Forge Works, Chinley, Derbyshire

Historic Building Recording and Archaeological Works

General view of a standing chimney at Forge Works, Chinley, looking north.

ARS Ltd Report 2015/96
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Archaeological Research Services Ltd

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Executive Summary

In March 2014 Archaeological Research Services Ltd was commissioned by Copperleaf Ltd to undertake a historic building recording at the former Forge Works, Chinley, Derbyshire, prior to a proposed regeneration of the site. Additional archaeological works consisting of a strip, map and sample excavation, as well as a watching brief, were also carried out in 2015 to discharge the condition of the planning permission.

The historic building survey of the standing structures identified within the site provides a suitable preservation by record prior to any re-development programme. It has successfully created an interpretative discussion of the form, function and phasing of the extant structures within the Works. Of note, were several features associated with the original water management system of the original mill represented by leat or sluice, sluice gates, mill ponds, bridges over the leat, etc. which are depicted from the 1851 OS map through to the present edition.

The strip, map and sample excavation area measured approximately 40 metres x 30 metres. Despite considerable intrusion, the excavation identified few structural remains which may have been associated with the early paper mill including a substantial red sandstone wall within the central area and ephemeral foundation walls towards the northern side, one of which was associated with an earthen floor overlying a make-up layer composed of slag residues within a clayey matrix.

Evidence for later industrial activities was widespread consisting of two complete and one truncated underground brick vaulted chambers, three larger and contiguous settling tanks and seven depressed stone-lined compartments. These features appears to have acted as bleaching cisterns and probably relate to late 19th century Bleaching Works.

The watching brief recorded a short sandstone wall abutting the retaining wall of the small mill pond. This may have acted as a possible plinth for a drive shaft connection which would have been linked with a bearing housing that was inserted into the retaining wall of the small pond as part of later industrial activities within the Works.

1 Introduction

1.1 Scope of work

1.1.1 This report relates to a programme of archaeological works undertaken by Archaeological Research Services Ltd (ARS Ltd) to discharge the condition of the planning permission for the proposed development of the former Forge Works, Chinley, Derbyshire, which consists of the demolition of all remaining structures and re-development for up to 182 dwellings, up to 1,672m² of business floorspace (Use Class B1), up to 279m² of non-residential institution floorspace (Use Class D1), community facilities and associated infrastructure.

1.1.2 Planning permission has been granted for the works through a successful appeal (Appeal Ref: APP/H1033/A/13/2189819) made by Innovation Forge Limited and Woodford Land Limited against the decision of High Peak Borough Council (Application Ref. HPK/2012/0323, dated 31st May 2012, which was refused by notice dated 30 November 2012). A condition of the planning permission requires that:
"No development, including demolition, shall take place until a Written Scheme of Investigation for historic building recording and archaeological work has been submitted to and approved in writing by the local planning authority, and until any prestart element of the approved scheme has been completed in accordance with the approved scheme. The scheme shall include an assessment of significance and research questions; and:
a) The programme and methodology of site investigation and recording;
b) The programme for post investigation assessment;
c) Provision to be made for analysis of the site investigation and recording;
d) Provision to be made for publication and dissemination of the analysis and records of the site investigation;
e) Provision to be made for archive deposition of the analysis and records of the site investigation; and Appeal Decision APP/H1033/A/13/2189819
www.planningportal.gov.uk/planninginspectorate 20
f) Nomination of a competent person or persons/organization to undertake the works set out within the Written Scheme of Investigation."

1.1.3 The archaeological condition is in line with the National Planning Policy Framework (NPPF) paragraph 141 (DCLG 2012), to record and enhance understanding of the significance of any heritage assets to be lost during the proposed development in a manner proportionate to their importance, and to make this evidence (and any archive generated) publically accessible.

1.1.4 The programme of archaeological works entailed a historic building recording of several standing structural remains of the Works within the site and the recording of any below-ground remains associated with the early mill through a strip, map and sample excavation and a watching brief. The historic building recording complied with Levels 1/2 as outlined in the English Heritage (EH) report *Understanding Historic Buildings. A Guide to Good Recording Practice* (2006).

1.2 Location and topography

1.2.1 The site is located immediately south of the southern extent of the present-day village of Chinley (Fig. 1). The development area covers a total area of 12.64 acres and is centred on grid reference NGR SK 0438 8213.

1.2.1 The local geology comprises Millstone Grit Group - Mudstone, Siltstone and Sandstone sedimentary bedrock which was formed approximately 313 to 326 million years ago in the Carboniferous Period (British Geological Survey 2015).

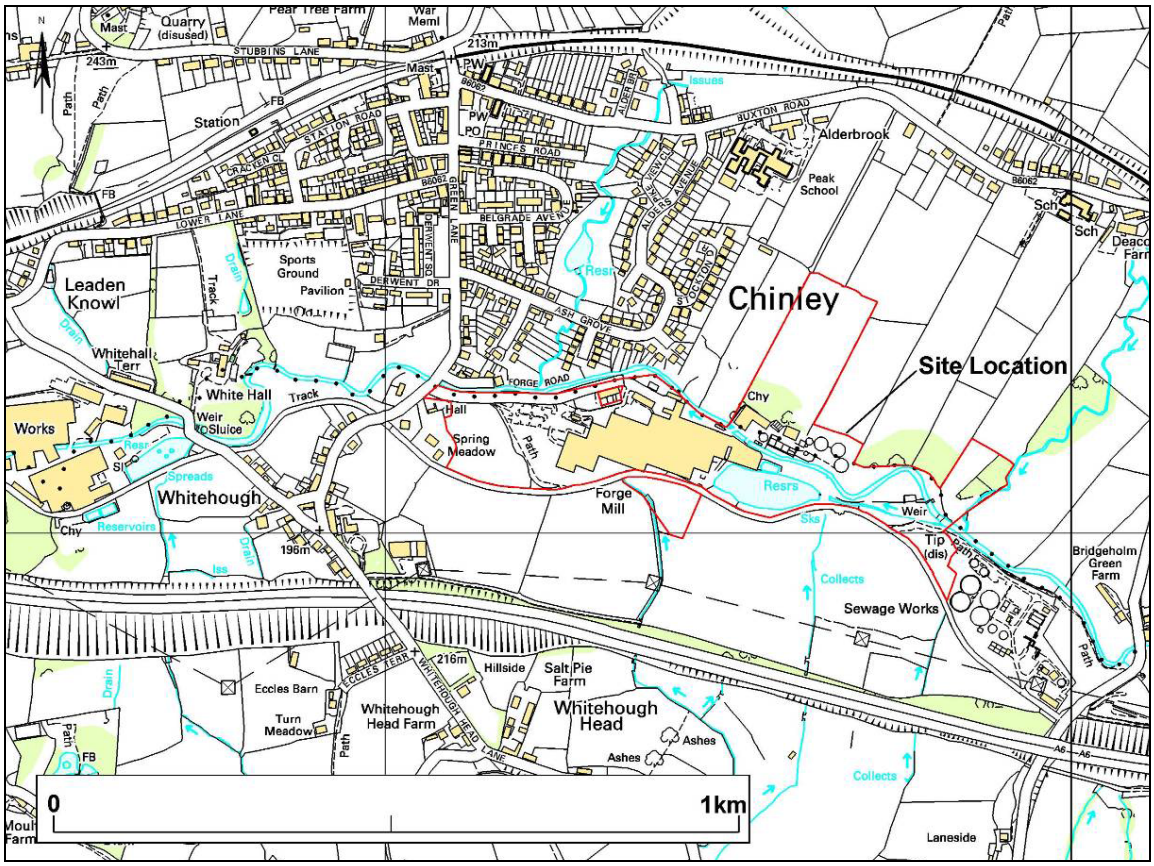


Figure 1: General site location (red line).
(Ordnance Survey data Copyright OS, reproduced by permission, Licence No. 100045420).

2 Aims and Objectives

2.1 The overarching objectives of the programme of works were to record the remaining above-ground remains and identify and determine the nature and date of any surviving below-ground remains associated with the former Forge Works as follows.

- To produce a photographic and descriptive record of the extant structural remains and built water management features associated with the Works.
- To recover and record through strip, map and sample excavation and a watching brief any remains of the early 19th century paper mill, including water-management features, that may be present beneath the later concrete ground slabs.

2.2 A full account of specific objectives is provided within a Written Scheme of Investigations (WSI) prepared by ARS Ltd which was subsequently approved by Steve Baker, Development Control Archaeologist of Derbyshire County Council (Appendix II).

3 Methodology

3.1 The fieldwork was led by Alvaro Mora-Ottomano (BA Hons, MSc) of ARS Ltd who is a corporate member of the Institute for Archaeologists (ACIfA 5297) and the Institute of Historic Building Conservation (2583AFF). All aspects of the building recording were conducted according to the guidelines in *Understanding Historic Buildings – A Guide to Good Recording Practice* by English Heritage (2006) and the *Standards and Guidance for Archaeological Building Recording* by the Chartered Institute for Archaeologists (2014a). All aspects of the archaeological monitoring and recording followed the standards outlined in the Chartered Institute for Archaeologists' *Standards and Guidance for Archaeological Excavation* (CIfA 2014b, *Standards and Guidance for an Archaeological Watching Brief* (CIfA 2014c) and the *Code of Conduct* (CIfA 2014d).

Historic Building Recording

3.2 The records produced were used in order to create an interpretative discussion of the form, function and phasing of the extant structures within the Works. This consisted of the following.

- A written record of the building was carried out by annotating plans and by completing ARS Ltd pro-forma building recording sheets. Descriptions and terms used follow Brunskill (1994 and 2000), Curl (1997) and Lynch (1994) wherever possible.
- A photographic survey composed of 35mm black and white print (400 Ilford HP5 Plus) of general views, was conducted using a Canon EOS 3000 N SLR camera fitted with a 28-90mm lens. Moreover, high resolution digital photographs (16 megapixels) was taken using a Nikon L810. Where possible, photographs included a graduated scale and cameras were mounted on tripods for extra stability. Details of the photographs were recorded on pro-forma index sheets, which included location, subject and orientation. The location and direction of the photographs were plotted on scaled plans.

Strip, map and sample excavation

3.3 An area measuring approximately 40m by 30m (*c.*1,200m^2) where an early 19th century paper mill was located was stripped down to a maximum depth of 1.5m in order to determine if any remains of the early mill, including water-management features, survived beneath the later concrete ground slabs. Full account of the specific methodology (including finds processing, conservation work and storage) is provided within the WSI (Appendix II).

Watching brief

3.4 An archaeological monitoring of ground-works on water management features and related areas of heritage interest was also undertaken. The main features of interest were the horizons at the bottom of and immediately below the reservoirs located immediately to

the south and east of the Works. The general methodology employed is also included in the WSI (Appendix II).

3.5 A risk assessment was undertaken before commencement of the work and health and safety regulations were adhered to at all times.

4 Historical background

4.1 Prior to the historic building recording and archaeological works, a series of documents were submitted to the planning authority in support of the planning application. These documents examine the historical and archaeological background of the site for the development and included an archaeological desk-based assessment undertaken by ARS Ltd (Davies 2011). These documents should be read in conjunction with this report.

4.2 A summary of the historical development, based on the aforementioned documents, is included here. The Forge Works, Chinley, was founded as a paper mill in the early 1800s. The desk-based assessment aforementioned includes an extract of the Tithe map of Chinley issued in 1841 with the putative location of the site. However, the location is erroneous as the site is in fact situated further south. Indeed, the site appears depicted on the 1847 Tithe map of Chapel-en-le-Frith, Derbyshire, instead. An extract reproduced here shows the mill, composed of a large rectangular structure with a central courtyard, associated mill ponds and leat (which are currently extant) and the adjacent Peak Forest Tramway that forms part of the western boundary (Fig 2). The 1st edition 25" OS map (1851) names the site as 'Forge Mill (Paper)' and shows the large mill pond with a range of buildings to the north-west, linked with the Peak Forest Tramway via sidings running along the west end of the pond. The 2nd OS map edition issued in 1898 shows that the industrial activity has changed as the Works appear labelled as 'Forge Mill (Bleaching)'. Further development occurred through time, including the construction of the present tall chimney situated within the northern area of the site which appears depicted from the OS 1938 map onwards. The site was sold to Dorma in the early 20th century who produced bed linen and cotton prints at the site. The bleach mill was extended at this time. In 2005 the site was sold to Kaleidoscope Colouration Ltd but the company went into administration. The site was largely demolished in 2008.

