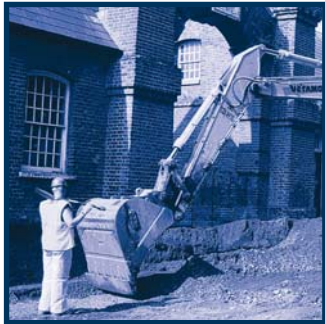


# Chatterley Whitfield Colliery Stoke on Trent Staffordshire



## Archaeological Watching Brief Report



**Oxford Archaeology**

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# Chatterley Whitfield Colliery, Stoke on Trent, Staffordshire

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## SUMMARY

*Between September 2004 and November 2005, Oxford Archaeology (OA) carried out an archaeological watching brief at Chatterley Whitfield Colliery, Stoke on Trent, Staffordshire (NGR: SU 8839 5326). The work was commissioned by Atkins Heritage as part of the Chatterley Whitfield Regeneration Project. A watching brief during the excavation of test pits revealed the foundations of building number 12 (the main office block) and evidence of ground reduction and/or deposition of made ground prior to the construction of building number 12. A partially exposed concrete slab which may represent an earlier phase of building was also recorded. A later watching brief during the installation of new sewers exposed the ground floor and walls of the former lower laboratory building and layers of made ground over the north-east corner of the site, and also those associated with the access road embankment. During the excavation of a cable trench an earlier road and yard surface was exposed south-west of the main office.*

## 1 INTRODUCTION

### 1.1 Location and scope of work

1.1.1 On the 13th of September 2004, Oxford Archaeology (OA) carried out an archaeological watching brief at Chatterley Whitfield Colliery, Stoke on Trent, Staffordshire (NGR: SU 8839 5326). The work was commissioned by Atkins Heritage in respect of the proposed excavation of four test pits in order to ascertain the nature of the foundations of building number 12 (the main office block) as part of the Chatterley Whitfield Regeneration Project.

1.1.2 The Chatterley Whitfield Colliery site is a Scheduled Ancient Monument (SAM) (National Monument Number 21575) and as a condition for allowing the work to take place within the Scheduled area English Heritage requested that an Archaeologist be present during the excavation of the test pits. The presence took the form of an Archaeological Watching Brief

1.1.3 OA prepared a Written Scheme of Investigation (OA 2004) detailing how it would undertake these works.

1.1.4 However, due to the presence of live services and a concrete slab, only two of these (Test pits 1 and 3) could be opened, and both of these were moved from their original location (Fig. 2).

### 1.2 Geology and topography

1.2.1 The area of the works is located at the Chatterley Whitfield Colliery site on the northern outskirts of Stoke on Trent in Staffordshire (centred at SJ 8839 5326). The underlying geology is Lower Westphalian Limestone. It lies at approximately 170 m OD.

### 1.3 Archaeological and historical background

- 1.3.1 A description of the Chatterley Whitfield Colliery was prepared by English Heritage (EH) as part of its record of scheduled monuments and an abridged version is reproduced overleaf.
- 1.3.2 The monument is situated in the north Staffordshire coalfield on the north-east outskirts of Stoke on Trent. It includes intact buildings, ruins and the earthwork remains of parts of Chatterley Whitfield colliery and parts of an associated railway network. The site, which is grouped around five main shafts (called Old Bellringer or Institute, Middle Pit, Platt, Hesketh and Winstanley) is set partly within an area of reclaimed colliery waste which has been re-shaped as part of the Whitfield Valley Public Open Space Programme.
- 1.3.3 Although the exploitation of coal in the Whitfield area dates back to the 18th century, the development of the present colliery site did not begin until the early 1860s. The opening of the Biddulph Valley Railway in 1860 prompted landowner, Hugh Henshall Williamson, to widen and deepen abandoned shallow shafts on the Whitfield Estate and a short railway line was built to connect these shafts with the Biddulph Valley line.
- 1.3.4 In c.1872 the site was purchased by the Chatterley Coal and Iron Company with the intention that Whitfield coal should be used in the manufacture of iron. By the early 1890s the company was renamed Chatterley Whitfield Collieries Ltd. A programme of modification and improvements took place at the site which brought the colliery to the forefront of mine electrification and mechanisation processes. Three of the Whitfield shafts were deepened in order to strike lower coal seams and one of these, the Old Bellringer shaft, was renamed the Institute in 1874. A number of early and mid-20th century structures associated with this shaft remain standing and are situated in the south eastern part of the site. These include an engine house, built during the 1950s-60s, and the steel headgear, erected in 1922. To the north of the shaft, the fan drift and fan house which, at one time, ventilated both the Institute and Platt shafts, remain standing. This building, also constructed during the 1950s-60s, houses an intact electrically driven ventilation fan which is included in the scheduling. The brick-built engine house, built to replace the original winding house, retains its electrical winding engine which is included in the scheduling. The buried remains of earlier structures associated with the Institute shaft, including the original winding house, are thought to survive beneath the ground surface.
- 1.3.5 Immediately to the east of the Institute shaft are the headgear and winding house of the Platt shaft which was developed in the 1880s to replace the destroyed Laura shaft. The Platt winding house is thought to be the oldest surviving structure at Chatterley Whitfield and was constructed in 1883. A sloping corrugated sheet roof was added to the buildings at a later date. The original winding engine has been removed and the building now houses a restored engine from Silverdale colliery. The winding engine itself is excluded from the scheduling, although the building and the ground beneath it are included. To the north of the Platt shaft is a second fan house, built during the

