Bradbourne Mill, Bradbourne, Matlock

Watching Brief Report

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Executive Summary

Archaeological Research Services Ltd was commissioned by Amos Developments Ltd to undertake a watching brief on the excavation of land at Bradbourne Mill, Bradbourne, Matlock in August and September 2007. The work involved monitoring the excavation of three trenches which were required for the construction of new flood defences requisite for the development of new dwellings at Bradbourne Mill. The flood defences replaced a drystone wall on the north bank of Haverhill Dale Brook and extended north east from dwelling B to tie into an existing weir wall. A new flood defence wall was built on the south bank to protect dwelling C, which also had footings excavated for an extension to the dwelling. Flood plains were also constructed east of the mill site and on both north and south banks of the brook. No archaeological features were encountered.

1. Introduction

1.1 The watching brief on groundworks on land near Bradbourne Mill, Bradbourne was undertaken by Brian Marshall and Jessika Shakarian of Archaeological Research Services Ltd (ARS Ltd) for Derbyshire County Council during the construction of flood defences for the new dwellings at Bradbourne Mill. The work involved the excavation of two flood plains on either side of the Haverhill Dale Brook east of the buildings and the excavation of three foundation trenches for dry stone walls that were to act as flood defences. The excavation of footings for an extension to Barn C was also observed by an archaeologist during the watching brief.