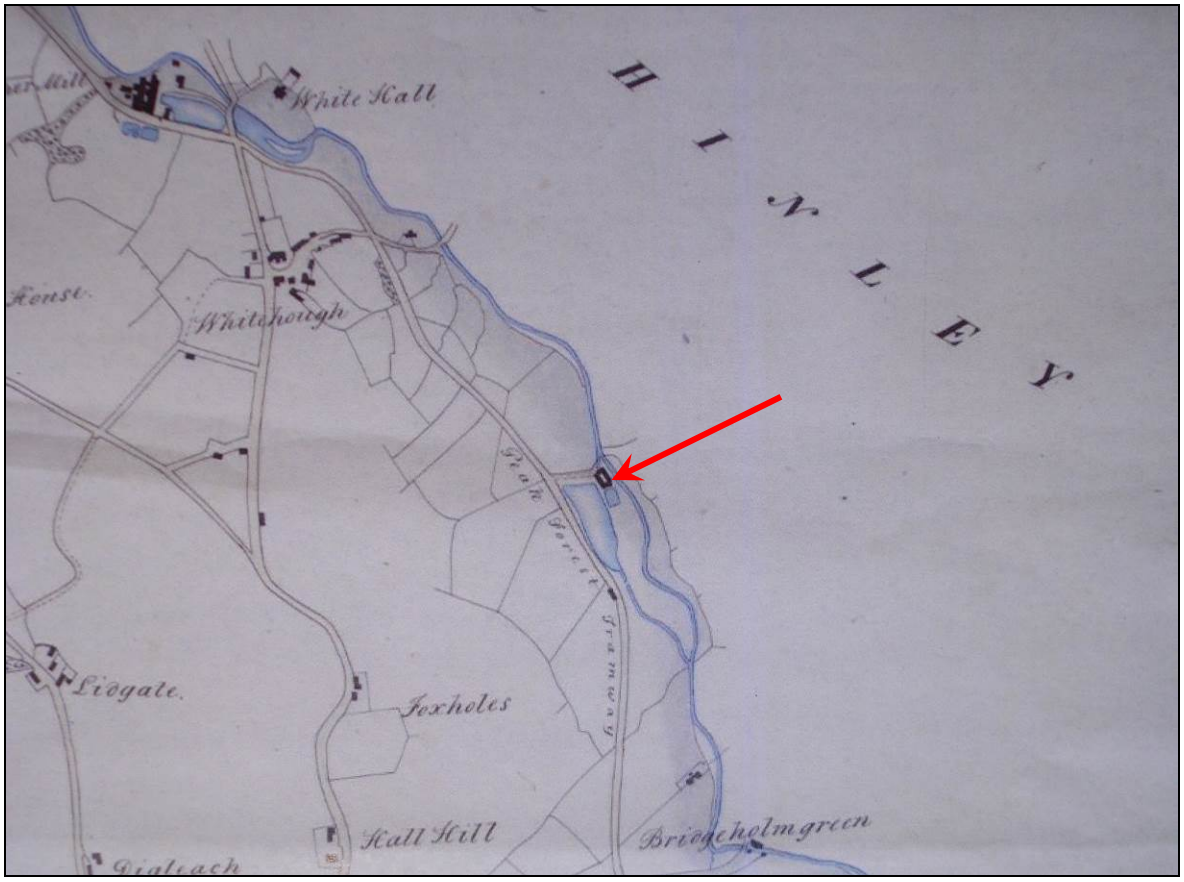
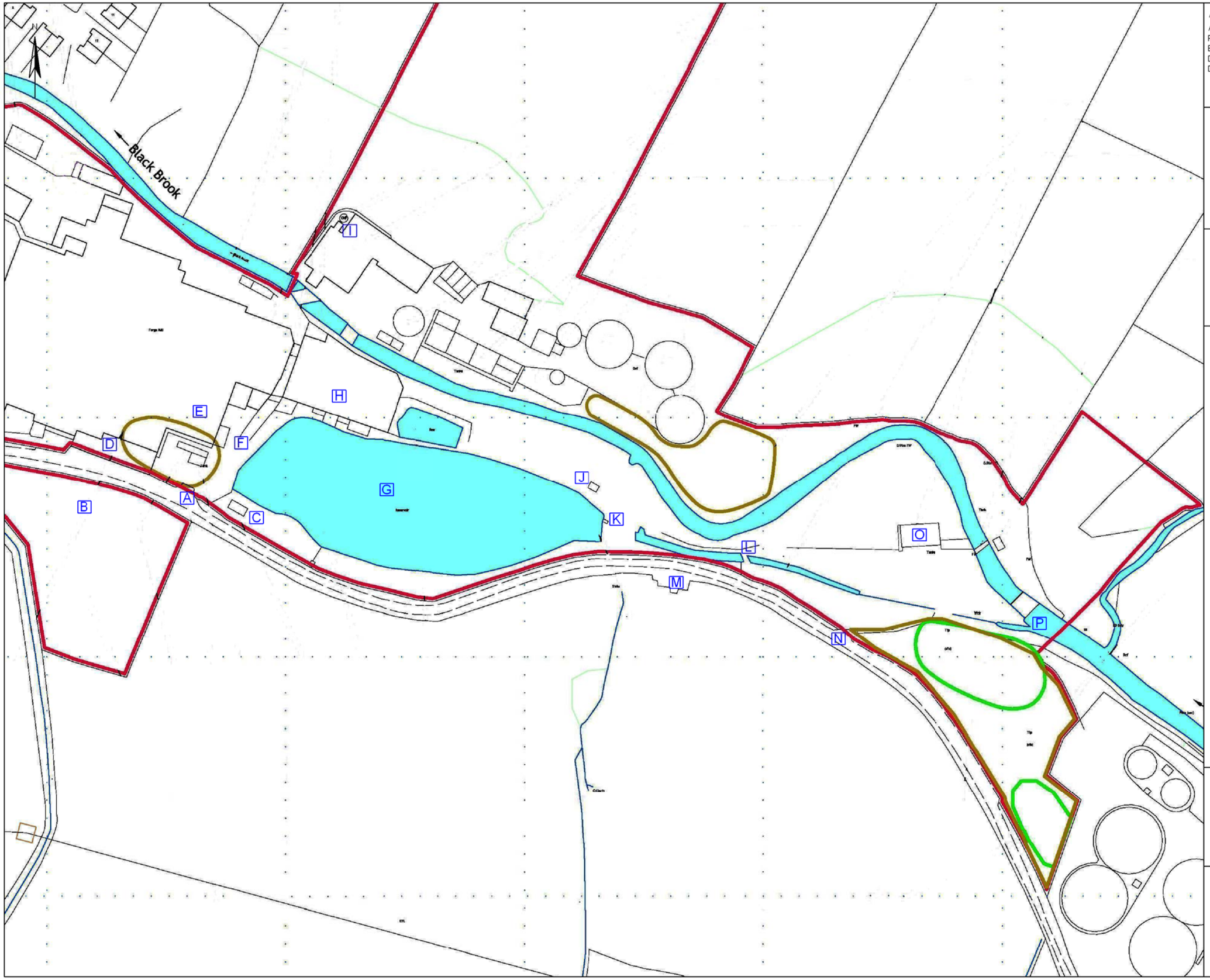


Figure 2: Extract of the 1847 Tithe map of Chapel-en-le-Frith showing the site (arrow).

5 Building recording

The proposed development site comprises several structural remains of the former Works which were recorded at English Heritage (2006) Level 1/2 standard prior to the proposed development of the site. Each original building/structure was analysed individually and the results are included below. A plan showing the buildings/structures with their assigned codes has been produced (Fig. 3).

The photographic record, comprising high-definition colour digital images and black-and-white prints and negatives, is included in the project archive with scaled plans showing their location and direction, as well as an accompanying photographic register with their descriptions. A selection of photographic plates is included in the report with detailed captions indicating the viewpoint of the camera.



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Site Code: FWC'15
Drawing Ref:
Date: 30 June 2015
Drawn: AMO
Scale: 1:1500@A3

Figure 3:
Plan of the site showing the standing structures and their codes

Key:

Notes:

5.1 Structure A

5.1.1 Structure A is a gateway into the Works from the Peak Forest Tramway (centred coordinates: 404459/382072). The Derbyshire HER entry for the Peak Forest Tramway states that it opened in 1796 soon after the completion of the Peak Forest Canal to Buxworth Basin and was in use until the mid-1920s (MDR9592). The date of its construction is significant to establish the origin of the primary mill as the route of the tramway, although running across several field boundaries, meanders around the southern edge of the large mill pond as if to avoid it. This may suggest that the pond (and associated mill structures) might have already existed prior to 1796 (cf. HER entry – MDR 485 – for Forge Mill which refers to it as *19th century paper mill/bleach mill linked with the Peak Forest Tramway via sidings)*. It is possible that the mill and associated water management components might have been constructed sometime during the third quarter of the 18th century as the 1762-7 Burdett's map shows other mills along the brook but does not depict any mill within the location of the site.

5.1.2 The gateway appears depicted on the 1851 OS map through to the present edition. Although this was the original main access to the Works, from the 1920s a new access road was constructed towards the northern side.

5.1.3 The gateway is recessed from the southern boundary wall of the Works with slightly curved walls which abut two gateposts or piers (*c.*2 metres height), built with coursed squared gritstone blocks, topped with shallow pyramid caps. The stonework of the posts is very regular with fairly plane face and each pier contains a single large block roughly dressed beneath the cap or copping stone. These larger blocks contain metal fittings for the gate hinges. The copping stones have rock-faced dressing with margins. The current gate is a modern utilitarian iron element. The boundary dry-stone wall is topped with crenalleted copping stones whose merlons and embrasures have been repointed in recent times. The masonry is rather regular with plane face and laid mostly in snecked bond (Figs 4 – 7). The Derbyshire HER entry describes the wall as *'Late 18th century drystone field walls. Drystone field walls, some with vernacular and some with formal castellated copestones, possibly enclosing land owned by Peak Forest Tramway. Perhaps built 1795-1796 as part of original construction. Modern squeeze stile in eastern section, and further east a tumble of large gritstone blocks'* (MDR 10958).

Figure 4: Structure A, looking north (scale 2m).

Figure 5: Eastern gatepost abutted by the wall along the disused tramway, looking south-east (scale 2m).

Figure 6: Detail of the western gatepost of Structure A, looking north (scale 2m).

Figure 7: Detail of the eastern gatepost of Structure A, looking north-east (scale 2m).

5.2 Structure B

5.2.1 This structure is located immediately to the south of the southern retaining wall of the disused tramway (centred coordinates: 404423/382067). Structure B has previously been described as the remains of an air raid shelter situated in close proximity to the Peak Forest Tramway (Derbyshire HER reference: MDR 10946).

5.2.2 However, no reliable evidence of the shelter was identified within its putative location which consists of a mound-like promontory adjacent to a dry-stone wall, partially covered by vegetation, which acts as a retaining wall along the southern side of the disused tramway (Figs 8 – 9). Further uncertainty of its authenticity is provided within the HER record which refers to it as '*Air raid shelter built c.1939 for Forge Mill workers during World War II. The shelter is visible as a flat-topped earth bank with a plantation of coppiced woodland to give camouflage from aerial observation. The location of the air raid shelter could not be determined by the 2006 ARCUS survey* Feature No. 9h1a *(Duckworth, Jessop & Badcock 2006)*'.

Figure 8: Alleged site of Structure B, looking north-west (scale 1m).

Figure 9: Top of promontory of the putative Structure B, looking north-west (scale 1m).

5.3 Structure C

5.3.1 This structure is located immediately to the north of the southern boundary wall which runs along the disused tramway (centred coordinates: 404476/382064). It appears depicted on the 1971 OS map. Structure C consists of a depressed brick-built rectangular chamber identified as an abstraction well (or well storage). It is mostly backfilled with soil and covered with shallow vegetation. Nevertheless, the structure is partially visible and its uppermost course acts as a coping laid in rowlock bond. Two large iron pipes were identified within the outer western wall which turns in a U shape towards the well or tank.

5.3.2 In close proximity to the western wall of the well, the remains of a stone pillar were also identified. The pillar is built with squared gritstone blocks with furrowed dressing and measures approximately 1 mete in height. Its function is unknown (Figs 10 – 12).

Figure 10: Structure C (arrow), looking north-west (scale 2m).

Figure 11: Detail of Structure C, looking north-west (scale 2m).

Figure 12: Remnants of stone pillar adjacent to Structure C, looking north-east (scale 1m).

5.4 Structure D

5.4.1 This structure is located along the disused tramway and to the west of the southern entrance of the Works (centred coordinates: 404428/382087). This structure is a long rectangular single-storey brick-built range which appears to have had an asymmetrical pitched roof. The southern wall stands approximately 3.50 metres in height and the western return consists of a gable wall. It is built with standard orangey bricks laid in English Garden Wall bond. It contains a large sliding door towards the western end. The structure includes a concrete floor and the internal face of the brickwork is lime-washed coated (Figs 13 – 16).

5.4.2 Structure D appears first depicted on the 1971 OS map; however, a retaining wall which would have supported the northern external wall of the mostly demolished building was partially observed and appears to consist of two separate phases of construction. Indeed the lower section (despite being slightly obscured by lime-wash coating) consists of a battered wall built with fairly coursed gritstone roughly hewn blocks and dressed quoins (Fig. 17). It is possible that the lower section of the retaining wall might have originally been part of an earlier structure which is depicted on the 1938 OS map.

Figure 13: Structure D facing onto the disused tramway, looking north-west (scale 2m).

Figure 14: Western end of Structure D, looking north (scale 2m).

Figure 15: Internal view of Structure D, looking west (scale 2m).

Figure 16: Western internal end of Structure D, looking north-west (scale 2m).

Figure 17: Detail of retaining wall with an earlier phase of construction (arrow), looking south.

5.5 Structure E

5.5.1 This structure is located near the centre of the Works (centred coordinates: 404450/382106). The structural remains consist mainly of an L-shaped wall (*c.*4 metres high) with a minor extension within the north-eastern corner. The L-shape wall appears to be a combination of different constructions. Although both walls are built with roughly hewn gritstone blocks, the southern wall is laid to snecked bond which necessitates a substantial amount of larger squared gritstone blocks, whereas the eastern wall is mainly built to courses with less regular stone blocks (Figs 18 – 23). Moreover, the southern wall is slightly battered and contains weep holes indicating that this wall acted as a retaining wall although the eastern wall also functioned as a revetment of a large building which appears first depicted on the 1921 OS map.

5.5.2 There is a small extension within the north-eastern corner which projects towards the east and is built with concrete and coursed gritstone rubble (Fig. 24). This extension is first depicted on 1938 OS map.

Figure 18: General view of Structure E, looking south-east.

Figure 19: Internal corner of Structure E, looking south-west.

Figure 20: Southern retaining wall, looking south-west (scale 2m).

Figure 21: Detail of retaining wall with weep holes, looking south (scale 2m).

