constructed above an earlier stone foundation, which survived partly as extant wall fabric within the north elevation (Plate 1), where a stone arch formed the outflow to the north of the River Dean. There appeared to be a blocked doorway within relict stone construction at ground-floor level, and a further blocked doorway at first-floor height, on the right of the elevation, within the later brickwork. A scar on the right of the elevation suggests the removal of a wall extending to the north from this elevation.



Plate 1: North elevation of Building A, with earlier stone footings at lower level

- 4.2.2 The east elevation comprised six bays, each with a louvred window with a concrete sill and lintel, within the second storey (Plate 2). At ground-floor level, the first two bays from the left of the elevation comprised doorways, with two windows in the following bays, and a further door and window at the northern end. To the south, the building butted the north elevation of Building B. The interior of the building was not accessible due to the presence of chemical drums and asbestos flooring.



Plate 2: East elevation of Building A, with Building B to the rear

- 4.2.3 **Building B:** this large two-storey, brick-built gabled building, also of mid-1950s date, was butted by Building A to the north, and abutted buildings G and H to the south (Fig 2). No internal access was available, and the west elevation was obscured heavily by vegetation. It comprised 17 bays, the northern three of which dog-leg slightly to the west, to follow the line of the valley (Fig 2). The ground floor has an entrance in the northern bay of the east elevation, with all remaining bays, bar the fourth bay from the southern end, having vertical ten-light windows with concrete lintels and projecting concrete sills. The slightly shallower upper floor has six-light windows within each bay, of similar style, but shorter than those on the ground floor below (Plate 3). The southern three bays of the east elevation lie within a corrugated asbestos sheet canopy, which forms part of Building F (Fig 2), although it post-dates both structures. The southern bay housed a wide double doorway in the east elevation, affording access from the complex to the south and east.



Plate 3: East elevation of Building B, with canopy to building F behind



Plate 4: Wall scar of Building D on northern elevation of Building E

- 4.2.5 **Building C:** this building had been demolished by the time of the building investigation.
- 4.2.6 **Building D:** this structure had been demolished shortly before the building survey was undertaken, but the demolition rubble suggested that it was at least partially constructed of, or remodelled with machine-made brick. Furthermore, scars to the north-west corner of Building E (Fig 2) demonstrated that it was of two-storey height, with a pitched roof, and almost certainly post-dated the building to the south, as the purlins appear to have been punched into the external elevation of Building E (Plate 4).
- 4.2.7 **Building E:** this two-storey, sub-rectangular building comprised mainly stone construction, below a damaged slate roof. The building was in an extremely poor state of repair, with parts of the north and west walls having collapsed. The west of the building contained a single-cell room at ground-floor level, presumably below a similar room above, although internal access was not possible to confirm the first-floor layout (Plate 5). This appears to have originally represented a separate structure, being later subsumed into an enlarged boiler house. The extant north elevation of this part of the building had two tall blocked windows at ground-floor level, with a smaller, blocked window above. A wall and roof scar on the right of this elevation appear to relate to the demolished Building D.
- 4.2.8 The eastern part of Building E contained a large boiler bed, of a size suitable for a Cornish boiler and an adjoining larger room to the east that possibly housed a further boiler, both of which were open to two storeys. Although parts of these had been demolished, part of the boiler bed, and fragments of a boiler, remained *in-situ* in the western bay (Plate 6). The two rooms were divided by a wall of brick and stone construction. The lower part of the wall comprised refractory brick, forming a plinth below an approximately 2m high section of red brick construction (Plate 6). Above this level the dividing wall was of rubble stone construction, possibly representing the original outer wall of the boiler house.
- 4.2.9 The west elevation of the building had a single doorway, placed to the left of centre, affording access into the single ground-floor room. The south-west corner of the building was chamfered at ground-floor level, in order to improve vehicular access around the building (Plate 7). The south elevation had two large open bays on the eastern side of the elevation, divided by a central pier constructed of bull-nosed engineering brick, unlike the rest of the elevation which was of stone construction (Plate 8). A small stone arch to the left of the entrance to the boiler bed had been infilled, and a doorway at the western end of the south elevation were also blocked, with an extant small window above.



Plate 5: South wall of western part of Building E, with arched aperture to west of entrance



Plate 6: In-situ remains of a Cornish boiler, Building E



Plate 7: Chamfered ground floor return of Building E



Plate 8: Open frontage of boiler house in eastern part of Building E

4.2.10 **Building F:** this comprised a late nineteenth-century building of stone construction, placed on the southern side of the main spinning block (Building I; Fig 2). Externally the building was of only a single storey, but internally it had a reduced floor level, consistent with that of the spinning block to the south. The majority of the building was of stone construction, but was remodelled below the eaves in modern machine-made brick, suggesting an alteration of the height of the structure, in conjunction with a replacement roof. Almost all of the of the window and door apertures were also blocked with brick (Plate 9). The north wall had a large double-door entrance on the western side of the elevation, where it was butted by Building B. This had bull-nosed quoins to the left jamb. All the remaining apertures had external sandstone quoin surrounds, with the windows also having stone lintels and projecting stone sills. A wide doorway at the western side of the elevation was partially blocked with brick, forming a window, itself blocked subsequently. Two stone lined recesses on this elevation appear to have originally housed recessed downspouts for the gutters.



Plate 9: North elevation of Building F, with blocked apertures and rebuilt wall-head

4.2.11 The north-east-facing elevation comprised three bays, with a doorway on the left also having bull-nosed stone quoin jambs. It was brick-blocked, as were windows in the other two bays. The roof line was higher above this elevation, rising to a peak above the right-hand jamb of the doorway. The east elevation was of bays, with a doorway in the north bay apparently representing an insertion, as there were no quoins to the jambs, and the door surround had been heavily re-pointed. The window to the right was blocked with clinker block. The southern wall of the building was formed by the north external elevation of the earlier spinning block, Building I (Fig 2).

4.2.12 **Building G:** this comprised a single-storey, stone-built structure, abutting the western side of the waterwheel house. It retained the majority of a single-pitched slate roof, supported upon a central principal rafter. A roof scar on the adjacent, earlier Building H, above the present roof-line, suggests that the height of the roof had been reduced, and the upper five courses of the west wall also appeared rebuilt, as they comprised larger stone blocks (Plate 10). The building had been reduced in length at its northern end, by approximately 2m, surviving to its original extent only as a collapsed wall on the roadside, western elevation (Plate 10). The replacement north wall was constructed using machine-made brick, and housed a central four-light window within the gable. The west wall had two large central windows, both brick-blocked, with a probable stone-blocked doorway at the southern end of the wall. A larger aperture, with an I-section steel lintel comprised the entirety of the south frontage of the structure, suggesting that it was originally open-fronted. The eastern jamb of this aperture overlay a blocked arched opening within the waterwheel house (Building H; Fig 2), demonstrating the later construction of Building G (Plate 11).



Plate 10: Building G, with shortened northern extent, and blocked apertures in west elevation



Plate 11: South elevation of Building G, with blocked aperture in west elevation of Building H

- 4.2.13 **Building J:** this represents the stair and hoist towers attached to the southern side of Building I, and both were included in the Level II survey.
- 4.2.14 **Building K:** a small single-storey, rectangular room butting the southern side of the hoist tower of the spinning block (Building I; Fig 2). It was of late twentieth-century brick construction, built in English Garden Wall bond, and with a single pitched roof. The building only had access via the hoist tower, and was presumably a small storeroom associated with the late re-use of the spinning block.
- 4.2.15 **Building L:** this comprised a single-storey shed butting the eastern side of the spinning block (Building I; Fig 2). It was of stone construction, with modifications in brick, and had a single-pitched asbestos sheet roof, supported on L-section steel members. The structure has a vertical joint in its eastern wall, flush with the south wall of Building I, suggesting that it was constructed in two phases (Plate 12). The northern part of the building may originally have extended further, quite possibly to the northern edge of the spinning block, and the latter elevation was formed in brick, with a steel lintel carrying the wall over a double doorway. The floor levels within the structure did not match those within the original layout of the spinning block, suggesting that these had also been altered within Building L. Part of a blocked doorway surviving at wall-head level in the east wall, above three blocked windows, demonstrated this change in floor level, and also that the building was originally taller.