2. Location, Background and Geology

2.1 The village of Bradbourne is situated c.7km north of Ashbourne and c.11km south-west of Matlock (Fig. 1).

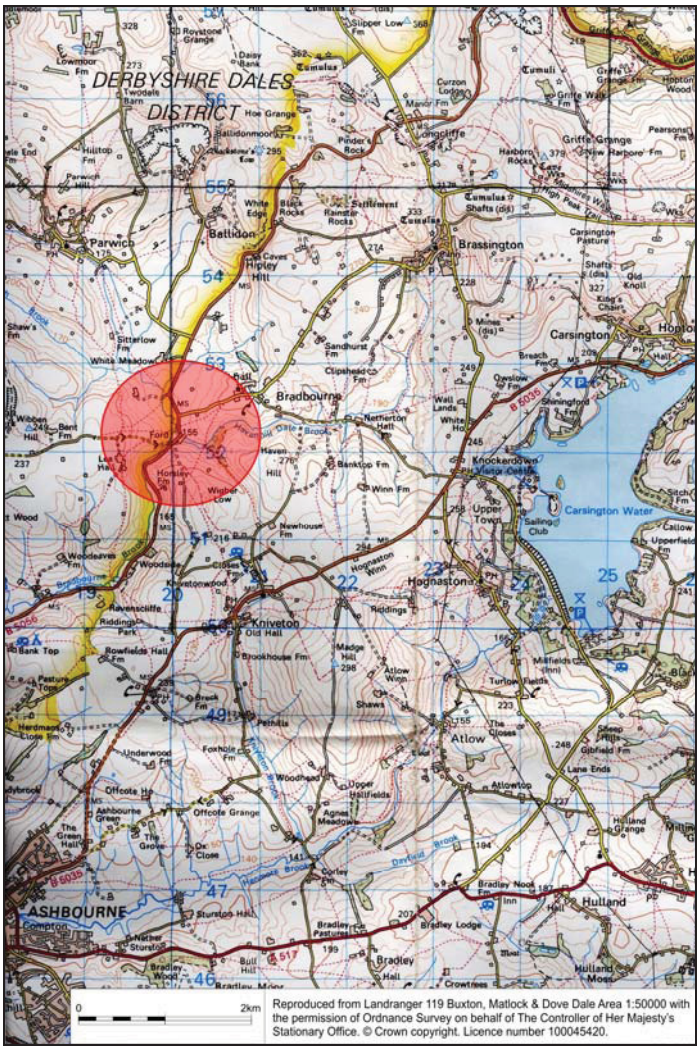
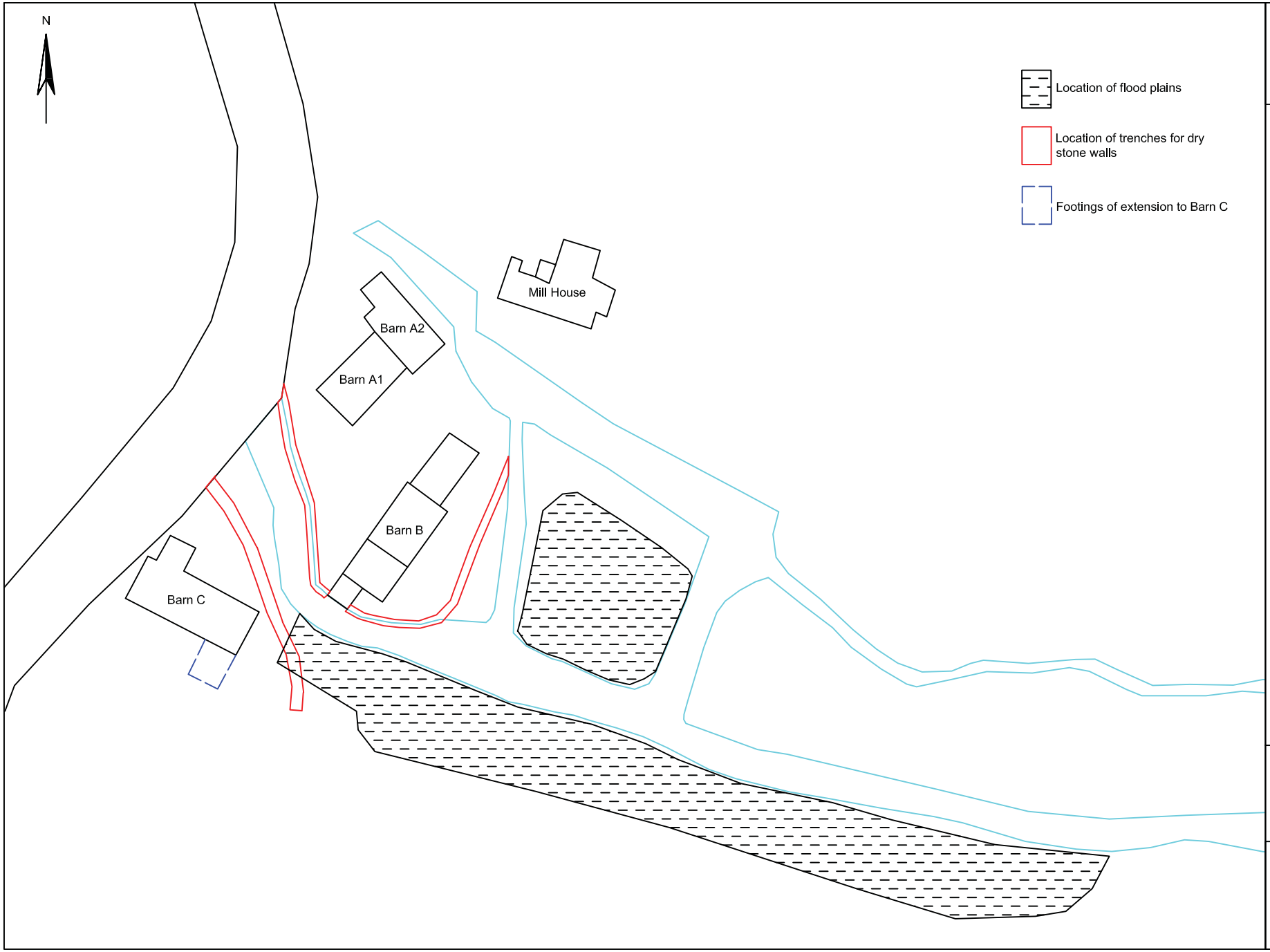


Fig. 1 Location Map of the Development Site.



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Site Code: Brad2 07
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Figure

Plan of Bradbourne Mill showing location of flood defences.

Notes:

2.2 Bradbourne Mill is situated near Tissington Ford on a bend of the B5056 road between Ashbourne and Matlock. The development site is located at SK20174 52259 to the east of the mill and the proposed footpath will run through the fields in this area (Fig. 2). Bradbourne Mill is entered in the Derbyshire Sites and Monuments Record (SMR 2016) as a Medieval and Post-Medieval water-powered corn mill. The mill was built in the 18th Century and carries the date of 1726. It is known as the oldest surviving water-powered corn mill in Derbyshire and is the only mill which has two water wheels which stand side by side in a wheel pit. Furthermore, Bradbourne Mill still retains most of its original machinery, which will be kept and restored *in-situ* during the forthcoming restoration and development of the mill into residential homes.