Figure 22: Eastern wall of Structure E, looking south-east (scale 2m).

Figure 23: Southern side of the eastern wall of Structure E, looking south-east (scale 2m).

Figure 24: Later extension within the north-eastern corner, looking south-east (scale 2m).

5.6 Structure F

5.6.1 This structure consists of the remains of a north/south trackway along the western side of the large mill pond (centred coordinates: 404490/382102). This structure appears to be an original feature of the early 19th century paper mill and is shown on the 1851 OS map.

5.6.2 The trackway was found mostly backfilled with demolition debris and soil although the side walls that demarcates the track boundary were observed amongst the rubble establishing an approximate width of 3 metres. Subsequent ground-works removed a large amount of the demolition material exposing further the course of the trackway and its flanking walls made of gritstone roughly hewn rubble laid to courses, albeit slightly irregular in nature (Figs 25 – 28).

Figure 25: Structure F mostly backfilled with rubble, looking north (scale 2m).

Figure 26: Surviving retaining wall of the trackway, looking east (scale 2m).

Figure 27: Trackway following the excavation of the backfilled rubble, looking north.

Figure 28: Excavated trackway flanked by retaining walls, looking south.

5.7 Structure G

5.7.1 This structure is the large main mill pond located within the eastern side of the Works (centred coordinates: 404553/382062). It covers an area of approximately 6,200 square metres and contains considerable vegetation. The walls are made of roughly hewn gritstone blocks built to courses, albeit fairly irregular, and is rendered with cement and topped with concrete coping slabs. A large vertical truncation through the northern wall has been created in order to drain the pond. Adjacent to this inserted aperture, remnants of a sluice mechanism was noticed consisting of vertical iron rods attached to the stone wall (Figs 29 – 32).

5.7.2 There is also an adjacent small pond immediately to the north (centred coordinates: 404560/382097), 278 square metres in area, which is also drained containing trees and general vegetation inside it (Fig. 33). An equivalent sluice gate mechanism to the one attached to the wall of the large pond was also observed within the central area of the small pond although access to it was restricted (Figs 34 and 35). Both ponds are shown on the 1847 Tithe map of Chapel-en-le-Frith, and subsequent Ordnance Survey editions.

Figure 29: Large mill pond with retaining wall topped with concrete coping, looking north-east.

Figure 30: General view of the drained large mill pond, looking north.

Figure 31: Remains of a sluice gate mechanism, looking south-east.

Figure 32: Eastern area of the large mill pond, looking west.

Figure 33: Southern side of the small mill pond adjoining the large pond, looking east.

Figure 34: Small mill pond with a sluice gate mechanism (arrow), looking north.

Figure 35: Detail of sluice gate mechanism, looking north.

5.8 Structure H

5.8.1 This structure is located immediately to the north-west of the main mill pond (centred coordinates: 404533/382106). Structure H consists mainly of a long stone wall aligned east to west which constituted the southern wall of a substantial building adjacent to the large mill. The wall also contains the remains of an eastern return wall forming an L-shape. Most of the extant stone walls follow the outline of the earlier paper mill which appears depicted on the 1851 OS map. However, this area was significantly rebuilt in the 1920s as indicated by cartographic records although the extant stone walls appears to have been incorporated within the later constructions. The main southern wall is approximately 1.20 metres high built with roughly hewn elongated gritstone blocks laid in regular courses and its inner face is treated with lime-wash. A large aperture, contiguous with the one identified within the large pond, was also present across the southern wall which appears to be a recent truncation created to drain the pond. There are smaller compartments built with comparable masonry creating a terraced stepped platform immediately to the south of the main wall abutting the mill pond. There is also a later brick compartment forming part of the terraced platform (Figs 36 – 43).

5.8.2 The eastern wall is an integral element of the primary stone-built structure which was initially obscured by rubble although following ground-work excavation it was exposed yielding an overall height of 2 metres and treated with lime-wash. Of note is a large inserted bearing housing which had been blocked with bricks (Figs 44 and 45). This slightly battered wall acts as a revetment of the western side of the small mill pond.

Figure 36: General view of Structure H, looking south-east (scale 1m).

Figure 37: Easternmost area of the main wall and later brick-built extension, looking south-east (scale 1m).

Figure 38: Brick-built extension to the south of the main southern stone wall, looking south (scale 1m).

Figure 39: Central area of Structure H, looking south (scale 2 x 1m).

Figure 40: Terraced stone walls within the central area, looking south (scale 1m).

Figure 41: Detail of the terraced stepped walls, looking south-west (scale 1m).

Figure 42: Western area of the main wall of Structure H, looking south-west (scale 1m).

Figure 43: Westernmost end of the southern terraced wall, looking south (scale 1m).

Figure 44: Eastern wall following ground-work excavation, looking east (scale 1m).

Figure 45: Detail of bricked-up bearing housing, looking south-east (scale 1m).

5.9 Structure I

5.9.1 This structure is located within the northern area of the Works (centred coordinates: 404524/382185). It consists of a tall brick-built chimney that dominates the landscape of the Works which appears depicted on the 1938 OS map. The chimney is complete containing its crown top whose uppermost courses are reinforced with several bands of hand-forged wrought-iron. The brickwork is bonded with lime mortar laid in English Garden Wall bond. The actual bricks are radial (a purposely designed tapered ends which enables creating accurate circumferences) with one frogged bed containing the maker's stamp: 'E GLOSSOP AMBERGATE' relating to a brick manufacturer who became established probably in the first quarter of the 20th century as Edwin Glossop, Brick and Ganister Works, Ambergate, Derbyshire (East Midlands Named Bricks 2014). There is a slightly disturbed opening which constituted the main flue and is covered with fire bricks (Figs 46 – 52).

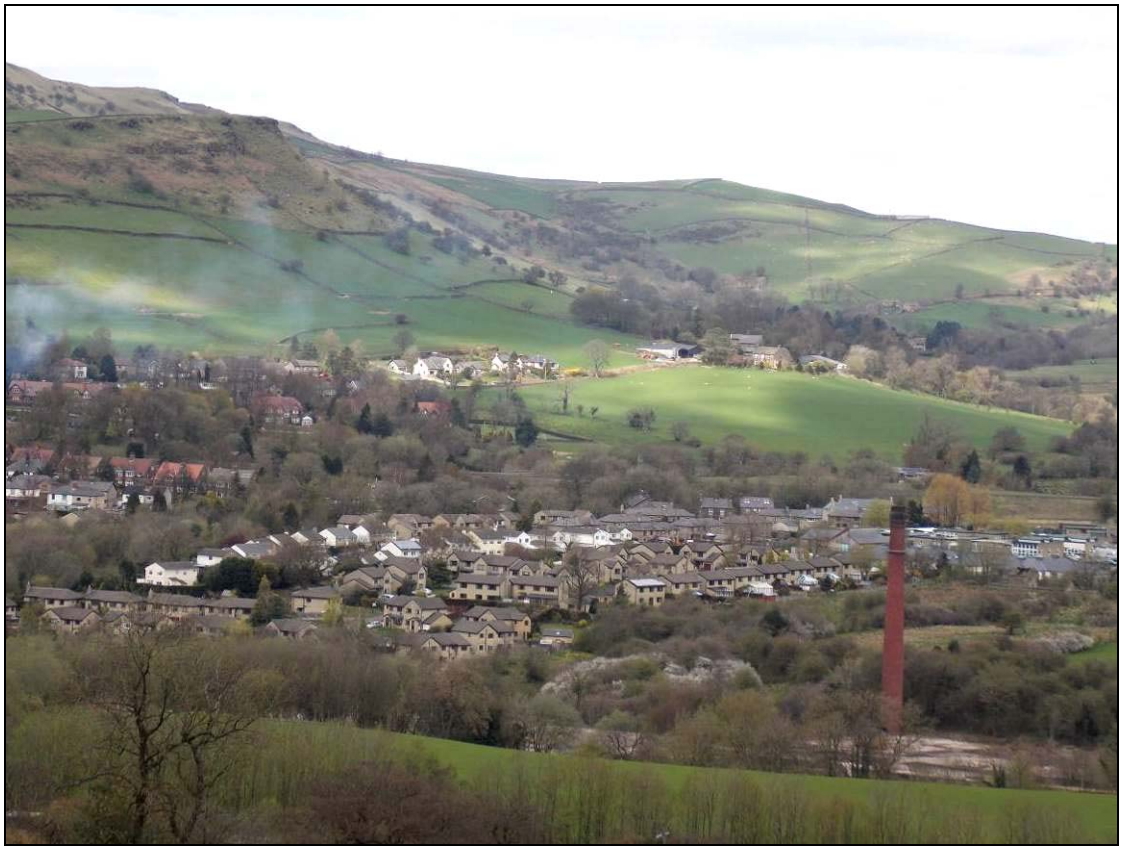


Figure 46: The tall chimney (Structure I) within its setting, looking north-west.

Figure 47: General view of the chimney, looking north.

Figure 48: Detail of the crown top, looking north.

Figure 49: Flue opening, looking north (scale 1m).

Figure 50: Detail of the brickwork, looking north-west (scale 2m).

Figure 51: Detail of radial frogged brick with maker's stamp.

Figure 52: Fire bricks within the flue, looking north.

5.10 Structure J

5.10.1 This structure is located in close proximity to the north-eastern area of the large mill pond (centred coordinates: 404628/382071). This is a small single-storey brick-built structure with a pitched slated roof which has close plain eaves and verges. The masonry is composed of standards orangey bricks laid in stretcher bond. Internally the brickwork is lime-washed, it has a concrete floor and the roof structure is composed of two sawn timber rafters supporting tongue-and-grove boards (Figs 53 – 55).

5.10.2 This building appears depicted on the 1971 OS map onwards. It might have acted as a pumping station as inside it there are remnants of a high-pressure pump with the maker's plate 'Rhodes, Brydon & Youatt Ltd. Stockport'. Although the structure was built in the 1960s or early 1970s, the actual pump appears to have been reused from an earlier building as this model dates to the 1940s or 1950s. Similar pumps from the same engineering company can be viewed online at http://www.hevac-heritage.org/electronic_books/pumps/4-PUMPSvariousmanufacturers.pdf

Figure 53: Structure J, looking north-west (scale 2m).

Figure 54: Internal view of Structure J, looking north-west (scale 2m).

Figure 55: Remnants of high-pressure pump, looking north-west (scale 1m).

5.11 Structure K

5.11.1 This structure is a sluice gate within the north-east corner of the large mill pond (centred coordinates: 404633/382058). The sluice gate is mostly extant and appears to be original as depicted on the 1851 OS map. The sluice itself is partially visible consisting of a stone-line channel although substantially covered with vegetation. The gate consists of a cast-iron frame with internal rails and a central threaded rod that would have facilitated vertical movement of a timber door mounted within the frame acting as a valve (Fig. 56).

Figure 56: Sluice gate within the north-eastern corner of the large mill pond, looking north-west (scale 1m).

5.12 Structure L

5.12.1 This structure is located along the sluice linking water from Black Brook to the large mill pond (centred coordinates: 404692/382042). Structure L is composed of a sluice gate which releases canalised water into the Black Brook through a spillway and an adjacent bridge which runs over the main sluice or leat that flows into the large mill pond. The sluice gate is comparable to the one identified further west as Structure K, although with the aforementioned spillway built with stone. The bridge appears to be built with roughly hewn gritstone blocks and has a semi-circular arch with more regular *voussoirs* under a dry-stone parapet (Figs 57 – 59). The bridge first appears depicted on the 1847 Tithe map of Chapel-en-le-Frith, linking a footpath over the sluice which extended from the southern side of the embankment of Black Brook to Forge Mill.

Figure 57: General view of the sluice, sluice gate and bridge, looking west (scale 1m).

Figure 58: Detail of stone bridge, looking north-west.

Figure 59: Sluice gate and spillway, looking south (scale 1m).

5.13 Structure M

5.13.1 This structure is located along the disused tramway (centred coordinates: 404662/382031). It consists of several ruinous walls which form part of the southern retaining wall of the tramway. It was thought to be within the boundary of the proposed development boundary but it is in effect outside it. Nevertheless, a description of the structure and a selection of relevant photographs taken during the building recording are provided below (Figs 60 – 63).

5.13.2 This structure is shown on the 1847 Tithe map of Chapel-en-le-Frith, and succeeding Ordnance Survey maps. It has been considered in a previous conservation management plan as '*Ruins of two small rubble gritstone structures, with brick outshot, set against a quarried face in a rectangular enclosure to the south of the trackbed. The surviving remains suggest a dwelling to the west end, having the remnants of a chimney flue against the south wall, built into the bank, and an attached earth closet. A smaller structure to the east appears to have been a cart shed or store. It is probably a former Lengthsman's House, built 1794 to 1796, but rebuilt 1803 as it was in the way of track widening'* (Duckworth, Jessop and Badcock 2006, feature 16).

Figure 60: General view of Structure M, looking south-west (scale 1m).

Figure 61: Southern wall with a central fire place, looking north (scale 2m).

Figure 62: Detail of the southern wall of Structure M, looking south-west (scale 1m).

Figure 63: Detailed of blocked-up fire place, looking south (scale 1m).

5.14 Structure N

5.14.1 This structure is located to the east of the Works along the disused tramway (centred coordinates: 404737/382011). Structure N consists of two gritstone gateposts adjacent to the crenallated boundary wall along the northern side of the disused tramway leading to a footpath which first appears depicted on the 1938 OS map. The gateposts are flat monolith flat slabs with round tops and contain iron pintles for the gate hinges. Remnants of one gate survive adjacent to one of the posts. The present footpath would have been a trackway for vehicles as the original gate consisted of two doors with an overall width of 3 metres (Figs 64 – 66).

Figure 64: Structure N between the boundary wall and disused tramway, looking south-east.