Plate 12: East elevation of Building L, with central butt-joint within stone construction

- 4.2.16 **Building M – Finishing Shed:** this small sub-rectangular structure was butted onto the southern side of the earlier spinning block (Building I; Fig 2). It was of stone construction, and probably originally had a pitched slate roof, which was replaced by a single-pitched asbestos sheet roof supported on a steel frame. The building, which had a concrete floor, was empty internally, and had a large blocked doorway into the spinning block in its northern elevation. This was stone-blocked, suggesting that it may have been blocked at the time of the construction of Building M, with access being provided in the western end of the building, adjacent to the stair tower. The west wall of the tower also housed the end bearing for a lineshaft within Building M, demonstrating that power was provided for the structure.
- 4.2.17 **Building N - Shed:** this late single-storey shed overlay the River Dean, and was aligned parallel to the culvert below the spinning block. It was of machine-made red brick construction, erected in English Garden Wall bond, most probably in the second half of the twentieth century. Access was afforded in either gable, below a pitched corrugated asbestos sheet roof. No internal access was afforded to the building.
- 4.2.18 **Building O – Shed:** this timber structure had been demolished prior to the desk-based assessment of 2004.
- 4.2.19 **Building P - Institute:** this 1½ storey detached stone building was of well-dressed stone construction, with a hipped roof, and quoined returns, suggesting a higher status than many of the surrounding structures (Plate 13). It was unfortunately in a poor state of repair, and had an external stair to a blocked entrance at first-floor level in the northern elevation, and had several

ground floor apertures in a single-storey outshut range along its western elevation. These were also blocked and partly overlain by a large build-up of demolition debris forming the present ground level (Plate 13). A single window in this range afforded light to the upper storey, which was mainly contained within the roofspace of the main structure. Although no internal inspection of the building was possible, the western outshut almost certainly represented an entrance lobby with adjacent cloakrooms, vestibules, and a stair, probably with a single open-plan room to the rear.



Plate 13: Front elevation of Building P, with raised ground level in the foreground

4.2.20 **Building Q – Large Finishing Shed:** this large shed was of stone construction, and although heavily modernised both internally and externally, still retained several original features. It comprised a single storey, open to the rafters, and retaining two east/west-aligned pitched roofs. Each of these had a projecting coped parapet above the western gable, each with an *oeil de boeuf* round window in the upper gable (Plate 14). The late corrugated asbestos roof had rows of corrugated plastic skylights, probably replicating the original arrangement which would have comprised slate and glass. The roofs were supported on timber lattice trusses (Plate 15), which were somewhat unusual. It was unclear, given only the cursory inspection afforded, to establish whether these were original, but it is unlikely that any original steel trusses would have failed and needed replacing on such a large scale during a re-roofing of the building. Furthermore, the present trusses were not of consistent style for the probable date of the roofing material, suggesting that they represent original trusses. The valley between the two roofs was carried on an I-section beam, supported on cylindrical-section cast-iron columns.



Plate 14: West elevation of Building R, western gables of Building Q above



Plate 15: Rooftrusses within Building Q,

- 4.2.21 **Building R – Warehouse:** this stone-built single-storey structure formed a continuous outshut to the larger shed to the east (Building Q; Fig 2). It had several stone-blocked windows and doors in its western wall, which was latterly partly subsumed below a rise in ground level for the present road bed (Plate 14). Given the material used in the blocking of the apertures, it would appear that this change of levels was undertaken relatively shortly after the erection of the building.
- 4.2.22 **Building S – Storage Shed:** this mid-twentieth-century large open warehouse/shed, replaced the southern half of the late nineteenth-century finishing shed, and a smaller shed placed on its southern side. Elements of the western wall appear to have been incorporated in the new building. Whilst the lower part of the external walls were of stone construction, the late building was supported on a steel frame, the upper parts of which were clad with asbestos sheeting (Plate 14), with corrugated asbestos sheeting to the gables. The majority of the eight bays of the building had a pair of windows in the western elevation, although the north and southern bays contained doorways, with a further full-height roller-shutter door presumably inserted into the third bay from the southern end. The southern gable housed two windows, which were level with the present ground level. Internally, the floor level was lower than to the south, and the building was open-plan, with the north wall being of machine made brick construction, forming a partition to the remodelled shed to the north (Building Q). The steel lattice trusses were more typical of its period of construction than those in Building Q to the north.

4.3 LEVEL II BUILDING SURVEY

- 4.3.1 **Building I:** the 12 bay spinning block (Fig 3), measuring approximately 110 x 37' (33.5 x 11.3m), was constructed of local coursed rubble to a height of four storeys, and survives without a roof or any of the internal floors (Plate 16). The upper two floors are each stepped back by 9½" (0.24m) on the north and south walls and the eastern gable, saving material and reducing the weight of the building. Internally, the windows had segmental brick arches and brick reveals. All original first floor windows have been blocked, with either stone or brick. On the upper floor, the tie beam sockets had projecting sandstone pads (Plate 17).
- 4.3.2 On the north external face, the windows have flat sandstone lintels of varying thickness. The eastern bay (12) at first floor level was remodelled subsequently into a door, flanked by a narrow window (Plate 18). Bay 4 has a pair of timber rails within the wall face, placed at the top of the ground floor window aperture, and probably relating to its blocking. Bay 5 has a fishplate at first-floor level, in the position where a window could be expected, but for which there was no evidence, suggesting one was not included within the original build. The two bays to the west were also devoid of windows, with a large bearing box in Bay 7, flanked by a pair of smaller boxes, set slightly lower in the wall (Plate 19).



Plate 16: General view of the spinning block, Building I, and wheel house Building H



Plate 17: North internal elevation, Building I, with diminishing wall thickness and window size, blocked apertures and narrow upper Bay 1 window



Plate 18: Eastern end of north elevation, Building I, with remodelled aperture in end bay

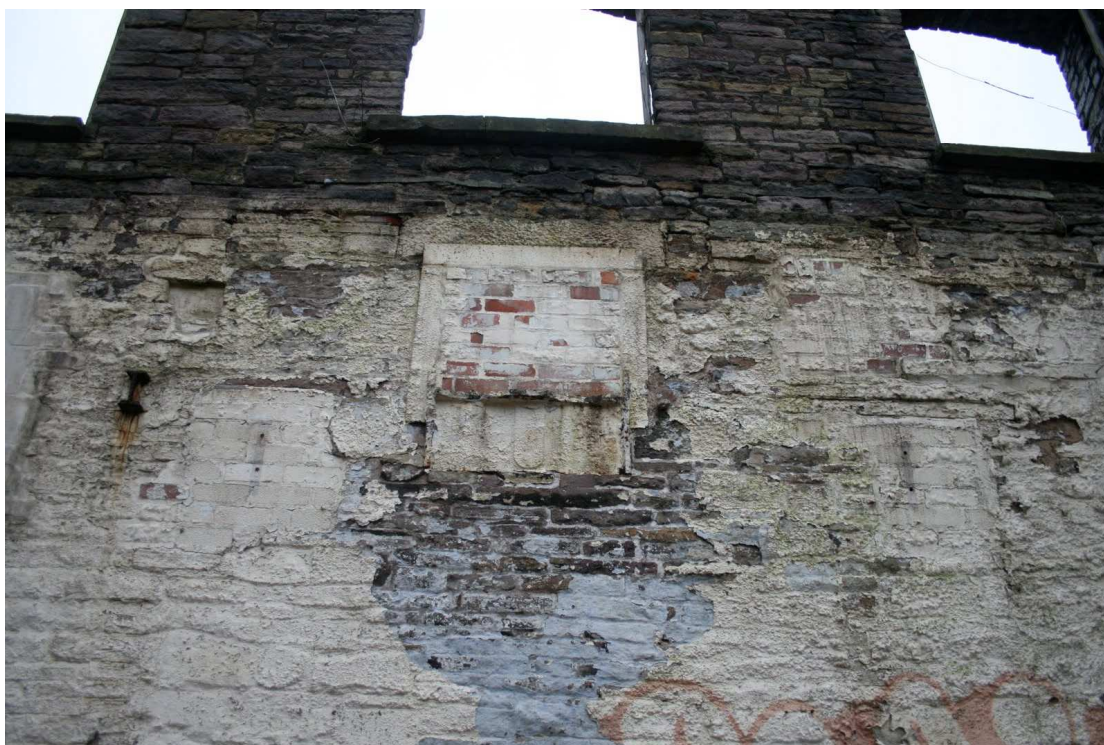


Plate 19: Large cast-iron bearing box, Bay 7, Building I, flanked by smaller apertures

- 4.3.3 The external ground level was increased subsequently on the north side of the structure, obscuring most of the original ground-floor apertures, all of which are stone-blocked, with the exception of the eastern bay (Bay 1), which has an enlarged opening with an I-section steel lintel (Plate 17). The window in the third bay was also brick-blocked at ground floor level. The windows in Bays 1 and 2 in the north wall were both also narrowed on the upper two floors (Plate 17).
- 4.3.4 The original four floors were reduced to three taller floors, supported on I-section steel beams. The original beams were either removed, with the sockets infilled with clinker block, or were cut flush with the wall face. Two of the large I-section beams inserted to create the new first-floor level had deflected significantly, and have two supporting cylindrical cast-iron columns, each set on flagstone pads above the present concrete floor (Plate 20).