2.3 The Havenhill Dale Brook flows through the site and diverges into two channels, the Havenhill Brook and the original mill race, near Bradbourne Mill. A footpath and cycleway have been laid running from the south of the mill eastwards where it crosses the Havenhill Brook and subsequently the mill race. At this point a bridge was constructed across the brook, a watching brief on the excavations of the abutments required for these bridges was undertaken in may 2007 by Archaeological Research Services Ltd and a report produced (Marshall 2007).

2.4 Land drainage works to the east of Bradbourne Mill and c.100m east of the proposed crossing at Havenhill Dale Brook at a disused mill dam in Springs Bridge uncovered a number of well preserved oak timbers, presumably from the sluice gate of the dam wall. A dendrochronological study provided a felling date of AD 1580. However, more recently, these timbers were radiocarbon dated which suggested that the trees had been felled in the winter of 1836-37 and were therefore fairly modern in origin (Gifford 1999).

2.5 The earliest documented evidence of Bradbourne is in AD1086 with an entry in the Domesday Book when the village was known as Bradeburne (Morris 1978). Bradbourne later also contained a Medieval Grange run by Dunstable Priory (Hart 1984, 155).

2.6 Bradbourne lies on the border between two geological zones, the Widmerpool Formation (consisting of mudstone with limestone and occasional sandstone deposits) and Hopedale Limestones (BGS 1978).

3. Aims of the Project

3.1 The project was an archaeological watching brief as requested by Amos Developmentsl. The aim of the watching brief was to observe the excavation of three trenches and two flood plains required for the construction of flood defences on the north and south bank's of Haverdale Hill Brook. The trenches were in close proximity to a complex of buildings that constituted the Bradbourne Mill site, and the flood plains were situated to the east. The excavation of footings for an extension to the rear of Barn C was also observed. If any archaeological features were discovered, they were to be fully recorded and excavated.

4. Method Statement

4.1 The entire process was monitored by an archaeologist from Archaeological Research Services Ltd. All stratigraphic layers were context recorded on pro-forma sheets and a context register completed. Any features or structures were to be fully cleaned and recorded in accordance with the standards stipulated by the Institute of Field Archaeologists (IFA).

5. Summary of Results

5.1 Excavation of the flood plains

5.1.1 Flood plains were excavated on the north and south banks of the brook to allow the dispersal of water in the case of a flood (Fig. 1). Flood Plain A was excavated between two weirs to the west of Barn B. An area of land was levelled northwards to a maximum width of 14m from the brook, and 0.3m above the water level. The ground was then sloped at an angle of approximately 50° northwards to form a bank that ascended to higher ground approximately 3m above. The depth of the ground excavated between the two weirs was approximately 2.4m; its stratigraphy is described as follows and can be seen in figure 4. A medium black (2.5Y 2.5/1) topsoil (201) existed across the site and was between 0.1m to 0.3m in depth. Below the topsoil (201) existed a dark yellow (10YR 4/4) clay (202) that contained occasional sandstone blocks. The clay (202) was found across the site and had a maximum thickness of 0.6m. Below the yellow clay (202) existed a very dark greyish brown (2.5Y/3/2) clay (203) which was located approximately 0.6m below the modern ground level and was 1.1m thick. Below the grey clay (203) was a layer of dark grey (2.5Y 3/1) mudstone (204) that contained sandstone blocks measuring between 0.1m to 0.8m. The layer of mudstone (204) was located 1.8m below the modern ground level and was approximately 0.17m thick. Below the mudstone (204) was a layer of firm black (5Y 2.5/1) shale (205), located 0.9m below the modern ground level and was approximately 0.1m thick. Below the shale (205) there existed a thin layer of orange (7.5YR 4/6) sand containing medium rounded pebbles (206) which was approximately 0.01m thick. The sand (206) lay above another deposit of black shale (207) that was excavated to a thickness of 0.35m. The total depth of the shale (207) was not established as it extended beyond the limit of the excavation.

5.1.2 The soil and underlying sediments were all of natural origin and no archaeological remains or horizons were evident. The excavation of Flood Plain A did reveal a section of stone floor; this was an element of the west weir (Fig 3). The whole of the weir is to be exposed and retained in situ.

Fig. 3, Section of the west weir stone floor

Fig. 4, Section showing the contexts relating to Flood Plain A (Scale: 2m).

Fig. 5, Working shot of Flood Plain A under excavation (looking south west).

5.1.3 Flood Plain B was excavated on the south side of Havenhill Dale Brook, it was situated east of barn C and was approximately 135m in length (Fig. 1). The working plans required two terraces each measuring 2.5m in length to be excavated into the hillside, the ground would then be sloped off at 60º into the hillside. The plans were amended to protect established bushes and trees on the bank side, which did not allow the two terraces to be fully excavated.