Figure 65: Structure N and boundary wall, looking north-east (scale 1m).

Figure 66: Detail of post with remnants of gate, looking south (scale 1m).

5.15 Structure O

5.15.1 This structure is located to the east of the Works in close proximity to Black Brook (centred coordinates: 404766/382052). It first appears depicted on the 1938 OS map and might have originally been used as setting tanks. It consists of a pool-like structure built with standard orangey bricks (two skins) laid in stretcher bond and the uppermost course laid in rowlock acting as coping. Although the interior of the structure is partially covered with vegetation, a total of twelve brick courses were observed yielding an overall depth of *c.*1 metre. There is also an integral narrow compartment along the western side wall with one brick partition (Figs 67 – 69).

Figure 67: Structure O, looking north (scale 2m).

Figure 68: Structure O, looking north-east (scale 2m).

Figure 69: Structure O, looking east (scale 2m).

5.16 Structure P

5.16.1 This structure is located to the eastern end of the Works along the southern embankment of Black Brook (centred coordinates: 404811/382012). It consists of a sluice gate controlling the initial flow of water from Black Brook into the sluice or leat. This structure appears to be original, associated with the entire water management of the Works, and is depicted on the 1851 OS map. The sluice consists of a small channel built with gritstone blocks although is it considerably covered with vegetation (Figs 70 and 71). The gate might be a later replacement which consists of an RSJ frame with a central vertical threaded bolt that would have enabled lifting a wooden paddle. Its construction is comparable to the other sluice gates identified along the channel (Structures K and L).

Figure 70: Structure P adjacent to Black Brook, looking north (scale 2m).

Figure 71: Structure P, looking north (scale 2m).

6 Strip, map and sample excavation

6.1 The aim of the strip, map and sample excavation was to record evidence for the earlier paper mill which was originally located immediately to north of the large pond and west of the small pond. It involved the removal of a substantial concrete floor of a series of workshops demolished in recent years. The excavation area measured approximately 40 metres x 30 metres. An additional watching brief was also maintained along the relevant side of the ponds in case structural remains of the former mill were present beneath or beyond the excavated area. A plan showing the location of the excavation and watching brief areas is provided below (Fig. 72).

6.2 Although the excavation revealed a considerable quantity of structural remains beneath the present concrete floor of the Works, these were not associated with the former mill. Instead they were associated with later constructions. Nevertheless, the remains were rapidly recorded and a general plan was produced (Fig. 73).

6.3 Despite substantial modern truncation, the structural remains also contained evidence of industrial activities associated with the Bleach Works which may be regarded as an industrial heritage asset. In order to better understand the significance of the site, an overview of the industrial process follows below.

6.4 Textile finishing works form an important but little studied part of the industrial landscape of the 18th, 19th and early 20th centuries in North England. The growth in the textile

finishing site, whose antecedents can be traced to the late medieval period, was the result of two technological changes. The first was the introduction of chemical bleaching and the second the application of steam power to the bleaching, dyeing and printing processes which resulted in at least 67 finishing sites being established in and around Manchester during the 18th century (Nevell 2008, 42). Traditionally the cloth was treated in bundles by hand but in 1828 David Bentley invented a washing machine that used lengths of cloth pieced or sewn together to form a near continuous process. However, it was not until 1845 that John Brooks, of the Sunnyside Print Works in Crawshawbooth, first used steam power to carry the ropes of cloth through all the stages of the bleaching process. This continuous process used a pulley system, and the cloth ropes were pulled through the walls separating the various bleaching and dyeing rooms via glazed bricks with large holes in them known as 'pot eyes' (*ibid.*).

6.5 By the early 19th century the typical industrialised bleaching process for cotton yarn involved boiling in caustic soda or soda ash; bleaching in chloride of lime; souring in hydrochloric or sulphuric acid; and finally, for white yarn, washing and blueing. This was the method adopted in nearly all bleaching processes, but the details (such as solution strengths and duration of treatment) not only varied in different works, but in the same works, according to the quality of the cotton and the yarn to be bleached. The new process for bleaching cotton pieces was even more complicated than that for yarn. This was because whereas in cotton yarn the impurities were mainly natural, with very few impurities coming from the spinning process, in cotton fabric or pieces there were far more accidental impurities such as oil and grease, finger marks, lime soaps, copper and iron compounds and, above all, size (the substance used to strengthen the warp fibres before weaving). This was made from starch, soap, tallow and paraffin wax. To remove all these impurities involved a number of different chemical processes. After arrival the cotton pieces were stitched together into a continuous rope form to facilitate handling and movement between process units. Cloth that was going to be used for printing was singed, that is it was passed over heated plates which removed any loose hairs to produce a smoother surface. After this it was washed and impregnated with milk of lime which was prepared in a pasty form in a stone cistern. The pasty slaked lime was mixed with water to form the milk of lime, so that this could run from the cistern in which it is prepared into the liming machine as it was required. For this purpose, a pipe was run into the bottom of the trough of the liming machine and not over the top, to avoid splashing on to the cloths and leading to overliming, which was not to be desired on account of its liability to rot the cloth (Beech 1901, 29).

6.6 The next step in the process was to place the cloth in large kiers of free-standing iron, later steel, vats for bleaching, after which the cloth was washed again. This process might be repeated a number of times in different chemicals depending on the quality of the finished goods required. Finally, the bleached rope of cloth was scutched or opened and then damped down and put through calenders (heavy duty rollers) and mangles for a final wash and dry. The dying process, which until the mid-19th century was undertaken using natural dyes, was often done on a separate site but, like bleaching, involved intensive preparation of both cloth and yarn requiring large amounts of power and water. The similarities in the basic requirements of the two industrialised processes meant that by the early 19th century bleaching and dying were usually done on the same site. This newly industrialised process required large amounts of housing and storage. Consequently it led to a switch in the late 18th century from open-air bleaching grounds to an enclosed bleachworks with bleach and dying crofts housed in long thin one or two storey buildings (Nevell 2008, 42).

6.7 These newly mechanised bleach and dye works were characterised by a central core of buildings, flanked by artificial reservoirs and a complex leat system which exploited a local river system. It was the latter two elements which had the greatest impact on their surrounds. Some of the largest bleach and dye works in the region covered tens of hectares with their reservoirs and leat systems and led to a fundamental re-working of their immediate landscape. As the 19th century progressed the separate processes of bleaching and dyeing were usually combined on a single site (*ibid.*). These new, extensive, industrialised landscape were dominated by reservoir and leat systems as is the case at Forge Works.

6.8 A summary of relevant archaeological features uncovered during the strip, map and sample excavation follows below. A substantial platform (101) aligned east to west was identified along the southern edge of the excavated area. This was constructed with re-used sandstone blocks bonded with cement and contained large bolts embedded into the masonry from which steel stanchions would have been attached to support the roof structure of a recently demolished modern building. The platform has a concrete foundation wall (103) which steps out 1 metre to the north and contained a drainage gully. A similar platform (102) was also present along the eastern boundary of the excavation. These features appear to be associated with part of modern workshops as well as a large number of sandstone and brick pads distributed mainly within the eastern half of the excavated area which also were designed to support steel stanchions. Additional associated brick partitions includes an L-shaped double brick wall (104) within the south-eastern corner of the excavated area (Fig 75).

6.9 In close proximity to the western wall of structure (104), two depressed square containers (107) and (108) were uncovered at *c.*184.2 metres above Ordnance Datum (AOD). These features appears to have acted as bleaching cisterns as seen on comparable examples excavated at the nearby site of Hodge Print Works, Broadbottom, Tameside (Nevell 2002, 11). These cisterns were located next to each other and were partially disturbed and backfilled with demolition material which formed part of a general made-ground layer for the recently dismantled concrete floor of the existing workshops. The cisterns were built with thin sawn-sandstone slabs assembled together with tongue-and-groove joints: each of them measured *c.*1.5 x 1.5 metres (Figs 76 – 78).

6.10 Approximately three metres west of the cisterns, a small rectangular structure (109) with a concrete floor was identified at a *c.*184.45 metres AOD. The structure measured 5.7 x 2.3 metres. The nature of this feature was not ascertained although the concrete floor resembled a later capping and, thus, the rectangular brick structure might have originally consisted of a kind of tank. More interestingly was an adjacent brick structure situated immediately against the western half of the northern wall which, despite considerable truncation, consisted of an underground vaulted chamber (110) whose inner side was rendered (Fig. 79). The chamber was square on plan with an overall dimension of 3.3 x 3.3 metres. The highest level of the surviving chamber was situated at *c.*184.39 metres AOD and its base was established at approximately 1.20 metres below it, yielding an overall height of 182. 95 metres AOD. This chamber might have acted as a settling tank or similar kind of tub which appears to have been associated with the industrial bleaching activities. Bleaching solution might have connected the vaulted underground chamber (110) with the adjacent possible tank (109) through a series of large iron pipes which appeared to have been linking both features. Furthermore, the north-west corner of the underground chamber was opened to a contiguous chamber (although mostly truncated) to the west through an opening within the northernmost end of the dividing wall.

6.11 Remains of a flagstone floor (136) were uncovered immediately to the north of the underground vaulted chamber at 183.73 metres AOD which abutted an ephemeral foundation sandstone wall (114) at an equivalent height. Two similar sections of flagstone floors (119) and (129) were uncovered at the same level towards the west. The former abutted a double brick wall (118) whereas the latter was devoid of any associated wall.

6.12 Two further short sections of additional sandstone foundation walls (116) and (115) were identified approximately 2 metres to the north of flagstone floor (136) at a similar height (Figs 80 and 81). Foundation wall (115) is a minor and later feature which was significantly truncated and only 2 metres in length survived. Foundation wall (116) was also disturbed although it measured approximately 5.5 metres in length and was aligned north-west to south-east. This alignment differed from the position of the remaining structures. The possibility that these footings might have been associated with the earlier paper mill cannot be ruled out. Moreover, a short section of an earthen floor (137) abutting the wall was also observed towards the converging point between this wall and the later abutment (115). An exploratory sondage was excavated to a depth of 500mm establishing that the foundation wall (116) consisted of up to three courses of roughly hewn sandstone blocks laid fairly irregularly and bonded with coarse lime mortar (Fig. 82). Floor (137) was a thin ashy-silty-clayey layer overlying a make-up layer (139) composed mainly of iron slags within a silty clay matrix with an overall thickness of 100mm. The foundation wall was truncated by a modern large brick structure (117) situated towards the northern side of the excavated area.

6.13 Further modern ephemeral brick structures within the northern area included contexts (113), (111) and (112); these were plotted on the site plan although they did not constitute significant findings.

6.14 The remaining context within the northern area consisted of a stone-lined and capped drain (135) which was encountered at 183.7 metres AOD (Fig 83).

6.15 Within the central area an L-shaped sandstone wall (123), although considerably truncated, was identified at 184. 24 metres AOD (Figs 84 and 85). The remains consisted of up to three courses of roughly hewn red sandstone blocks bonded with coarse lime mortar with an overall width of 1.5 metres. The remains of such a substantial structure and its stratigraphic position may indicate that they may be related earlier structures, including the former paper mill.

6.16 A series of further structural remains associated with bleaching activities were identified within the central and western sides of the excavated area including settling tanks, bleaching cisterns and vaulted underground chambers.

6.17 The westernmost end of the area of the strip, map and sample excavation contained a large brick structure (134) which extended further west beyond the excavation. It consisted of a long north/south four-leaf brick wall constructed with wire-cut standard size orangey bricks bonded with light beige lime mortar whose uppermost courses was identified at 184.83 metres AOD. A total of ten courses were exposed following the dismantlement of a stone trough-like tank. This revealed a large arched opening, built with three courses of headers creating a segmental archway, although it had been blocked up. The excavation around the wall also revealed a vaulted underground chamber (133) and an associated bleaching cistern (132) (Figs 86 and 87).

6.18 The underground chamber (133) consisted of a rectangular brick structure with a semi-circular barrel vault within the southern side and a central brick pillar which would have been associated with an aperture of the chamber (Fig. 88). The end of a large iron pipe was identified projecting into this vaulted tank.

6.19 The cistern (132) adjacent to it was encountered at 183.95 metres AOD and measured 2.3 x 2.3 metres. The base was not established as it was backfilled with demolition material and a large volume of water. The construction of the cistern consisted of four large thin slabs of sawn slates attached together with tongue-and-groove joint and reinforced with tension iron bolted rods which extended through projecting outer sides.