1920s-30s. Its original fan is no longer extant and the building has been converted for other uses in recent times. It is excluded from the scheduling, although the ground beneath is included.

- 1.3.6 In 1891 work began on the construction of a chimney stack which served several banks of Lancashire boilers situated around its base in the central part of the colliery complex. The chimney, originally approximately 60m high, has since been shortened but it survives in good condition. The main boiler plant, built during the 1920s-30s, is situated immediately to the north of the chimney and is thought to have replaced an earlier structure. This building has been partly demolished but retains ten Lancashire boilers and their associated pipework and is included in the scheduling. Also situated within the central part of the mine complex is a building, Listed Grade II, which originally served as the site's electrical and mechanical fitting shop and was constructed in the late 1930s or early 1940s. This building was extensively altered for mine car repair work and, in recent years, for use as a locomotive repair shop. It is excluded from the scheduling, although the ground beneath is included.
- 1.3.7 During the early 20th century the production of coal at the site increased dramatically and two further shafts were sunk at the site, the Hesketh and Winstanley shafts. The former is situated in the south east corner of the colliery complex and was the deepest shaft to be developed at Chatterley Whitfield. The heapstead (the buildings and works around a mine shaft), the headgear and the complex which houses the compressor, power and winding houses remain standing and are included in the scheduling. The steel headgear of the Hesketh shaft dates to c.1920 and the brick and girder heapstead was developed during the 1920s and 1930s as the exploitation of coal through the Hesketh pit increased. A complete mine car circuit still survives within the heapstead and includes tippers and creeper railways which were linked to the screens, to grade the coal, and the railway loading bridges which loaded the coal onto the main line railway. The screens have since been demolished but the loading bridges, although partly derelict, survive and are included in the scheduling. Also in this part of the site are a number of railway tracks which extend for a distance of approximately 300m eastwards beyond the Hesketh heapstead. A 40m sample length of these tracks is included in the scheduling in order to preserve the relationship between the railway and the colliery buildings.
- 1.3.8 The brick-built Hesketh complex is one of the finest surviving structures at the site and was constructed from 1914-15 onwards. The winding, compressor and power houses for the shaft are situated on the building's upper floor while the basement was utilised for machinery and winding rope storage. The Hesketh winding house retains its original Worsley Mesnes twin cylinder horizontal steam engine and this is included in the scheduling. The compressor house currently houses a reconstructed steam compressor engine which was removed from Sutton Manor colliery and this engine is excluded from the scheduling, although the building and the ground beneath it are included.

- 1.3.9 The Winstanley shaft and its associated heapstead are situated in the south west part of the site. The shaft was sunk in c.1917 partly to improve ventilation in the Middle Pit, sited immediately to the east. The Middle Pit was capped and infilled in 1966 but its power house, dating to c.1905 and situated to the north of the shaft, remains standing and is included in the scheduling. The power generating machinery was originally located on the upper floor of this building and the ground floor housed a haulage engine for powering the underground haulage systems within the Middle Pit. The machinery and engine have since been removed from the power house and the building is now derelict.
- 1.3.10 The Winstanley shaft has also been capped and infilled, but the heapstead survives and incorporates a winding house of unique brick construction and German design encasing the head wheels. The original steam winder has been replaced by an electric winder which remains operable and is included in the scheduling. Approximately 75m to the north of the Winstanley shaft and heapstead is the colliery's weighbridge and weighplates which are included in the scheduling. The building housing these features was constructed during the 1950s and the weighplates survive intact with one side remaining operable.
- 1.3.11 To the north and north west of the Winstanley shaft are a pump house, which has been stripped of its pumping equipment, and the building which originally housed a methane plant. These structures are excluded from the scheduling, although the ground beneath is included. In the north western part of the site is a group of buildings, erected during the 1930s, which served as the colliery offices and laboratories. These buildings are excluded from the scheduling, although again the ground is included.
- 1.3.12 Before World War II, Chatterley Whitfield was the largest colliery in Staffordshire and in 1937 it became the first mine in Britain to draw more than one million tons of coal in a single year. The year 1947 witnessed a new era in mining and, after nationalisation, the majority of mines, including Chatterley Whitfield, became part of the National Coal Board. The 1960s saw a steady decline in the colliery's fortunes in the wake of a fall in international demand for coal and a decision was made to extract the surviving coal measures on the Whitfield site by way of Wolstanton colliery, some four miles to the south.
- 1.3.13 In 1976-77 coal mining ceased at Chatterley Whitfield although key site buildings continued to be utilised by the Coal Board for non-mining activities until March 1989.
- 1.3.14 For an industrial site, there is also a remarkable collection of documentary information which provides evidence for the history and development of the colliery.

## **2 PROJECT AIMS AND METHODOLOGY**

### **2.1 Aims**

2.1.1 To identify and record the presence/absence, extent, condition, quality and date of archaeological remains in the areas affected by the test pits.

2.1.2 To make available the results of the archaeological investigation.

## 2.2 Methodology

2.2.1 The test pits were planned at a scale of 1:50 and sample sections drawn at a scale of 1:20. The test pits were photographed using colour slide and black and white print film. A general photographic record of the work was made. Recording followed procedures detailed in the *OAU Fieldwork Manual* (ed D Wilkinson, 1992).

## 3 RESULTS

### 3.1 Description of deposits

#### *Test Pit 1 (TP1)*

3.1.1 TP1 was to be excavated against the western wall of building number 12. The presence of a down pipe and associated drain cover necessitated the re-location of the test pit c 6m to the south of its original location (Figs 2 and 3, and Plate 1).

3.1.2 The test pit was excavated to a maximum depth of 0.7m below ground level (bgl). A deposit of mid orangey brown sandy clay (100) was encountered at a depth of 0.3m bgl and was interpreted as an alluvial deposit overlying the limestone bedrock. This deposit was truncated by the construction cut (101) for the concrete footing of the western wall of building number 12, which was backfilled by a mixed deposit of re-deposited alluvium and building rubble (102).

3.1.3 Deposit 100 and the backfill of the construction cut were overlain by a layer of made ground (103), similar in composition to deposit 102 and in turn overlain by a very rough tarmac surface.

3.1.4 The base of the brickwork was at 0.37m bgl and directly overlay the concrete foundation, the base of which was at 0.57m bgl.

#### *Test Pit 2 (TP2)*

3.1.5 TP2 was to be excavated against the southern wall of building number 12 but was not opened as there was a live electric cable in the vicinity.

#### *Test Pit 3 (TP3)*

3.1.6 TP3 was to be excavated against the north wall at the north east corner of building number 12. However, due to the presence of a 200-300mm thick concrete slab it was re-located against the eastern wall (Figs 2 and 3). During excavation of the re-located test pit, the probable extent of this slab was encountered (Fig. 3, and Plates 2, 3 and 4) and the test pit moved south again.



- 3.1.7 TP3 was excavated to a maximum depth of 0.94m bgl to the top of a concrete slab (300) overlain by a mid-dark grey silty clay (301). Deposit 301 was truncated by the construction cut (302) for the lower brick courses and concrete footing of the eastern wall of building number 12.
- 3.1.8 The backfill of the construction cut (303) comprised re-deposited deposit 301 and building rubble. Both deposit 301 and deposit 303 were overlain by a layer of sandy material (304) used as bedding for the paving slabs which run along this side of the building.
- 3.1.9 The base of the brickwork was at 0.74m bgl and directly overlay the concrete foundation, the base of which was at 0.94m bgl.

#### ***Test Pit 4 (TP4)***

- 3.1.10 TP4 was to be excavated against the eastern wall at the south east corner of building number 12, but was not opened as there was a foul water drain running adjacent to the building.

### **3.2 Finds**

- 3.2.1 No finds were retained during the watching brief although 20th-century building rubble was observed within the backfill of construction trenches 101 and 302 and within the made ground 103.

### **3.3 Palaeo-environmental remains**

- 3.3.1 No deposits were observed which were deemed suitable for palaeo-environmental sampling.

## **4 DISCUSSION AND CONCLUSIONS**

- 4.1.1 Despite the limited nature of the test pits, a number of tentative suggestions can be made regarding the characterisation of the deposits observed during the watching brief.
- 4.1.2 The ground level around the eastern 1/3 of building number 12 is approximately 1.8m higher than that around the western 2/3 (Fig. 2), and it seems likely that the ground level has been reduced to the west prior to the construction of building 12. It is feasible that this reduction has not been continued to the west if concrete slab 300 represents an earlier phase of building. However as the extent of this slab was not established this can be no more than conjectural.
- 4.1.3 Deposit 301 overlay this concrete slab and may have originated from the ground reduction to the west although the lack of building debris within this deposit may suggest an alternative origin.
- 4.1.4 Therefore the possible phases of construction would be as follows: a building existed within the eastern part of the footprint of the existing building. This was subsequently

demolished to its concrete foundations and the ground to the west reduced. The resulting spoil was then deposited over the foundations of the demolished building and the strip foundations for building 12 excavated.

## 5 ADDITIONAL WATCHING BRIEF RESULTS

- 5.1.1 On 5th and 6th July 2005 the site was visited following a request from Rob Sutton, after pottery was discovered during excavation of footings for a proposed lift shaft within the 1934 wages office. A layer of brown clay silt (1001), a buried soil horizon, probably representing the original topsoil, was encountered at the base of the excavations. This was overlaid by a yellow-brown clay silt (1000) which contained numerous fragments of pottery. A representative sample of these were recovered, and were found to contain many sherds of earthenware, occasional fragments of white glazed china, fragments of saggars (possibly kiln lining ?) and many fragments of ceramic kiln furniture such as temporary stands, legs and spacers. This deposit probably represents a layer of made ground composed of material imported from one of the Stoke-on-Trent potteries.
- 5.1.2 Between 6th October and November 3rd 2005 OA conducted a series of watching briefs on new sewerage works running from where the trench entered the delineated Scheduled Ancient Monument area, along the northern edge of the site up to the former transformer house (building 112) before turning and running southwards alongside the laboratory (building 14). The work consisted of approximately 90 m length of trenching.
- 5.1.3 The first stretch, monitored on 6th October 2005 by Neville Rees-Higgins, was dug from the footprint of the former lower laboratory building situated to the north of the former wages office and measured 15 m long by 0.8 m deep. The base of the trench came down on natural clay. This had been cut by the foundation trenches for the building into which two red brick walls had been constructed. These walls were abutted by a concrete slab, the original floor of the building (Plate 5). This had been sealed by a later concrete slab.
- 5.1.4 A second length was monitored also by Neville Rees-Higgins on 7th October 2005 running parallel to the northern wall of the former transformer house (building 112) before turning and running westwards, terminating by the blast bank. This trench measured 25 m long by 0.9 m deep. The base of this trench cut into the top of the underlying natural grey-brown clay. This had been overlaid by layers of made ground composed of mixed clinker, stone and brick fragments up to 0.6 m in depth. Adjacent to the transformer house this was sealed by a concrete slab dating to the 1970s, changing to rough grass and turf as it approached the blast wall.
- 5.1.5 On 20th October 2005 a 30 m length of trench measuring 0.95 m wide, was monitored by Granville Laws. This ran along the north-western corner of the site and ending at the eastern edge of the access road. The base of the base cut into the natural grey-brown clay which was sealed by a layer of made ground composed of a mixed

brown sandy clay containing clinker and lens of yellow clay. This was sealed by a mid brown silty clay topsoil and turf.

- 5.1.6 The final length connecting to the existing sewer and running up the access road to the previous stretch was monitored on 3rd November 2005 by Mike Sims.
- 5.1.7 This consisted of approximately 20 m length of 2.6 m wide trench measuring up to 2.8 m in depth.
- 5.1.8 A layer of tenacious red-brown natural clay was encountered at a depth of 2.0 m below the current road level. This was overlaid by a 1.0 m thick layer of tenacious light yellow-brown clay also of natural origin. Overlying this was a 0.3 m deep layer of grey-brown silt clay, containing some organic staining and representing a buried soil horizon. Sealing this was a 0.15 m thick layer of made ground composed of mixed pale yellow-brown and red-brown mudstone. Overlying this was a 0.18 m deep layer of black gritty sand with a high percentage of coal dust. This was overlaid by a 0.2 m thick layer of mixed stone fragments and black sand. This was sealed below a 0.12 m deep layer of mixed clinker and stone. The last 4 layers are probably layers of made ground composed of spoil from the mine. A 0.15 m thick layer of modern tarmac completed the section.
- 5.1.9 These deposits are associated with the construction of the embankment which spans the stream bed at this point.
- 5.1.10 All sections of the trench exposed layers of made ground laid directly upon the underlying geology. This was probably to provide a level working area within the colliery yard. Apart from the (known) laboratory walls exposed within the first stretch of trench no evidence for earlier colliery buildings or structures was encountered.
- 5.1.11 On 22nd February 2006 a cable trench measuring approximately 70 m in length by 0.7 m wide by 0.45 m deep was monitored by Mike Sims. This ran from the entrance to the main office, alongside the road before crossing and connecting to the weighbridge office. The stratigraphy exposed was similar throughout its length. The base of the trench cut 0.1 m deep into the top of a layer of pale yellow-brown clay silt, a layer of redeposited material similar to that observed in both the sewer trench and during the excavation of the lift shaft (Context 1000). This was overlaid by a 0.15 m thick layer of small to medium sized angular stone fragments bound in a tar matrix, an earlier road and yard surface probably dating to the late 19th or early 20th century. On the alignment of the present roadway the current tarmac road surface was laid directly onto this layer whilst to the north and south-east of the road it was sealed by a 0.25 m deep layer of very dark grey sandy silt, a probable layer of made ground.

## APPENDICES

## APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

<i>Context</i>	<i>Type</i>	<i>Depth</i>	<i>Comments</i>	<i>Finds</i>	<i>Date</i>
Test pit 1					
100	Layer	>0.5 m	Alluvium above bedrock	-	-
101	Cut	0.3 m	Construction cut for building	-	C20th
102	Fill	0.45 m	Backfill of construction cut	-	C20th
103	Layer	0.1 m	Made ground	-	C20th
Test pit 3					
300	Structure	>0.1 m	Concrete slab	-	C20th
301	Layer	>0.6 m	Made ground overlying 300	-	C20th
302	Cut	>0.7 m	Construction cut for east wall of building 12	-	C20th
303	Fill	0.4 m	Backfill of construction cut	-	C20th
304	Layer	0.2 m	Sand bedding for paving slabs	-	C20th
5th and 6th July 2005 watching brief					
1000	Layer	0.18 m	Made ground, waste material from local pottery	Pottery, kiln furniture	C20th
1001	Layer	> 0.7 m	Buried soil horizon, original topsoil.	-	-

## APPENDIX 2 BIBLIOGRAPHY AND REFERENCES

EH 1997 *Record of Scheduled Monuments: Description of Monument No. 21575, Chatterley Whitfield Colliery*

IFA 1992 *Standard and Guidance for Archaeological Watching Briefs*

OA 1992 *Fieldwork Manual (1st edition ed. Wilkinson D)*

OA 2004 *Chatterley Whitfield Colliery, Stoke on Trent, Staffordshire - Written Scheme of Investigation*

## APPENDIX 3 SUMMARY OF SITE DETAILS

**Site name:** Chatterley Whitfield Colliery, Stoke on Trent, Staffordshire

**Site code:** CHAT 04

**Grid reference:** SJ 8839 5326

**Type of watching brief:** 4 hand dug test pits, excavation of new sewers and the excavation of a cable trench.

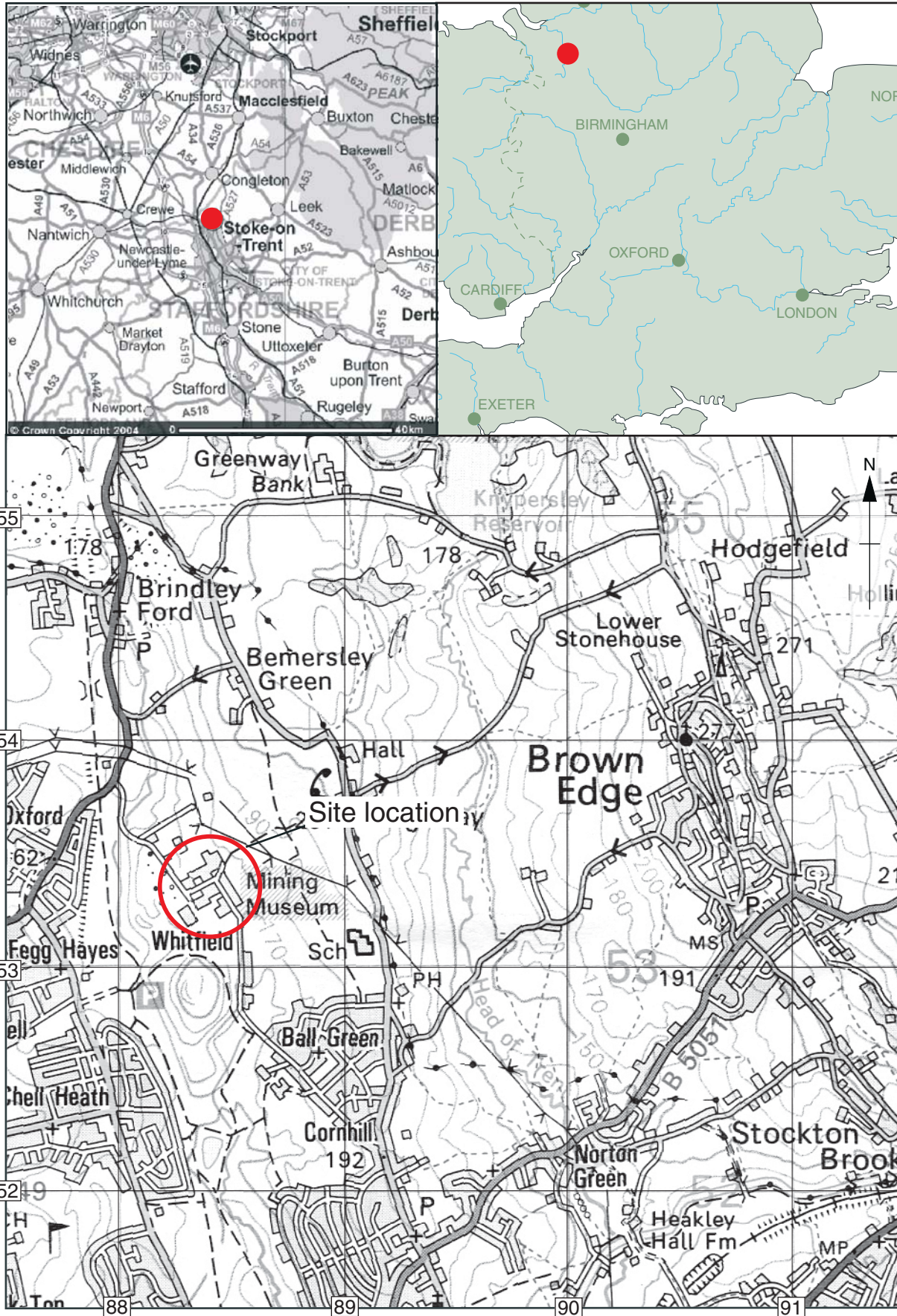
**Date and duration of project:** 13th of September 2004, 6th, 7th and 20th October 2005 and 22nd February 2006, 5 days on site

**Area of site:** 1.0 hectare

**Summary of results:** During the excavation of trial pits the foundations of Building 12 were exposed together with evidence of ground reduction during its construction. A concrete slab, possibly representing an earlier phase of building was also exposed. Later watching briefs during excavations for new sewers exposed the ground floor and walls of the former lower laboratory building, layers of made ground over the north-east corner of the site and also made ground associated with the access road embankment. A separate watching brief during the excavation of a cable trench exposed an earlier road surface between the main office and the weighbridge.

**Location of archive:** The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with an appropriate Museum Service in due course.



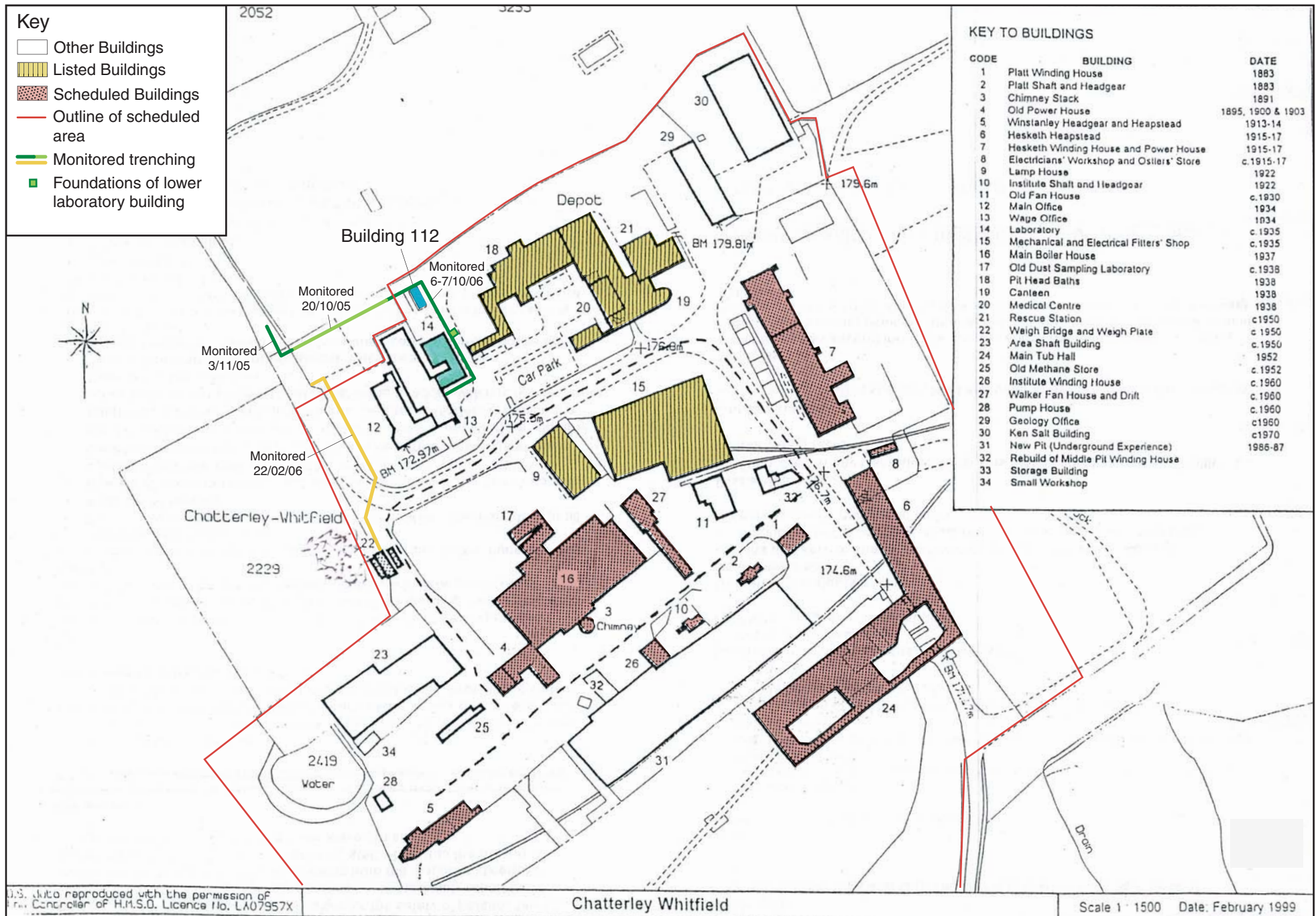


Scale 1:25,000

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Figure 1: Site location





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Chatterley Whitfield

Scale 1 : 1500 Date: February 1999

Figure 2: Location plan



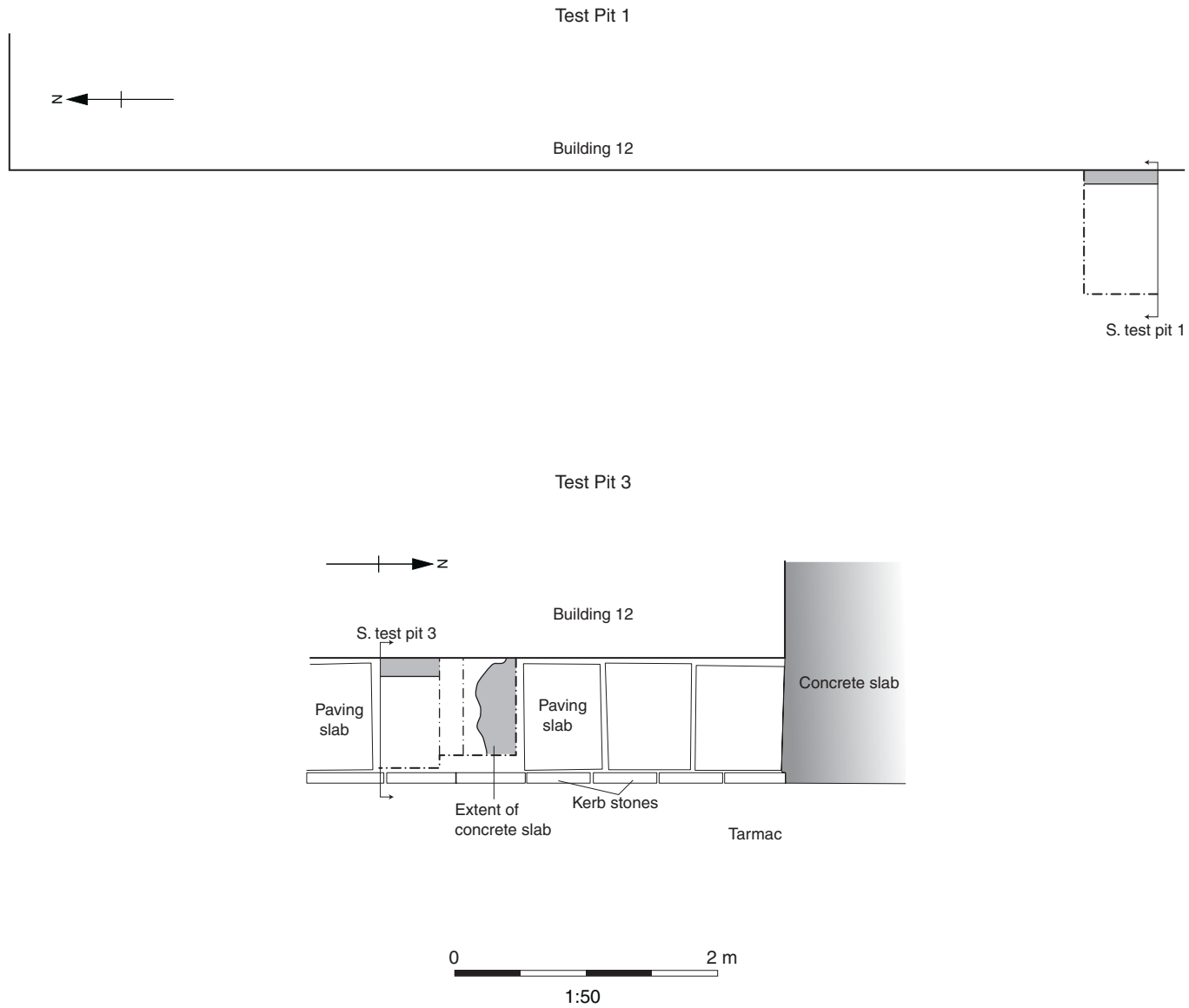