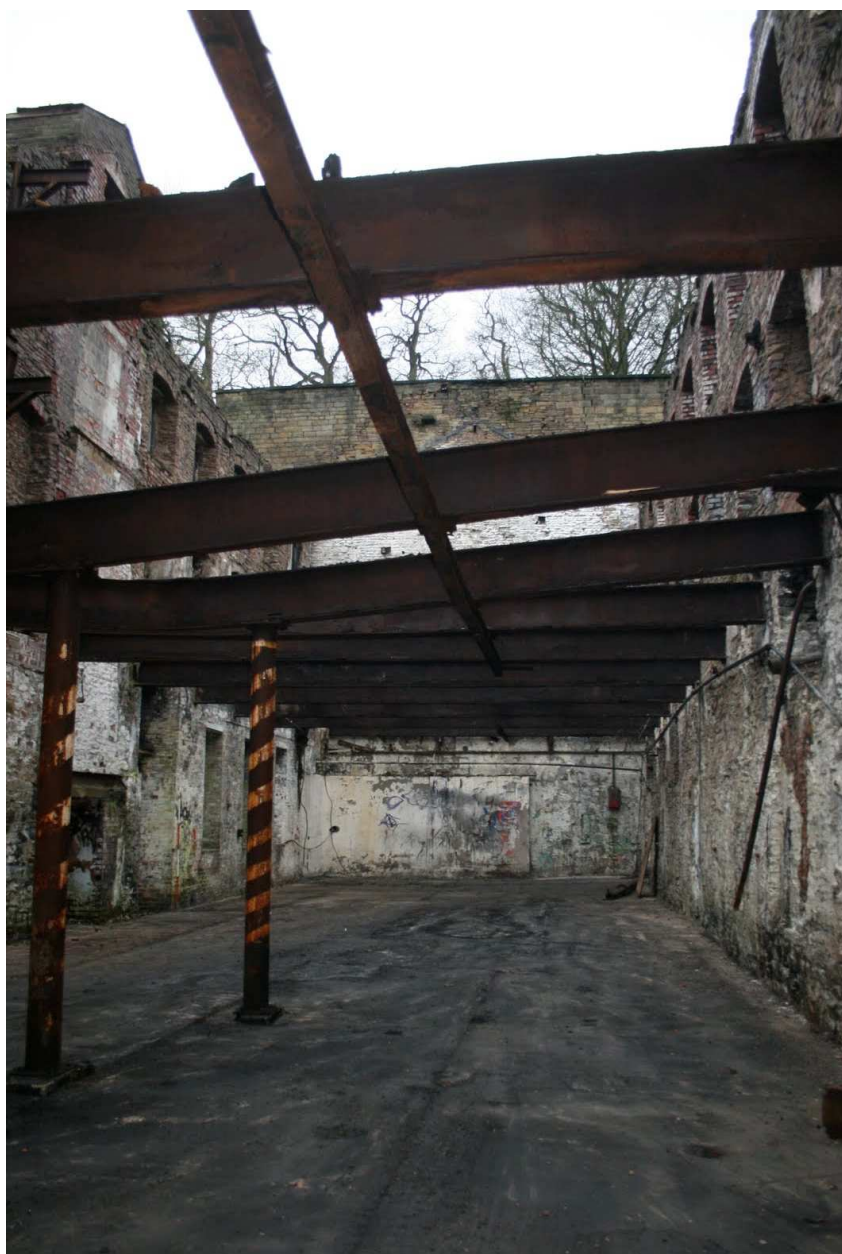


Plate 20: Inserted steel beams for the repositioned first floor level, Building I

- 4.3.5 Both the north and south walls returned to form the eastern elevation of the waterwheel house, which was extended above the height of the original gable wall. A subsequently remodelled wide doorway was inserted into the partition wall between the two structures at its northern end, as was a round-headed arched opening to the south of centre (Plate 21). The base of this has been enlarged to form a doorway by cutting through the padstone of the original driveshaft bearing which it housed (Plate 22).



Plate 21: Apertures inserted into the western gable of the spinning block, into Building H



Plate 22: Detail of axle mount for water wheel, with cut padstone

4.3.6 Internally, the north wall retains several fragments of cast-iron wall brackets (Plate 23), which presumably carried lineshafting, although the height is unusual, being only around 5' above the present concrete floor. The fifth to seventh bays have no evidence for ground-floor windows, whilst at first-floor level above, there was similarly no evidence for windows, as observed within the external elevation. The large bearing box within Bay 7 was set on a sandstone pad (Plate 24). In the eastern bay (12), there was also no window, as this lay below the external ground level, but immediately to the west of where it would have been placed was a 3 x 1' (0.92 x 0.30m) vertical rectangular aperture (Plate 25). This was blocked with bricked stamped 'BC' denoting it was made at Bradford Colliery, Manchester, and was bonded in a black sooty mortar, suggesting a late nineteenth- or early twentieth-century date for the blocking. The exact purpose of the aperture is unclear, although it may represent the housing for an end bearing for a lineshaft, which may have been placed in this position if the end bay housed a stair from the raised external ground level (Fig 2). A late clinker block stair gave access to a concrete platform above a clinker block store in the end bay, which would have also afforded external access.

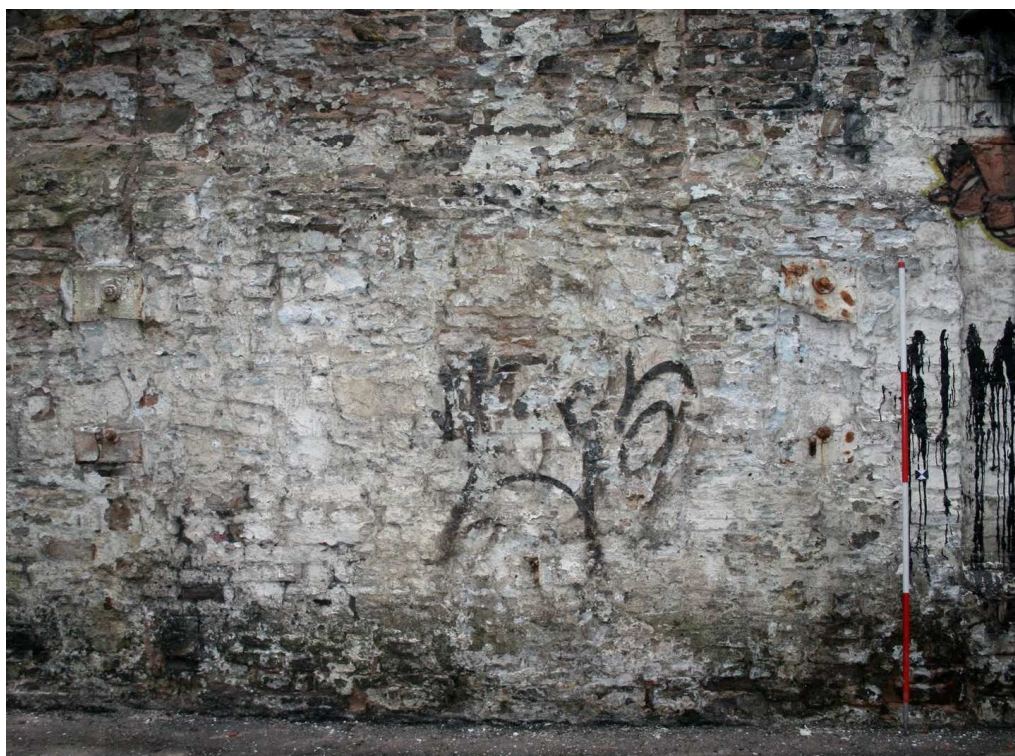


Plate 23: Broken cast-iron wall brackets, north elevation, Building I



Plate 24: Large cast-iron bearing box, Bay 7, Building I, flanked by smaller apertures