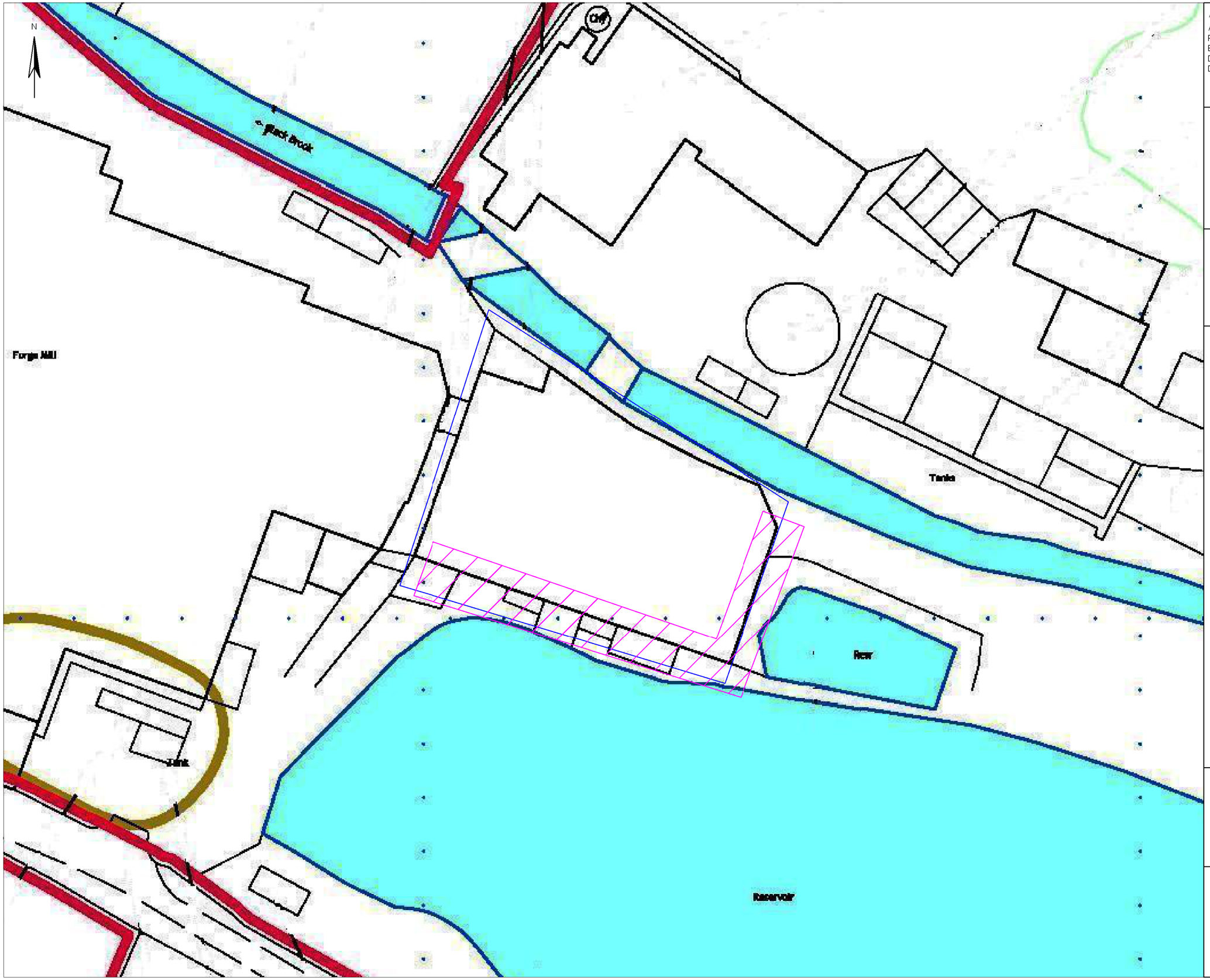
6.20 An equivalent cistern (131) was revealed 4.5 metres to the north at a height of 182.37 metres AOD. The cistern was also partially backfilled although it was possible to discerned four equidistant timber posts within the cistern which would have supported associated equipment (Fig. 89). The assembly joints of the cistern contained matching marks which would have been created when the container was made in a workshop (Fig. 90). These two cisterns were well preserved as they were capped with secondary large sandstone slabs. A slightly larger cistern (130) made of concrete was also identified approximately 2 metres to the east of cistern (131).

6.21 The central area contained three contiguous brick-built settling tanks (124), (125) and (126), two further slate-lined cisterns (120) and (121) and a flagstone floor (122) between them, as well as minor brick structural remains (106) to the south (Figs 91 – 93). The flagstone floor had an overall height of 183.85 metres AOD; the base of the three contiguous brick tanks were established at approximately 184.30 metres AOD. Cistern (121) was comparable to cisterns (131) and (132) and was partially excavated establishing its base at 1.25 metres in depth which yielded a level of 182.65 metres AOD (Fig. 94). Cistern (120) was also slate-lined although of a smaller size measuring 2 x 1.5 metres.

6.22 The contiguous brick tanks were five brick courses higher than the flagstone floor, and contained well-preserved floors although the actual tank construction barely survived. Each tank measured 3.7 x 2.9 metres externally and were constructed with two-leaf standard bricks and contained drainage holes within the eastern and western walls which would have enabled slaked lime to run through them when necessary (Figs 95 and 96). The internal fabric of tanks (124) and (125) had been re-faced with glazed tongue-and-groove tiles that would have improved their impervious qualities (Figs 97 and 98).

6.23 Two well-preserved semi-circular barrel vaulted underground chambers (127) and (128) were uncovered immediately to the west of brick tanks (124) and (126). The corresponding pair of vaulted chambers and settling tanks were linked with iron pipes running through them. Each vaulted chamber measured externally 3.3 x 1.9 metres and contained a large square aperture (700 x 700mm) created with sandstone slabs set vertically (Fig. 99). The top level of the vaults were established at an overall height of 184.7 metres AOD. Remains of a flagstone floor (138) and associated concrete platform were identified abutting the western side of the vaulted chamber (128) at a lower level of 184.4 metres AOD (Fig. 100). The interior of vaulted chamber (128) was inspected revealing that the chamber was partially backfilled with demolition material which had entered through its aperture. The walls were partially incrusted with limescale following bleaching processes undertaken inside these chambers or tanks which might have involved water evaporation or heating (Fig. 101).

6.24 Only one significant, although residual, artefact was retrieved from the made-ground/backfill deposit consisting of a crudely-made red ceramic plug measuring a maximum of 40mm internal diameter, 80mm external diameter and with an overall length of 60mm (Fig. 102). Although several pipes and drain holes were identified amongst the structural remains of the site, the dimensions of the plug itself may indicate that it might have been part of a smaller scale and possibly free-standing vat or similar type of vessel.



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Site Code: FWC'15
Drawing Ref:
Date: 30 June 2015
Drawn: AMO
Scale: 1:500@A3

Figure 72:
Plan of the site showing the excavation and watching brief areas

Key:

Srip, map and sample excavation area

Watching brief area

Notes:

N

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Drawing Ref:
Date: 30 June 2015
Drawn: AMO
Scale: 1:125@A3

Figure 73:
Plan of the strip, map and sample excavation (blue line)

Key:
- Concrete
- Brickwork
- Sandstone wall
- Flagstone floor
- Slate

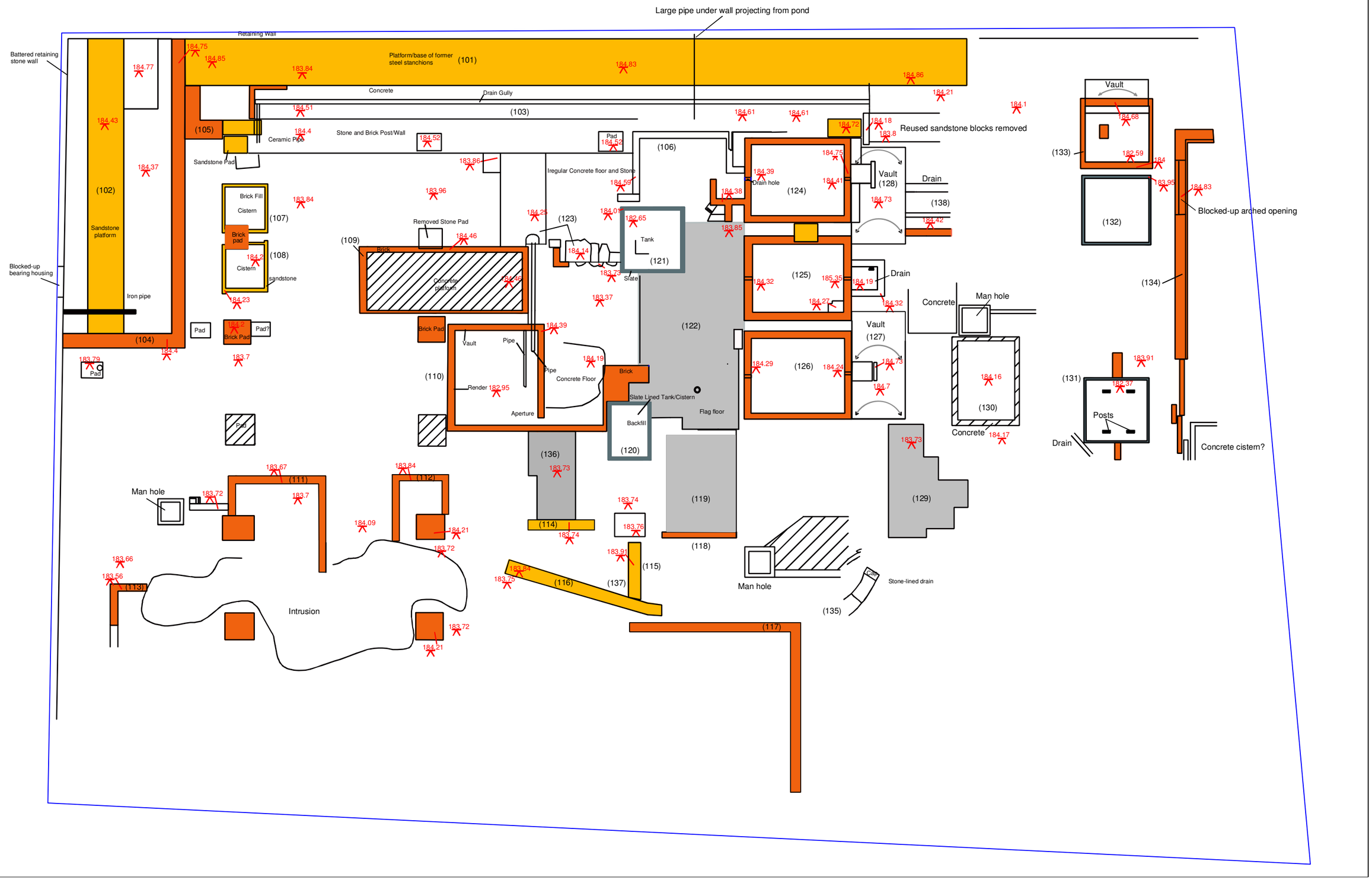

Figure 74: General view of the excavated area, looking west (scale 2 x 1m).

Figure 75: South-eastern end of the excavated area, looking west.

Figure 76: General view of cisterns (107) and (108) within the eastern area, looking east (scale 1m).

Figure 77: Cisterns (107) and (108), looking north (scale 1m).

Figure 78: Detail of assembly grooves (arrows), looking north-east (scale 1m).

Figure 79: Remnants of brick vaulted chamber (110), looking south-west (scale 1m).

Figure 80: Foundation walls (114), (115) and (116), and flagstone floor (136), looking north (scale 1m).

Figure 81: Detail of flagstone floor (136), looking south (scale 1m).

Figure 82: Sondage against foundation wall (116) and earthen floor (137), looking north (scale 1m).

Figure 83: Stone-lined drain (135), looking north-west (scale 300mm).

Figure 84: Sandstone wall (123), looking south (scale 1m).

Figure 85: Southern return of wall (123), looking south-east (scale 1m).

Figure 86: Cistern (132), vaulted chamber (133) and wall (134), looking south-west (scale 1m).

Figure 87: Bricked-up arched opening within wall (134), looking west (scale 1m).

Figure 88: Detail of brick vaulted chamber (133), looking south.

Figure 89: Cistern (131), looking west.

Figure 90: Detail of assembly marks within the slate-lined cistern (131).

Figure 91: General view of the central area, looking south-west.

Figure 92: Structural remnants within the central area, looking west (scale 1m).

Figure 93: Southernmost tank (124) and adjacent structures, looking west (scale 1m).

Figure 94: Partially excavated cistern (121), looking west (scale 1m).

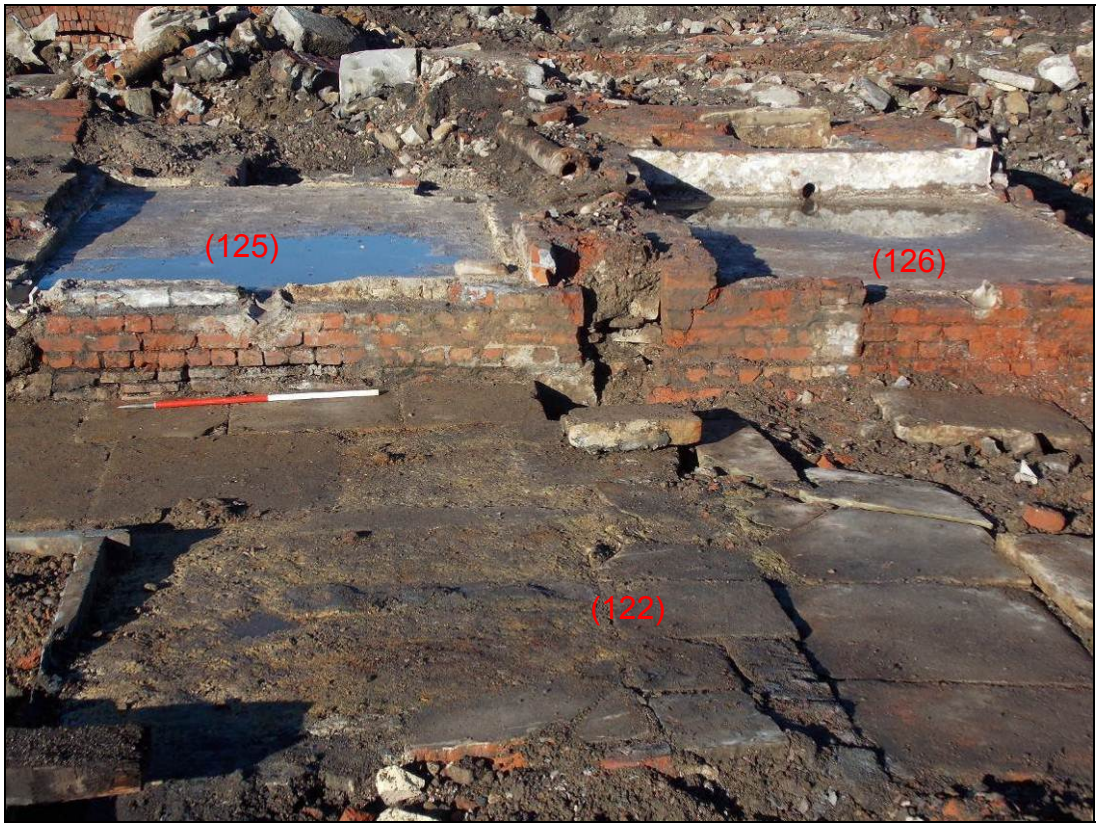

Figure 95: Tanks (125) and (126), abutted by flagstone floor (122), looking west (scale 1m).