Fig. 6 Assessing levels of the terraces on Flood Plain B

Fig. 7 Flood Plain B showing diversion around bushes and trees.

The light brown (10YR 3/2) topsoil (301) that existed south of the brook was loose and coarse grained, between 0.1m to 0.2m in depth and contained small rounded pebbles. Below the topsoil (301) was red/orange boulder clay (5YR 4/4) that was approximately 0.5m in depth and was in complete contrast to the underlying clays north of the stream. This orange boulder clay layer (302) was the predominant covering over area B. The exception to this was a 13m length of the lower terrace at the eastern end of the flood plain, were the slopes of the adjacent hillside became gentler. Exposed at this level was a dark greyish brown (10YR 4/3) alluvial clay (303) that was excavated to a thickness of 0.12m. The total depth of alluvial clay was not established as it extended beyond the limit of the

excavation. Within the alluvial clay (303) were patches of black (7.5 YR 2.5/1) mudstone (304) within the alluvial clay (303). Travelling west and central to area B the lower slopes of the hillside became severe, this revealed concentrated deposits of sandstone bedrock (305) ranging in size from small stones to tablets of 1mx1.5m. The hillside returned to a gentler slope as it dropped towards Barn C.

Fig. 8 East end of Flood Plain B looking east.

5.2 Three trenches were excavated as footings for flood walls along the north and south banks of the brook close to Barns B and C. The walls were to be an addition to the flood defences for the buildings.

5.2.1 Trench 1 was located east of barn B and north of the brook (Fig.1). An existing dry stone wall and footbridge were demolished, and a bank of redeposited clay and stone was constructed which allowed the excavation of trench 1 by machine (Fig. 9). The demolition of the dry stone wall revealed the stratigraphy of the standing ground, which had a depth of 0.85m at its western extent sloping down

Fig. 9 Marking out line of Trench 1looking east

to 0.2m at its eastern extent. The trench was excavated to a depth of 0.85m; the first layer consisted of type one gravel and sand 0.2m in depth overlaying a dark brown clayey soil 0.25m deep. This in turn overlay grey/buff clay with small pockets of orange clay 0.4m deep with mudstone appearing at this horizon. From this level a trench 0.5m deep 1.9m wide was excavated which extended further into the mudstones and shales (Fig. 10).

Fig.10 Trench 1 looking east (scale 1 & 2m)

5.2.2 Trench 2 was located south of the brook and north of barn C (Fig 1). The surface area again consisted of type one gravel. After removal of this layer dark brown subsoil containing sandstones and tree roots was revealed, this overlay the grey/buff clay as found in trench 1. The trench was excavated to a width of 1.3m with a variable depth between 0.5 and 0.9m. At the western section of the trench mudstone and shales were exposed, while towards the east, the horizon became the grey/buff clay (Fig 11).

Fig. 11 Trench 2 looking west

Trench 3 excavated to the rear of barn C, was excavated to accommodate the footings for an extension to be attached to the barn seen in Fig.12. The trench was excavated to a width of 1m x 0.9m deep and terminated in a layer of grey/buff clay.

Fig. 12 Trench 3 extension to barn C

5.2.3 The flood defence system was completed with the excavation of trench 4, which was situated on the north bank of the brook and abutted barn B (Fig 1). A bank of clay and soil was deposited in the brook to allow the excavation of a trench in this section (Fig.13). Curving from the west wall of barn B the trench extended northwards until it abutted the existing west wall of the west weir, to which the flood wall will be tied. Soil and clay was excavated down to mudstone and shale, with a band of poorly sorted sandstone rocks encountered in the northern section of the trench. The trench was 0.6m to 0.9m in depth and 1.4m wide to within 1m of the existing weir wall where it was reduced to 1m in width.

Fig. 13 Trench 4 cut into redeposited soil and clay

6. Conclusions

6.1 During the course of the archaeological watching brief no significant achaeological remains were encountered.

7 Publicity, Confidentiality and Copyright

7.1 Any publicity will be handled by the client.

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

8. Statement of Indemnity

8.1 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.

9. Acknowledgements

9.1 Archaeological Research Services Ltd would like to thank all those involved with the smooth running of the project, especially Andy Myers the Development Control Archaeologist for Derbyshire County Council and Mick Cotterill, Matt Potts and the site workers and staff of Amos Developments.

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