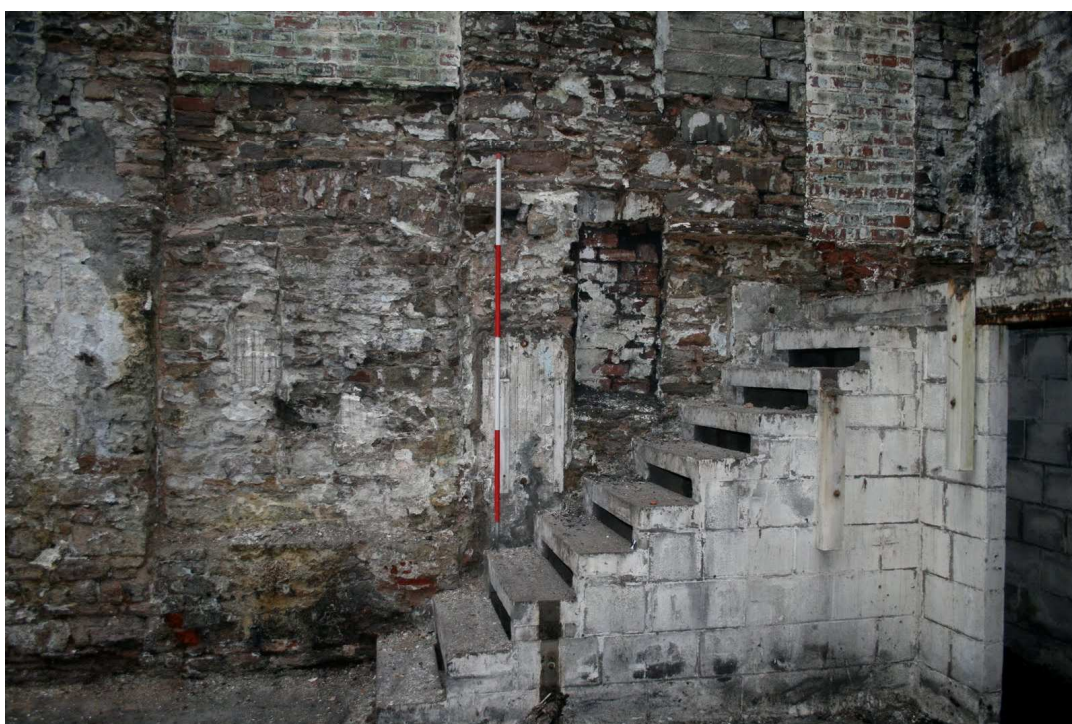


Plate 25: Blocked windows, inserted stair, and possible blocked end bearing bracket, Bay 12



Plate 26: Blocked end bearing box, eastern gable, Building I, with remodelled doorway above

- 4.3.7 The eastern gable has no apertures at ground-floor level, as this was also positioned below the external ground level, which rises up the hillslope around the end of the building. The only ground floor feature is a bearing box, presumably for an end bearing, placed approximately 18" (0.46m) from the south wall (Plate 26). A door at the north end of the first floor has been remodelled and enlarged, whilst the three floors above all have doorways positioned to the south of centre, with that on the top floor being stone-blocked. This afforded access into the adjacent structure (Building L; Fig 2), which was reduced in height subsequently.

- 4.3.8 Bays 10-12 of the south wall are heavily remodelled at original ground and first floor levels, although Bay 11 retains a large segmental arch, taller than the windows elsewhere, and apparently represented an original doorway, blocked subsequently with stone (Plate 27), quite possibly during the addition of a further finishing shed, Building M (Fig 2: *Section 4.2.16*, above).

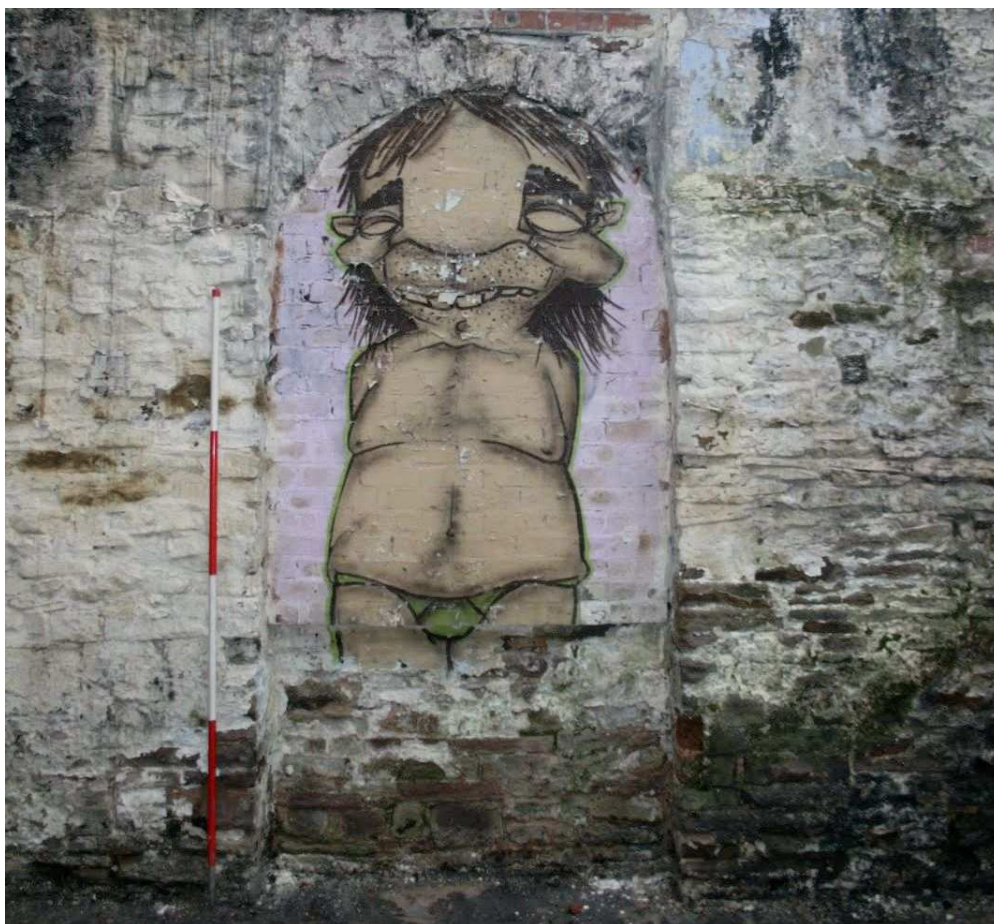


Plate 27: Blocked doorway, south elevation, Bay 11, Building I

- 4.3.9 Bay 9 has an inserted doorway, possibly enlarged from a window aperture, with an extractor fan at first-floor level in the window above. Bay 8 afforded access into the original stair tower, and was latterly fitted with steel fireproof double doors. The first-floor aperture above is stone-blocked, whilst the upper two floors had single fireproof steel doors (Plate 28).



Plate 28: Bay 8, south elevation, Building I, showing doorways into stair tower J

4.3.10 The 14'2 (4.27m) stair tower (Building J) is of fireproof construction, with an external door in its eastern side at ground-floor level. The stairs are of sandstone flag construction, with quarter-turn landings between each floor. The central newel is of brick construction, bonded in lime mortar, with bull-nosed corners, and is lime-washed. Windows were originally provided on each of the western landings and on floor level landings of the first three floors (Plate 29). A lineshaft appears to have been placed through the tower at first floor level, as opposing bearing boxes were observed in the east and west

walls (Plate 29). This possibly resulted in the stone blocking of the doorway into the spinning block at this level, as its insertion would have not been possible whilst the doorway remained in use. The external east wall also houses an end-bearing box (Plate 29).



Plate 29: East wall of stair tower with landing windows and two inserted bearing boxes



Plate 30: Bays 7 and 6, south elevation, showing blocked doorways and brick hoist tower J

4.3.11 The apertures in Bay 7 are blocked at all levels, flush with the internal wall face on all but the second floor. These were larger than the windows elsewhere on the upper floors, suggesting that they represented doorways, almost certainly into a privy tower, which would have been removed for the insertion of a hoist tower in Bay 6 (Plate 30). This was constructed in machine-made brick, in English Garden Wall bond, using a black sooty mortar, and clad in stone, similar in size, but greener in colour than the pinkish-red sandstone of the original construction (Plate 31). It was butted onto the earlier stair tower, which presently has a single-pitched roof, possibly remodelled during the addition of the hoist tower. On its southern external face, the hoist tower has four-light windows to each floor (Plate 31), above a date stone of 1809, bearing the initials E C (Plate 31), presumably representing Edward Collier, who owned the complex at this date (UMAU 2004). This has clearly been repositioned from elsewhere within the building or complex.