Figure 96: Detail of drainage hole within the eastern wall of tank (125), looking west (scale 1m).

Figure 97: Tank (124), looking west (scale 1m).

Figure 98: Detail of glazed tiles with tongue-and-groove joint (scale 300mm).

Figure 99: Tank (124) and adjacent vaulted chamber (128), looking north (scale 2 x 1m).

Figure 100: Detail of barrel vault (128) abutted by floor (138), looking north-east (scale 1m).

Figure 101: Internal view of vaulted chamber (128), looking north.

Figure 102: Ceramic plug.

7 Watching brief

7.1 Following the removal of the structural remains revealed during the strip, map and sample excavation, an archaeological watching brief was undertaken within the areas adjacent to both mill ponds (Figs 103 – 106). A further archaeological feature was uncovered consisting of a short sandstone wall (140) abutting the retaining wall of the small mill pond immediately underneath the inserted bearing housing within the retaining wall (Figs 107 and 108). The wall was partially truncated by the substantial modern platform (102) identified during the preceding excavation. The exposed wall (140) was built with roughly hewn sandstone blocks laid regularly and bonded with lime mortar, and measured 2 metres in length and 500mm in height. Of interest was the presence of a weep hole towards the lower area. The nature of this feature was not ascertained although it is suggested that it may have been associated with the inserted bearing housing as a possible plinth for a drive shaft connection linked with the bearing housing inserted into the retaining wall of the small pond.

7.2 No further archaeological features, significant deposits or artefacts were encountered during the final demolition works.

Figure 103: General view of the watching brief excavation.

Figure 104: Watching brief area along the northern side of the large mill pond, looking south-east (scale 2m).

Figure 105: Excavation along the retaining wall of the small mill pond, looking north-east.

Figure 106: Excavation along the retaining wall of the small mill pond, looking south-west.

Figure 107: Wall (140) truncated by later foundation platform (102), looking south (scale 2m).

Figure 108: Detail of wall (140), looking south (scale 2m).

8 Conclusion

8.1 Archaeological Research Services Ltd undertook a historic building recording in 2014 at the former Forge Works, Chinley, Derbyshire, prior to a proposed regeneration of the site. Additional archaeological works consisting of a strip, map and sample excavation, and a watching brief, were carried out in 2015 as part of the planning application.

8.2 The historic building survey of the standing structures identified within the site provides a suitable preservation by record prior to any re-development programme. It has successfully created an interpretative discussion of the form, function and phasing of the extant structures within the Works. Of note, were several features associated with the original water management system of the original mill represented by leat or sluice, sluice gates, mil ponds, bridges over the leat, etc. which are depicted from the 1851 OS map through to the present edition.

8.3 The strip, map and sample excavation area measured approximately 40 metres x 30 metres. Despite considerable intrusion, the excavation identified remnants of structural remains which may have been associated with the early paper mill including a substantial red sandstone wall within the central area and ephemeral foundation walls towards the northern side, one of which was associated with an earthen floor overlying a make-up layer composed of slag residues within a clayey matrix.

8.4 Evidence for later industrial activities was widespread consisting of two complete and one truncated underground brick vaulted chambers, three larger and contiguous settling tanks and seven depressed stone lined compartments were identified within the entire site. These features appear to have acted as bleaching cisterns and similar types of vessel as seen on comparable examples excavated at the nearby site of Hodge Print Works, Broadbottom, and probably relate to the late 19th century Bleaching Works.

8.5 The watching brief recorded a short sandstone wall abutting the retaining wall of the small mill pond. This may have acted as a possible plinth for a drive shaft connection which would have been linked with a bearing housing that was inserted into the retaining wall of the small pond as part of later industrial activities within the Works.

9 Publicity, Confidentiality and Copyright

9.1 Any publicity will be handled by the client.

9.2 Archaeological Research Services Ltd will retain the copyright of all documentary and photographic material under the Copyright, Designs and Patent Act (1988).

10 Statement of Indemnity

10.1 All statements and opinions contained within this report arising from the works undertaken are offered in good faith and compiled according to professional standards. No responsibility can be accepted by the author/s of the report for any errors of fact or opinion resulting from data supplied by any third party, or for loss or other consequence

arising from decisions or actions made upon the basis of facts or opinions expressed in any such report(s), howsoever such facts and opinions may have been derived.

11 Publication

11.1 A summary of the project, with selected drawings, illustrations and photographs, will be submitted within 2 years of the completion of the project to Derbyshire Archaeological Journal for publication.

12 Archive Deposition

12.1 A digital and paper archive will be prepared by ARS Ltd, consisting of all primary written documents, plans, elevations, photographs and electronic data, which will be deposited at Buxton Museum and Art Gallery (accession number DERSB 2013.27) in 2015.

13 Acknowledgements

13.1 Archaeological Research Services Ltd would like to thank all those involved with the archaeological fieldwork, especially Simon Pote and Mark Jones of Copperleaf Ltd for commissioning the work; Paul Whylie, also of Copperleaf Ltd, for providing valuable tactical access arrangements; and Steve Baker, Development Control Archaeologist for Derbyshire County Council for valuable inputs throughout the project.

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APPENDIX I: SPECIFICATIONS and OASIS FORM

Forge Works, Forge Road, Chinley, Derbyshire

Written Scheme of Investigation for Historic Building Recording and Archaeological Work

Archaeological Research Services Ltd

1 Introduction

1.1 This scheme of works relates to the proposed development at Forge Works, Forge Road, Chinley, Derbyshire SK23 6BW which consists of the demolition of all remaining structures and redevelopment for up to 182 dwellings, up to 1,672m² of business floorspace (Use Class B1), up to 279m² of non-residential institution floorspace (Use Class D1), community facilities and associated infrastructure (Figure 1).

1.2 Planning permission has been granted for the works through a successful appeal (Appeal Ref: APP/H1033/A/13/2189819) made by Innovation Forge Limited and Woodford Land Limited against the decision of High Peak Borough Council (Application Ref. HPK/2012/0323, dated 31 May 2012, which was refused by notice dated 30 November 2012). A condition of the planning permission requires that:

"No development, including demolition, shall take place until a Written Scheme of Investigation for historic building recording and archaeological work has been submitted to and approved in writing by the local planning authority, and until any prestart element of the approved scheme has been completed in accordance with the approved scheme. The scheme shall include an assessment of significance and research questions; and:
a) The programme and methodology of site investigation and recording;
b) The programme for post investigation assessment;
c) Provision to be made for analysis of the site investigation and recording;
d) Provision to be made for publication and dissemination of the analysis and records of the site investigation;
e) Provision to be made for archive deposition of the analysis and records of the site investigation; and,
Appeal Decision APP/H1033/A/13/2189819
www.planningportal.gov.uk/planninginspectorate 20
f) Nomination of a competent person or persons/organization to undertake the works set out within the Written Scheme of Investigation."

1.3 This Written Scheme of Investigation details the phased programme of work to be undertaken by Archaeological Research Services Ltd (ARS Ltd) before and during ground works at the site.

1.4 The aim of the programme of work is, in line with the National Planning Policy Framework (NPPF) paragraph 141 (CLG 2012), to record and enhance understanding of the significance of any heritage assets to be lost during the proposed development in a manner proportionate to their importance, and to make this evidence (and any archive generated) publically accessible.

2 Background

2.1 Part of the proposed development site is occupied by Forge Works, a non-designated heritage asset. This was founded as a paper mill in the early 1800s and consisted initially of a large mill pond with a range of buildings to the north-west, linked to the Peak Forest Tramway via sidings running along the west end of the pond. It became a dye/bleach works by *c.*1900, by which time the original building appears to have been altered or rebuilt and a new large building and chimney had been erected. In the early 20th century the bleach mill was converted and extended for producing bed linen and cotton prints. The site went out of use in 2005 and was largely demolished in 2008. The entire southern site boundary is defined by the Peak Forest Tramway and its associated monuments: undesignated HER sites that were in operation in the late 1790s to the mid-1920s.

2.2 Above-ground remains of the former Forge Works are restricted to a chimney, buttressed walls, a brick-loading shed and built water management features.

2.3 Below-ground remains of the former Forge Works could survive in a relatively well-preserved condition, given the demolition of the former buildings down to slab level only. The remains of the structures associated with the early 19th century paper mill may be present beneath the later concrete ground slabs. Remains of water-management features certainly survive, although infilled with demolition rubble, and wheel-pits could also be present. On removal of the existing concrete slabs, evaluation trenching in the area where the early mill works stood would determine what remains still survive.

2.4 Possible earlier below-ground archaeological remains on the site do not fall within the area of the proposed development site.

3 Objectives

3.1 The objectives of the programme of work are to record the remaining above-ground remains and identify and determine the nature and date of any surviving below-ground remains associated with the former Forge Works as follows.

- To produce a photographic and descriptive record of the remaining chimney, buttressed walls, brick-loading shed and built water management features associated with the Works.
- To recover and record through strip, map and sample excavation and a watching brief of any remains of the early 19th century paper mill, including water-management features, that may be present beneath the later concrete ground slabs.

3.2 Achieving these objectives will involve a phased programme of works as follows.

- Building recording survey to English Heritage (2006) Level 1/2 standards of the remaining chimney and brick-loading shed associated with the Works to be undertaken before any further demolition or ground works take place.
- Strip, map and sample excavation of to be undertaken in the central part of the proposed development site where the early 19th century paper mill was situated in order to determine if any remains of the mill, including water-management features, survive beneath the later concrete ground slabs.
- Archaeological monitoring of ground works on water management features situated

immediately south and east of the Works and related areas of heritage interest.
- On completion of the on-site archaeological works, post-excavation analysis, reporting, publication and archiving to be carried out.

4 Historic building survey

4.1 ARS Ltd will provide a suitably qualified and experienced archaeologist to undertake a Level 1/2 building recording survey conducted according to the guidelines in *Understanding Historic Buildings –A guide to good recording practice* by English Heritage (2006) and the Institute for Archaeologists (IfA) *Standards and Guidance for Archaeological Building Recording* by (2008a) and *Code of Conduct* (2012) of the remaining chimney and brick-loading shed (Figure 2).

4.2 All site operations will be carried out in a safe manner in accordance with ARS Ltd's health and safety policy. A risk assessment will be prepared before commencement on site.

Recording

4.3 An appropriate photographic record (digital colour SLR images at 10 Mpix minimum, along with 35mm black-and-white print film) will also be maintained including detailed and general shots of the building being recorded, fixtures, fittings and phase change evidence and general shots of the context and outlook. This will be supported by an index and brief description. All photographs will include a scale.

5 Strip, map and sample excavation

5.1 An area measuring approximately 40m by 30m (*c.*1,200m²) where the early 19th century paper mill was located (Figures 3-4) is to be stripped down to a maximum depth of 1.5m in order to determine if any remains of the early mill, including water-management features, survive beneath the later concrete ground slabs.

5.2 ARS Ltd will provide suitably qualified and experienced archaeologists to undertake the strip, map and sample excavation in accordance with the IfA (2008b) *Standards and Guidance for Archaeological Excavations* and *Code of Conduct* (2012).

5.3 Hard standing, unstratified modern material and topsoil will be removed mechanically by a machine using a wide toothless ditching bucket, under continuous archaeological supervision. The topsoil or recent overburden will be removed down to the first significant archaeological horizon in successive level spits. No machinery will track over areas that have previously been stripped until the area has been signed off by ARS Ltd.

5.4 The areas will be appropriately cleaned using hand tools in order to expose the full nature and extent of archaeological features and deposits.

5.5 All archaeological features within the 1,200m² area should be planned using a Total Station (Leica TCR 307 reflectorless model) to capture any structural features with hand annotation of the plots to record structure details and composition, supplemented with a photographic record using a digital colour camera.

5.6 Any features and deposits within a maximum 300m² area associated with the early mill and its subsequent development, such as foundation walls and floors will be excavated sufficiently to determine their character, stratigraphy and relationship to other features and attempts made to obtain dating evidence. Once this c.1,200m² area has been stripped and cleaned as outlined in 5.3 and 5.4 above, a site meeting Derby and Derbyshire Development Control Archaeologist will be arranged to decide how much and which parts of the 300m² area should be excavated.

5.7 Isolated, discrete features such as pits not belonging to structures or industrial activities will be 50% sampled, although if they produce artefacts then provision is made for full excavation.

5.8 Limited representative samples of bricks from brick-built structures, and selective products of the brick working process will be retained for specialist analysis where appropriate.

5.9 Discovery of any human remains will be reported to the coroner and excavated following receipt of the appropriate Ministry of Justice Guidelines.

5.10 All site operations will be carried out in a safe manner in accordance with ARS Ltd's health and safety policy. Deep sections such as those across ditches or pits will be shored as necessary. A risk assessment will be prepared before commencement on site.

Recording

5.11 The site will be accurately tied into the National Grid and located on a 1:2500 or 1:1250 map of the area. The site will be recorded using a single context planning system in accordance with the ARS Ltd field recording manual.