Figure 3: Plan of test pits 1 and 3

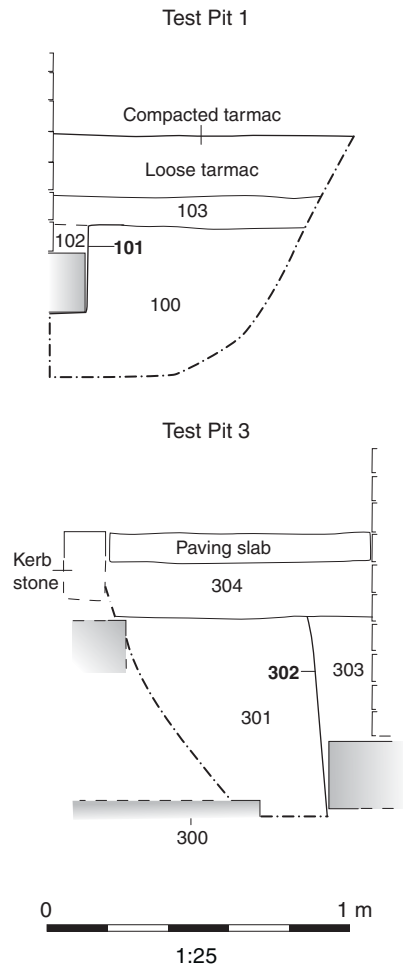


Figure 4: Sections of test pits 1 and 3





Plate 1: Test pit 1



Plate 2: Test pit 3



Plate 3: Detail of Test pit 3



Plate 4: Detail of Test pit 3





Plate 5: Foundations of lower laboratory building