Plate 31: Southern elevation of hoist tower, J, with repositioned datestone of 1809

- 4.3.12 The western five bays of the south wall were refaced in machine-made brick at ground and first-floor level, projecting a full-brick thickness from the wall (Plate 32). This appears to date from the alteration of floor levels within the spinning block. Bay 1 of the south wall has doors on the upper two floors, reflecting the change in ground level adjacent to the wheel house.



Plate 32: Western bays of south elevation, Building I, showing refaced ground floor

- 4.3.13 **Building H:** the five-storey high waterwheel house was most probably added to the western gable of the spinning block in the 1850s, to replace two smaller water wheels, one of which was presumably housed internally, within the western bay of the spinning block, where the River Dean passed under the building in a culvert (Fig 2).
- 4.3.14 The rectangular structure was built with well-dressed and coursed local stone, to a much higher standard than other buildings within the complex, and had a string course at external ground floor level and projecting stone copings (Plate 33). The western elevation had a high-level wall scar for the roof-line of the original height of Building G (Plate 16), whilst the northern elevation had two doorways inserted into the north elevation, affording access from Building B to a floor inserted into the waterwheel house, following the removal of the wheel in the mid-twentieth century (Plate 16). The south elevation has further decoration in the form of a pair of round-headed arched windows, with a

projecting keystone, at a level corresponding to the fourth floor of the spinning block (Plate 33). The floor above had a shallower round-headed window, with a projecting sandstone sill (Plate 33). A doorway at external ground floor level, with an I-section steel lintel was almost certainly inserted following the removal of the wheel.



Plate 33: Large 1850s wheel house, with cast iron trough supplying water from a reservoir

- 4.3.15 No internal access was afforded into the waterwheel house, which contained late concrete floors at first- and second-floor level, but the round-headed apertures housing the axle bearing were observed in the west external wall (Plate 11) and within the gable of the spinning block (Plate 22).
- 4.3.16 The waterwheel was fed by a long leat which ran down the western side of the valley, being fed from the River Dean at a level where a suitable head of water could be generated (Fig 2). The leat filled a header reservoir, cut into the hillside to the west of the wheel house, and still extant, although heavily overgrown. A sluice in its eastern side controlled the flow of water into an iron trough, which bridged the road below, into the wheel house (Plate 33). This is heavily overgrown (Plate 34), and inaccessible, but could be seen to comprise riveted iron sheets, each approximately 4' (1.22m) wide and 2' (0.61m) high. At each junction a strengthening or tensioning bar was bolted across the top of the trough (Plate 34). The base comprised similar sized sheets, which were carried on cast-iron rails, which had a pair of strengthening braces at either end into the wheel house and retaining wall of the reservoir (Plate 33). The aperture from the trough into the wheel house had an I-section steel lintel (Plate 34), which presumably represented a replacement to an earlier lintel, with the wall above also being rebuilt in machine-made brick (Plate 34).



Plate 34: Detail of iron-sheet trough from reservoir into wheel house

4.4 WATCHING BRIEF

- 4.4.1 **Building E:** the watching brief examined the below-ground remains of the boiler house element of Building E, following its demolition (Plate 35). Prior to this demolition, the western of the two bays retained part of the outer casing of a boiler, and an *in-situ* blown down pipe (Plate 6). Unfortunately this did not survive the demolition of the structure.
- 4.4.2 Not only did the watching brief reveal the size and layout of the boiler bed for the boiler, it also revealed two further boiler beds to the east of the dividing wall (Plate 36). These were slightly longer than that in the western bay (Fig 4), and had partially intact flues (Plates 37 and 38) feeding a perpendicular flue which ran across the northern end of all three boilers (Plate 39).
- 4.4.3 All were constructed of a mixture of red brick and refractory brick, with the latter being used primarily as facings, and within the flues where the heat was greatest. Many were stamped with the name HAMMOND, a local brick

manufacturer in Pott Shrigley. Several lower grade refractory bricks bore the stamp BC of the Bradford Colliery brickworks in Manchester.



Plate 35: Footprint of Building E following demolition



Plate 36: Three boiler beds with partially intact benches observed below Building E



Plate 37: Flue on boiler bench, and at rear (right) of both visible beds into main flue



Plate 38: Detail of boiler flue, with in-situ damper framing at rear



Plate 39: Boiler flue adjacent to front edge of Building E

4.4.4 All three boilers were of Cornish-type, with part of the full length side flues clearly visible within the extant fabric (Fig 4; Plates 37 and 38). Whilst these were mainly destroyed prior to, or during the demolition of the structure, elements of associated dampers into the main rear flue were observed *in situ* (Plate 38) and within the demolition debris. Elements of damaged projecting walls, of refractory brick construction at the rear of each boiler, almost certainly relate to the channelling of air from the back of the boiler into the two side flues, which ran to the front of the boiler bench and into a single flue beneath the boiler. Whilst the benches for the boiler were all badly damaged, probably as a result of the removal of the boilers themselves, a short row of disturbed, but effectively *in-situ* mounting blocks were observed at the northern end of the western bench. Several more of these L-shaped blocks, with concave inner faces to support the curved boiler, were observed within the backfill, as were examples of convex refractory tiles, which were placed over the top of the boiler.

5. DISCUSSION

5.1 INTRODUCTION

5.1.1 The chronology and development of the Ingersley Vale Mill complex has previously been discussed as part of a comprehensive desk-based assessment undertaken several years prior to this survey (UMAU 2004). This identified five principle phases in the development of the complex, which was begun in the late-eighteenth century. Whilst it is not deemed necessary to repeat this information for the purposes of this report, the buildings recorded will be discussed as individual entities within the broader framework of the earlier proposed phasing.

5.2 DISCUSSION OF COMPONENT BUILDINGS

- 5.2.1 **Building A - Offices:** whilst some fabric relating to an earlier structure in this position survived, the extant fabric was constructed during the final phase of activity, probably shortly after the survey for the 1955 Ordnance Survey map. The building was constructed as a large office block, showing the increased administrative workforce and workload associated with later-twentieth century manufacture.
- 5.2.2 **Building B – former ‘Grey Rooms’:** the present structure was of similar build to Building A to the north, and probably predated it by a very short space of time. It was built on the foundation of a structure erected between 1842 and 1871 (UMAU 2004, 17). Within the structure, unbleached cloth would firstly have been sorted, dependant on both its quality, and the bleaching processes to be undertaken, and subsequently rolled and sown together to form continuous belts for bleaching.
- 5.2.3 **Building C – Oil tanks:** these mid-twentieth century oil storage tanks had been removed prior to the building survey, but presumably stored oil for use within late oil-fired boilers.
- 5.2.4 **Building D - Warehouse:** although demolished prior to the survey, this structure appears to have been similar to the western part of Building E, and quite possibly originally formed part of the same structure, erected between 1842 and 1871 (UMAU 2004, 17). Its position close to both the Grey Rooms, and the site entrance strongly suggests use as a store or warehouse.
- 5.2.5 **Building E – Boiler House:** the previous study of the complex was unable to identify the function of this structure, but the Level I building survey and subsequent watching brief, clearly identified it as a boiler house. It would appear that the western part of the structure, which comprised a single small rectangular room on two floors, was originally an isolated structure, quite probably part of a north/south aligned row of buildings which included Building D, and probably serving as a warehouse or store. The original part of Building E appears to have been the eastern bay, which housed two Cornish-type boilers, installed prior to 1875, when the two boiler beds are clearly

depicted on the Ordnance Survey map (UMAU 2004, 29). The following edition of 1909 shows the area between these boilers and the single-celled building forming the western part of Building E, as being infilled, but in a different arrangement than that accommodating the third, slightly smaller boiler (Fig 2). This suggests that the western of the three boiler beds dates to the early-twentieth century, and was presumably installed to heat water for the bleaching process, rather than to provide steam for a power plant. The use of Cornish boilers at such a late date also suggests a low-pressure heating application, rather than use for power generation, as such boilers had been superseded by twin-tube Lancashire boilers in the second half of the nineteenth century within most textile manufacturing complexes.

- 5.2.6 The flue for the three boilers was placed on a perpendicular alignment, along the north wall of the building, and was modified for the addition of the flue from the western boiler. It survived to the edge of the demolished Building D, from where it must have dropped below ground level, and below Building B to a steeply rising flue leading to the chimney on the slope to the west (Fig 2). A depression in the ground surface marked the position of this flue, from Building B to the chimney, presumably resulting from the collapse of the flue. However, the 1875 map also shows a chimney on the hill to the north of the boiler house, and part of a flue was observed immediately to the south of its probable location (Plate 40). This suggests that this represented the original chimney for the two boilers, being replaced subsequently by a much higher structure on the opposite side of the valley, where a greater draw could be achieved.



Plate 40: Extant section of flue from boilers within Building E to demolished chimney above

- 5.2.7 It is highly likely that the original boilers not only provided hot water for the bleaching process, but also powered a steam engine, which apparently supplied supplementary power to the water wheel (UMAU 2004). Whilst no evidence for its position was observed during the building survey or watching brief, it was most likely placed adjacent to the boilers, and thus almost certainly in the space to the north of the extant eastern part of Building E, and partly beneath the later boiler bed.
- 5.2.8 **Building F – Finishing Shed:** this single-storey stone structure was built around the turn of the twentieth century as a finishing shed, where the cloth was dried, mangled, and beetled to produce the completed articles. The building was modified subsequently, with many alterations in machine-made brick.
- 5.2.9 The processes within the finishing shed required power, and this was probably primarily transferred from the water wheel, through the spinning block and finally into the finishing shed, rather than from the engine, which was almost certainly placed on the western side of the boilers within Building E. However, it is possible that a driveshaft from the engine was placed into Building F, where it could be used to augment the water-powered supply to both the finishing shed and spinning block when necessary.
- 5.2.10 **Building G – Boiler House:** this single-storey stone structure, built against the western face of the waterwheel house between 1842 and 1871, was described as a boiler house in an account of 1900 (UMAU 2004, 16). The extant building, although latterly shortened, was certainly of suitable style, with a large open frontage on its southern side, and with a high single-pitched roof. It would not have been inserted to provide steam for an engine, rather to provide an increased supply of hot water for the bleaching process, demonstrating the expansion of the complex and its output during this period.
- 5.2.11 **Building H – Waterwheel House:** the waterwheel house probably represents the most significant of the surviving structures. It was probably built in the 1850s to replace an earlier dual water wheel system (UMAU 2004, 14), and housed a large, 56' (17.07m) diameter cast-iron suspension wheel, reputedly the largest in the country (*ibid*). The wheel itself was removed in the mid-twentieth century, and concrete floors were inserted into the structure.
- 5.2.12 The water supply from the River Dean was carried via a gravity-fed leat, originating much higher up the valley, and fed a header reservoir placed adjacent to the waterwheel house, on the opposite side of the road, approximately level with of the top of the building. The water supply was controlled via a sluice, into a trough of riveted iron-sheet construction, which formed a flume within the top of the waterwheel house. The identification of a replacement lintel for the aperture into the waterwheel house, suggests that the present trough may have been a replacement for an earlier example, possibly of timber construction.
- 5.2.13 The extensive undertaking of constructing the leat, reservoir and water trough, considering that the river flowed directly below the mill itself, allowed the large waterwheel to have an overshot water supply, almost certainly of

backshot variety. This is a particularly efficient form of waterwheel, as all of the water applied to the wheel is utilised, and the full potential energy of the water is released and also enhanced by gravity. Such waterwheels did not require a large flow of water to keep them rotating. Furthermore it would cope much better with seasonal variations in flow rates and water levels, than a true overshot waterwheel, where the wheel rotates forwards from the flume, and thus against the water in the channel below the wheel. This would require it to be stopped at times of high water. It is unclear whether the River Dean was culverted through the base of the waterwheel house, to allow the water current to push the wheel, as in an undershot variant, further increasing its efficiency.

- 5.2.14 **Building I – Spinning Block:** although badly damaged by both fire and extensive remodelling, the spinning block represents the earliest extant building of the complex. It was certainly constructed prior to 1844, most probably in 1809, as depicted on the datestone inserted into the face of the late-nineteenth/early-twentieth century hoist tower. The structure is relatively narrow, even for an early-nineteenth century spinning block, designed to house spinning mules placed transversely across the structure. This allowed them to be placed in narrow spinning blocks that could be spanned by large-scantling timber beams, generally with only a centrally-placed row of columns providing internal support. The 37' span of the mill would only allow mules carrying well under 300 spindles (Miller and Wild 2007, 100), whereas rapid advances in mule design and uptake meant that significantly larger mules were available at this time (*ibid*).
- 5.2.15 The building was placed across the River Dean, with power for the mules presumably originally being generated by an internal undershot water wheel placed in the western bay. As a result of the position of the mill relative to the river, the stair tower was offset to the east of centre on the southern side of the building (Fig 2). This was of typical fireproof construction, with stone floors and stairs, whereas the floors of the main building would almost certainly have been timber above ground floor level, carried on timber joists and beams. This was the most common arrangement within mills of this period, as it represented a cost-effective compromise to the threat of fire (*ibid*). Blocked apertures in the bay immediately to the west of the stair tower, and the lack of fenestration within this elevation, suggest that a privy tower may have originally been placed in this position. The adjacent hoist tower was added prior the alteration of floor levels, dating it to the mid/late-nineteenth century, as it housed a doorway to the original first-floor level. The inclusion of windows in the south elevation of the relatively large hoist tower suggests that it also housed replacement privies for those which it replaced.
- 5.2.16 Very little evidence for the power system within the spinning block survived. A large aperture in the western elevation, at first-floor level represented the axle for the mid-nineteenth century water wheel, which presumably provided power directly into the spinning block. No evidence for footstep bearings, translating horizontal driveshafts into vertical rotative power survives, although the wider pier between the first and second bays in the north wall could feasibly have housed such features. An end-bearing box in the east wall, immediately below the ground-floor ceiling level, adjacent to the south

elevation, almost certainly reflects the position of a lineshaft, but their position on the upper floors is unclear. As the large bearing box and associated apertures in Bay 7 of the north wall are confined to the lower floors, it is almost certain that these relate to a bevel gear translating a driveshaft into the adjacent finishing shed to the north (Building F), where rotative power would also have been required.

- 5.2.17 The extensive remodelling of the structure began in the late-nineteenth century, when spinning ceased, and the building was converted for use within a bleachworks. The first floor was removed, allowing large vertical kiers to be placed at ground-floor level.
- 5.2.18 **Building K – Store:** this small late store related to the final use of the spinning block, after the mules had been removed and the floor levels altered. Its only communication was with the hoist tower, and its probable use as a store room was presumably related.
- 5.2.19 **Building L – Finishing Shed:** this heavily remodelled and extended structure appears to date from the latter part of the nineteenth century, and was constructed as a further small finishing shed. It would originally have communicated directly with the upper two floors of the adjacent spinning block, allowing for the easy transfer of materials. Its use probably changed after the erection of the hoist tower on the south side of the spinning block, culminating in a reduction in its height.
- 5.2.20 **Building M – Finishing Shed:** this small sub-rectangular structure was placed on the southern side of the spinning block (Building I). The single-storey, stone-built structure almost certainly contained beetling machines, as evidence for a powered process was identified in the extant eastern elevation of the adjacent stair tower, where the end bearing for a lineshaft within Building M was observed.
- 5.2.21 **Building N - Shed:** this late single-storey shed overlay the River Dean, and was aligned parallel to the culvert below the spinning block. It was described in the desk-based assessment of 2004 (UMAU 2004, 17) as being of timber construction, but was actually of machine-made red brick, most probably erected in the second half of the twentieth century. Access was afforded in either gable, suggesting that it functioned as a small workshop.
- 5.2.22 **Building O – Shed:** this timber structure had been demolished, or had collapsed prior to the original survey of 2004, and appears to have formed a temporary canopy between Buildings M and Q (Fig 2).
- 5.2.23 **Building P - Institute:** this detached stone building was described as a two-storey institute, erected in 1903, in the earlier desk-based assessment (UMAU 2004). It was well-constructed, with a hipped roof, and quoined returns, suggesting a higher status than many of the surrounding structures. It was of 1½ storey height, with a low upper floor, mainly contained within the roof space. Its presence within the mill demonstrates the varied role of such complexes, particularly in rural environments, where they served as a major

focus within the community, not only as an employer, but also in terms of a social and educational centre.

- 5.2.24 **Building Q – Large Finishing Shed:** this was the largest component of the site following its erection at the end of the nineteenth century, and marks the transfer from spinning to bleaching of textiles within the complex. It was used for making-up, packing and stamping the finished goods prior to their departure. The two coped parapets which rose above Building R to the west, represented the northern of four such gables within the original structure, demonstrating it to have been twice the length of the surviving building, which was heavily modernised internally.
- 5.2.25 **Building R – Warehouse:** this low single-storey structure lay mostly beneath the level of the present road, and apparently formed a continuous outshut to the larger shed to the east (Building Q; Fig 2). Stone-blocked windows and doors in its western elevation demonstrate that the road level was originally consistent with the floor levels within the finishing shed to the east. The structure was almost certainly a warehouse for finished packaged goods, awaiting transport from site. It is too wide to have formed a rope-alley for the shed, which would also have been unnecessary in this area, and too long to have housed boilers.
- 5.2.26 **Building S – Storage Shed:** this mid-twentieth century large open warehouse/shed, replaced the southern half of the late-nineteenth century finishing shed, and a smaller shed placed on its southern side. Elements of the original western wall appear to have been incorporated in the new building, which also had a stone-built southern wall, although this appears to represent re-used material, in an attempt to blend the building slightly with its surroundings.

5.3 CONCLUSION

- 5.1.2 The buildings of the Ingersley Vale Mill complex represent the culmination of a long and varied history of textile production in the valley. Little survives of the original spinning mill, and the spinning block itself was heavily remodelled for use as the main structure of the subsequent bleaching processes undertaken on the site. This conversion of the site to a bleachworks not only required the remodelling of the existing structures, but hailed a large-scale expansion of the complex, particularly on its southern side.
- 5.1.3 All of the buildings had been significantly remodelled, and many survived in a very poor state of repair at the time of the Level I survey. However, the rapid recording of the buildings has significantly increased our knowledge of the complex, and despite significant changes in ground levels, the watching brief demonstrated that significant archaeological features were preserved below later structures.
- 5.1.4 The removal of many of the late features, and the consolidation of the earlier structures will not only ensure their future survival, but will present the monument in a much more simplified fashion, more akin to its cotton-spinning origins.

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ILLUSTRATIONS

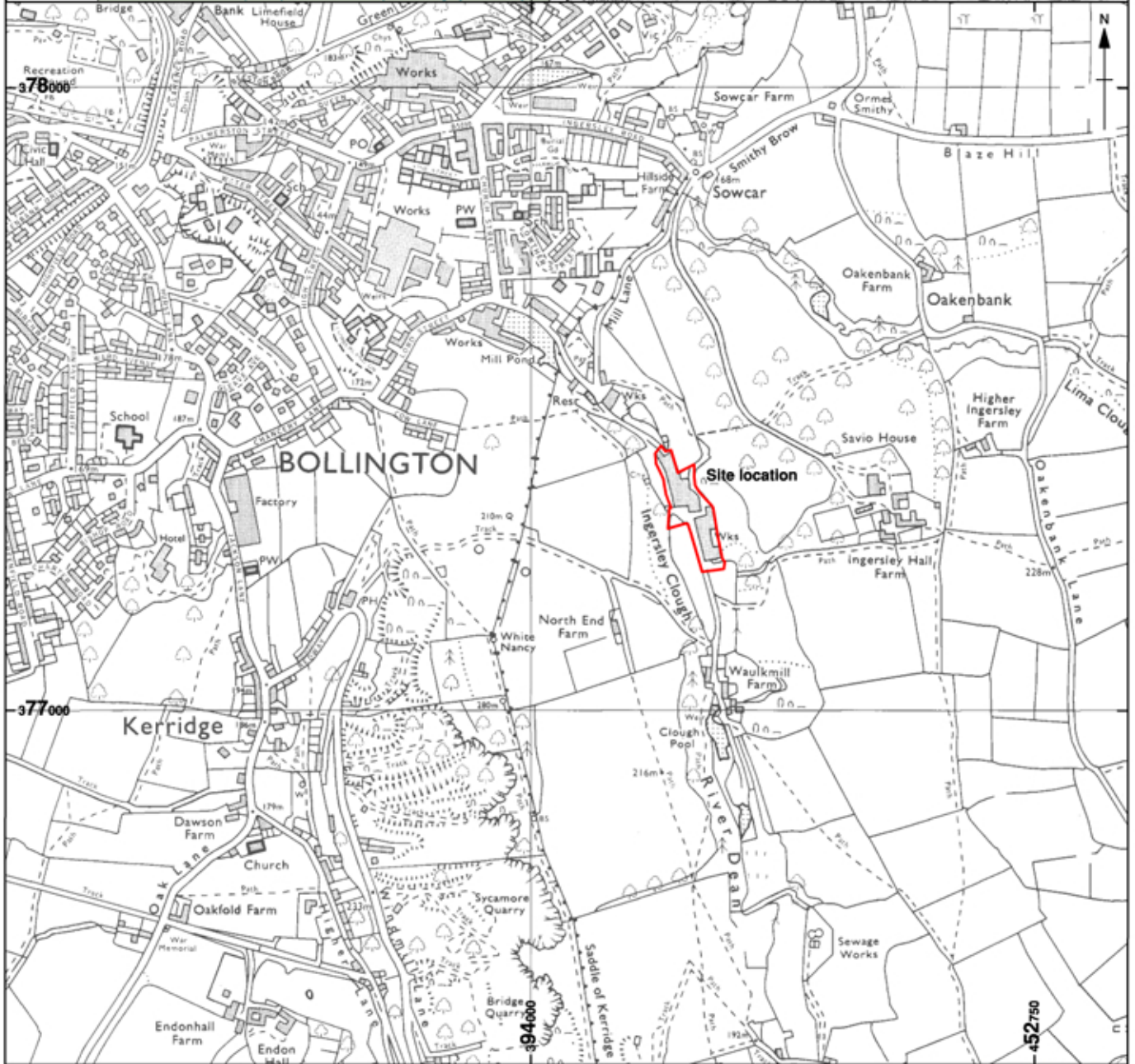
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Figure 1: Site location

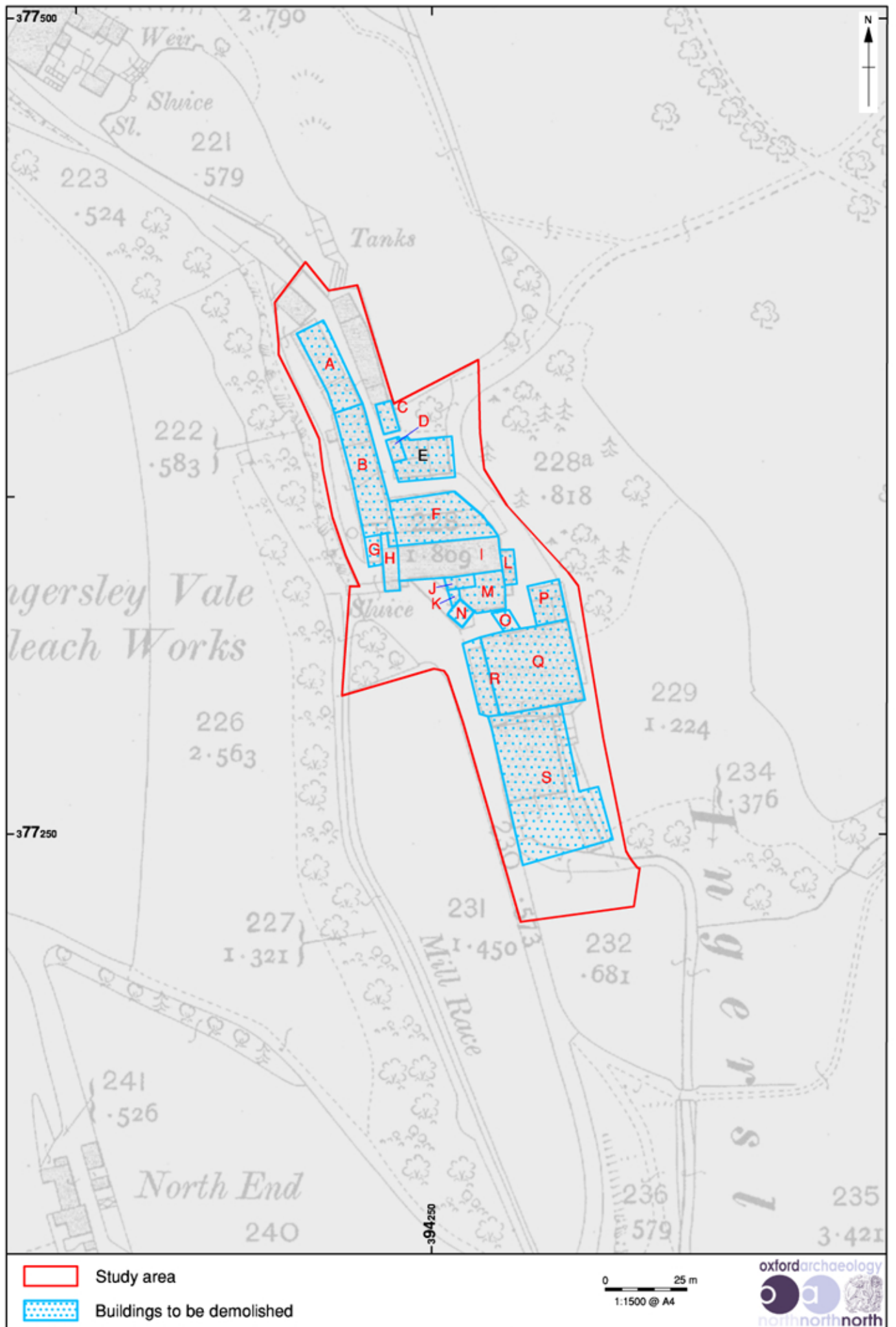


Figure 2: Site plan showing building annotations, overlain on Ordnance Survey map of 1909

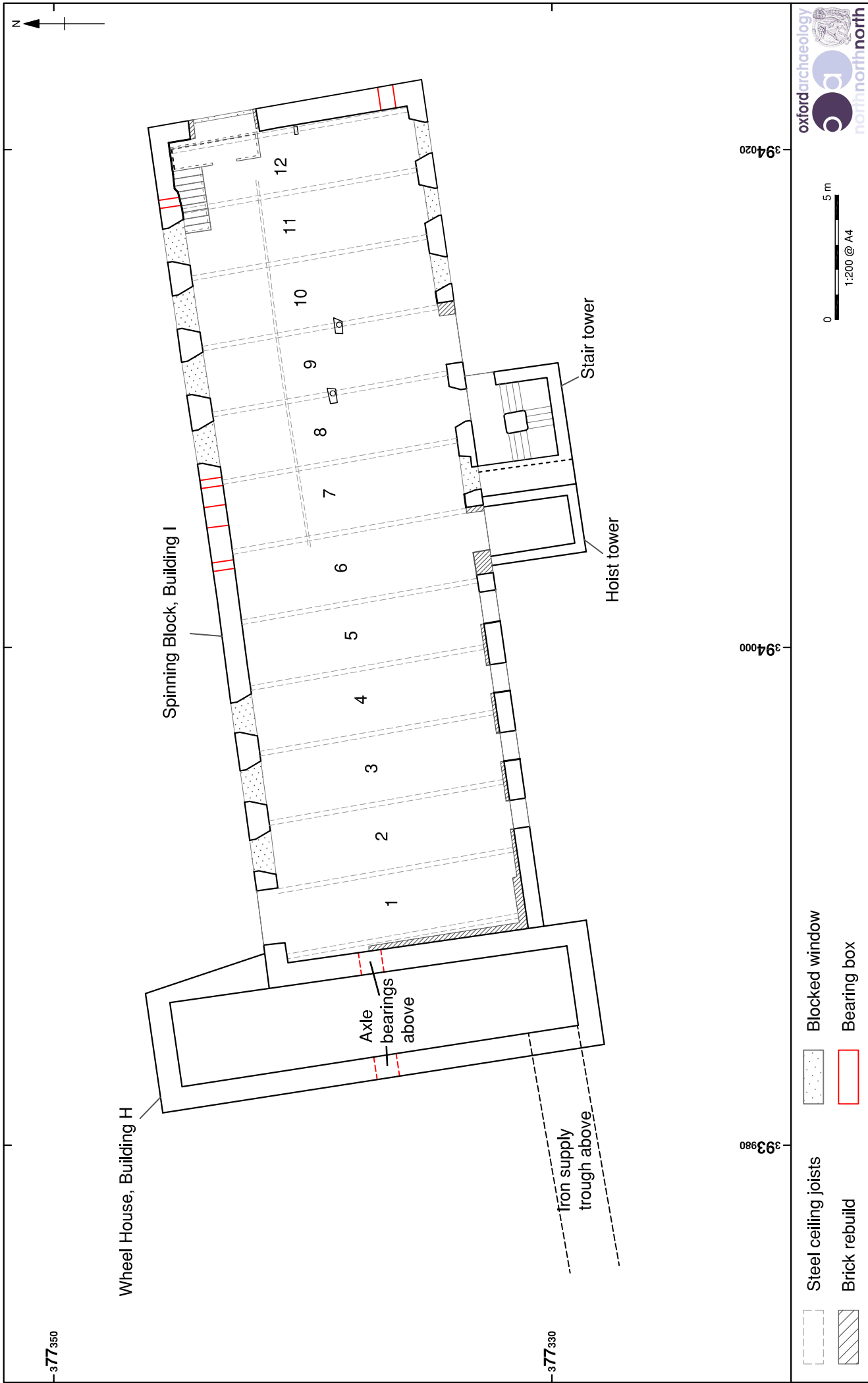


Figure 3: Plan of spinning block (Building I) and wheel house (Building H)

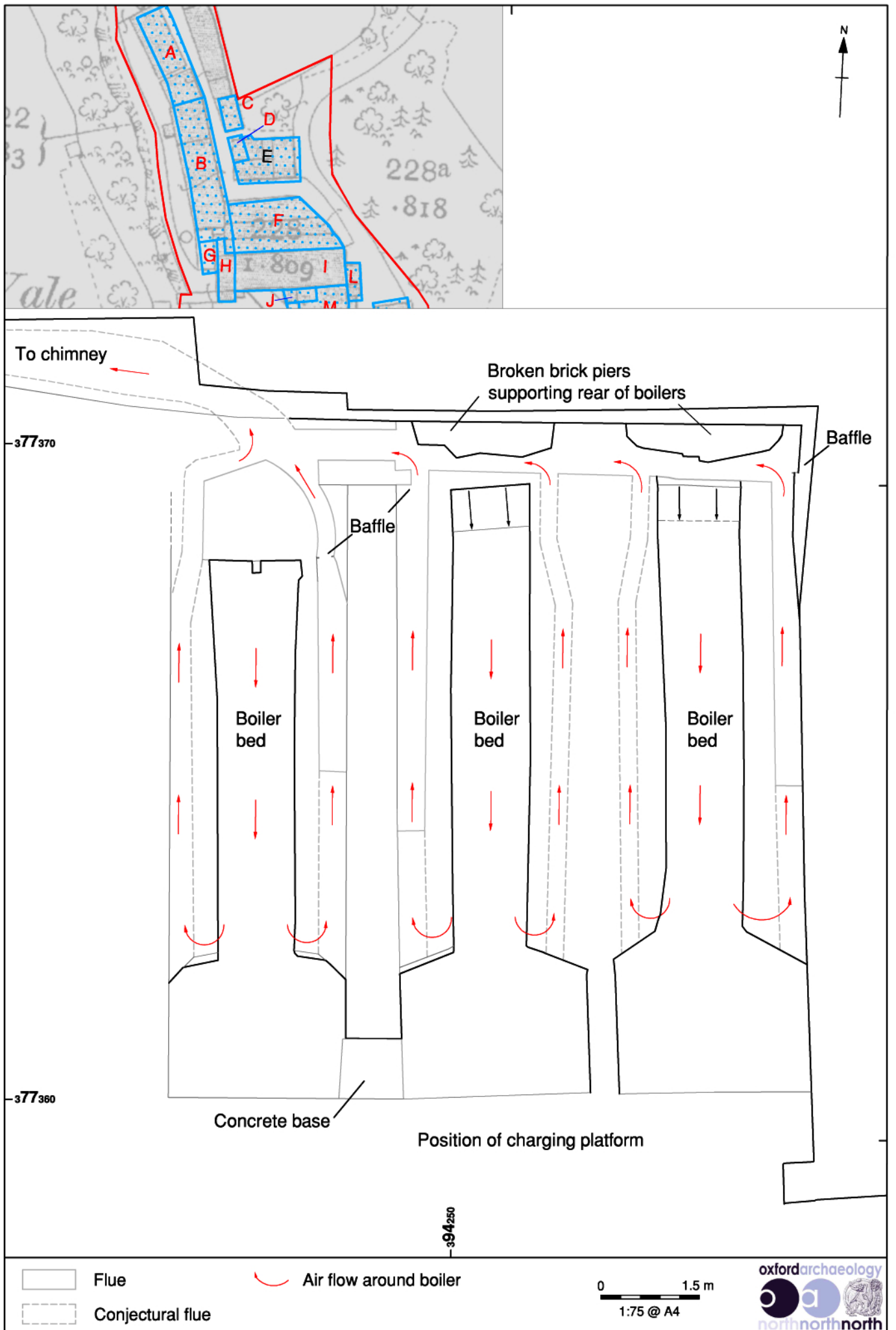


Figure 4: Plan of boiler beds revealed during watching brief of Building E