5.12 A full and proper record (written, graphic and photographic as appropriate) will be made for all work, using pro-forma record sheets and text descriptions appropriate to the work. Accurate scale plans and section drawings will be drawn where required at 1:50, 1:20 and 1:10 scales, as appropriate. In addition to relevant illustrations, provision for rectified photographic recording shall be made, if deemed necessary.

5.13 The stratigraphy of the site will be recorded even where no archaeological deposits have been identified.

5.14 All archaeological deposits and features will be recorded with above ordnance datum (AOD) levels.

5.15 A photographic record of all contexts will be taken using a digital colour camera, and will include a clearly visible, graduated metric scale. A register of all photographs will be kept. A selection of working shots will be taken to demonstrate how the site was investigated and what the prevailing conditions were like during excavation.

5.16 Where stratified deposits are encountered, a 'Harris' matrix will be compiled.

Finds Processing and Storage

5.17 All finds processing, conservation work and storage of finds will be carried out in accordance with the IfA (2008c) *Standard and Guidance for the collection, documentation,*

conservation and research of archaeological materials and the UKIC (1990) *Guidelines for the Preparation of Archives for Long-Term Storage*.

5.18 Artefact collection and discard policies will be appropriate for the defined purpose.

5.19 Bulk finds which are not discarded will be washed and, with the exception of animal bone, marked. Marking and labelling will be indelible and irremovable by abrasion. Bulk finds will be appropriately bagged, boxed and recorded. This process will be carried out no later than two months after the end of the excavation.

5.20 All small finds will be recorded as individual items and appropriately packaged (e.g. lithics in self-sealing plastic bags and ceramic in acid-free tissue paper). Vulnerable objects will be specially packaged and textile, painted glass and coins stored in appropriate specialist systems. This process will be carried out within two days of the small find being excavated.

5.21 During and after the excavation all objects will be stored in appropriate materials and storage conditions to ensure minimal deterioration and loss of information (including controlled storage, correct packaging, and regular monitoring, immediate selection for conservation of vulnerable material). All storage will have appropriate security provision.

5.22 The deposition and disposal of artefacts will be agreed with the legal owner and Buxton Museum prior to the work taking place. All finds except treasure trove are the property of the landowner.

5.23 All retained artefacts and ecofacts will be cleaned and packaged in accordance with the requirements of the recipient museum.

6 Watching brief

6.1 ARS Ltd will provide a suitably qualified and experienced archaeologist to undertake archaeological monitoring of ground works on water management features and related areas of heritage interest. The main features of interest are the horizons at the bottom of and immediately below the reservoirs located immediately to the south and east of the Works.

6.2 All relevant ground works will be undertaken by a suitable mechanical excavator fitted with a toothless ditching bucket or by hand. Archaeological monitoring will not entail excavation beyond the total areas exposed by the development works. Arrangement will be made to avoid any tracking of machinery across recently stripped areas until the areas have been checked and cleared by a representative of ARS Ltd. If significant archaeological features are identified, the Derby and Derbyshire Development Control Archaeologist will be notified and a decision taken as to the best method of proceeding.

6.3 The watching brief will be undertaken in accordance with the Institute for Archaeologists *Standards and Guidelines for Archaeological Watching Briefs* (2008d) and *Code of Conduct* (2012).

6.4 ARS Ltd will ensure that heavy plant or machinery will not be operated in the immediate vicinity of archaeological remains until the remains have been recorded. Contractors and plant operators will be notified that any observations of archaeological remains must be reported immediately to the archaeologist on site.

6.5 A risk assessment will be undertaken before commencement of the work and health and safety regulations will be adhered to at all times.

Recording

6.6 A written, drawn and photographic record will be maintained during the watching brief and all significant archaeological remains will be recorded and/or retrieved. All excavations will be recorded in accordance with normal principles of archaeological evaluation upon pro forma context sheets. All significant architectural features will be photographed (with scale) *in situ* and their location recorded on a plan of the site.

6.7 Where archaeological features and/or deposits are identified during the watching brief, then a sufficient quantity of the said features will be investigated by hand to allow their date, nature and degree of survival to be ascribed. All features thus investigated will be recorded in plan and section and significant archaeological finds recovered will be retained for analysis. Any archaeological features identified will be photographed and drawn in plan at a scale of 1:20 and in section at a scale of 1:10. The stratigraphy, where relevant and apparent, will be recorded.

6.8 For brick structures, the record will include details of brick dimensions and type (handmade/machine-made, plain/frogged), mortar (colour, composition, hardness) and the extent of structures (number of courses, thickness in skins).

6.9 A plan of the excavated areas will be maintained, features noted and section lines recorded. All drawings will be carried out at an appropriate scale and all contexts will be recorded using a single context recording system. The site archive will include plans and sections at an appropriate scale, a scale photographic record, and full stratigraphic records on recording forms/context sheets or their electronic equivalent. Should archaeological features be present then the locations and height AOD of the features will be accurately fixed, surveying in either the planning baselines or the features themselves.

6.10 In the unlikely event that human remains are discovered, they will initially be left *in-situ* and, if removal is deemed necessary, this will be undertaken in accordance with the relevant Ministry of Justice regulations.

6.11 Should archaeological remains be encountered for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard, then work on site shall cease and the Derby and Derbyshire Development Control Archaeologist shall be notified immediately. Site works will not re-commence until resources are in place to secure preservation *in situ* or adequate archaeological treatment of the relevant remains.

7 Monitoring arrangements

7.1 Ideally, at least one week prior notice of the commencement of the historic building survey and the ground works will be given to the Derby and Derbyshire Development Control Archaeologist:

Steve Baker
Derbyshire County Council
Shand House
Dale Road South
Matlock
Derbyshire
DE4 3RY
Tel: 01629 539773.

7.2 ARS Ltd will liaise with the Derby and Derbyshire Development Control Archaeologist at regular intervals throughout the course of the work.

7.3 The client will afford reasonable access to the Derby and Derbyshire Development Control Archaeologist, or his representative, for the purposes of monitoring the archaeological mitigation.

8 Report

8.1 Within two months of the completion of the watching brief, ARS Ltd will produce a report which will include the following.

8.2 Within two months of the completion of the building recording, ARS Ltd will produce a report which will include the following as a minimum.

- Non-technical summary of the background to the project and the findings of work undertaken
- Introductory statement
- Aims and purpose of the project
- An outline of the methodology employed
- A location plan showing all recorded built heritage features and excavated areas and any archaeological features with respect to nearby fixed structures and roads
- A descriptive and illustrated developmental account of the documented built heritage features including, as appropriate, historic mapping
- Photographic images of the built heritage features at laser printer quality, no smaller than 5" x 4" and suitably captioned
- A descriptive and illustrated developmental account of the excavated and recorded features, including phasing and interpretation of the site sequence
- Specialist assessment of the various categories of artefacts recovered
- Illustrations of all archaeological features with appropriately scaled hachured plans and sections.
- Conclusions
- Recommendations for the retention or discard of archive material
- Supporting data – tabulated or in appendices
- Index to archive and details of archive location

- References
- Statement of intent regarding publication
- Confirmation of archive transfer arrangements
- A copy of the approved scheme of works (WSI)
- A copy of the OASIS form.

8.3 Copies of the final report, along with a CD (with the project title, date and author noted on the CD) containing i.) digital copy of the report (PDF) and ii.) separate digital (TIF/JPG/BMP) copies of all photographic images, will be deposited with the Derbyshire Historic Environment Record (HER).

9 Archive deposition

9.1 A digital, paper and artefactual archive will be prepared by ARS Ltd, consisting of all primary written documents, plans, sections, photographs and electronic data (in a format to be agreed by the repository museum which in this case is Buxton Museum and Art Gallery). The archive will be deposited in line with the IfA (2009) *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives* and Society of Museum Archaeologists (1993) *Selection, Retention and Dispersal of Archaeological Collections. Guidelines for use in England, Wales and Northern Ireland*, and will be deposited within two months of the completion of the report. The accession number for the archive is DERSB 2013.27. The Derby and Derbyshire Development Control Archaeologist and Museum Curator will be notified in writing on completion of the fieldwork with projected dates for the completion of the report and deposition of the archive. The date for deposition of the archive will be confirmed in the report and the Derby and Derbyshire Development Control Archaeologist informed in writing on final deposition of the archive.

9.2 All artefacts and associated material will be cleaned, recorded, properly stored and deposited in the archive (see 5.17-5.21 above).

9.3 A full set of annotated, illustrative pictures of the site, excavation, features, layers and selected artefacts will be deposited with the archive as digital images on a CD ROM.

9.4 At the start of work (immediately before fieldwork commences) an OASIS online record http://ads.ahds.ac.uk/project/oasis/ will be initiated and key fields completed on Details, Location and Creators forms. All parts of the OASIS online form will be completed for submission to the HER. This will include an uploaded .pdf version of the entire report (a paper copy will also be included within the archive).

10 Changes to Methodology or Work Programme

10.1 Changes to the approved methodology or programme of works will only be made with prior written approval of the Derby and Derbyshire Development Control Archaeologist.

11 Publication

11.1 If significant archaeological remains are recorded, a summary of the project with, if appropriate, selected drawings, illustrations and photographs, will be submitted within 2 years of the completion of the project to Derbyshire Archaeological Journal for publication.

12 References

Department for Communities and Local Government (CLG). 2012. *The National Planning Policy Framework*. London, The Stationery Office.

English Heritage. 2006. *Understanding Historic Buildings –A guide to good recording practice* by

Institute for Archaeologists. 2008a. *The Standards and Guidance for Archaeological Building Recording*. Reading, Institute for Archaeologists.

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Institute for Archaeologists. 2009. *Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives*. Reading, Institute for Archaeologists.

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Society of Museum Archaeologists. 1993. *Selection, Retention and Dispersal of Archaeological Collections. Guidelines for use in England, Wales and Northern Ireland.* London: Society of Museum Archaeologists.

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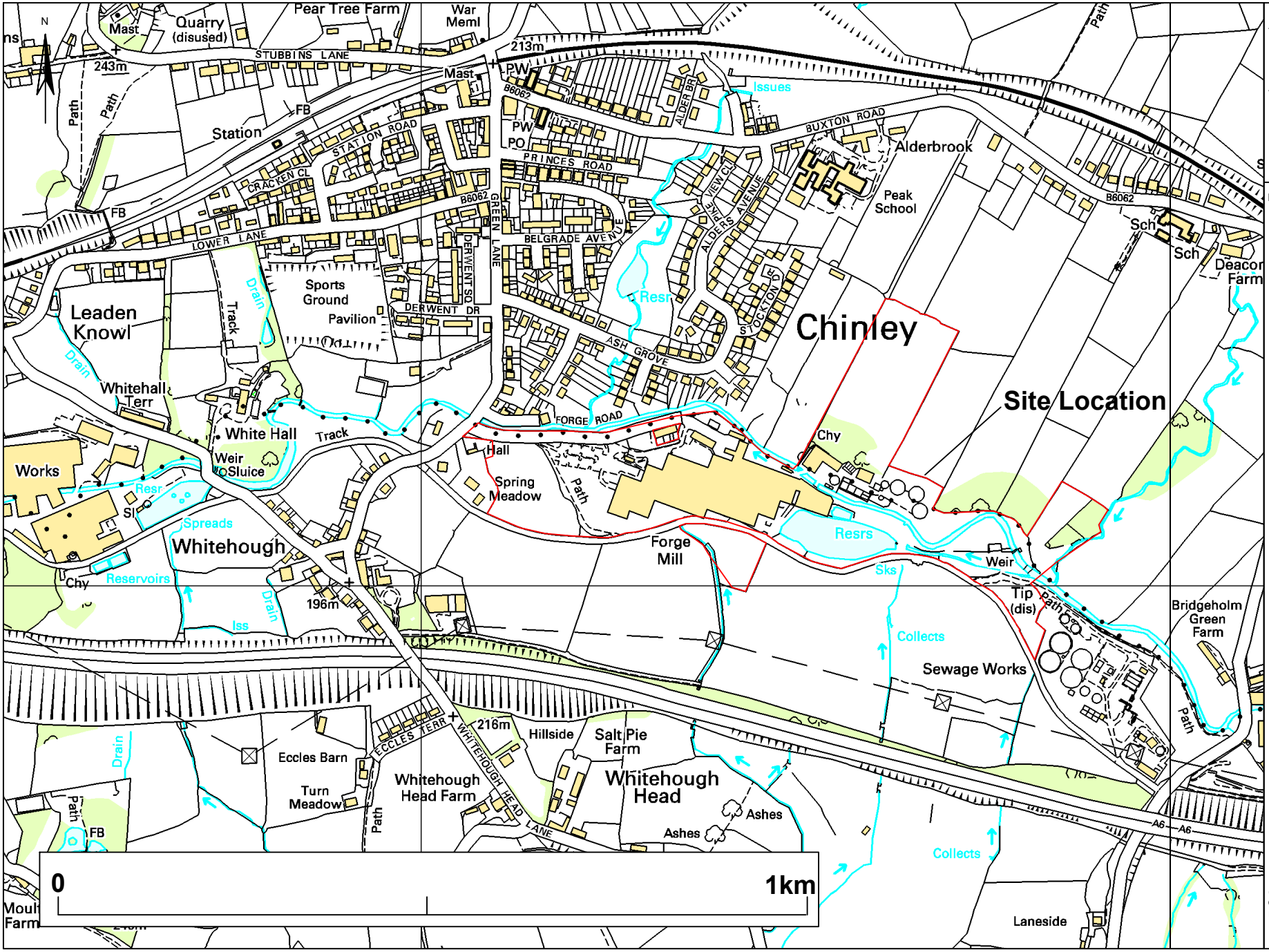

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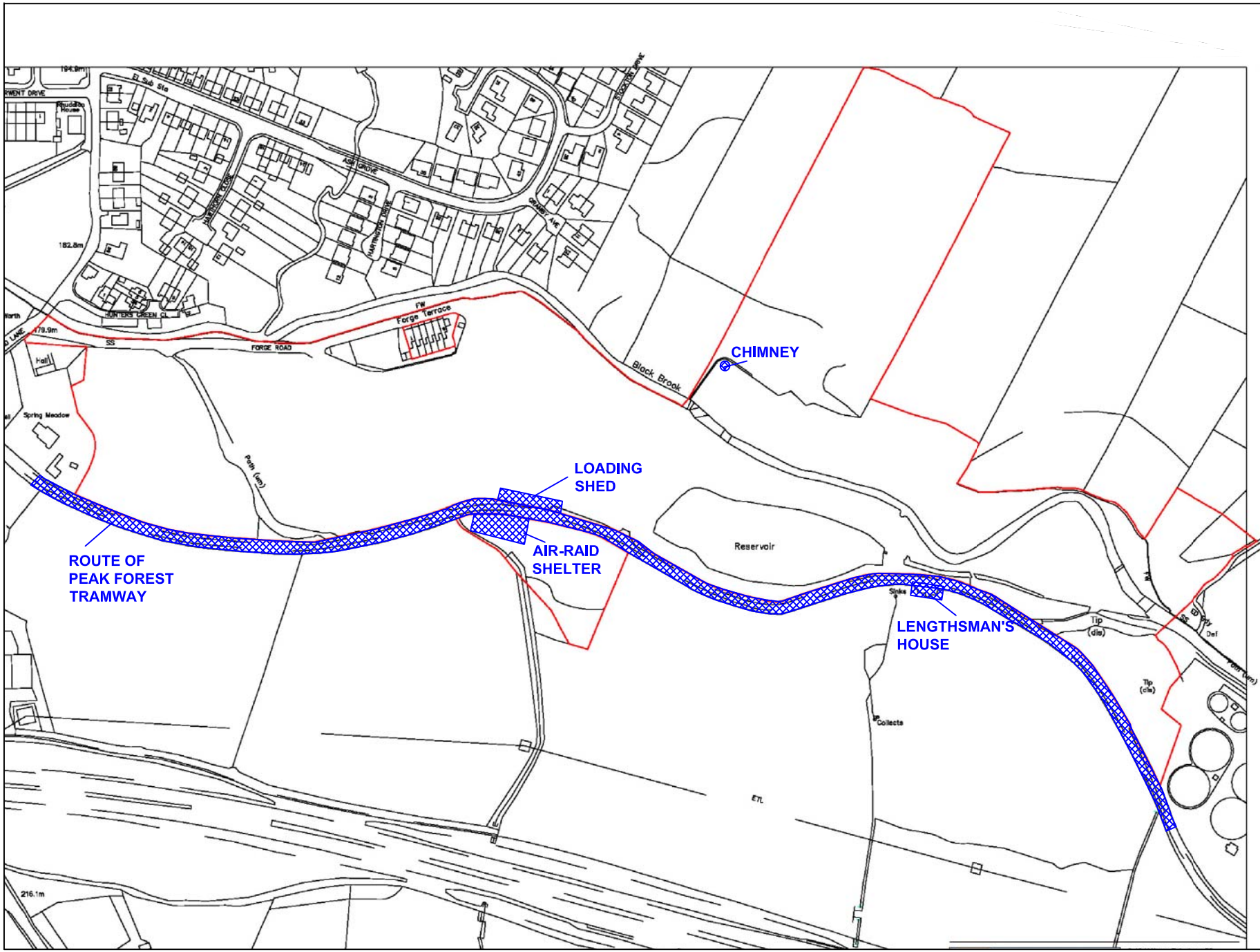
Bakewell
Derbyshire
DE45 1HB

Figure 1 Site Location



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Site Code: Forge Works
Drawing Ref:
Date: 25-10-13
Drawn: GE
Scale: not to scale

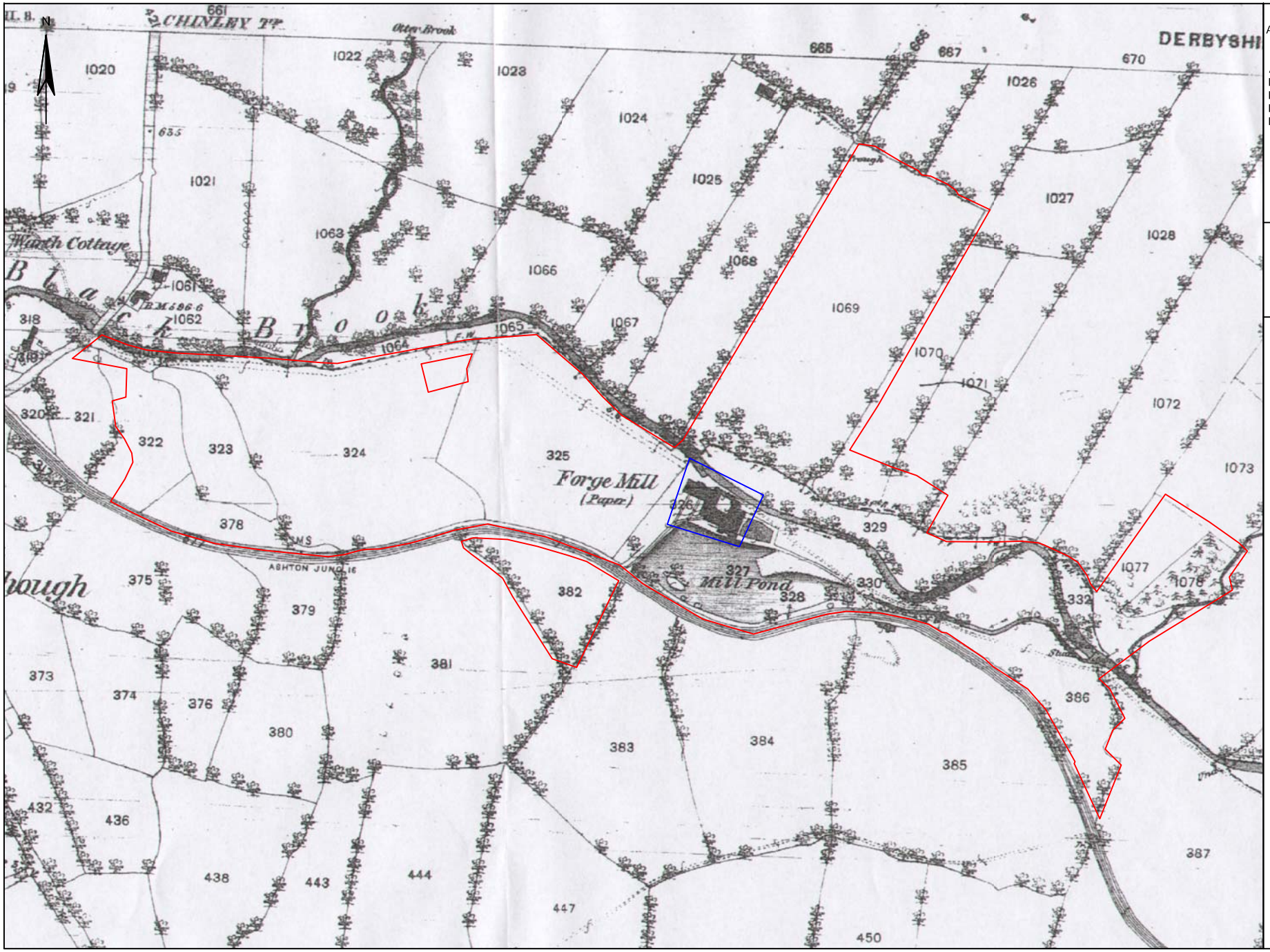
Figure 9: Location of conservation requirement areas

Key:

Conservation Requirement Areas

N

Notes:



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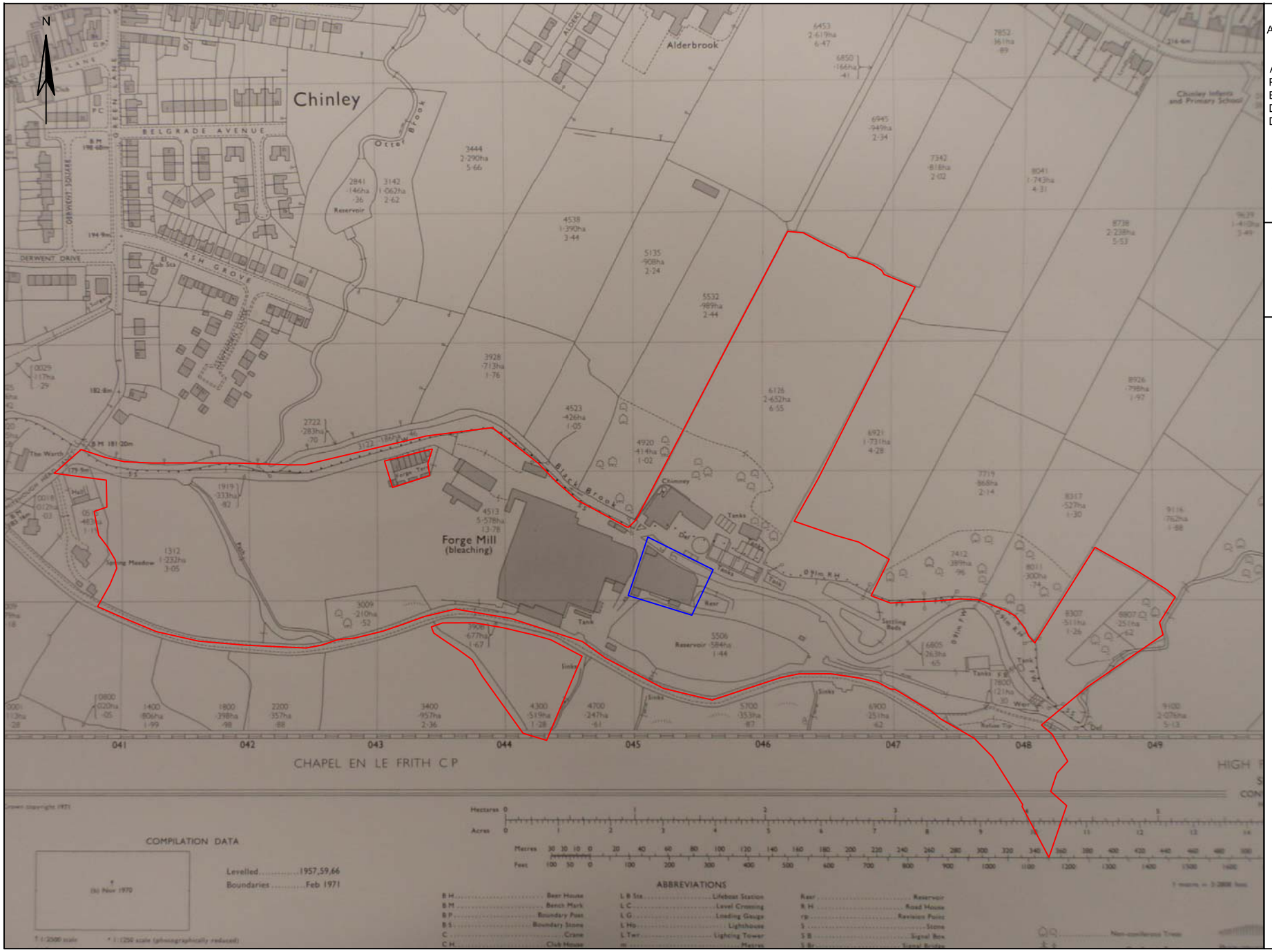
Site Code: FWC

Figure 9: OS map 1851



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Site Code: FWC

Figure 11: OS map 1971

OASIS DATA COLLECTION FORM: England

List of Projects ˜| Manage Projects | Search Projects | New project | Change your details | HER coverage | Change country | Log out

Printable version

OASIS ID: archaeol5-176603

Project details

Project name	Forge Works, Chinley, Derbyshire. Historic building recording
Short description of the project	Historic building recording of a series of standing structures at the former Forge Works, Cchinley, Derbyshire.
Project dates	Start: 03-04-2014 End: 04-04-2014
Previous/future work	Yes / Not known
Type of project	Building Recording
Monument type	MILL Post Medieval
Monument type	FORGE WORKS Post Medieval
Significant Finds	NONE None
Methods & techniques	"Photographic Survey"
Prompt	Planning condition

Project location

Country	England
Site location	DERBYSHIRE HIGH PEAK CHINLEY BUXWORTH AND BROWNSIDE Forge Works, Chinley
Study area	100.00 Square metres
Site coordinates	SK 0438 8213 53.3357899011 -1.93421657401 53 20 08 N 001 56 03 W Point

Project creators

Name of Organisation	Archaeological Research Services Ltd
Project brief originator	Derbyshire County Council
Project design originator	Archaeological Research Services Ltd
Project director/manager	Robin Holgate
Project supervisor	Alvaro Mora-Ottomano

Project archives

Physical Archive Exists?	No
Digital Archive recipient	Derbyshire Record Office
Digital Contents	"none"
Digital Media available	"Database"
Paper Archive recipient	Derbyshire Record Office
Paper Contents	"none"
Paper Media available	"Photograph","Report"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Forge Works, Chinley, Derbyshire. Historic building recording
Author(s)/Editor(s)	Mora-Ottomano, A.
Date	2014
Issuer or publisher	Archaeological Research Services Ltd
Place of issue or publication	Bakewell

Entered by	Alvaro Mora-Ottomano (alvaro@archaeologicalresearchservices.com)
Entered on	7 April 2014

OASIS: