

FORUM

NEW SERIES
Volume 6
2017

The Journal of Council for British Archaeology
YORKSHIRE



CBA Yorkshire Annual
Review

Research, Fieldwork and
Excavation

Education, Community
and Commercial

Council for
British Archaeology

www.cba-yorkshire.org.uk

About FORUM Yorkshire

FORUM is an annual archaeological journal where community, independent, professional/commercial and academic archaeologists (and practitioners in complementary fields) can report their research or extend discussions about archaeological and allied issues. A range of contributions is invited including long (4000–8000 word) or short (2000–4000 word) articles, shorter notes (up to 2000 words), site summaries, and preliminary or full research fieldwork and project reports. Longer papers may be considered and requests should be submitted to the editor. We also accept reviews of books or articles related to the archaeology and heritage landscape of Yorkshire. Contributions are welcomed from students, voluntary and community-based groups, independent practitioners, providers of training and education, commercial organisations and academics. Contributors (and the editor) may request independent, specialist review of articles that are submitted for consideration. *FORUM* is dated and published retrospectively for the prior calendar year and distributed to subscribed members.

The geographic scope of this journal is Yorkshire including areas that were part of Yorkshire prior to the 1974 boundary reorganisation. Contributions on archaeology which is not located in Yorkshire (or its previous boundaries) but is immediately adjacent or pertinent to it may be considered. Authors are requested to contact the editor prior to writing such an article.

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FORUM

NEW SERIES
Volume 6
2017

The Journal of Council for British Archaeology YORKSHIRE

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Edited by Christiane Kroebe

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Council for British Archaeology Yorkshire

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Charitable Status | Council for British Archaeology Yorkshire is a registered Charity number 519581. A copy of the constitution may be obtained from the secretary or found on the CBA Yorkshire website.

Officers 2017–2018 | The Organisation is run by a management committee and overseen by trustees. These are elected at the AGM and meet four times each year.

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<i>Front cover</i>	Some of our younger visitors enjoying the hands-on interactives, learning about bones and searching for clues with UV torches. © Leeds Museums and Galleries.
<i>Back cover</i>	Left The Swaledale and Arkengarthdale Archaeology Group hard at work. © SWAAG. Right Remains of Low Mill at Thruscross Reservoir, looking north-east. © J. Buglass.

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Editorial

Christiane Kroebel, Hon. Editor 2017–18

forum-editor@cba-yorkshire.org.uk

The reception to the slimmer volume 5 of *Forum* was complimentary, with a few comments on the lines of ‘this is the way forward’ and ‘good example for other groups’, though one or two people said that they would have to get used to it. It has ensured that CBA Yorkshire is financially secure whilst at the same time saving space on your bookshelves and the recycled paper burden.

The articles show wide-ranging activities across Yorkshire from developed funded excavations to community projects. The latter are particularly well represented and demonstrate people’s enthusiasm for their history and archaeology. All the articles inform and two are meant to stimulate discussion; the exhibition in Leeds on the display of human remains and South Leeds Archaeology’s thoughts on how groups can remain relevant in thriving.

As this volume goes to the printer, we are planning the next issue. If you wish to contribute in 2018 do get in touch.

As is customary, with the publication of this present volume, *FORUM* volume 5 (2016) becomes fully open access. Visit <http://www.cba-yorkshire.org.uk/forum> to download as a PDF file and here is the information on how to access the full online journal.

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To view or download *Forum* volume 6 (2017), enter this link into your web browser –

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When the PDF prompts you for a password, enter **Yorkshire2017!** (case sensitive)

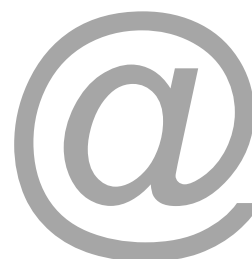
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CBA Yorkshire Annual Review 2017

The objectives of the group for the year were clearly and simply stated in the Forward Plan published in the 2016 edition of Forum and largely inspired and developed by our Chair, Steve Bence with the strong backing of the rest of the committee. It was therefore a great blow when Steve sadly passed away in December after losing a long-term battle with poor health. However it is a mark of his dedication to the group that Steve played a full part helping to bring the 2017 objectives to fruition and setting the direction for 2018 until his health problems forced him to step down in November.

The 2017 objectives to develop a new website, issue four e-newsletters a year, publish a new-look Forum, (part in print and part on-line) and to create a CBA Yorkshire event in the Autumn to complement the long-established and popular February Symposium were all met. Paul Brayford, our Vice-chair was instrumental in developing the new website which has a much cleaner and more modern appearance than our previous one. Though some elements are still in development, it is there for us to build on during the coming years. Paul also produces the e-newsletters which are primarily aimed at publicising our own events and news from our affiliated groups. Our Editor, Christiane Kroebel succeeded in getting the first of the 'new-look' Forum publications published in time to hand out at the February Symposium. The slimmer printed volume acts as a gateway to more substantial articles published on our website and in so doing the cost to the group of publishing Forum has dropped to a sustainable level putting the group's modest finances on a much sounder footing and giving us the freedom to invest in other initiatives.

The summer saw successful visits to Byland Abbey and Helmsley Castle and evening guided walks of Georgian York and of Hull as UK City of Culture 2017. These events were followed in November by our first ever 'Autumn Showcase'. Steve was very clear that we needed to do more for our Community Groups and his idea was to create an event that brought these groups together to hear talks, to exhibit their projects and to develop skills through workshops, all under one roof and over one day. This is how the Autumn Showcase 2017 came together in November in the historic venue of the National Centre for Early Music in York, though it was sad that by then Steve was too ill to attend in person.

Some elements of the 2017 plan remain as challenges. We still need to mount a membership drive, especially to attract more community groups to become affiliated to CBA Yorkshire and we would like to develop a stronger role in advocacy to play our part in helping to defend the county's heritage. But 2018 presents the even bigger obstacle of trying to get new people to join the committee to take the group forward and this may prove to be the biggest challenge of all. Finally, it is important to mention the sterling work being done by our Treasurer, Ian Drake and to our Secretary and Membership Secretary, Trevor Pearson for keeping the administrative side of the group working well and to all our individual and affiliated members for their continued support.

Join the adventure today—and help spread the word!



The 2017 AGM & Symposium at York St John's Fountain Lecture Hall

© Eric Houlder



The 2017 Autumn Showcase at the historic National Centre for Early Music in York

© C. Kroebel & Eric Houlder

Steve Bence 1956 - 2017: An Appreciation

Steve had a long and successful career in the rail industry first with British Rail and then as part of the senior management of the Association of Train Operating Companies which represented the various operating companies created after privatisation. After retiring, Steve was able to devote himself to his other great interest – archaeology. His first digging experience was with the late Professor Philip Rahtz at Blandsby Park in 2000 during the course of which he met members of the Scarborough Archaeological and Historical Society and soon became a regular volunteer on their excavations in and around the old town of Scarborough, eventually joining the committee. Steve also joined the Yorkshire Archaeological Society (now the Yorkshire Archaeological and Historical Society) becoming active in the running of the Roman Antiquities section and more recently from his home he shared with his wife Linda at Thixendale, he helped to set up the High Wolds Heritage Group to help foster an interest in the archaeology and history of the area. This then led on to the excavation of the deserted medieval village at Hanging Grimston near Kirby Underdale as readers of Forum will know. He also invested time in the group looking after Malton Museum and then in February 2016 Steve was elected Chair and Trustee of CBA Yorkshire. He took on the role with huge vigour, working to give much needed practical, clear and sensible direction to our group and working to help us put the group on a sounder financial footing.



Steve made many friends in archaeology and he had very much still to give, and a lot to live for. He is very much missed by his friends and colleagues.

Thematic index of article content	Palaeolithic Mesolithic	Neolithic	Bronze Age	Iron Age	Roman	Early Medieval	Late Medieval	Post-Medieval Modern	Landscape Survey	Building Recording	Remote Sensing	Excavation	Desk-Based Research	Thesis Synthesis	Community Voluntary	Education Training	Commercial Developer	Academic Research	Local Society Group
Paper title <i>Authors</i>																			
Themes:	Period								Method					Engagement					
Articles																			
Excavations at Nether Mill, Penistone, Barnsley, South Yorkshire: Archaeological Report <i>Johnson</i>								■				■					■		
Anglo-Saxon, medieval and Victorian discoveries: Investigating the underground ducts at Ripon Cathedral <i>Humble & Pinnock</i>						■		■	■		■		■				■		
The Devil's Bridge and Other Bridges over the River Ure <i>Buglass</i>								■		■			■				■		
Skeletons: Our Buried Bones' exhibition at Leeds City Museum <i>Baxter</i>				■				■	■				■	■		■			
Water-control at Brough Beck, Catterick <i>Speed</i>								■	■			■					■		
A Romano-British Field System and Burnt Pits at West Moor Park, Armthorpe, Doncaster, South Yorkshire <i>Tuck</i>				■	■							■					■		
Victorian Brickworks: Excavations at the Former Amy Johnson School, Hull <i>Tuck</i>								■				■					■		
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Sixty years of the Pontefract & District Archaeological Society <i>Houlder</i>								■				■			■	■			■
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Archaeological Register																			
Selected Recent Work in Yorkshire by John Buglass Archaeological Services <i>Buglass</i>	Multi-period								■	■		■			■	■	■		■

Chronology | Dating nomenclature for British archaeological periods as defined by Historic England:

Post-Medieval	After 1540 cal AD	Bronze Age	2500 – 600 cal BC
Late Medieval	1066 – 1540 cal AD	Neolithic	4000 – 2500 cal BC
Early Medieval	410 – 1066 cal AD	Mesolithic	c. 10,000 – 4000 cal BC
Roman	43 – 410 cal AD	Palaeolithic	Until c. 10,000 cal BC
Iron Age	cal BC 600 – 43 cal AD		

Excavations at Nether Mill, Penistone, Barnsley, South Yorkshire: Archaeological Report

Ed Johnson

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Keywords Penistone, Mill, Buildings, Race, Water

Abstract

In 2016 Wardell Armstrong was commissioned by Duchy Homes to undertake an archaeological excavation prior to the construction of new housing on the site of the former Nether Mill, a water-powered grist mill at Penistone, Barnsley, South Yorkshire. Excavations revealed substantial below ground remains showing several phases of development associated with the mill before its demolition for road widening purposes during the 1960s. These remains showed that the mill's origins were post-medieval in date with several phases of building charting the mill's expansion and redevelopment throughout its operational lifespan.

Introduction

In April 2016 Duchy Homes commissioned Wardell Armstrong to undertake an archaeological excavation on the site of a former water-powered grist (corn) mill at Penistone, Barnsley, South Yorkshire (centred on NGR: SE2444 0379; Fig. 1). This excavation was required as part of a planning condition prior to the development of the site for housing and followed an archaeological assessment of the remaining extant mill buildings and surrounding farm buildings undertaken by CS Archaeology in 2012 (Scurfield 2012).

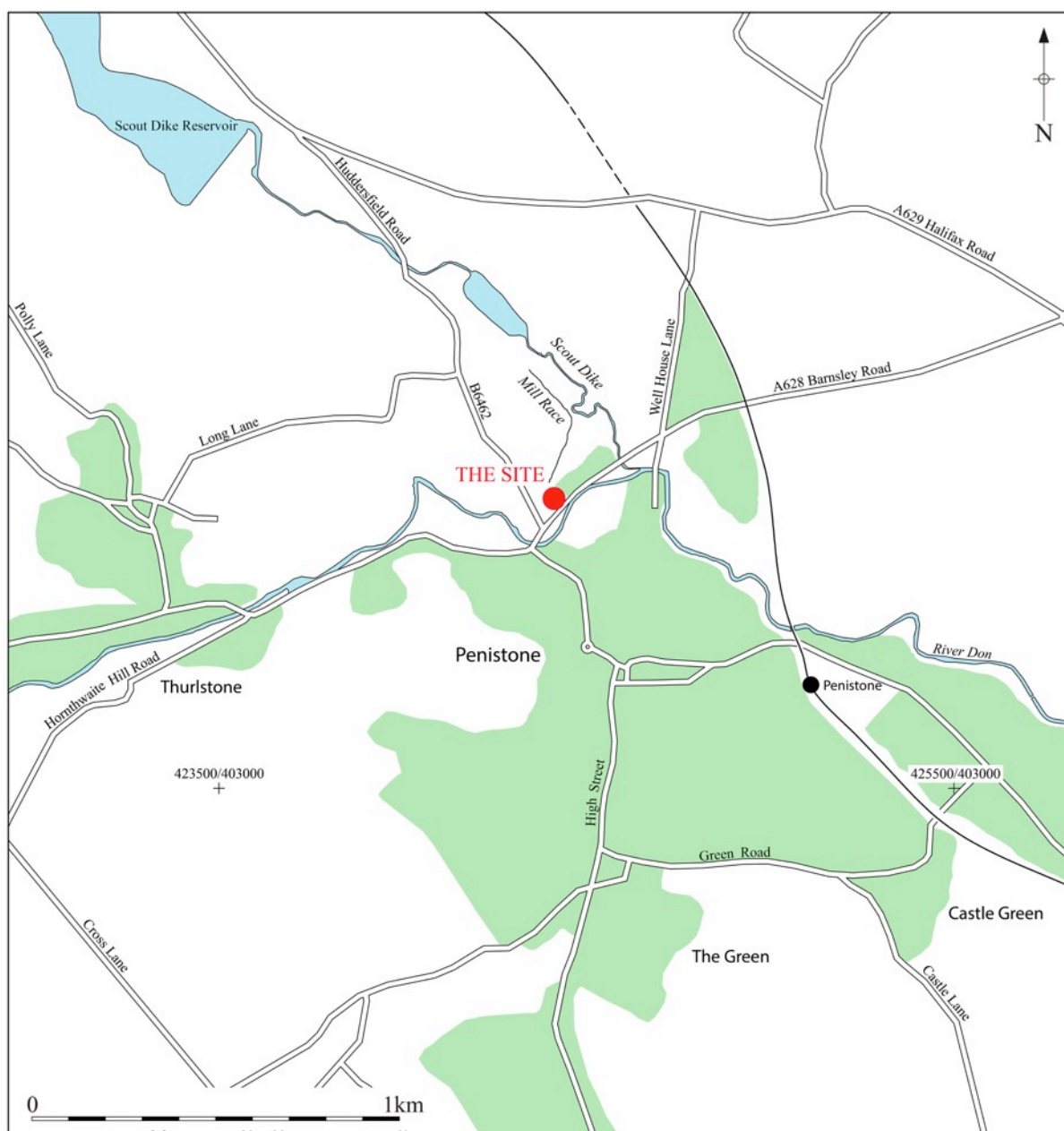


Figure 1 Site Location.

The excavation was situated within an area of waste ground measuring 175m² to the southwest of the remaining extant mill structures and on the northwest side of the A628 Barnsley Road (Fig. 2). The existing soil deposits covering the remains were removed by a mechanical excavator along with several layers of demolition rubble deposited across the site during the buildings' demolition in 1961.

These excavations revealed several distinct phases of construction ranging in date from the late 17th century through to the mid-20th century, all relating to the development and enlargement of the mill throughout its lifespan. The phasing of the buildings was somewhat problematic in several areas mainly due to the lack of datable evidence recovered and the considerable stratigraphic disturbance caused during the destruction of the mill buildings in the 1960s.

Background

Nether Mill is located on the western outskirts of Penistone in the upper Don Valley approximately 14 miles northwest of Sheffield and 8 miles west of Barnsley. There are no references to a medieval mill on the site and

despite Nether Mill being within 150m of the site of the medieval manorial caput, there is no evidence that the mill was a manorial mill (Scurfield 2012).

The first references to a mill located at the site date to the 16th century when the mill was leased from William Wordsworth of Penistone to a Robert Peck (Nicholson 2001, 109). Subsequently, the site was leased as a water-powered corn mill by Thomas Wordsworth to an Edward Sotwell. The source for the water power was via a mill-race fed from Scout Dike situated to the northeast of the mill complex (Fig. 1). Nether Mill changed ownership in 1687 when it passed into the possession of the Grammar family who continued occupation until 1761. In 1721 permission was sought by Mary Grammar to excavate a new mill-race from the neighbouring River Don (Hey 2002, 52). Another deed, two years later, suggests that the mill may have been refurbished in 1723 (Hey 2002, 52).

Ownership of the mill was taken over by Spencer Stanhope in 1761, with trade directories of 1822 and 1851 showing the miller to be a Benjamin Hudson. In a trade directory of 1871, Hudson's sons Joseph and John Hudson, along with Richard Ellison, are listed as the millers at the site. During this period the mill was enlarged and repaired several times and in October 1871 a fire destroyed the mill buildings along with its machinery (Nicholson 2001, 113).

The mill was back in operation by 1879 and was leased by Joseph Hudson who continued as the miller until his death in 1889 when the lease was taken up by William Henry Hinchliffe (*ibid.* 114). Nether Mill remained leased to the Hinchliffe family through its owners the Stanhope's until 1958 when Thomas Henry Hinchliffe died and the business came to an end. After its closure, the mill was purchased by Penistone Council and by 1961 the main mill building was demolished and the mill pond infilled in order that the A628 Barnsley Road could be widened.

Excavation

Following the desk-based assessment of Nether Mill and its associated farm buildings, undertaken by CS Archaeology (Scurfield 2012), Wardell Armstrong undertook an archaeological evaluation consisting of eight trenches. Four of these trenches revealed substantial evidence for the former mill buildings and its associated water management systems. The evaluation results prompted a request from the local archaeological curator for an open area excavation of the site to mitigate the impacts of the proposed development through preservation by record. The excavations produced little in the way of artefacts, though several large pieces of millstone and a carved column, possibly used as a prop for the mill-race, were recovered from the site.

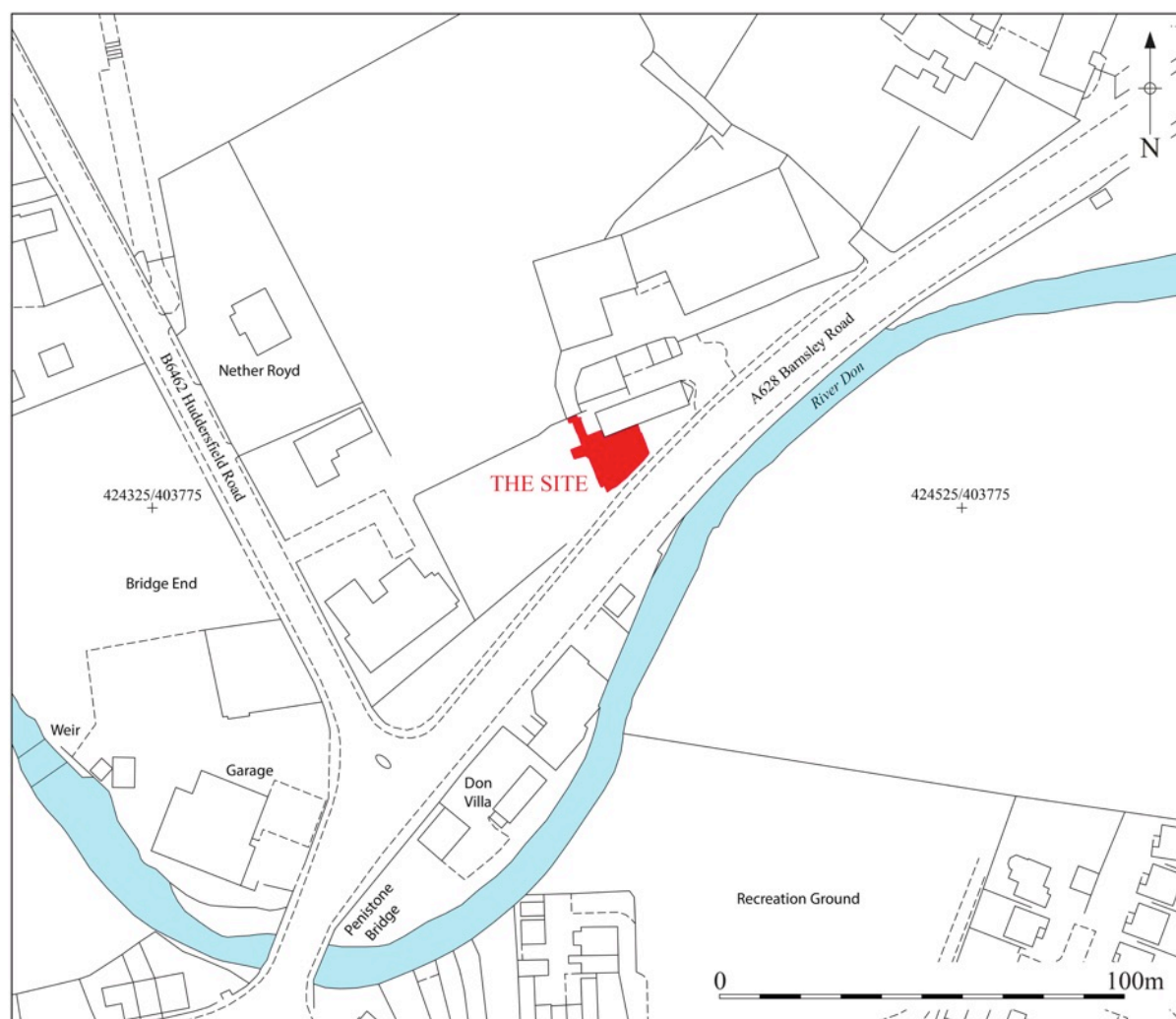


Figure 2 Location of the excavation.

The archaeological excavation undertaken during May 2016 (Mounsey 2016) revealed that the former mill building went through several phases of construction, with the size and shape of the mill changing during its working life. The remains were, for the majority, constructed from dressed yellow sandstone of varying sizes with regular coursing and were well bonded. Other remains were of varying types of brick, with some areas of concrete also visible.

During the initial excavation of the site it was clear that, after the demolition of the building, the rubble had been used as levelling deposits. These deposits, including layers of compact, engineered industrial waste along with demolition material, had a general thickness of up to 1.3m above the remains of the mill walls.

The excavations also revealed the rectilinear foundations of the mill. Substantial remains survived the building's demolition. Internal and external floors also remained, along with evidence that the internal floors were constructed above stone piers, possibly built from the remains of an earlier mill. Significantly, the remains for a wheel pit and tail race were found at the northern end of the mill, with later brick additions hiding the wheel scarring on the original sandstone wheel pit wall.

The adaption of the mill by Mary Grammar in 1723 was clearly visible with the survival of a large dam wall. This wall was separated from the original mill building by a deposit of hardened industrial waste.

Later additions to the mill complex were also visible during the excavations but were less well preserved, with an eastern and northern expansion visible in the form of two smaller buildings. The roof scar for the northern building was visible on the extant barn that remains on the site. However, this building had been replaced at some point by an open, concrete floored storage area. The eastern building appeared to be a later addition to the mill complex and differed in style from the rest of the buildings on the site, having been

constructed in a rather ad hoc fashion. Later 19th-century additions were also visible with concrete floors and drains inserted to the south of the extant barn, along with the reconstruction of the mill-race from Scout Dike.

Discussion: The mill's development



Figure 3 Phase plan

Phase 1

The earliest remains consisted of the rectilinear foundations of the main mill building (Fig. 4) which extended north to south across the excavation area. A paucity of finds makes it difficult to establish the date of this initial building phase, although it is probably of late-17th/early-18th century date. The structure is possibly based on the previous footprint of Skoute Mill, the first recorded mill on the site, although no evidence for this was revealed. The outer walls, constructed of dressed yellow sandstone, were all of the same width, measuring 0.65m, whilst the inner walls measured 0.45m in width.



Figure 4 Overall view of the main mill building, looking southeast. Scale: 2m/1m. © Wardell Armstrong.

Within the interior of the building a flagged floor was present which was built onto a layer of natural clay, with the remains of two small square stone structures also visible. These two small structures survived below the flagged floor and appeared to be built from the remnants of a previous mill with a large piece of millstone forming one of the corners (Fig. 5). The function of these small structures remains unclear although they may have formed the basis of a pier system on which the flagged floor was laid, or they may represent the possible bases for the power transmission associated with the waterwheel.



Figure 5 Piece of millstone in situ, forming part of a possible machinery support. Scale: 0.5m. © Wardell Armstrong.

No trace of a wheel pit could be firmly attributed to this initial phase but it is likely that the original wheel was 'overshot fed' from the mill-race leading from Scouts Dike until the construction of the new mill pond in 1723 which may have changed the position and functionality of the mill and its wheel.

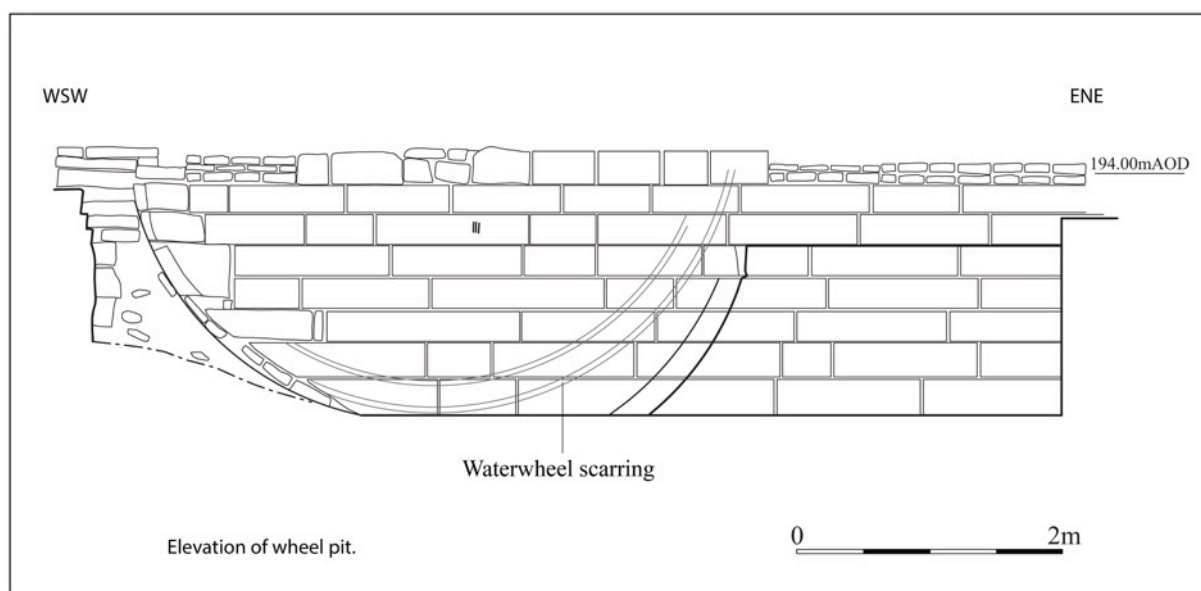


Figure 6 Elevation of Wheel Pit Wall.

Phase 2

The excavations revealed that the second phase of the building was largely associated with its refurbishment and expansion under Mary Grammar in 1713. The main structural remains of this phase comprised the dam wall and its supports situated to the west. The dam wall survived in good condition to a width of 0.90m and was constructed from substantial, bonded yellow sandstone blocks. It was observed to have a length of 8.40m and a surviving height of 1.30m. The dam wall was not built directly against the existing mill building (Phase 1), with the gap between the two filled with a hard, black industrial waste possibly forming a waterproof barrier. This layer measured 0.12m in width and was visible along the length of the dam wall, along with two courses of mortared red bricks, the use of which remains unclear. It is likely that this construction was intended to prevent leakage into the mill. The dam impounded a millpond to the west of the mill, as depicted on 19th-century maps.



Figure 7 Buttress supports against the western wall of the mill building, looking southwest. Scale: 2m/1m. © Wardell Armstrong.

The construction of the dam wall against the western wall of the mill building meant that extra internal support in the form of three buttresses (Fig. 7) was required in order to relieve the lateral pressure on the mill building created by the construction of the mill dam. These buttresses were of a comparable size (2.20m x 0.90m) and, as with the rest of the major buildings on site, were constructed from sandstone.

A wheel pit associated with Phase 2 was situated at the northern end of the main building utilising the original northern wall. Scarring from the wheel was revealed when the later brick additions, forming a possible culvert (Phase 3), had been removed. It was possible to determine from this scarring that the wheel had an overall diameter of 4.60m (15 feet) and was most likely fed from the millpond. The base of the wheel pit was similarly constructed from yellow sandstone slabs and placed at an angle sloping downward towards the east. The water from the wheel pit would have drained into a tail race situated to the east of the wheel pit. This was constructed of unfaced and unbonded yellow sandstone blocks with a similar width to that of the wheel pit.

At some point between Phases 2 and 3 the wheel appeared to have gone out of use with the wheel pit partially filled in and a brick culvert constructed in its place. Using the original tail race and sandstone base of the wheel pit, the culvert extended east with an internal width and depth of 0.60m and 0.63m. This was then covered by two layers of sandstone flags whilst the gap between the brick culvert and sandstone was infilled

with clay and rubble, possibly to support the culverts construction. The function of this culvert is unknown although it may have been associated with the new dam wall and a possible sluice.



Figure 8 First Edition Ordnance Survey Map, 1854.

The mid-19th century First Edition Ordnance Survey map (Fig. 8) shows that the Scouts Dike leat continued past the wheel pit and extended to the south of the building. It seems apparent from both the archaeological and cartographic evidence that at some point before the mid-19th century the wheel pit fell out of use and was replaced by another one to the south. It is unfortunate that no evidence of this later wheel pit was revealed during the archaeological excavation as it was located outside the excavation area, preventing any comparison to be made.

Phase 3

The First Edition Ordnance Survey Map of 1854 (Fig. 8) shows that the mill had extended beyond its original rectilinear footprint. The expansion associated with Phase 3 possibly corresponds with an increase in production and demand under the Hudson's during the 19th century. Two extensions associated with this phase were visible, one to the north and one to the east.

A new building, measuring 4.60m by 5.50m (Fig. 3), was built against the eastern wall of the Phase 1 building. The walls measured 0.90m in width and were again formed of mortared yellow sandstone, but less well built than the earlier Phase 1 structure. Backfill deposits of clay and rubble were visible on the inside of the building along with several large irregular shaped sandstone blocks which overlaid the tail race (Phase 2). All evidence of floor remains had been removed.

The northern building measured 4.05m by 3.60m and was constructed beyond the north of the wheel pit at the western end of the extant building. The scarring where the two buildings abutted each other could clearly be seen although evidence of this later building's use and purpose could not be determined. During the later phases

of the mill this northern building seems to have been demolished and replaced with a concrete floor to create an open storage area of hardstanding.

Phase 4

The remains in Phase 4 are believed to post-date 1871 when the mill was destroyed by fire allowing for partial redesign of the mill and its processes, with the location of the wheel pit remaining unchanged. The concrete floor surfaces (Fig. 3) to the south of the extant building were laid during this period and the extant building itself was erected at this time. The floor surface to the southeast of the Phase 3 eastern extension building also seems to be of this period and can be seen in photographic evidence from the late 19th century. The yellow sandstone slabs covered an area measuring 3.90m by 1.60m and possibly related to a loading area.

Running parallel to the extant building was a brick and mortared drain aligned east to west. This was constructed into the backfill layers covering the sandstone slabs, which in turn covered the tail race (Phases 2 and 3). The drain utilised the fall of the tail race. A concrete yard area in front of the extant building was also observed, with another drain associated with the extant building. This concrete yard may have been associated with the later redevelopment of the mill, but could also post-date the mills demolition.



Figure 9 Drain cut through sandstone blocks. Scale: 0.5m. © Wardell Armstrong.

The final stage in the mills development was the refurbishment in concrete of the mill race from Scout Dike. The concrete race was laid in sections with three horizontal layers, with the uppermost layer having been reinforced with iron bars and supported by stone buttresses. The mill race continued beyond the southern end of the building to where the later wheel pit may still be situated. Bitumen covered wooden sides still existed on the mill race along with several iron fittings which are visible on photographs dating from the early 20th century.

Conclusion

The archaeological evidence from the site shows that Nether Mill progressed through several different developmental stages expanding in the 19th century and ending in its demolition during the 1960s. Despite

documentary evidence indicating a 16th-century mill of possible medieval origin, no archaeological evidence was revealed for such activity. The initial phase of construction appears to date to the later 17th century. A wheel pit was revealed at the northern end of the Phase 1 structure. This wheel pit and the Phase 1 mill building may owe their construction to the Grammar family who took ownership of the mill in the late 17th century.

During Phase 2, which appears to date to the refurbishments of the mill and improvements in water supply undertaken under the ownership of Mary Grammar in the 1720s, a mill wall was built to impound a new millpond with the new water supply. Production may have increased with the evidence of a well-constructed wheel pit which appears to have gone out of use at some point before the mid-19th century and replaced by a drain. This drain, potentially a spill point for the new millpond, actively utilised the previous spillway and tail race, most likely minimising cost and construction time.

By the mid 19th century, new buildings had been erected to the north and east, expanding the mill in size and clearly evidencing considerable investment which is likely to have been linked to increased flour production on the site. A small amount of ramped outer floor suggested evidence that a loading area was positioned to the southeast of the main building during the 19th century, adjacent to the pre-1854 building to the east.

The mill continued functioning into the 20th century until its closure during the 1960s. Following its closure, the majority of the mill was demolished clearing the site for road expansion. The survival of significant below ground remains has allowed a better understanding of the site's evolution to be retrieved.

Archives

The full site archive is located at Barnsley Museum and Archives, Town hall, Church St., Barnsley S70 2TA and can be accessed under the unique project identifier WAA16, NMF-B, CP 11733. The fragments of millstone and column are located at the Wardell Armstrong offices in Carlisle.

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Anglo-Saxon, medieval and Victorian discoveries: Investigating the underground ducts at Ripon Cathedral

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Keywords Ripon Cathedral, St. Wilfrid, Anglo-Saxon, Crypt, Medieval, Organ, Archbishop Roger de Pont l'Évêque

Abstract

In 2013 the underground trunking that feeds air to the organ at Ripon Cathedral was removed for replacement. This made possible unprecedented access to the brick-built Victorian ducts below the Quire at Ripon and allowed the recording of the remains of two parallel east-west stone walls with a mortar floor between that lie below the present-day Quire. Based on their stratigraphic relationship with the existing masonry of the Quire, the walls are likely to date to the late 12th century rebuilding of the church at Ripon initiated by Archbishop Roger de Pont l'Évêque of York.

The archaeological investigation also recorded the brick-built ducts themselves in detail for the first time, confirming their date as being contemporary with the original installation of the present-day organ in 1878. It had previously been observed that the western terminus of the ducts is in fact the outside of the east wall of Ripon's internationally significant Anglo-Saxon crypt. The present investigation was able to confirm that the duct lay immediately behind the niche in the east wall of the central chamber of the crypt.

Introduction

In 2013 the underground trunking that feeds air to the organ at Ripon Cathedral was removed for replacement. This maintenance event allowed unencumbered physical access – probably for the first time since 1878 – to a series of Victorian brick-built ducts that run beneath the present day Quire and close to Ripon's internationally significant 7th century crypt. The crypt is the oldest remaining built fabric of any English cathedral (excepting the re-use of Roman materials in some cathedrals), which has been in continuous ecclesiastical use since its construction and has survived without substantial alteration (Fig. 1).

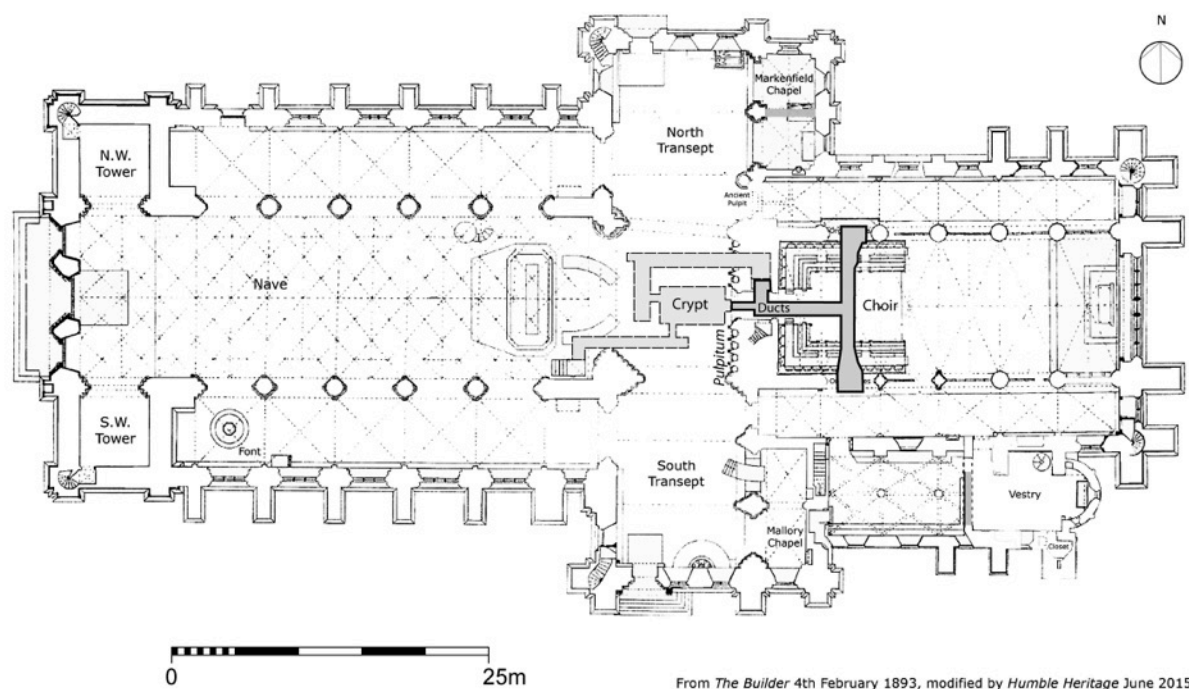


Figure 1 Plan of the cathedral showing location of the Victorian organ ducts and the 7th century crypt. (Base plan after *The Builder* 4th February 1893, with modifications by Humble Heritage 2015)

The opportunity was taken to archaeologically record the narrow, cramped organ ducts. This challenging task was carried out by a team from York Archaeological Trust led by Mark Johnson under the supervision of the then Cathedral Archaeologist Liz Humble. The site formed a T-shaped arrangement of ducts consisting of walls and floor of brick with a roof of sandstone slabs (Fig. 2). At the north and south ends of the crosspiece of the 'T', the ducts were unroofed and their ceiling consisted of the underside of the tiered seating on either side of the Quire; the resulting shallow gap allowed very restricted access to a void below the Quire. The project was carried out in July 2013 and consisted of written, drawn and photographic recording of the ducts themselves and the stonework exposed in the under-floor voids.

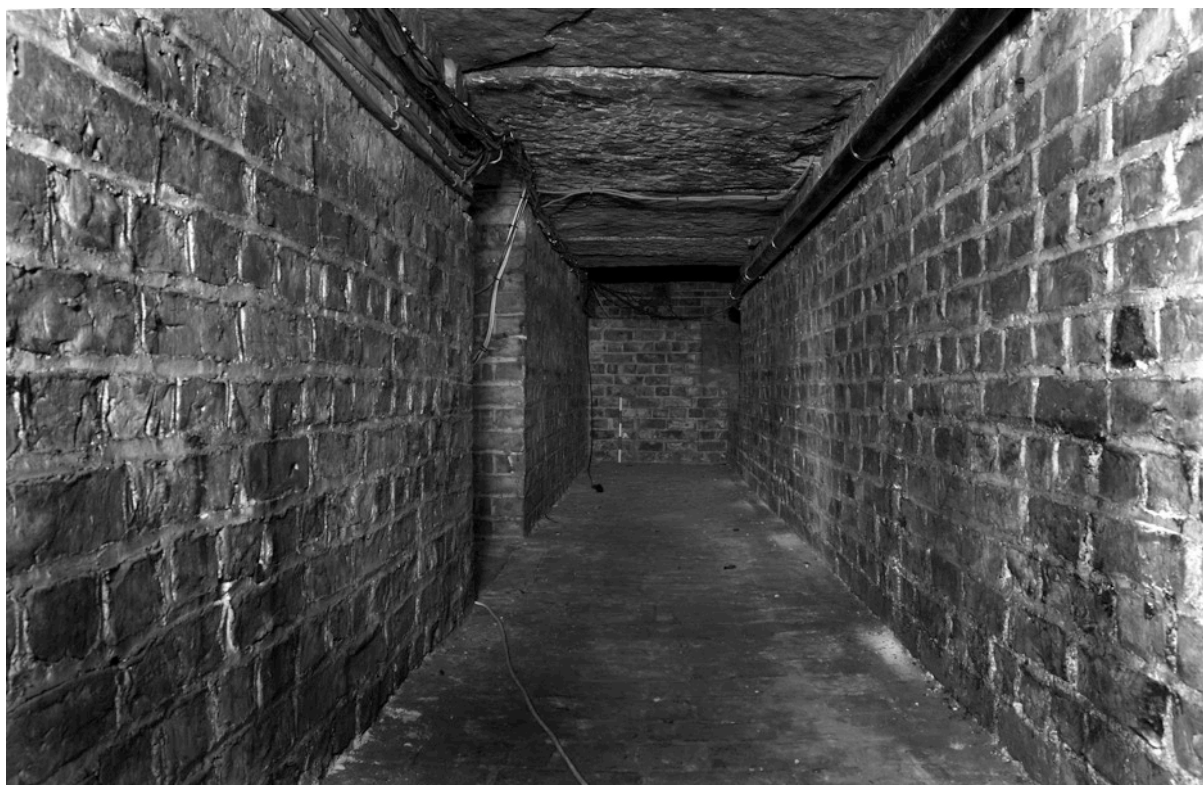


Figure 2 Photograph looking north along the north-south duct with the junction with the east-west duct visible on the left. © York Archaeological Trust.

The Results

The archaeological recording provided information about three main elements of the cathedral, the Victorian ducts themselves, medieval stonework and flooring visible in the voids below the Quire seating and the Anglo-Saxon crypt.

The Ducts

The brick organ ducts are laid out in a T-shape. The 13m long crosspiece of the T runs north-south under the Quire. The shaft of the T is 10m long and runs from below the organ (which is mounted above the pulpitum) eastward to link with the crosspiece of the T. The ducts are generally 1m wide and around 1.4m high. The north and south ends of the ducts rise up in a series of steps and ramps, reflecting the rising ceiling formed by the tiered seating in the Quire. A short northward offshoot from the shaft of the T leads to what is now the exit from the crypt, which was created in 1974, and is blocked by the wooden spiral stair that was inserted at the time (Hall 1977). This offshoot may have been the original entrance for maintenance but access for the present project was made from the south Quire aisle. At the western end of the east-west duct, there is graffiti on the sandstone ceiling slabs that reads ‘Oct 24 187[?]’ together with a number of initials as well as further indecipherable writing.

The organ was built in 1878 by TC Lewis incorporating ‘a modest amount of material from an earlier organ’ according to the 2004 inspection report by Harrison and Harrison Organ Builders in the cathedral archive. It has been extensively refurbished and restored a number of times in the intervening years, since the early 20th century by Harrison and Harrison whose records may therefore be assumed to be reasonably authoritative.

It had previously been hypothesised by Dr Richard Hall (a former Cathedral Archaeologist) hypothesised that the ducts were contemporary with the 1878 organ (Hall 1977 and 1993). This was based on the archaeological evidence of the hard red bricks, the cement based mortar bonding and the dated graffiti and accords well with a contemporary account (see below). The wind trunking that lay within the ducts had been removed before archaeological recording began, so there was no opportunity to inspect it. Harrison and Harrison

described it as ‘zinc’ and noted in their inspection report of 2004 that it was damaged, possibly by electricians who needed to squeeze past the trunking to lay cables in the ducts. They described the trunking as ‘very convoluted’ with an ‘awkward layout’ and proposed reconstructing the components to distribute wind more efficiently. According to receipts in the cathedral archives although some elements of the wind system were replaced by Harrison and Harrison in 1963 this does not seem to have included the actual trunking, which may therefore have been contemporary with the organ. If so, its replacement in 2013 allowed unencumbered access to the ducting for the first time since 1878.

The medieval stonework below the Quire stalls

Two parallel lines of mortared stone wall were visible in the voids adjacent to the north and south ends of the ducts (Figs. 3 and 4). The walls were visible to east and west of the duct and appear to have been cut through to insert the duct in 1878. Only the southward elevation of the north wall and the northward elevation of the south wall were accessible so the thickness of the walls remains unknown. The floor of the stalls above is supported by beams and joists, in part supported on loose stone blocks that rest on top of the mortared walls. Two courses of stone were visible in places on the northern stretch of wall (Fig. 5), but only one course elsewhere (mainly because of material obscuring the lower courses). The stonework was dressed and tooled and was bonded with lime mortar.

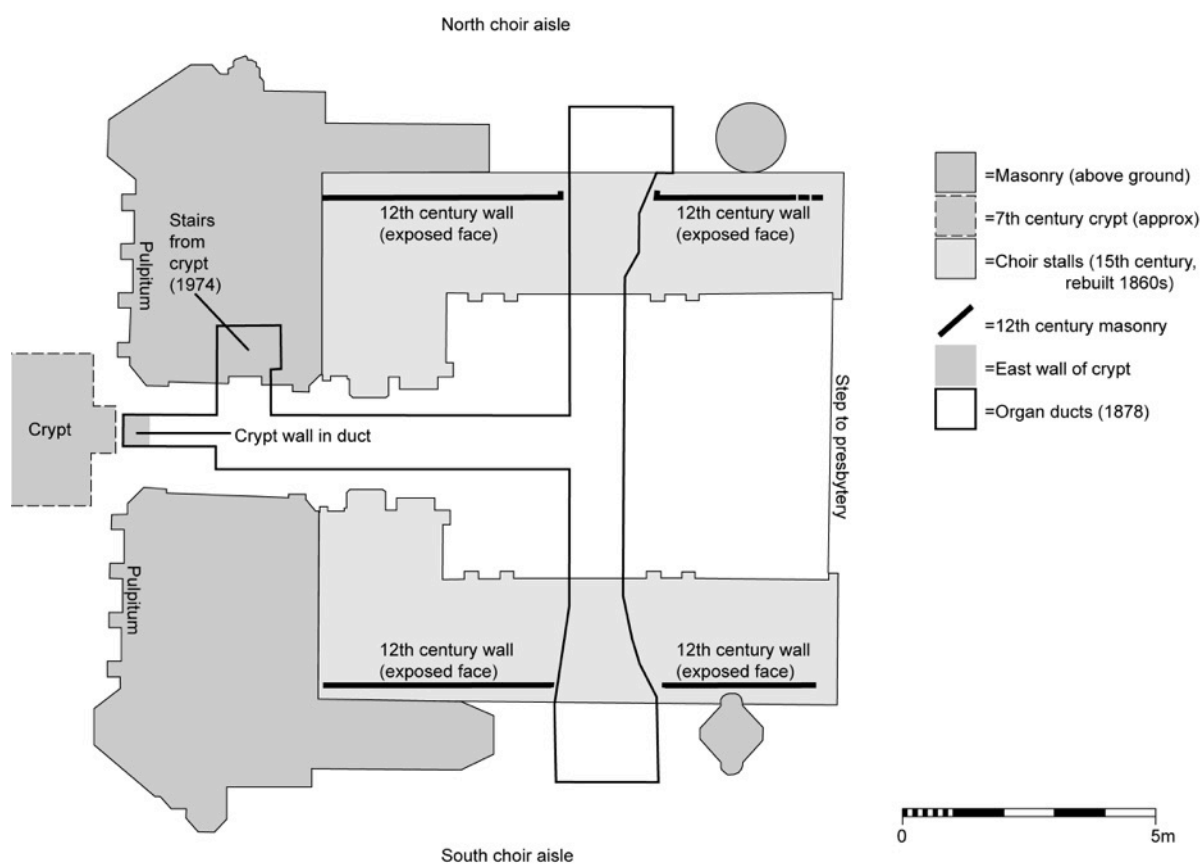


Figure 3 Plan showing layout of the ducts and features of archaeological interest (after original by York Archaeological Trust).

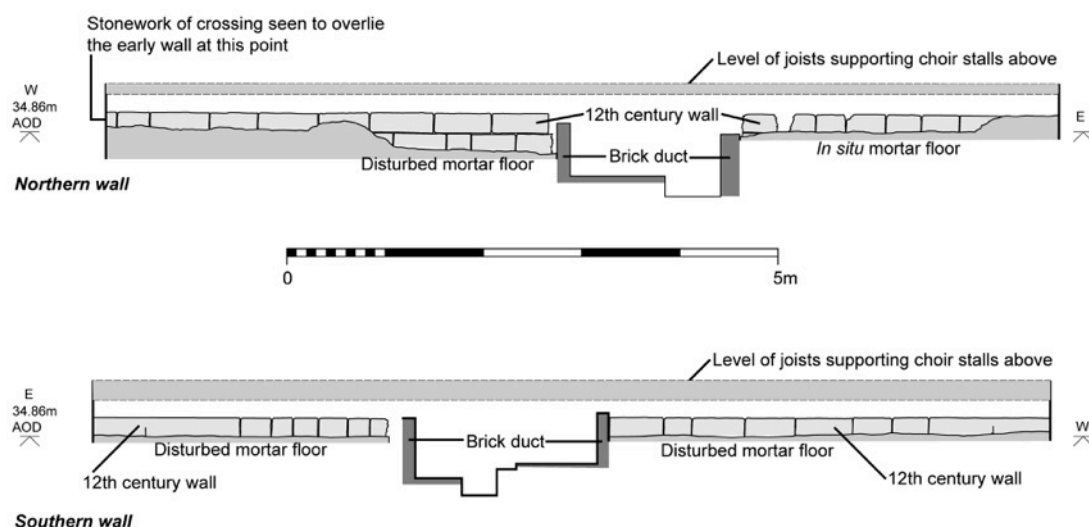


Figure 4 Elevations of the north and south 12th century masonry (after original by York Archaeological Trust).



Figure 5 Photograph showing two courses of 12th century masonry visible in the western part of the north wall (note that the mortar floor is damaged at this point). © York Archaeological Trust.

The medieval date of the walling is established by three features. Stratigraphically the walls are below the structure of the Quire stalls above, which demonstrates a pre-19th century date. Although the seating in the Quire is dated to 1489 or 1494 by dates inscribed in the wood (Wilson 2009), it was extensively rebuilt by George Gilbert Scott in the 1860s. The archaeological recording noted that the beams and joists supporting the Quire stalls were a mixture of old timber, marked by mixed dimensions, warty edges (i.e. characterised by unevenness caused by the curvature of the original log) and empty mortices and peg holes, and new timber that was machine sawn and of more regular proportions. The beams and joists were supported by a mixture of squat

pillars, partly or wholly of Victorian brick, and loose stone blocks placed haphazardly on top of the mortared walls. The whole structure of beams and joists was installed during Scott's reconstruction of the Quire, using a mixture of new and re-used medieval timber.

At the western end of the north wall it was possible to determine that the wall was stratigraphically earlier than the masonry that formed the western end of the Quire, which was built over this northern wall (which suggests that the northern wall continued westward beyond the current west end of the Quire). The masonry at the west end of the Quire dates to after the collapse of the crossing tower in 1450, when the southern and eastern parts of the crossing were renewed, but presumably predates the construction of the Quire stalls *c.* 1489. This therefore gives a *terminus ante quem* for the northern wall (and by extension the southern wall).

Johnson (2013, 6) suggested that, 'the striated tooling on the ashlar of the early walls is suggestive of a date around the 12th century' (Fig. 6) and that this showed that the walls were part of the well-documented rebuilding campaign initiated by Archbishop Roger de Pont l'Évêque (archbishop of York 1154-1181) (Walbran 1851; Wilson 1986; Harrison and Barker 1999). Archbishop Roger began rebuilding the entire church with a six bay Quire, three bay north and south transepts and a long aisle-less nave, retaining only the crypt. Too much weight should not, perhaps, be accorded to the form of the tooling as stone can be re-used in later contexts. It has been demonstrated that stone from Archbishop Roger's church has been re-used later in the medieval period elsewhere in the cathedral (Harrison 2013; Humble 2016 and forthcoming). However, in this case it seems to fit the stratigraphic position of the walls. There is not known to have been any building campaign in this location between the 1450 rebuild and the work of Archbishop Roger.



Figure 6 Photograph showing tooling on east part of northern wall. © York Archaeological Trust.

A mortar floor consisting of cream-coloured lime mortar with frequent, gravel-sized sandstone inclusions was seen to butt up against the north and south walls. It was over 100mm thick but the base was not visible so the full thickness is not known. The mortar floor is likely to have been contemporary with the walls and will have formed the foundation for the Quire floor of Archbishop Roger's church.

The function of the walls is impossible to establish for certain. The tops of both the north and south walls are the same height and there is no sign of a higher course, permitting the tentative hypothesis that this was their original finished height. The mortar floor would presumably have been continuous between the two walls. If so, the floor space of the Quire in Archbishop Roger's church would have been 8.6m wide. This compares to its

present-day width of 5m, but of course much of the width of the Quire is taken up by the 15th century stalls at the expense of floor space. Archbishop Roger's Quire would also have had stalls, and in fact it seems reasonable to conjecture that the low walls on either side of a floor may have been part of their support. Perhaps the stalls consisted of fewer rows resulting in greater relative floor space.

The Crypt

The presence of some stonework exposed in the western end of the east-west duct that appeared to be part of the east wall of the Anglo-Saxon crypt had been previously noted. A former Cathedral Archaeologist, Dr Richard Hall, was given the opportunity to examine the exposed stonework in 1989 (having presumably descended into the ducts and squeezed past the zinc wind trunking that would have been *in situ* at that time). In a brief letter in the cathedral archive he described cleaning away 'dust and debris' to reveal 'on the floor of the Victorian passage...an area where 19th century mortar, associated with the Victorian works there, formed a very thin skim over stone blocks which I take to be part of the east wall of St Wilfrid's crypt'. He goes on to describe how he was unable to take measurements in order to relate the blocks to the niche in the east wall of the crypt but would do so at a later date. Nonetheless, he concluded that 'there seemed to be no evidence that the niche in the east wall was ever carried through to form an opening through the crypt east wall.' In doing so he was addressing and refuting the suggestion, originating with Carter in 1806 (cited by Hall 1993) and later by Micklethwaite in 1882, that the eastern niche in the chamber of the crypt was once, as Micklethwaite had it, an 'opening or window, through which people in the church could by descending a few steps look into [the crypt]' (Micklethwaite 1882, 349).

Having evidently successfully revisited later in 1989 to take the required measurements, Hall wrote of his findings in 1993. He concluded that the 1878 passage was slightly offset from the eastern niche of the crypt but was very close, with the thickness of remaining wall being just 200mm (Hall 1993, 49 and Figures 3-4). Unencumbered by the zinc trunking, the 2013 investigation was able to record the rear of the east wall of the crypt in more detail (Fig. 7) and for the most part confirmed Hall's observations. In addition to the stone exposed on the floor of the duct, of which one and a half blocks thickness was visible, two large blocks projected to either side in the upper part of the duct. Both the upper and lower stonework was made up of yellow, coarse-grained sandstone bonded with pinkish-coloured lime mortar. Above the upper stonework were a number of fragments of red sandstone, also bonded with pinkish mortar. The area between the upper and lower sandstone block-work was filled with a mixture of brick and stone fragments bonded with copious amounts of mortar. The upper and lower stonework is clearly the original fabric of St Wilfrid's crypt and the mixed stone and brick between them is post medieval or 19th century infill of a hole, although it was not possible to tell whether this had once pierced all the way through to the crypt chamber. Hall was of the opinion that it had not (Hall 1993, 48) and the present investigation offered no further evidence on the question. Only in one small respect did the present investigation deviate from Hall's findings; two electrical cables had been drilled through between the duct and the niche sometime after Dr Hall's 1989 visit, and from the relative positions of these on either side of the wall it was clear that the west end of the duct is situated directly behind the east niche of the crypt chamber.

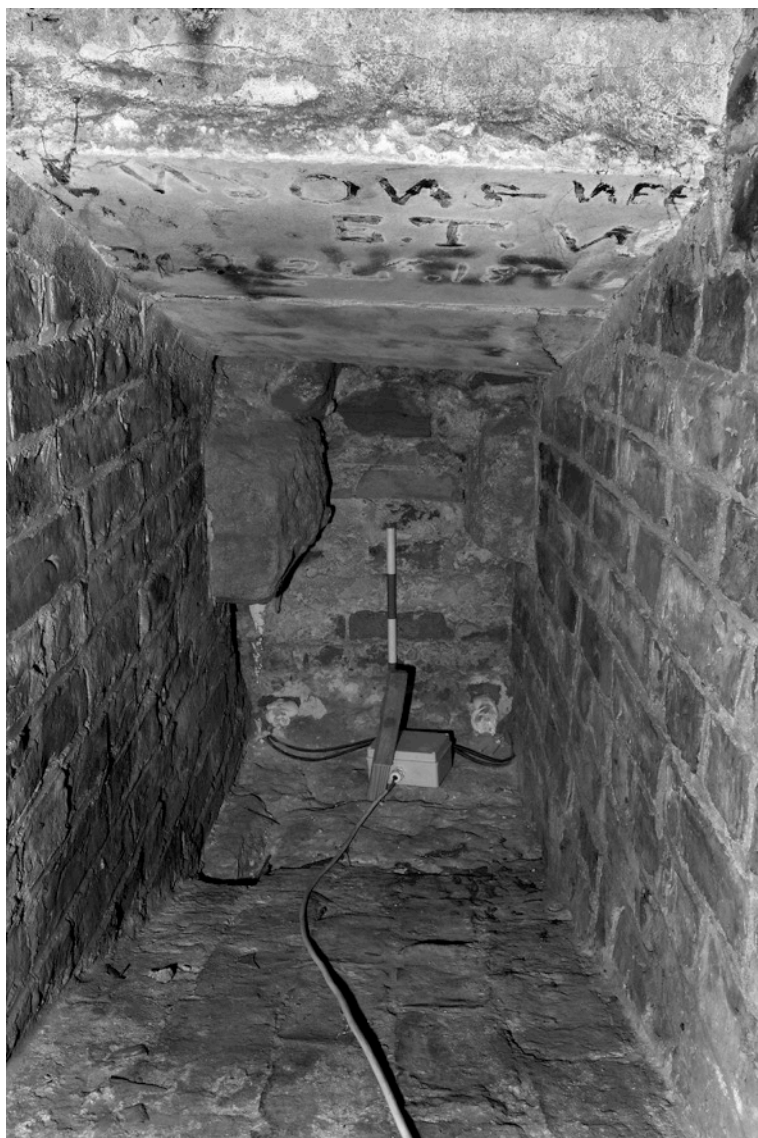


Figure 7 Photograph showing the wall of the 7th century crypt in the west end of the east-west duct. Sandstone blocks visible on the floor and above are the original walling with brick, rubble and mortar infill between. Slab with dated graffiti visible above. © York Archaeological Trust.

The explanation for the missing crypt stonework and its replacement with brick, stone and mortar, and the ragged, irregular shape of the opening that was made is provided by a passing remark by Micklethwaite, ‘That [niche] at Ripon was opened out a short time ago, when those engaged in the erection of a new organ began to alter the old vault to fit it for the reception of some of their machinery. This was very properly stopped...’ (Micklethwaite 1882, 353). This also confirms the date of the ducts as being contemporary with the ‘new’ organ (1878), replacing a mysterious and intriguing ‘old vault’ according to Micklethwaite’s account, although no trace of previous work was apparent in the present investigation. Micklethwaite makes no further mention of this ‘old vault’ despite the fact that an ancient date might help support his theory of an original opening, so he must have believed it to be of relatively recent origin, possibly relating to the earlier organ. Some questions remain, particularly why the workers were intent on cutting through a thick sandstone wall to the crypt, how their duct came to be so precisely aligned with the eastern niche of the crypt, and whether they fully pierced the wall before being stopped. However, the present investigation produced no evidence to address these further questions or to clarify Micklethwaite’s reference to an ‘old vault’ that pre-dated the 1878 ducts.

Conclusion

The replacement of the trunking in 2013 allowed unprecedented access to the Victorian ducts below the Quire at Ripon. This enabled the recording of the remains of two parallel east-west stone walls with a mortar floor between that lie below the present-day ground level. Based on their stratigraphic relationship with the existing masonry of the Quire, the walls are likely to date to the late 12th century rebuilding of the church at Ripon initiated by Archbishop Roger de Pont l'Évêque of York. The walls suggest that Archbishop Roger's Quire had a wider floor space than the current Quire and that at least some stalls were present on either side of the floor.

The investigation also recorded the brick-built ducts themselves in detail for the first time, confirming their date as being contemporary with the original installation of the present-day organ in 1878. The western terminus of the ducts is in fact the outer elevation of the east wall of Ripon's internationally significant Anglo-Saxon crypt and the present investigation confirmed the previous observations made by Richard Hall in 1989 (Hall 1993). The relatively unencumbered access that was made possible and the installation of two electricity cables at some time after Hall's visit and prior to the present investigation meant that it was also possible to demonstrate that the duct is positioned immediately behind the niche in the east wall of the central chamber of the crypt.

Acknowledgements

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The Devil's Bridge and Other Bridges over the River Ure

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Keywords Devils Bridge, Kilgram Bridge, Low Burn Bridge, West Tanfield Bridge, Masons marks, River Ure, North Yorkshire

Abstract

Bridges are an important feature of the road network but they can often be overlooked as an object of historical or archaeological study. Typically as we cross a bridge our attention is, or should be, on the road and other traffic and when driving we rarely have the time to look properly at the historic bridges we cross. However, if the opportunity does present itself then it is well worth having a closer look at historic bridges as many of them have their history written in their stones. In order to redress this lack of study and as a part of a Lottery Funded project, a series of archaeological surveys and interpretations were undertaken for the Ure River Research Group. Although the project had a wider remit, this paper discusses three bridges only – the Devil's or Kilgram Bridge, Low Burn Bridge, and West Tanfield Bridge. Of the bridges that were studied the remains of a range of features could clearly be seen which allowed their various stages of construction and repair to be identified. In addition to this there is evidence for the stonemasons who built the structures and, in some cases, how they went about it.

Introduction

Although bridges are an important feature of the road network of any area they can often be overlooked as an object of historical or archaeological study. Typically as we cross a bridge on our way from A to B our attention is, or should be, on the road and other traffic and when driving we rarely have the time to look properly at the historic bridges we cross. However, if the opportunity does present itself then it is well worth having a closer look at historic bridges as many of them have their history written in their stones. In order to redress this lack of study and as a part of a Lottery Funded project, a series of archaeological surveys and interpretations were undertaken for the Ure River Research Group. The project looked at four of the historic bridges on the Rivers Ure and Burn along with several historic weirs, dams and the remains of Mickley Mill; though in this paper it is only three of the bridges that will be discussed. Of the bridges that were studied the remains of a range of features could clearly be seen which allowed their various stages of construction and repair to be identified. In addition to this there is evidence for the stonemasons who built the structures and, in some cases, how they went about it.

The Devil's or Kilgram Bridge

NGR SE 19134 86005

Kilgram Bridge, some 6km to the north-west of Masham, has an important local role in that it is one of only two bridges that cross the Ure between Masham and Middleham. The bridge is undoubtedly very old and local tradition has it that it was built by the Normans sometime between the completion of Richmond Castle in 1070 and the building of Jervaulx Abbey in 1145. Although this early date is by no means proven from the style of construction this date does not seem entirely unlikely. As would be expected from a structure of this age it has undergone numerous repairs and alterations over time and the evidence some of these works can be identified in the bridge as it is seen today.

The Original Bridge

The stone-built bridge as it stands today comprises six segmental arches, of which four cross the river whilst the remaining two act as flood relief (Fig. 1). Each of the arches has four square ribs; there are string courses below the level of the parapets and the cutwaters are splayed back to the level of the tops of the arches. However, this is not the bridge as it was originally built and an examination of the bridge, particularly its underside, clearly shows how it has evolved over time. For ease of discussion the arches have been numbered from 1 to 6 from north to south. Arches 2–5 span the river and as such they have running water passing under them all year round whilst Arches 1 and 6 are well above the normal river level and act as flood relief during the winter months.



Figure 1 General view of the east side of Kilgram Bridge. © J. Buglass.

From an examination of the bridge it would appear that the original bridge was approximately a third narrower and probably had a flat, wooden deck; there are a number of reasons for suggesting this. The first of these is that set into the side of some of the bridge piers, directly under the springing point for the arches, there is a line of three stone corbels (Fig. 2). As the springing point for the arches does not require any support it would seem quite likely that these corbels are left over from an earlier (?original) form of the bridge. As corbels are typically used to support the end of a horizontal timber beam and as the corbels are present on several sides of the piers this strongly suggests that the bridge was originally built with stone piers joined by a wooden deck. This scenario would seem quite possible as it would allow for a bridge to be built relatively quickly and at a lesser cost than if it was constructed from scratch with the stone arches. These could be added at a later date when there was either the skills available or the funds permitted.



Figure 2 Corbels below springing point on the north side of Arch 2. Scale: 2m. © J. Buglass.

The second reason is that the corbels that are still present are all restricted to the western (upstream) side of the piers which strongly suggests that the original bridge was probably two-thirds the width that it is today. Interestingly there are the remains of corbels located at two different heights (Fig. 3). As discussed above the lower, larger, corbels would have supported the roadway whilst the smaller, slightly higher ones may well have supported some form of rail running along the edge of the bridge.



Figure 3 Different height corbels on Arch 3. Scale: 2m. © J. Buglass.

If the suggestion that the bridge originally had a flat deck is correct then this would mean that it would have been approximately 2m lower than the current roadway. This in turn would mean that the flood relief arches at either end are not part of the original construction and any remains of an earlier road could lie beneath the floors of these arches. The addition of the outer arches at a later date would also seem to be supported by the abrupt joint between the two southernmost arches (Fig. 4).



Figure 4 Butt joint in the different phases of the bridge seen under Arch 6. Scale: 0.5m. © J. Buglass.

The Arched Bridge

When and why the earlier flat decked roadway was replaced is currently unknown – possible reasons include: the decay of the timber, flood damage or the availability of skills/funds. Though in terms of date it would seem that it was probably not that long after the original bridge was built as there is no significant difference in the finish and tool marks on the stone-work between the western (original) and eastern (later addition) sides.

The general lack of putlog holes in the stonework suggests that the first phase of the arched bridge was constructed by the use of free-standing scaffolding. The remains of a series of large timber posts located along the edges of the stonework in the riverbed below the bridge may well be the surviving elements of that scaffolding

framework. These would have provided the outer framework along the line of the bridge within which the piers, and possibly later, the arches were built.

Repair of Arched Bridge

Although putlog holes as such are not seen in the bridge there are similar holes that have been cut into the springing point of the ribs (Fig. 5). These appear to be coupled with the occurrence of angled slots directly below them which have been cut into the stone packing on the river bed. The slots in the stone packing have sloping bases which are level with the stone-work on their northern side but some 0.08m deep on their southern side. This would have allowed timber props to be put in place to support the rib above and to then be locked into position by the use of wedges. A closer examination of these holes shows that there are traces of mortar/cement still present along with fragments of timber. There are no other features like this in the rest of the stone packing.



Figure 5 High level corbel and recess cut under the springing point in Arch 3. Scale: 0.1m units. © J. Buglass.

This combination of holes is only found in the southern side of Arch 3 southwards which would seem to show that the southern end of the bridge around Arch 3 required a significant degree of support at some stage after completion. It is proposed that the buttresses for Arches 4 and 5 were at some stage damaged, probably by a flood, and the southern part of the span for Arch 3 required support whilst the remainder of the bridge was re-built.

Further evidence for a major repair is a dramatic change in the coursing of the stones on the southern side of Arch 4 (Fig 6). This change appears to be coupled with the lack of symmetry and alignment of both the eastern and western sides of this buttress with the others. This lack of alignment would appear to argue that the eastern end, at least, of this buttress suffered considerable damage, and possible collapse, which lead to it being rebuilt. Finally, on the western side of the bridge above Arch 4 there is an additional levelling course just below the string course for the current roadway which further indicates some form of re-building.



Figure 6 South side of Arch 4 showing the marked change in the stone courses. Scale: 2m. © J. Buglass.

It is unsurprising that there is considerable evidence for damage and repair on the bridge and there are repeated documentary accounts for various events and repairs to Kilgram Bridge ranging from 1145 through 1585 to 1611 and 1874 (see Cale 1998 for details). Though unfortunately it is not currently possible to assign any particular account of repair to the physical evidence seen in the bridge.

Like some other bridges the riverbed under the arches has a well-laid ‘floor’ of stone blocks. The presence of this stone-built feature has given rise to the suggestion that it is the remains of an earlier ford – potentially even Roman in date (Chaplin 2003). However, it would seem that the reason for the structure is much more prosaic – it simply prevents the erosion of the riverbed by the increased flow of the river as it is confined between the bridge piers. This does not mean that there wasn’t an earlier crossing point here and the bridge may well have been built over or adjacent to that.

Discussion

As mentioned above an early 12th century date would not be unlikely (Cale 1998), particularly as the name is probably derived from Old Norse (used 8th to 12th centuries). The style of the bridge, with its rounded arches as opposed to pointed ones which are generally considered to be of a later date – early Gothic rather than the rounded

Norman or Romanesque arch (de Mare 1987, 19) – seems to add weight to the early date for the bridge. The importance of the bridge can be seen in its substantial construction; widening and repeated accounts of repairs (Cale 1998). The importance and age of the bridge is such that it is referred to in Lelands' itinerary undertaken between 1535 and 1543 as a 'great old bridge of stone on Ure caullyd Kilgram Bridge' (Smith 1910, 139).

Who built the bridge? The initial construction of the bridge would have been a costly and time consuming operation and not one undertaken lightly. It is generally considered that at the time the only people who would have had the resources would be the king, a very wealthy landowner, or a church/monastic order. Probably the most obvious candidate is the nearby community at Jervaulx Abbey who had certainly established nearby Kilgram grange from at least as early as 1228 (Cale 1998), though until further evidence is found this remains speculative.

It has been calculated that the movement of stone for construction during the medieval period would not, generally, have been far. The reason for this is that once the stone has been transported over 12 miles the transport would start to cost more than the materials (Salzman 1997, 119). In addition to this there is a long and well-established tradition for the reuse of material from earlier buildings and structures (Parsons 1991, 13 *et seq.*). Coupled with the need for the transportation of large amounts of stone there is a demand for other materials required in the building of the bridge – timber for scaffolding and mortar for securing the blocks being the most obvious. It is known that for larger construction jobs the mortar was not only mixed on site but the required lime was also burnt in kilns on site in order to maintain a suitable supply (Salzman 1997, 149 *et seq.*). This could imply that there might be the remains of a temporary kiln(s) in the vicinity, along with other buildings for the masons and the rest of the workforce.

The enduring story associated with Kilgram Bridge is its alternative name of the Devils Bridge (Cale 1998 and Darlington and Stockton Times 1997) which derives from an old superstition that 'Every bridge demands a life'. This is often taken to mean that as the number of potential souls for the Devil/water deities would be lost when there was no longer the risk of being swept away when a ford was replaced with the safer bridge and therefore the construction of the bridge would take a life to compensate for this (de Mare 1987, 8 *et seq.* cites several examples). The variation on this legend in the case of Kilgram Bridge is that a deal was made with the Devil that in return for the safety of the workers building the bridge the Devil would take the soul of the first person to cross the bridge once it was completed. Which is why, to this day, whenever repairs are carried out to the bridge there is always one stone left out so that the bridge is never finished (Fig. 7). This legend, and variations on it, have given rise to 'Devil's Bridges' which can be found in most countries and other well known ones in Britain are at Kirkby Lonsdale (Jervoise 1932, 131) and Ceredigion in Wales.



Figure 7 The missing stone in order to prevent the Devil taking his due. © J. Buglass.

LOW BURN BRIDGE

NGR SE 22643 79838

Low Burn Bridge lies *c.*0.75km to the south of Masham and carries the minor road which runs to Grewelthorpe. The bridge spans the River Burn (a tributary of the Ure) and in its current configuration the bridge is formed from three, seven metre segmental arches with voussoirs (Fig. 8). This form is a result of widening the original, much narrower bridge in 1715 (<https://historicengland.org.uk/listing/the-list/list-entry/1166868>). The majority of the earlier bridge survives as the eastern half of the structure and the different phases of the bridge were built from different types of stone. The earlier phase used a grit/sandstone whilst the later phase is of worked limestone blocks. Both phases showed a wide range of different tool marks along with both masons' and setting out/construction marks (see below for a fuller discussion). The bridge is aligned north to south with a raised parapet, also of limestone construction and thus part of the second phase of the bridge.



Figure 8 Low Burn Bridge from the west. © J. Buglass.

The Original Bridge

As already mentioned the first phase of the bridge survives as the eastern part of the structure and from the evidence of the various changes in stonework it was possible to establish its original dimensions. The surviving part of the first bridge was 3.2m wide with the original abutments to the west adding a further 0.8m to its width (Fig. 9) giving a total width of some 4m. The inside of the arches were *c.*3m high and, although due to the modern tarmac deck of the bridge it was impossible to determine the original road surface, it was probably not much different from what is seen now.



Figure 9 The old (right hand side) and new (1715) parts of Low burn Bridge. Scale: 1 and 2m. © J. Buglass.

The original bridge would have had four semicircular cutwaters rising as pilaster buttresses on both sides built up from a stone base set into the riverbed. From the current appearance of the abutments on the eastern side of the bridge, which have a modern concrete cap, they originally appeared to have had flat tops and were possibly refuges for foot traffic when carts crossed.

With the widening of the bridge in 1715 the western abutments along with the western side of the bridge were removed and then rebuilt onto the now wider structure. This gives the bridge a general overall appearance of a single phase of construction. The moving of the abutments could be seen in several aspects of the construction of the wider bridge. Firstly, the type of stone in the western abutments was the same as the original bridge. Secondly, the tool marks and stone dressing were the same on the western abutments as the earlier bridge and finally the masons' marks were also the same as on the original bridge. There were a few additional masons' marks which corresponded with the widening phase which probably indicate replacement of worn or damaged blocks. The tool marks for the dressing on the stonework on the older part of the bridge were predominantly in the form of closely spaced parallel lines, probably created with a bolster. As well as the range of tool marks, many masons' marks and what appeared to be setting out/construction marks were also recorded.

In addition to the masons' marks this first phase of the bridge also contained a large number of blocks with Roman numerals cut into them (Fig. 10). The commonest explanation for these was that they represented the laying out and marking up of the blocks prior to their actual use in the construction. This may well have been at a place away from the site of the bridge, possibly even on the dressing floor at the quarry prior to the blocks being transported to their final location. By having the blocks pre-marked, as long as the building workers matched the same patterns of numerals they would be able to carry out the construction work, even if they were illiterate. The Historic England listing description for the bridge records that there are 20 types of masons' marks. It would seem from this investigation that this number includes Roman numerals as only 10 different masons' marks were identified in this study. Within the Roman numerals it is interesting to note that 24 is inscribed as both XXIII and XXIV which would seem to indicate that at least two different people were involved in the setting out process.



Figure 10 Roman numerals on the underside of the old portion of Low Burn Bridge. © J. Buglass.

The 1715 Bridge

According to the listed building description the original bridge was widened in 1715. As stated above this appears to have been achieved by dismantling the western abutments and flanking stonework, inserting c.4m of new stonework (Fig. 9) and then re-erecting the original abutments on to the new stonework. The new stonework is in limestone as opposed to the grit/sandstone of the original construction and has also been finished in three different ways. Some of the blocks had a 'rusticated' finish whilst others had been pecked or scabbled and the final group showed evidence of being roughly dressed with a narrow chisel. This use of different finishes on the stonework strongly suggests that either the material was obtained from different sources and the masons at these sources were unaware of the finish that was being used on the other blocks or that the material has been salvaged and reused from another structure. The latter situation could be seen to be supported by the fact that there are a large number of different sizes of blocks used in the later phase of the bridge. This would seem to imply re-use of available material rather than standardised production. This in turn suggests that there is less control over the source material than would otherwise have been wished for. The variations in the finish and block size may also imply that the construction of

the bridge was not seen as a priority and the lack of uniformity was not perceived as being important; particularly as the original abutments and flanking stonework had been reused. The parapet appears to have been added at the same time as the widening as it was built from limestone blocks with a rusticated finish.

Unlike the earlier bridge the latter phase only contained masons' marks and no setting out/construction marks; however it did contain one unusual block. In the apex of the northern most arch of the second phase bridge and directly adjacent to the old bridge there was a single stone block which contained at least four of the masons' marks seen elsewhere in the second phase bridge. It is possible that this represents the 'signature' of some or all of the workforce engaged on the bridge widening (Fig. 11).



Figure 11 The 'signature stone' of the masons working on the 1715 bridge widening. © J. Buglass.

Discussion

Overall the current form of Low Burn Bridge can be seen to be the result of the earlier, probably later medieval, bridge being almost doubled in width in the early 18th century. This was achieved by re-using the original western side of the bridge in the widening with an end result that means that it still looks very much like it would have done originally, albeit with the addition of the parapet and loss of the refuges. However, an examination of the underside clearly shows the widening and the differences in materials and methods used to achieve this.

Unlike West Tanfield Bridge (see below) further along the River Ure, the bed between the arches has not been subject to erosion. This is mainly due to the presence of modern concrete preventing this, a situation which is repeated at Kilgram and Masham bridges, but in those cases stone blocks have been used.

WEST TANFIELD BRIDGE

NGR SE 26966 78731

West Tanfield Bridge is on the southern side of the village of West Tanfield c.6km north-west of Masham. As with many parishes the boundary runs along the mid-line of the river with one end of the bridge in North Stainley with Sleningsford Parish and the other in West Tanfield Parish. This administrative boundary is further compounded by being the boundary between Harrogate and Hambleton Districts. Historically this boundary was of greater significance as it was the demarcation line between the West and North Ridings – a situation which has led to the unusual appearance of the bridge.

Much of the history and development of West Tanfield Bridge has been reported upon in detail elsewhere (e.g. Branse-Instone 2002 and Finlayson 2004) but briefly it is assumed that the earliest phase of the current structure (the western side) was built around 1734 with the later eastern (downstream) side being added in the later 18th century. Though the results of this survey suggest that there may be elements of earlier structures surviving within the current form of the bridge.

The Listed Building description describes the western (older) side of the bridge as follows: three segmented arches with voussoirs and hoodmoulds, triangular sectioned cutwaters either side of central arch rising into pilasters, round end piers with semi-spherical caps and parapet with flat copings. To centre of parapet on the inside is an inscription '*Division of North and West Riding*'. The eastern side is similar but with banded and rusticated stonework. This description does not cover the more detailed results of this survey and archaeological investigation. This showed that there are at least four areas of subtle constructional differences within the bridge's structure.

The first of these can be seen in the shape and slope of the two cutwaters for the buttresses on the western side (Fig. 12). The upper, concave portion of the northern buttress can be seen to have a steeper slope than the southern one. The second difference also relates to this buttress – the stonework of the flank of the bridge on either side of the buttress has not been properly tied into the stonework of the buttress (Fig. 13). Thirdly; the north-western face of the northern buttress has a disruption in the regularity of the stone blocks and finally the stonework courses along the western flank of the bridge have a distinct difference in the regularity of the courses between the northern and southern portions of the southern most arch.



Figure 12 West side of West Tanfield Bridge, looking north showing the differences in the two buttresses. © J. Buglass.



Figure 13 Butt joints either side of the northern most buttress on the western side. © J. Buglass.

In addition to these structural differences it is noticeable that the western portion of the bridge contains significantly more masons' marks, whereas the eastern portion has a large number of what appear to be construction marks.

On the south-western side of the bridge there is another notable feature with what appears to have three distinct elements in its construction. The first element is that the majority of the structure from the visible base up to a point about halfway up is composed of evenly coursed sandstone blocks. On top of this and forming a diagonal line across the northern face of the feature is a second layer, which ends at the point where the slope to the flank of the bridge starts with a row of rusticated stone blocks. Above this, and forming the slope, are five courses of lighter coloured stone blocks dressed in a similar manner to the later bridge works that are cut to tie into the flank of the bridge itself (Fig. 14). In addition on the north-western corner of this feature there is a single stone block which protrudes from the mass of the stonework with no apparent function.



Figure 14 Unusual stone structure on the south-west side of West Tanfield Bridge. Scale: 1 and 2m. © J. Buglass.

The eastern side of the bridge proved to be very uniform in construction with no obvious evidence for later repair or rebuilding and as such makes this part of the bridge a particularly fine example of 18th century bridge building.

The final feature of the bridge is the presence of two inscribed stone plaques on the south-western flank (Fig. 15). The lower one has been recorded before (Branse-Instone 2002 and Finlayson 2004) and the differences in the amount of the inscription still legible between the reports gives a good indication of the amount of erosion that has occurred.



Figure 15 The two commemorative plaques on the south-western side. © J. Buglass.

Discussion

There is no recorded evidence for a medieval or early post-medieval bridge at West Tanfield (Finlayson 2004, 5), though this does not rule out there having been one. The crossing is known to have been by ferry in the 16th century (*Ibid.*).

The documentary evidence for the history of the bridge (*Ibid.*) shows that its construction was probably started soon after 1609 when £30 was allocated for the construction of a stone bridge over the river. Subsequent documentary references describe a three-arched bridge in 1725 and it being in decay in 1733. In 1734 the sum of £250 was allocated by the North Riding Quarter Sessions for re-building. Re-building, or more likely repair, was also carried out in 1737 as a result of flood damage. This would seem to suggest that the main body of the western

portion of the current bridge are the remains of the 1734 rebuild of the earlier 17th century bridge. There is clear evidence within the body of the bridge for re-build and repair, though at this level of investigation it is difficult to ascribe particular features with specific dates.

As described above, on the western side of the bridge the stonework on either side of the northern buttress can be seen to contain areas where the stone blocks are simply butt jointed instead of being interleaved (Fig. 13). In conjunction with this an inspection of the profiles of the two western buttresses shows that although they have the same general shape they are subtly different with the northern buttress having a steeper profile (Fig. 12). These two strands of evidence suggest that the northern buttress on this side of the bridge is a survival from the initial construction of 1609 and that the arches on either side have been added later by the use of the butt joints, probably in 1734.

Evidence for the repairs of 1737 may be seen in the north-western face of the northern buttress where the disruption in the regularity of the stone blocks is at a level which would be prone to water damage. It is also possible that the irregularity of the courses seen over the southern arches may also relate to flood damage. One way in which this could be further understood is in a detailed study of the distribution of the masons' marks which may be able to indicate areas of original construction and later repairs. It is interesting to note that although the original bridge is dated to 1609 there is a strong similarity between some of the masons' marks here and those recorded on Kilgram Bridge which is widely thought to date to around the 14th century (Buglass 2005a).

The unusual large stone feature at the southern end of the bridge described above with its three distinct stages of construction is difficult to interpret in relation to the rest of the bridge; though there are two possible explanations. Firstly, it represents the encasement of an earlier aspect of the bridge (possibly the 17th century one). This could be that as the later re-builds and repairs were made, the earlier and possibly degraded, parts of the bridge were simply encased and there is a corresponding feature now located within the 18th century widening on the eastern side. This may help explain the single stone block that protrudes on the corner of this feature. It could be that this stone is the remains of a support for planking to provide access along side the main part of the bridge during the initial stages of construction, as the higher corbel was at Kilgram Bridge. Secondly, the structure was built to act as additional support to the southern end of the bridge due to flood damage or subsidence.

The widening of the bridge to its current size is ascribed to either the late 18th century or 1842; the latter is based on the eroded inscription on the south-western side of the bridge (Finlayson 2004, 5, Fig. 15). This widening can be clearly seen in the joint on the underside of the arches (Fig. 16) and in the various differences in stone dressing and tool marks. It can also be seen in the different masons' marks and in the presence of Roman numerals cut into many of the blocks; particularly on the underside of the bridge. It is interesting to note that the masons' marks in the later part of the bridge are much more complex in their execution, though fewer in number. The Roman numerals are probably part of the construction process and probably relate to the block size and its final location resulting from the 'dry run' laying out of the stones prior to putting them in position. As with the masons' marks a study of the location and size of blocks exhibiting numerals it may be possible to determine additional information relating to the construction process.



Figure 16 The underside of West Tanfield Bridge showing the older (right hand side) and newer (?1842) parts of the bridge. © J. Buglass.

The widening of the bridge and re-modelling of its parapets and the differences between the works carried out by the North and West Ridings can be clearly seen. The most obvious is in the nature of the dressing of the stones with rusticated work being carried out on the West Riding side of the parapet. There are also minor differences in the location of the stone bollards to prevent damage from cartwheels between the northern side (North Riding) and southern side (West Riding).

Although the bridge appears to have escaped being saddled or pressure grouted as part of modern maintenance practices (*Ibid.*, 6), extensive amounts of concrete have been added around the base of the buttresses in at least three attempts to reduce erosion. This study of the bridge noted that there are areas where this concrete is being undercut. The depth of the river between the footings is considerably deeper than it is both up and down stream and there is active erosion in some places. It is interesting to note that although the bridges at West Tanfield, Kilgram and Masham are all on the same river and subject to very similar pressures during spate and of the three, it is only West Tanfield Bridge that is suffering from erosion between its arches. The reason for this is that the other two bridges have had the riverbed between the spans stabilised by the addition of extensive stone slabs held in position by timber piles and framework (Buglass, 2005a).

Conclusions

From the documentary and physical evidence described above it can be seen that the bridge at West Tanfield has, since its original construction, undergone a series of re-builds and repairs some of which it may be possible to identify within the current structure.

It appears from the results of this survey that the western portion of the northern buttress of the bridge may be a surviving element of the original 1609 bridge with other evidence for later re-builds and repairs. It is also possible

that the large stone feature at the south-western end of the bridge dates, if not from 1609 then from the re-build of 1734.

MASON MARKS

A wide range of marks were record on the stones of the various bridges which in some cases helped in determining broad dates for the structures, or parts of them, along with possible phases of construction. The marks on the stones (excluding graffiti) are as a result of one of three main processes – quarry marks; assembly marks or masons/bankers' marks.

Quarry Marks – these are used in the quarry to mark a range of criteria such as quality, destination size etc. These marks would rarely survive in the finished structure as they would often be removed during the cutting and dressing stage of construction.

Assembly Marks – these marks are used to show which blocks are related to each other during the construction sequence. They are often more commonly found around such features as doorways, windows and staircases. Assembly marks are often based around versions of Roman numerals or on a 'domino system'. Here one end of one block had the same symbol as the end of the next block, which in turn had a different symbol on its other end to relate to the next one.

Masons' or Bankers Marks – these marks are the ones most commonly seen and appear to relate to the skilled workmen who were responsible for squaring the stones or making the more complex mouldings for windows, doorways, etc. (Fig. 17).

Much has been written about masons' marks and their significance (e.g. Salzman 1997, 127; Blair and Ramsay 1991, xxvii; Alexander 2008) and there is a lot of debate and spurious attributions to the use and meaning of masons' marks. What can be said though is that they provide a glimpse of the more human aspect of the work which was carried out in the construction/repair of the bridges. One of the most likely suggestions for the use of masons' marks is that they represent the number of items worked in order to calculate pay – i.e. piecework (Salzman 1997, 127; Alexander, 2008). Of these marks many could be seen to be repeated frequently though there were a few that occurred only once. This may simply be a result of the way in which the blocks had been laid as there was only a one in six chance of the face with the mark in being visible. The majority of the marks visible on the three bridges studied were all deeply cut suggesting time was taken for the construction work. This had also been suggested as being indicative of a greater age for the structure (Salzman 1997, 127).

The study of the masons' marks, particularly on Kilgram and Low Burn Bridges, allowed a greater insight into some of the aspects of the development of the bridges. This was because certain types of masons' marks were restricted to particular areas of the bridges showing that those areas were probably the result of a single phase of construction. This was most obvious on Low Burn Bridge where the different marks on the eastern and western portions of the bridge were startlingly clear.





Figure 17 Masons' marks on Low Burn Bridge. Scale 10cms (where shown). © J. Buglass.

THE LOCATION OF BRIDGES

There is already a well know sequence of the development of types of bridges and river crossings over time from simple stepping stones, to clapper bridges then on to pack horse bridges etc. and it is not intended to repeat this here. However, bridges and fords often existed at the same time and the construction of a bridge does not mean the ford becomes redundant as soon as it is built. Historically rivers are crossed by fords where it is suitably shallow and the banks are such that there is safe access. Typically at these points the approach road is in-line with the ford. Then at a later date a wooden bridge is built adjacent to the ford for foot traffic and the ford is kept in use. The building of the bridge then causes a kink to develop in the road for the traffic to cross the bridge as the crossing is now no longer in-line with the road. The ford is maintained as it is used for cattle and sheep to prevent damage to the (expensive) bridge and keep the mud, etc., off for foot traffic. In addition, early bridges tended to be narrow and without parapets so there was little room for large numbers of livestock. Also as many of them did not have parapets livestock could easily fall off. As parapets are often added later identifying changes in stonework at deck level can often provide clues to the development of a bridge. It has also been suggested that the bridges were deliberately narrow to force coaches/carts as well as livestock to cross using the ford to prevent damage to the bridge. Another way of preventing damage to parapets was to set stones at ground level just inside the line of the parapet to stop wheels rubbing against the side.

Over time, as the wooden bridge decayed, a replacement wooden or stone bridge may be built adjacent to it, but whilst the first bridge still remained in use. It would be rash to demolish a bridge and have no dry crossing before the new one is built unless it was too dangerous to use. This could then lead to either the replacement bridge being built over the earlier ford (unlikely as the ford would probably still be needed) or causing a further kink in the road alignment to develop. This can be seen in the number of times a road approaches an old stone bridge and the road has a marked bend in it just as it reaches the crossing point.

The stone structures sometimes seen under bridges are often interpreted as earlier fords. Most commonly these are seen as areas of pavement type stonework, often held in position in a timber frame. Typically these are actually to prevent the scouring of the river bed under the bridge between the piers and the subsequent undermining of those piers. The reason you get the scouring is that as the width of the channel is reduced the same volume of water is now flowing through a narrower gap therefore it flows faster hence the scouring. This can be very clearly seen at Kilgram Bridge and Masham Bridge where there is a stone 'pavement' and no scour and at West Tanfield Bridge where there is no stone work there is c. 1.5m deep scour around the bases of the piers.

Conclusions

The many historic bridges carry busy roads and can easily be over looked as the traffic rushes over them; they are also vulnerable to collision damage from vehicles far larger than they were ever intended for. This potential damage can be compounded by the practice of saddling and pressure grouting them in order to strengthen them for modern

traffic. However, from the results of the various surveys described above it can be seen that the historic bridges on the Rivers Ure and Burn do retain much evidence for their original construction and many of their subsequent alterations, enlargements and repairs. This evidence is, literally, written in their stones in how the stones have been worked, marked, laid down and in many cases repaired and re-laid over time. The study of these stones shows not only the evidence for the life of the bridge but of the lives of the people who worked on them and created and maintained them. However, bridges should not be studied in glorious isolation and should be considered in relation to the rivers they cross, the roads they carry and the wider communities that they serve.

Archives

The reports are in the North Yorkshire HER, County Hall, Racecourse Lane, Northallerton, DL7 8AD under their respective parishes.

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- 1763 Emanuel Bowen The County of York
- 1720 John Warburton, Map of Yorkshire
- 1856/87 Ordnance Survey 1st edition 6" series.

‘Skeletons: Our Buried Bones’ exhibition at Leeds City Museum

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Abstract

‘Skeletons: Our Buried Bones’ was a collaborative exhibition at Leeds City Museum from Sept 2017 to Jan 2018 which was developed in partnership with Wellcome Collection and the Museum of London. It highlighted the skeletons of twelve individuals from London and Yorkshire, providing a rare glimpse into the lives of those who have gone before us and the history beneath our feet. This exhibition brought together commercial archaeology, academic research and museum curation to explore the stories of each individual and the place and time in which they lived, spanning thousands of years from the Iron Age until the 1800s. This article explores the organisation of the exhibition behind the scenes, the collaboration between partners and the display concept itself. It also discusses some of the wider ethical issues around displaying human remains, and the legacy of the project for Leeds Museums and Galleries going forward.



Figure 1 Iron Age skeleton from Wattle Syke, West Yorkshire, in the ‘Skeletons: Our Buried Bones’ exhibition. © Leeds Museums and Galleries.

Introduction

Leeds City Museum runs a varied exhibition programme and archaeology has been the focus of a number of temporary exhibitions since it opened nine years ago. The last exhibition, however, opened up parts of the archaeology collection which had never been on display before, and was the result of successful partnership-working.

The concept

‘Skeletons: Our Buried Bones’, which ran from 22 Sept 2017 – 7 Jan 2018, was a collaborative effort between Wellcome Collection, the Museum of London and Leeds Museums and Galleries (LMG). The concept for the exhibition was forged between Wellcome Collection and the Museum of London back in 2008 when they exhibited ‘Skeletons: London’s Buried Bones’, a selection of skeletons which were unearthed during London’s continuing development. After the success of the show, the two institutions sought partners around the UK to take the exhibition on the road and reach new audiences outside of London. ‘Skeletons’ toured to The Hunterian Art Gallery in Glasgow in 2016 and then to M Shed in Bristol in 2017, before travelling up to Leeds in September. But this was not simply a touring exhibition – in fact, even though the exhibition maintained the same look and feel at each venue, the individual stories told were completely different and reflected the unique archaeology and history of each place.

At each venue a number of human skeletons were displayed, drawn both from the Museum of London’s 20,000-strong collection and from collections in the local area. The individuals selected for display were chosen for their varied characteristics: sex, age at death, and pathologies which revealed details of that person’s life, health and, sometimes, death. The stories of local people really rooted the exhibition with a strong sense of place at each venue and resonated with local visitors. The local skeletons told diverse stories. On display in the Hunterian Art Gallery was the skeleton of a Neolithic individual from Balevullin on the Scottish Isle of Tiree who showed evidence of possibly suffering from rickets in childhood. On display in M Shed was the skeleton of a Victorian child found at a convent burial ground at St Catherine’s Court, who had undergone a post mortem craniotomy. The skeletons from London told a fascinating range of stories particularly linked to Medieval and Post-Medieval urban life, ranging from the effects of pollution to the Black Death.

As well as lending skeletons for the tour, the Museum of London also gave their expertise. Two of their osteoarchaeologists, Jelena Bekvalac and Rebecca Redfern, travelled across the country to assess regional skeletons and to tease out the stories of these fascinating people. They were a source of extensive knowledge and enthusiasm for sharing the stories written on peoples’ bones. Because the skeletons on display were excavated in advance of development (such as road upgrades and building works) this exhibition achieved a rare feat of joining up commercial archaeology, academic archaeology and museum curation. This was clearly demonstrated in a study day at Leeds City Museum called ‘Written on our bones: skeletons and human stories’, where speakers came from Archaeological Services WYAS / West Yorkshire Archaeology Advisory Services, three museums and two universities. This cross-disciplinary approach to exhibitions is something that LMG would be keen to replicate in the future.

Exhibition design

The exhibition opened at Leeds City Museum on 22 September 2017 with twelve skeletons on display: five from London and seven from across Yorkshire. The skeletons were laid out in chronological order from the Iron Age to the 1800s: nearly 2,000 years of our history beneath our feet.

The exhibition (Fig. 2) was pared back, with dark walls and spot-lit skeletons. There were no other objects to see; all focus was on the remains of these individuals. The skeletons were laid out in their anatomical positions but this does not reflect the various positions in which they were buried. LMG developed a guide to highlight some of the skeletons from Yorkshire and to show images of their burial positions to provide more context.



Figure 2 The exhibition at Leeds City Museum. © Leeds Museums and Galleries.

Each skeleton was accompanied by one text panel exploring the burial site and excavation, and one detailed label telling the individual's story from the evidence on their bones, and highlighting what to look for. Each skeleton was also accompanied by a specially commissioned photograph showing the burial site as it looks today (Fig. 3), displayed on a lightbox. These images were striking in their capture of surprisingly mundane scenes – a drain, a road, a fence – emphasising that history is beneath our feet as we go about our everyday lives. In a dark, reflective gallery the result was very effective.



Figure 3 Photograph of the burial site of two Iron Age skeletons in the exhibition. © Thomas Adank.

Selecting skeletons

A lot of thought went into selecting skeletons for display. Firstly, skeletons had to be as complete as possible so the display worked visually for visitors, although being from archaeological contexts this was a challenge. Most importantly, the evidence on the skeletons had to tell an engaging story about that person, their local history and geography.

Selection started with our own collections at LMG. Three local skeletons stood out as being robust and complete enough to display, and with interesting stories to tell. The skeletons of a man and woman, found buried together during excavations as part of the Bramham to Wetherby A1 upgrade scheme, showed a range of conditions reflecting daily life in the late Iron Age (Fig. 1). The woman had a benign, non-cancerous tumour on her skull, three abscesses linked to excessive wear on her teeth, and evidence of osteoarthritis. The man showed signs of a healed infection to his lower legs and marked muscle attachments, meaning he probably did a lot of heavy lifting and manual labour. The third skeleton from LMG, a Roman man from the site of Daltons Parlours Roman villa near Collingham (Fig. 4), showed a healed childhood fracture on his upper arm and soft tissue damage to his hand, possibly caused by a blow. He also had marked muscle attachments and a pronounced nuchal crest, the prominent ridge at the back of the skull.



Figure 4 Skull of the Romano-British man from Dalton Parlours, West Yorkshire, reconstructed from several fragments for display. © Leeds Museums and Galleries.

The team also looked elsewhere to find interesting Yorkshire skeletons held in other institutions, and we were not disappointed. The University of Sheffield offered three skeletons on loan for the exhibition: a Medieval anchoress and a 17th-century Parliamentary soldier, both from the Fishergate excavations in York, and a 19th-century man from the Carver Street Methodist Chapel cemetery in Sheffield. Furthermore, the University of Bradford allowed us to borrow and display the skeleton of a soldier from the Battle of Towton. The evidence on these skeletons, from the effects of syphilis and broken bones to extreme interpersonal violence linked to a famous battle, tell the stories of people in Yorkshire through time.

Once the seven Yorkshire skeletons had been finalised, the team agreed on five skeletons from the Museum of London. The London skeletons were from urban sites, and the pathologies on display ranged from severe breakages and rickets to the effects of prostate cancer. One of the most well-known skeletons on display was that of a Medieval woman known as the 'green goddess' (Fig. 5). Although there were no visible traces of trauma on her skeleton, her skull and neck had been stained green by the copper waste produced by the Royal Mint under which she was buried. Another Medieval skeleton showed the importance of burial context. This man had recovered from a serious projectile injury in his spine, only to have been killed by the plague. Although the plague was too fast acting to mark his bones, he was found in one of London's 'catastrophe' burial grounds specifically created for victims of the Black Death.



Figure 5 Museum of London osteoarchaeologists laying out the bones of the 'green goddess'. © Leeds Museums and Galleries.

All of the skeletons on display were those of adults. There had been discussions in the LMG human remains working group about displaying the remains of children. While we in no way wanted to sensor the past or play down the high levels of child mortality, we found ourselves questioning whether it would be appropriate for our family audiences, even though other venues had done so. In the end, however, we never had to make that decision because the skeletons with the most interesting stories were all adults who, by their very nature, had lived with diseases and conditions long enough to affect their bones.

The Leeds Lab

The Leeds team decided to extend the exhibition space and focus more on Leeds itself by creating an area at the back of the gallery called the Leeds Lab. This area was distinctly different from the space curated by Wellcome Collection, and it gave visitors the opportunity to think more broadly around the themes raised in the main exhibition, and to be more hands-on. In the Leeds Lab visitors could find out more about the history of the human remains collection held by Leeds Museums and Galleries, which includes human skeletons and mummies, but also any objects made out of, or containing, human bone, hair or teeth.

We also took the opportunity to explore some important Leeds sites where there had been discoveries of human skeletons but where there was little or nothing to display. These sites included Temple Newsam, where coal mining had revealed the cranium and 3 arm bones of a prehistoric young woman (on loan from the British Geological Survey). Two important sites were St. George's Crypt and Victoria Gate, where skeletons had been excavated, analysed and reburied, but where the data had given a broad picture of life in different parts of Leeds around the 1800s. The themes of working with skeletons in Leeds were shown in three short films in the gallery, now available on Leeds Museums and Galleries' YouTube channel. The Leeds Lab also featured some interactive stations. Visitors could put on a lab coat and investigate bones using UV torches, look at x-rays, or have a go at putting together a magnetic skeleton. These have proved to be hugely popular with all ages! (Fig. 6)



Figure 6 Some of our younger visitors enjoying the hands-on inter-actives, learning about bones and searching for clues with UV torches. © Leeds Museums and Galleries.

The final themes explored in the Leeds Lab were ethical issues around human remains in museums. At LMG we were very keen to use this exhibition as an opportunity to ask our visitors what they thought about the remains of once-living people being excavated and looked after in a museum, and how they felt about the dead being on display (Fig. 7). Having these conversations is very important to us as a service as we look after collections for the benefit of the public, and we strive to be open and to consult our audiences. Until the 'Skeletons' exhibition opened, there had only been the remains of one individual on permanent display; Nesyamun, the 3,000 year old mummy of an Egyptian priest. Putting human skeletons on display in such numbers, and actively talking about human remains in the collection, seemed like a perfect time to engage people in this conversation. Visitors gave their feedback through free-text cards in the gallery, on social media, and through a series of surveys carried out by a placement student from the University of Leeds. The challenge now is to collate all of this data and to bring it together into a report which will be made available by mid-2018. Several institutions have already expressed interest in our findings. This data will also directly feed into the next review of the Leeds Museums and Galleries human remains policy.



Figure 7 Panels exploring ethics in the Leeds Lab area of the exhibition. © Leeds Museums and Galleries.

What now?

‘Skeletons: Our Buried Bones’ has been a hugely successful exhibition in many ways. Visitor numbers have been high; in the three and half months it was open in Leeds, we welcomed over 42,000 visitors to the exhibition, and reached over 1300 through our events programme (tours, talks, a study day, and family activities). It has been successful in terms of the level of engagement we have had with our visitors, particularly around human remains and ethics. And it has also been successful in terms of the new partnerships we have built, and the existing partnerships we have strengthened. We now hope this will be a springboard for future collaboration, and that we will work more with our human remains collections armed with the data and feedback we have gathered from our visitors during the exhibition.

Acknowledgements

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Current exhibition

The current exhibition in Leeds City Museum is ‘Thomas Chippendale, 1718–1779: a celebration of British craftsmanship & design’ open 9 Feb – 9 June. The show explores Chippendale’s Yorkshire (Leeds and Otley) origins and includes a number of his Yorkshire commissions.

Water-control at Brough Beck, Catterick

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Keywords Catterick, Later medieval, Post-medieval, Water-control

Abstract

During construction of the new A1(M) to the west of Catterick, North Yorkshire, remains of a stone-floored timber structure were found adjacent to a palaeochannel immediately to the north of Brough Beck. The location of the structure, adjacent to the former course of the beck, and layout of the surviving ground-beam slots indicates a function associated with water management. Sparse pottery evidence indicated a potential later medieval or early post-medieval date for construction. The ruins of the structure were re-used in the 18th century as the basis for a raised platform of uncertain function, but this had fallen out of use by the mid-19th century.

Introduction

In May 2014, soil-stripping associated with construction of a re-aligned section of the A1 motorway passing to the west of Catterick, North Yorkshire, revealed a streamside structure lying close to the modern north bank of the Brough Beck. The subsequent excavation of the structure was carried out by Northern Archaeological Associates Ltd for the Carillion Morgan Sindall Joint Venture on behalf of Highways England as part of the wider scheme of archaeological works undertaken during the A1 Leeming Bar to Barton Improvement. Geophysical survey undertaken in the area had given no indication of the presence of the building (Hale 2005, fig. 141), and there is no evidence for any medieval or later settlement closer than the existing village 450m to the north-east. The site lies within an area of enclosures at the western fringe of the Baines Roman settlement, just outside of the scheduled area (No. 34734), which ends at the line of Brough Beck. As well as nearby Roman features, the structure lay amongst a number of Neolithic pits.

The structure was located to the west of Catterick village on the northern bank of the Brough Beck, at SE 2367 9732 (Fig. 1). At the time of excavation, it was located immediately west of the A1(T) dual-carriageway and south of Tunstall Lane (now both removed), with the site of the building now lying beneath the new A1(M). The area investigated measured up to 95m long from east to west and up to 45m wide, and lay on alluvial gravel terraces generally sloping down to the Brough Beck.

The Brough Beck, a tributary of the River Swale, has a straight course through this area from south-west to north-east, and has been canalised and straightened. Contour and geophysical survey, together with observations during topsoil stripping and excavation, show that it formerly diverged from its present line in the area of the excavated structure, briefly looping northwards before rejoining or crossing the modern channel a short distance to the north-east. This former meander was respected by Roman enclosures investigated as part of the same motorway scheme.

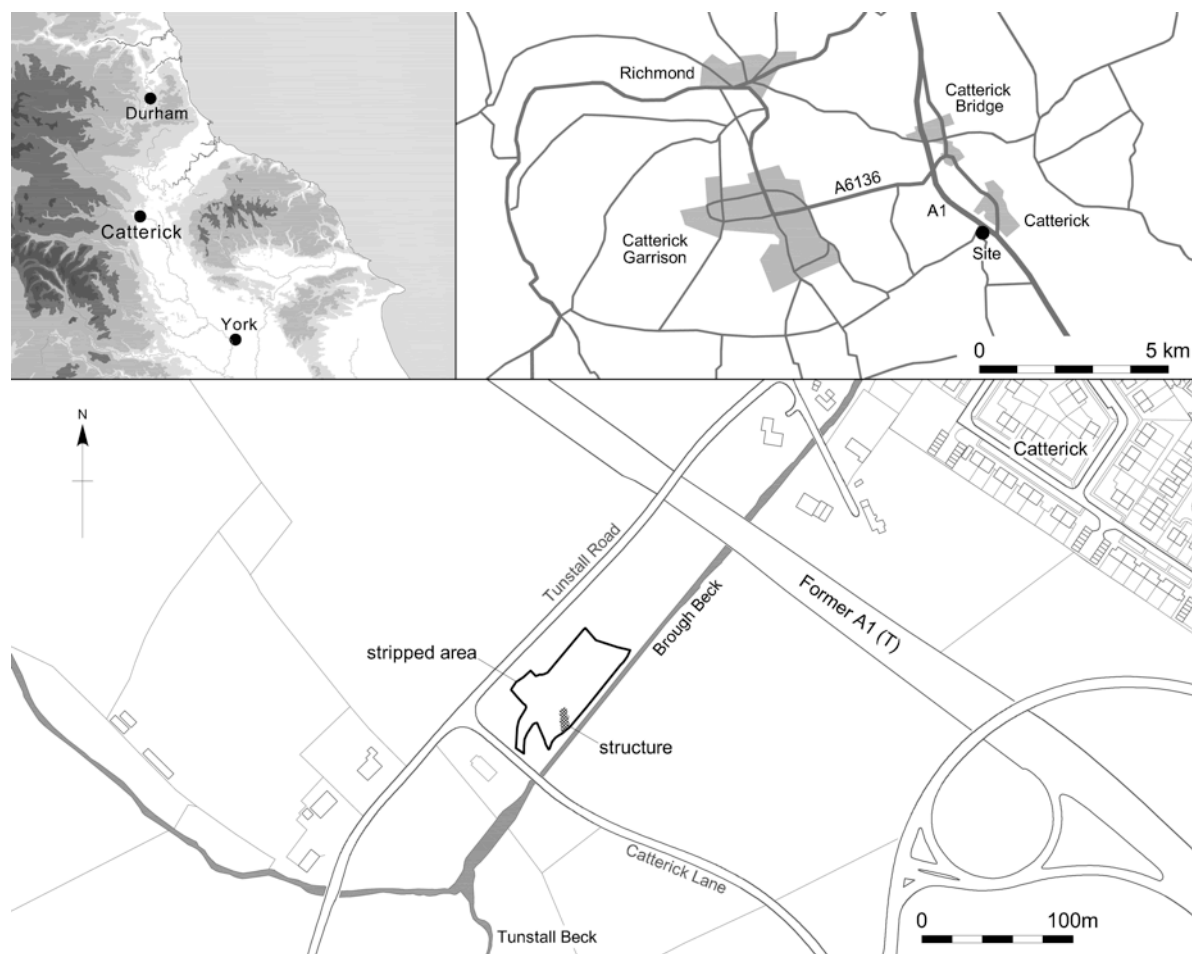


Figure 1 Site location. © NAA.

Excavation results

The excavation results are described below in six broad phases:

Phase 0 – Early stream deposits

Phase 1 – Prehistoric, Roman, and earlier medieval

Phase 2 – Construction of structure 4712, later medieval/early post-medieval

Phase 3 – Possible flood damage and repairs, later medieval/post-medieval

Phase 4 – Post-medieval

Phase 5 – Modern



Figure 2 The structure during initial cleaning, looking north-east towards Catterick village. The Brough Beck lies to the right.
© NAA.

Phase 0 – Early stream deposits

Several successive palaeochannels of the Brough Beck were recorded during the excavation, showing how dynamic the stream-system had been prior to its current canalisation. The palaeochannels looped northwards from the straight modern channel, passing from south to north across the stripped area, running towards a rounded scarp within the northern corner of the field. Here they presumably turned back to the north-east, passing below Cowstand Bridge (on the line of Dere Street) and along Catterick village green towards a confluence with the Swale.

The earliest recorded channel, 4929 (Fig. 3), ran from south to north towards the rounded scarp within the northern corner of the field, where it presumably turned back eastwards towards the existing line of the beck. It was excavated over a length of 12m and typically had a surviving width of 4.2m. It probably had an original depth of *c.*1.25m along its western edge (Fig. 3 section A), although within the excavated area this had been truncated by subsequent activity. No dating evidence was recovered from this channel; there was a general background of prehistoric and later artefacts across the immediate area, but their absence within the channel-fills suggests a possible prehistoric date for channel 4929. The beck then appears to have re-aligned its course slightly to the east (channel 4978).

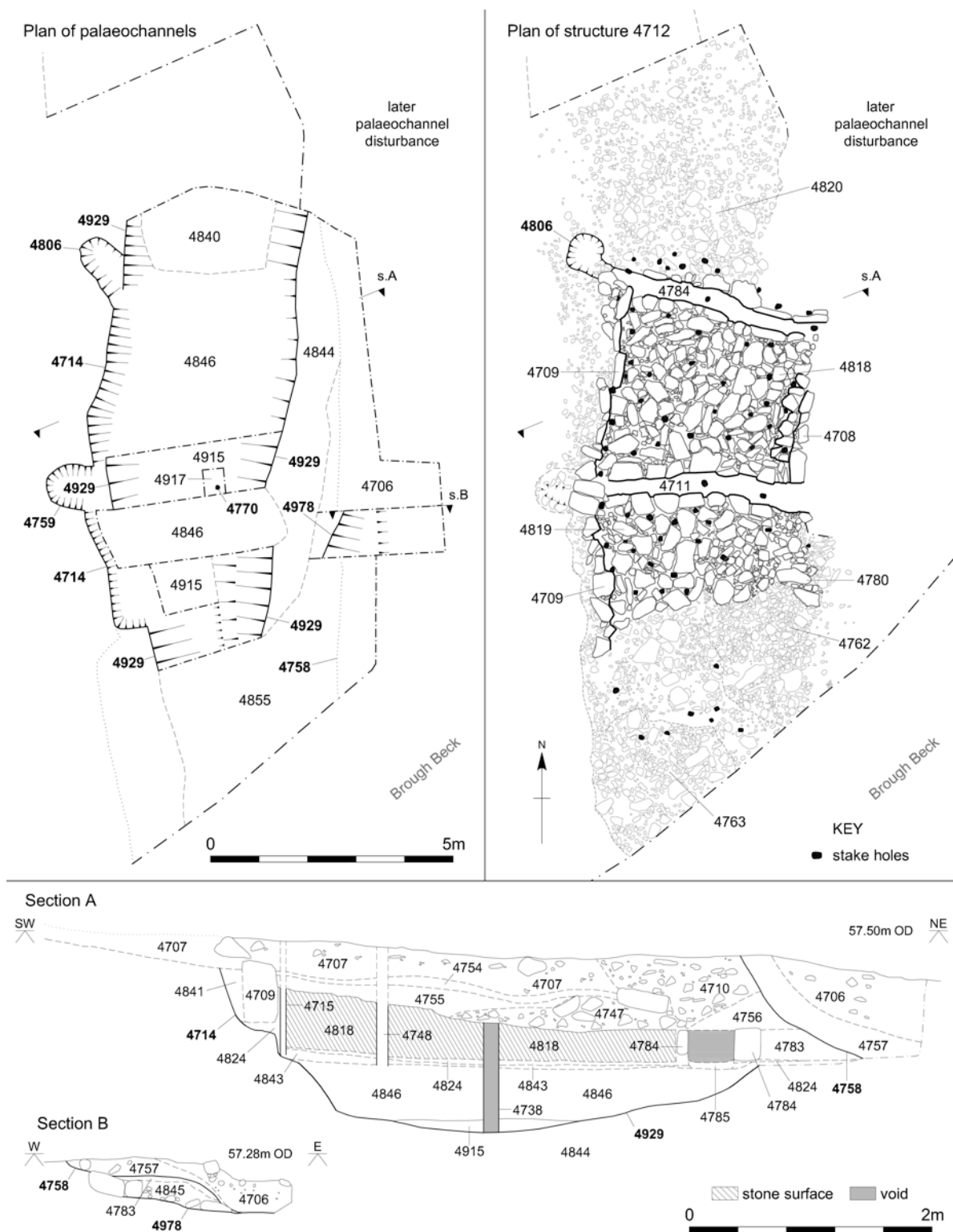


Figure 3 Plans of the palaeochannels of the Brough Beck crossing the excavation area (L) and structure 4712 (R), and sections. © NAA.

Phase 1 – Prehistoric, Roman, and earlier medieval

Seven circular or oval pits were recorded in the area. Four of these produced assemblages of earlier prehistoric pottery and several contained worked flints, suggesting that many, and possibly all, of these features were of earlier prehistoric origin. Although no dating evidence was recovered from a curved ditch observed in the area,

the form and orientation of this feature (inconsistent with the surrounding Roman enclosure system) suggested that it may also have had a prehistoric origin.

A number of residual early prehistoric lithics and Roman pottery sherds, along with a copper alloy openwork plate (Fig. 7, RF515, see below) of possible post-Roman date, were found amongst the contexts of the following phases and doubtless derived from documented activity during these periods within the immediate vicinity. The early date of the Roman pottery (late 1st or 2nd century AD) is consistent with the period of use of enclosures that have been excavated immediately to the north of the site. The presence of a sherd of 2nd century Central Gaulish samian provides a *terminus post quem* for silting of the second recorded palaeochannel (4978), which had truncated the eastern edge of channel 4929 (Figs. 3 and 4). Channel 4978 was more than 3m wide, more than 0.5m deep, and filled with stones, gravel, and silty sand (4845, Fig. 3 section B) below the yellow-brown silty sand (4783) that produced the samian sherd.

This stream movement resulted in a halt to the alluvial silting of channel 4929. Thus, the upper western bank of channel 4929 and the top of fill 4846/4855 provided a level terrace on the western bank of the new channel 4978, subsequently exploited for the structure 4712 (Phase 2, below).

Phase 2 - Construction of structure 4712, later medieval/early post-medieval

Prior to the construction of structure 4712 there was some site preparation. The upper western edge of channel 4929 was cut back (terracing cut 4714) to create a step to accommodate the western wall of the new building. A thin layer of stones, gravel, and sand (4843/4781) was laid down over the channel fill (4846/4855) to create a level platform. Deposit 4781 (not illustrated) produced a residual flint tool, presumably deposited with the levelling gravel.

A substantial timber structure was then erected upon this platform (Figs. 3 and 4). A timber ground-beam was set against the side of terracing cut 4714, its position marked by a linear gap between the cut and a parallel line of large upright packing stones 4709 placed against its eastern (internal) side. This large timber appears to have been c.0.3-0.4m wide, its position represented by sand (4841) which had filtered into the space as the wood decayed. More substantial evidence for similar ground-beams forming the northern end and central subdivision of the structure was provided by stone-groups 4784 and 4711 (Fig. 3), formed of large upright stones arranged on either side of linear slots. The silt infill (4785) of slot 4784 produced a residual struck flint. Additional packing stones suggested that the central ground beam extended slightly beyond the western wall line of the structure.



Figure 4 Composite rectified vertical photograph of structure 4712, facing north. The Brough Beck lies immediately to the lower right, running from lower left to upper right. Scale: 2m. © NAA.

Evidence for the eastern wall of the structure only survived within the northern part of the building. This was represented by a line of four large packing stones 4708, presumably placed against the inner face of a timber ground beam. The remainder of this packing, and any similar external line of packing stones, had been lost as a result of truncation by a later stream channel. Truncation also served to remove any evidence for an equivalent ground beam at the southern end of the building.

There was no direct evidence surviving for any original superstructure above the level of the ground beams. However, the placement of a number of stakes inserted during Phase 4 (below) over the lines of the beams suggested that they may have been opportunistically inserted through mortices cut through the timbers, which could originally have held vertical members. Examples include stakes located at the centre of the central beam-slot 4711, and at the centre and eastern end of beam slot 4784 (Fig. 3).

Within both rooms of the building, a thin bedding layer of fine gravel and sand 4824/4830 was laid down as a base for a stone surface. This material included two sherds of Tees Valley A type pottery of early to mid-13th to early 14th century date and three iron nails. An additional lens of sand (4909, not illustrated) overlay this near the south-western corner of the structure. The northern room, which was slightly trapezoidal (narrowing to the east), measured up to 4.1m from east to west and up to 3.9m from north to south. The area between the packing stones wedging the surrounding ground-beams was infilled with surface 4818. This consisted of large stones (measuring up to 0.45m) set closely on edge, creating a heavy surface which would have been excessive for any domestic structure. Part of a similar surface (4819) survived within the northern part of the southern room, but had been truncated to the south. Across the whole area of the building these floor surfaces were fairly level, but generally sloped slightly down to the north and more steeply down to the east.

Immediately to the north of the building, a spread of stones (4820) of uncertain extent appeared to abut the packing stones of the northern wall and may have represented an external yard surface.

Phase 3 - Possible flood damage and repairs, later medieval/post-medieval

The south-eastern part of the building was subsequently truncated, presumably during a flood. This would have been the most exposed section to any build-up of water. The whole of the southern wall and the southern part of the eastern wall were lost, together with the floor surface within the southern and eastern parts of the southern room. A substantial dump of river cobbles and sandy silt (4763) deposited against and external to, and broadly respecting, the southern wall-line may have been left by this flood, or alternatively represented an attempt to reinforce what was left of this side of the structure.

The building showed signs of repair to the floor, although using smaller materials than had been lost from the original floor (4819). The new areas of patching (4780 and 4762, Fig. 3) extended eastwards beyond the projected wall line of the original structure and, given the absence of any evidence for new walls, it seems possible that the superstructure of the building may not have been replaced. That repairs were made to the floor surface at this stage suggests that the damaged building platform still served some function.

Phase 4 - Post-medieval

A very worn coin of William III minted between AD 1695 and 1701, and presumably dropped during the very late 17th or earlier 18th century, was found wedged between the original floor stones of the Phase 2 building (recorded as context 4824), indicating that the surface was still exposed at this date. Phase 4 subsequently saw a total modification of the structure, with a platform raised over the area of the earlier building that was reinforced by a series of timber stakes and probably external posts.

A total of 75 stakeholes (Figs. 3 and 4), typically 0.10-0.15m in diameter and up to 1.4m deep, penetrated through the earlier floor surfaces described above, in some cases down to the base of the underlying palaeochannel (Fig. 3 section A). Many of the stakeholes appear to have been positioned to reinforce the wall-lines of the earlier structure. Their distribution within the rooms suggested opportunistic insertion where gaps between the stones of surfaces 4818 and 4819 permitted; if the stakes had been erected before the flooring was laid then a more regular arrangement would have been possible.

Two, and probably three, large post-pits were cut back into the upper, western edge of the original terracing cut 4714. Although positioned in relation to the ground-beams of the original structure, it is not apparent what function they could have had in relation to the original timber framing and they seem more likely to be associated with this secondary phase of the structure. Post-pit 4806 at the north-western corner was up to 0.75m across, survived to a depth of 0.4m, and was filled with yellow-brown sandy silt (4805). Post-pit 4759 near the centre of the wall was of similar dimensions. The presence of a third post-pit at the south-western corner of the structure was indicated by a similarly-sized indentation in the upper edge of palaeochannel 4929, located in line

with the southern wall of the building, as indicated by stakeholes (see above), and corresponding with the southern limit of the terracing-cut 4714 for the original building. Any equivalent post-pits along the southern wall of the structure had been lost due to subsequent erosion.

Some of the post-pipes, together with the central part of the backfill of post-pit 4759, were detected well above the level of the stone floor of the building (indeed before the presence of a building had even been recognised). Given the distribution of the stakes across the interior of the building, which would have rendered the rooms unusable (see Fig. 5), it seems unlikely that they were associated with the initial phase of the building represented by floor surfaces 4818 and 4819.



Figure 5 Structure 4712 looking south-west, with most of the voided stakeholes marked by wooden pegs. The modern course of the Brough Beck lies beyond the structure. © NAA.

A series of make-up dumps were then placed within the area of the former building, between the stakes. The convex profile of some of these deposits confirmed that they were artificial dumps, rather than caused by colluviation or flooding. Consolidated sand and gravel (4756), dumped over the northern ground-beam towards its eastern end, had served to preserve a partial void when the beam subsequently decayed. A dump of large stones (4747) that lay above floor 4818, within the north-eastern quadrant of the northern room, incorporated an iron nail and a post-medieval copper alloy button. Over the floor to the west and south of this was a spread of sand (4755), which contained an iron nail and single sherds of both Flavian coarse and samian wares. To the south, this had subsided into the central beam-slot (as context 4760, not illustrated, which produced another Flavian samian sherd) over a thin lens of sandy silt (4761, not illustrated). A soil sample from the latter produced a small fragment of glass, a residual piece of flint-knapping debitage, and traces of industrial waste. Layer 4755/4760 was overlain by another thin layer of sand and gravel (4754), which produced a mid-4th century Roman coin.

Most of the northern two thirds of the area of the building was levelled up with a layer of yellow-brown sand (4707) up to 0.3m thick. This material covered much of the northern room and also the northern half of the

southern room, including part of the earlier floor-repairs. Some of the voided stakeholes were initially identified from the top of this deposit, indicating that it was laid down around the timber stakes. Overlying the edge of this deposit, within the north-eastern corner of the building, was a thick dump of sand and cobbles (4710), which included two fragmentary copper-alloy objects, two iron nails, and a sherd of 18th century pottery. Different dumps of cobbles and mixed cobbles and sand (4762 and 4713, not illustrated) covered the southern part of the structure, filling in the gap to cobble dump 4763 at the southern wall line. Deposit 4713 produced a residual sherd of Tees Valley B type pottery.

The latest phase of modification of the structure was the erosion of its eastern side by yet another phase of stream palaeochannel (4758, Fig. 3 sections A and B). The surviving portion of this feature, as recorded within the excavated area, was more than 2.3m wide and more than 0.75m deep, but had been extensively cut away to the north-east by the modern, much deeper channel, and none of its base was observed. The primary fill against the western edge of channel 4758 consisted of yellow sandy gravel (4823, not illustrated). Above this was dark grey silty sand containing small gravel and pea-grit (4757), perhaps representing soil formation within the hollow. A thicker deposit of orange-brown sand silt and cobbles 4706/4744 suggested more active alluvial activity and contained a mixed pottery assemblage. This included residual 2nd century samian ware and Tees Valley B type sherds of later 13th or 14th century date, together with a post-medieval group of probable 18th century date and an iron nail. A final fill of almost stone-free greyish brown sandy silt (4822, not illustrated) presumably represented initial topsoil accumulation over the infilled channel.

The western edge of this latest palaeochannel provides a close correspondence to a curvilinear feature recorded by the geophysical survey (Hale 2005, fig. 141) that runs to the north and then north-east, before returning to the modern line of the beck towards the eastern edge of the field to pass beneath Cowstand Bridge. A band of sand noted within a trial trench excavated to the east of the building in 2005, in order to assess this anomaly (Speed 2006, 21), was in retrospect probably the primary fill of the channel along its western edge.

Phase 5 - Modern

By this time, the site had been abandoned and presumably allowed to revert to pasture; no structure is recorded on the First Edition Ordnance Survey 6" map of 1857 (surveyed 1854).

Brough Beck is today a relatively small stream, except when in flood, and there is currently no historical or archaeological evidence to suggest that it was ever much larger or carried a significantly higher or faster flow. The stream became canalised at some point prior to the mid-19th century, presumably to speed the flow towards an undershot wheel at Catterick Mill further downstream. This was a major undertaking, but was clearly deemed insufficient, since a more elaborate parallel system was subsequently constructed (Fig. 9). The mill was still operating to the end of the 19th century (Bulmer 1890), but had fallen into disuse by the 1920s (Middlemass 2005, 27).

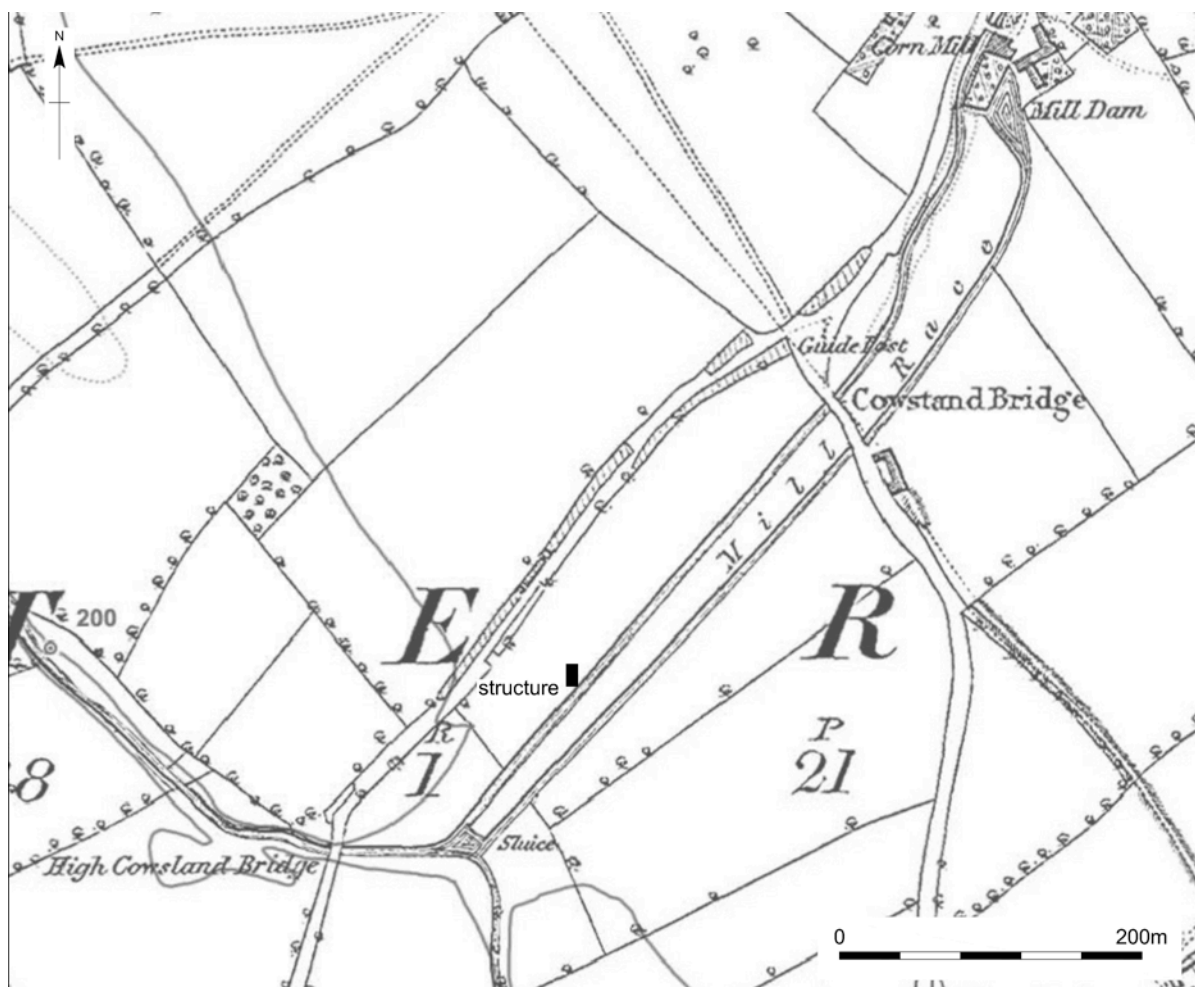


Figure 6 The First Edition Ordnance Survey 6 inch map of 1857 showing the position of structure 4712 in relation to the canalised Brough Beck and the post-medieval mill-leat. Scale: 200m. (Reproduced by permission of the National Library of Scotland)

Note on dating

Precise dating of structure 4712 was problematic; the finds recovered represented the Early Neolithic through to the modern period. The pottery assemblage comprised small sherds that had been subject to heavy post-depositional wear, likely the result of ploughing, manuring, or redeposition, and it is suggested that these were deposited at the site with the sand and gravel brought in to raise the floor level during the post-medieval period. The presence of two sherds of Tees Valley A type pottery recovered from the gravels beneath the stone surface, dating to between the early to mid-13th and early 14th century, and Tees Valley B type sherds (late 13th to 14th century) only appearing in later deposits, tentatively suggests a mid-13th century construction date for structure 4712.

Finds and environmental remains

Excavation of structure 4712 yielded a small assemblage of artefacts, which are presented below. During excavation 40 litre bulk soil samples were taken from three contexts (4770, 4778, and 4784).

Finds

Compiled by Elizabeth M. Foulds

Pottery

Roman pottery

Ruth Leary and Gwladys Monteil

The earliest pottery recovered from the structure consisted of five fragments of Roman pottery, one of which was a single sherd of coarseware pottery (4755) dated to AD 70-130. The remaining four fragments were samian ware. Two (4755 and 4760) were South Gaulish in origin and typical of the Flavian period, while the other two (4706 and 4783) were Central Gaulish and dated to the 2nd century AD.

Medieval, post-medieval, and early modern pottery

C. G. Cumberpatch

The assemblage fell into two distinct groups (Table 1). The earliest component consisted of local medieval pottery of Tees Valley ware types, while the later group was of early modern (18th to early 19th century) date. One sherd, a piece of Blackware from context 4706, was of late post-medieval (17th century) date.

The medieval pottery was recovered from contexts 4706, 4713, and 4824. The latter context contained two sherds of Tees Valley A type dating to the period between the early to mid-13th and early 14th century. Contexts 4706 and 4713 produced sherds of the slightly later Tees Valley B type ware (late 13th to 14th century). The typology, distribution, and dating of these wares have been discussed by Wrathmell (1987; 1990) and Didsbury (2010) and, although much work remains to be done on this important regional type, the broad outlines of its occurrence are reasonably robust.

Although some caution is required given the small size of the assemblage, it would appear that two phases of activity were represented on the site. The earliest dates to the 13th and 14th centuries, while the later dates to the 17th and 18th centuries. There was no evidence that this activity was anything other than of domestic character and the nature of the later material suggests a household with the resources to obtain and use fashionable tableware, including imported wares.

Table 1 Summary of medieval and post-medieval pottery. E - early; M - mid; L - late; C - century.

Context	Ceramic type	Date range	Count
4706	Blackware	C17th – EC18th	1
4706	Brown Salt Glazed Stoneware	C18th	1
4706	Creamware	c.1740 – c.1840	1
4706	Mottled Creamware	c.1740 – c.1840	6
4706	Porcelain	C18th	1
4706	Slipware	C18th	1
4706	Stoneware	C18th	1
4706	Tees Valley B type ware	LC13th – C14th	3
4706	White Salt Glazed Stoneware	c.1720 – c.1780	2
4710	Late Blackware	C18th	1
4713	Tees Valley B type ware	LC13th – C14th	1
4744	Creamware	c.1740 – c.1840	2
4744	Late Blackware	C18th	2
4824	Tees Valley A type ware	E/MC13th – EC14th	2

Total	25
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Metal finds

Alex Croom

Other finds from the structure primarily consisted of nails and fragments of iron sheet (Table 2). However, there were three copper alloy artefacts (Fig. 7), two of which suggested a post-medieval date (RF 11979 and RF 512). RF 515 appeared to be an openwork plate, but it was not clearly indicative of date.

Dimension abbreviations: L (length); W (width); H (height); Th (thickness); D (diameter)

RF512 (context 4710): nearly complete copper alloy small purse frame, with five perforations for attaching a textile/leather bag. The complete end has a loop for a hinged attachment to a second frame piece. Existing dimensions: L: 46.3mm; W: 34.2mm Th: 1.9mm. Post-medieval.

RF515 (context 4710): fragment of a copper alloy openwork plate. Existing dimensions: L: 25.8mm; W: 26.3mm; Th: 1.8mm. Non-diagnostic, but possibly post-Roman.

RF11979 (context 4747): near complete copper alloy button with missing shank. The decoration was partially obscured by corrosion product, but consists of a circumferential ring, two perpendicular zig-zag lines intersecting in the centre, and a cog-wheel motif in each quadrant. Dimensions: D: 15.3mm (5/8 inch); Th: 2.0mm. Post-medieval.

Table 2 Summary of iron finds.

RF	Context	Material	Object
	4706	Iron	Nail
	4710	Iron	Nail
	4710	Iron	nail
	4747	Iron	nail
	4755	Iron	nail
	4761	Iron	corrosion
526	4824	Iron	nail
525	4824	Iron	sheet
523	4824	Iron	sheet
524	4824	Iron	nail
	4830	Iron	nail

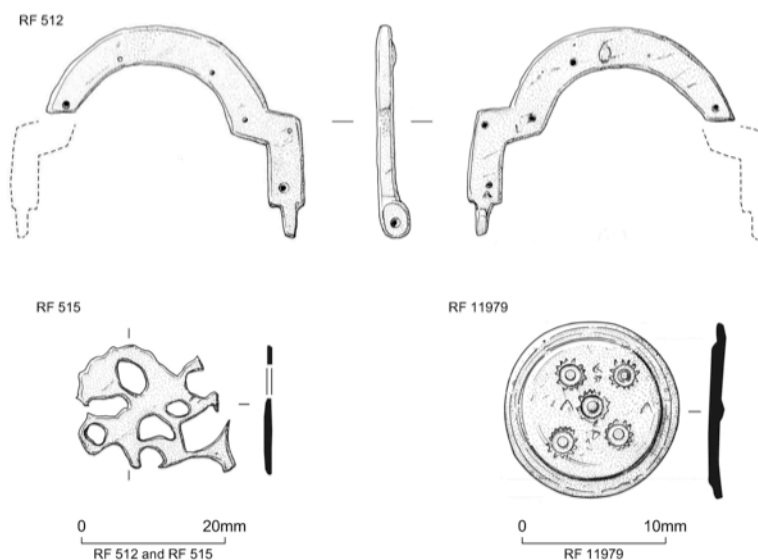


Figure 7 Copper alloy finds. © NAA.

Coins

Richard Brickstock

Only two coins were recovered from this locality:

RF519 (4754): this is very probably a FEL TEMP REPARATIO copy of the AD 350s, copying the types issued by Constantius II between AD 353 and 355.

RF522 (4824): this is a very worn half penny of William III, bearing the legends GVLIELMVS TERTIVS (on the obverse) and BRITANNIA (on the reverse). It was minted between AD 1695 and 1701.

Other finds

In addition to the pottery and metal finds reported on above, a small fragment of post-medieval vessel glass was recovered during sample processing of context 4761 (Cool 2016). Three fragments of non-diagnostic ceramic building material were recovered from context 4706 (Antink 2017). A flint tool and a small quantity of debitage recovered from contexts 4761, 4781, and 4917 (Foulds 2017) presumably derived from the adjacent area of early prehistoric activity and will be included with future publication of that material. The small amount of industrial material examined did not provide convincing evidence for any metallurgical activity within the structure (Starley 2017).

Environmental remains

Elizabeth Wright and David Taylor

Three samples were processed through Siraf floatation, with the residues and flots sorted according to Historic England guidelines (Campbell *et al.* 2011; Table 3). One sample, taken from the fill of beam slot 4784, produced two pieces of charcoal that were too small to be identified to species. A second sample, from the fill of stakehole 4770, produced one charred seed that was also unidentifiable due to preservation. The third sample, taken from the fill of stakehole 4778, produced no environmental data.

Table 3 Archaeobotanical and zooarchaeological remains. NISP=Number of countable specimens, '+' represents a non-countable specimen.

Archaeobotanical remains			
Type	Count		Description
Charcoal	2		Unidentifiable
Charred seed	1		Unidentifiable
Animal bones			
Taxa	NISP		Notes
	Bones	Teeth	
Cattle (<i>Bos taurus</i>)		1	Maxillary 1st or 2nd molar
Sheep/goat (<i>Ovisaries/Caprahircus</i>)		1	Mandibular 3rd molar
Pig (<i>Sus domesticus</i>)	1		3rd metacarpal, unfused
Equid (<i>Equus</i> sp.)	1		Astragalus
Rabbit/hare (<i>Oryctolagus</i> sp./ <i>Lepus</i> sp.)	11		At least two partial skeletons
Unidentifiable	+		Burnt fragment
Total	13	2	

Animal remains were hand collected during the excavations. They were recorded using the diagnostic zone protocol described in Bertini Vacca (2012). A total of 15 countable specimens were recovered, plus one small unidentifiable fragment of burnt bone (Table 3). Most of the remains were leporid postcranial bones, probably from two partial skeletons, found in context 4760 (the fill of a beam slot). These were too fragmentary to be able to identify to a specific species (rabbit (*Oryctolagus* sp.) or hare (*Lepus* sp.)). As these are burrowing animals and display no evidence of butchery, there is a possibility that these remains represent modern intrusions. Cattle (*Bos taurus*), sheep/goat (*Ovisaries/Caprahircus*), pig (*Sus domesticus*), and equid (*Equus* sp.) were all represented by one specimen each. The equid bone was a complete astragalus that was in the horse/mule size-range, rather than donkey. None of the bones displayed any butchery marks.

This small animal bone assemblage does not allow for much interpretation. The four most common domestic animals are present, and there is nothing in this assemblage that would not be expected at a site incorporating finds dated between the Roman and post-medieval period.

Discussion

During the course of the excavation, there was considerable speculation that the structure found adjacent to the Brough Beck at Catterick was either Roman or medieval in origin. The Roman period date was soon rejected once medieval pottery was recovered from deposits sealed below the substantial stone floor, indicating either a medieval or early post-medieval date.

The precise function of the structure has proven elusive. Irrespective of chronology, an initial interpretation of the structure as a watermill was rebutted; while several excavated medieval watermills have been found to have had substantial timber base-frames of comparable size to that at Catterick (see evidence from those collated by Watts 2002, 83-102; and at Tamworth, Rahtz and Meeson 1992), no other features or artefacts, such as timber components from waterwheels or gear wheels, millstone fragments, or stone bearings, consistent with a watermill interpretation were recovered. However, it can be difficult to identify watermills from archaeological remains, as their proximity to water courses has often led to them being subject to erosion, particularly from flood events, which resulted in the requirement for frequent rebuilding (Watts *pers. comm.*). Occasional flooding seems to have been an acceptable hazard at the Catterick structure, as the solid construction and slope of the floor appear to have taken such events into account.

The succession of former stream channels recorded, together with the wider topography, shows that the structure was located on the inside of the bend feeding into a gradually tightening meander of the Brough Beck; left to its own devices this would eventually have been cut off by the stream and left as an oxbow lake. The water flow was slowest on this side of the beck at this point, resulting in the demonstrable heavy sedimentation and also providing less power for any water process compared to a site on the opposite bank. However, except when floods may have brought about rapid changes to the channel, the phenomena of channel movement and sedimentation was slow and perhaps not easily perceived by the builders at the time.

The structure had clearly been positioned to exploit the former course of the stream, and some form of water-control sluice structure, mill dam (see Clay and Salisbury 1990), or timber race connected with an earlier water supply arrangement (perhaps to the corn mill as illustrated on the 1857 Ordnance Survey map, see Fig. 6) could also be considered (Watts *pers. comm.*). In some cases (e.g. Low Mill, Dewsbury; Keith and Wrathmell 2006), a timber floor and sides would be built off the ground-beams to form a water channel, possibly with sluice gates, for controlling water flow. The line of stakeholes along the west side of structure 4712 at Catterick may have been to support wattle or timber board screens to prevent erosion (Watts *pers. comm.*) and supports such an interpretation.

The difficulty in a firm identification of the structure at Catterick, with its water-control characteristics, is also due to its location close to the beck. In the past, numerous activities would have required proximity to running water, either as a power source (e.g. for milling cereals, fulling, or metalworking) or for activities requiring large amounts of the fluid itself. Ascertaining precise function of a similar medieval or post-medieval structure at Darley Abbey in Derbyshire has also proved difficult, which further demonstrates the issues in the interpretation of these types of archaeological remains (Flintoft 2014). The absence of a more informative artefact assemblage hinders a firm identification, but the presentation of the evidence in this paper will perhaps lead to a more clear interpretation of this enigmatic structure.

Archives

The archive, including original site records and full specialist reports, from structure 4712 on the A1 Leeming to Barton road improvement scheme (A1L2B) will be deposited with the Yorkshire Museum, York Museums Trust (YMT) in 2020. The YMT accession number is YORYM : 2016.101. Prior to archive deposition access can be arranged via Northern Archaeological Associates, Marwood House, 28 Harmire Enterprise Park, Barnard Castle, County Durham, DL12 8BN.

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A Romano-British Field System and Burnt Pits at West Moor Park, Armthorpe, Doncaster, South Yorkshire

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with specialist contributions by

Ian Rowlandson: Pottery

Phil Andrews: Metalworking slag

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Keywords West Moor Park, Iron Age, Romano-British, Field system, Burnt pits, Hearths

Abstract

Work by Wessex Archaeology in 2014/2015 at West Moor Park, Armthorpe, Doncaster (463788 404722) extends the results of earlier investigations by Archaeological Services WYAS (Richardson 2008) which identified a complex of Late Iron Age and Romano-British settlement and industry. A previously recorded 'brickwork' field system was shown to extend south as far as a geological boundary, with a lower-lying area on clay probably too wet to exploit. Ten or eleven circular burnt pits were also excavated, the dating and function of which are unclear.

Introduction

In 2014/2015 a strip map and sample excavation was undertaken by Wessex Archaeology on 1.7 hectares of land, centred on NGR 463850 404800, at West Moor Park, Armthorpe, on the eastern outskirts of Doncaster (Fig. 1) (Wessex Archaeology 2015). The site lay within a proposed road corridor lying mostly to the south of Holme Wood Lane, but with a small area extending to the north.

Aerial photography has indicated that the remains of a Late Iron Age/Romano-British 'brickwork' field system extended across much of Armthorpe (Riley 1980). The site reported here lies to the south of previous archaeological excavations in the Gunhills area undertaken in advance of the West Moor Park development, which had revealed a complex of late Iron Age to late Romano-British features, including settlement and industrial remains (Richardson 2008). From the medieval period the area is thought to have comprised marshland within Hatfield Chase. In the 17th century the area was drained by Cornelius Vemuyden, with the land inclosed a century later. Today, West Moor Park is occupied by industrial units including large distribution sheds.

The site lies on the boundary between two zones of superficial geological deposits, as mapped by the British Geological Survey (Geology of Britain online viewer). In the northern zone, on a slight rise at around 5m above Ordnance Datum, the superficial deposits comprise River Terrace Deposits of sand and gravel. In the slightly lower southern zone they comprise the Hemingbrough Glaciolacustrine Formation, recorded during excavation as yellow-orange or grey loamy clay. Archaeological features were largely confined to the sandy north, with the few features on the southern clay situated very close to the geological boundary.

A high level of plough truncation was evident across the site. The small area north of Holme Wood Lane had been heavily disturbed by recent development, and an area in the western part of the site had been disturbed by a former sewage treatment works. Modern features are not shown on Figure 1.

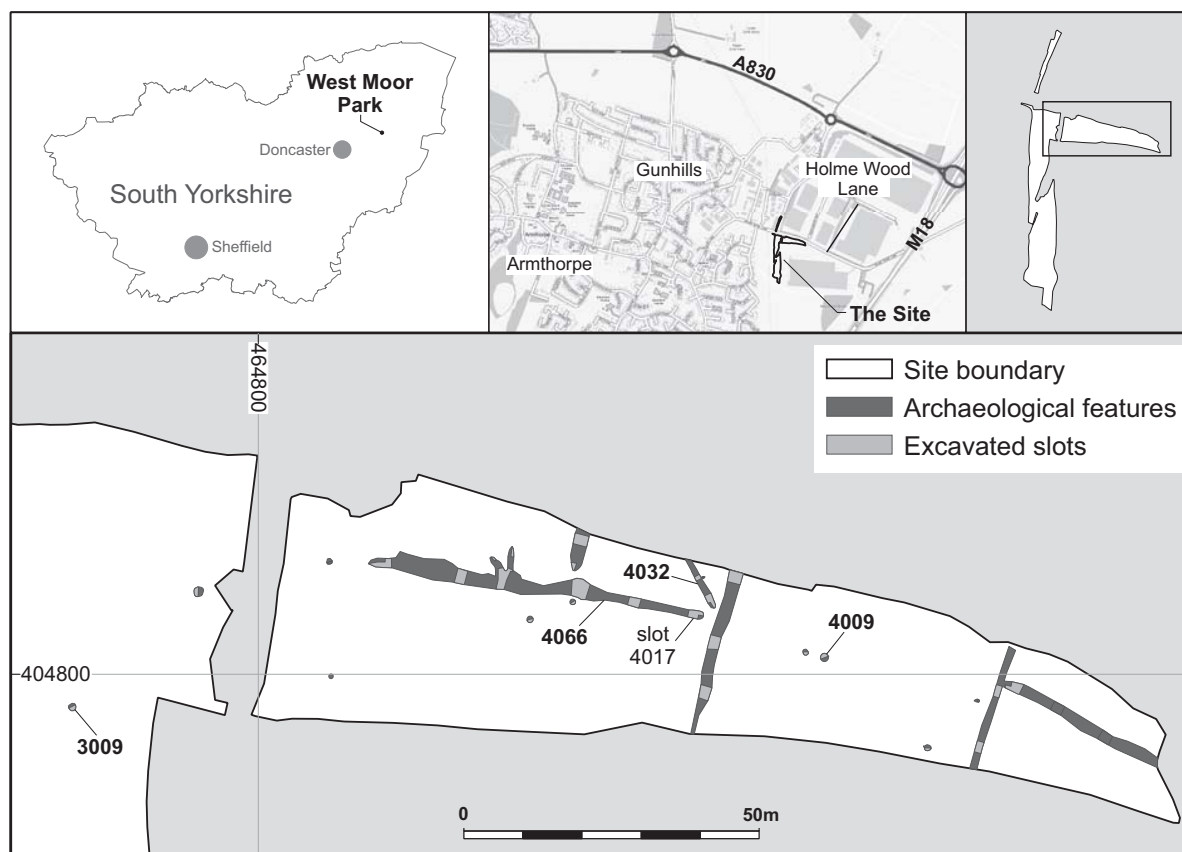


Figure 1 Location and site plan. © Wessex Archaeology, 2015.

Results

A series of ditches formed part of a regular co-axial field system of the type described by Riley (1980) as a ‘brickwork’ pattern (Fig. 1). These ditches were hard to detect as their fills were nearly indistinguishable from the natural geology (Fig. 2). Finds from most of the ditches indicate their Romano-British date. The ditches were similar to those from previous work, though somewhat less truncated. The ditches were 1.1–2.1m wide and 0.27–0.44m deep, with concave (U-shaped) profiles with some irregularities. One excavated slot exhibited a profile with a shallow shoulder that may indicate a re-cut although the fill appeared to be homogeneous across the feature. The long strips of the ‘brickwork’ pattern were approximately 40m wide, in agreement with Richardson (2008, 15), but smaller than the typical sizes of 50–100m given by Riley (1980, 12–15).



Figure 2 Slot 4017 across Romano-British field boundary 4066. Scale: 1m units. © Wessex Archaeology.

One undated ditch (4032) lying diagonally across one of the fields probably represents a later phase of activity; it terminated just short of two of the other ditches. This ditch was slightly smaller than the others: 1.03 m wide and 0.34 m deep.

Ten circular shallow pits with flattish bases, and one that was oval in shape, were recorded among the ditches. They were 0.9–1.7m in diameter and up to 0.22m deep. Each contained in situ burnt material, generally with a black basal layer and sometimes with a grey upper layer (Fig. 3), although this was inverted in one instance. Each layer was heavily laminated, indicating repeated episodes of burning. Heat-affected natural was present below some of the pits. One pit (3009, Fig. 1) contained two sherds of Romano-British greyware, but the others contained no finds; the sherds may be intrusive or residual, and the dating of these pits is uncertain.



Figure 3 Pit 4009 showing *in situ* burning. Scale: 1m units. © Wessex Archaeology.

Parts of a possible trackway identified from aerial photographs weakly correlate with the minor axis of the field system, but no evidence for a trackway was seen on the site.

Environmental samples were taken from both field system ditches and pits but preservation was poor: very few charred plant remains, and no waterlogged remains were recovered. However, large quantities of mature wood charcoal were recovered from the pits, likely representing uncombusted fuel.

Pottery

A total of 138 sherds of Romano-British pottery were recovered, weighing 2.821kg and giving a relatively large mean sherd weight of 20.44g. A large proportion of the pottery was abraded.

A group of 45 sherds from the eastern terminal (4017) of ditch 4066 contained over double the quantity of sherds from any other location (Fig. 2). This pattern of retrieval of large parts of the pottery assemblage from a small number of locations is a recognised feature of Romano-British rural sites in South Yorkshire/northern Nottinghamshire, and is suggestive of waste disposal in specific areas (Chadwick 2008; Leary 2008). The same pattern has been previously recorded at Gunhills, which Richardson (2008, 23–24) thought in later phases might indicate structured deposits relating to a change in land use or abandonment. Deposits of this form are sometimes associated with entrances and gateways (Chadwick 2007, 134), and the deposit of a larger amount of pottery in this terminal may be consistent with the use of the gap between this terminal and the adjacent ditch as an entrance between fields.

A very limited range of pottery was recovered, and it offers little evidence about when the ditches may have first been excavated. The pottery is nearly all local greywares and can be dated to the later 2nd to 3rd century AD. The greyware forms can be paralleled to material from the late Romano-British kiln from Bessacar (Buckland 1976) and the late Romano-British rural assemblage from Thurnscoe (Didsbury 2004). However, there is little pottery to compare with that from the early phases of occupation in the Gunhills area, and it is

possible that this site, if occupied, was marginal to any settlement during the later Iron Age and early Romano-British period, and had become so again by the middle of the 4th century AD.

Metalworking Slag

A small quantity of metalworking slag scattered across several features can fairly certainly be ascribed to smelting. The abraded nature of the pieces suggests that the smelting activity may not have taken place in the immediate vicinity.

Conclusions

The evidence from the previous excavations in the Gunhills area indicates that Late Iron Age/Romano-British activity was focused on the slightly higher ground of West Moor Park. The 'brickwork' field system known from previous excavations and from aerial photography was shown to extend as far south as the boundary between two geological zones, and the absence of archaeology from the southern part of this site suggests that it may have been too wet to exploit until drained in the 17th century.

Six phases of activity were identified on the adjacent excavation (Richardson 2008, 7–8). While the origin of the field system on this site is hard to pinpoint, it is likely that the majority of ditches are contemporary with Richardson's phase 4, with ditch 4032 possibly representing a subdivision corresponding to phase 5. Use of this part of the landscape appears to have been in decline by the 4th century AD.

There was no clear parallel on the Gunhills site for the circular burnt pits seen here. However, as Richardson notes (2008, 11–12) 'the heavy truncation of this site may have removed all traces of roundhouses or post-built structures', and it is possible that the circular pits represent settlement hearths. Alternatively, given the absence of these pits to the north, they may represent some activity associated with the marshy ground to the south. Charcoal production (perhaps to facilitate metalworking) is a possibility: wood from the margins of the agriculturally unexploited wetlands may have been used. However, the pits are rather small and regular and may have had some other use. Their dating is not secure and they may relate to activity earlier or later than the field system.

Archives

The archive is currently stored under project number 106490 at the offices of Wessex Archaeology, Unit 6, Sheaf Bank Business Park, Project Road, Sheffield, S2 3DN. Deposition with Doncaster Museum is recommended but at present Doncaster Museum is not accepting archives. OASIS form wessex1-194788 has been completed for this work.

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Victorian Brickworks: Excavations at the Former Amy Johnson School, Hull

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Keywords Hull, Amy Johnson School, Post-medieval, 19th Century, Brickworks, Brick kiln, Clamp kiln, Tramway

Abstract

In 2011 Wessex Archaeology excavated the site of a group of 19th-century brickworks at the former Amy Johnson School, Hull (NGR 506700 428200). Brick surfaces formerly accommodating clamp type brick kilns were recorded, along with the foundations of associated buildings. Former tracks, including one well-developed example, were also recorded along with other structures such as probable dwellings, machine bases, storage platforms and water management features.

Introduction

The former Amy Johnson School was situated to the west of Hawthorn Avenue in the western outskirts of Hull. At the time of excavation, the site comprised waste ground including former playing field areas (Wessex Archaeology 2011). The site included the former Ringrose Street in the north and the former Chesterton Street in the south, and was bounded by Hawthorn Avenue to the east, with an irregular boundary to the west (Fig. 1).

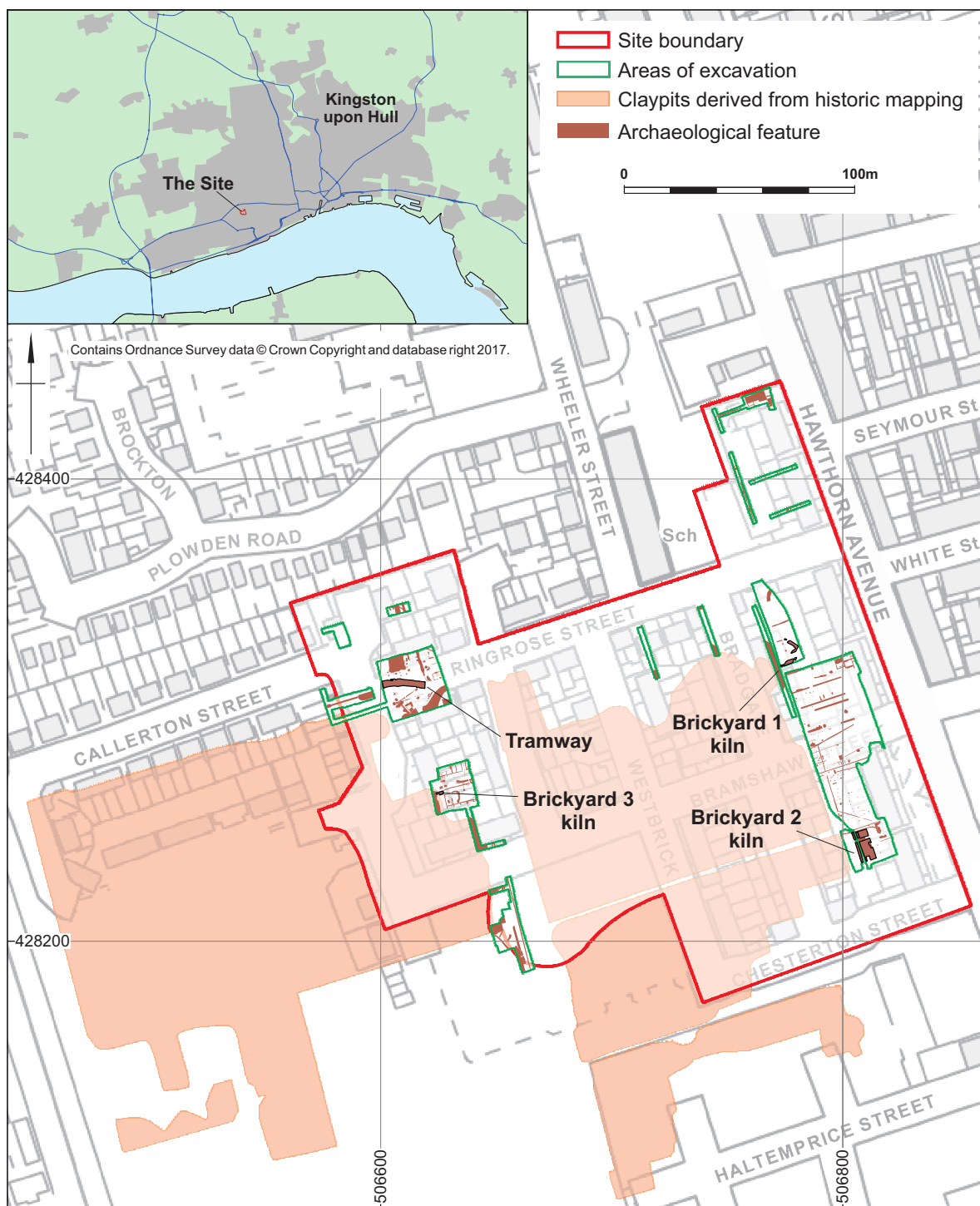


Figure 1 Plan of the site showing Brickyards 1, 2 and 3 showing the clay pits derived from the Ordnance Survey 1:10,560 map of 1910.

Historical background

Historic maps of the site environs indicate a rapid transition from farmland to industrial suburbs after the arrival of the railway in the mid-19th century. Ordnance Survey maps of 1891 show a clay pit and three brickworks on the site; each brickwork is depicted with a kiln. Archaeological remains of each kiln were identified in the excavation (Fig. 1). The kilns chiefly survived as heat-affected brick surfaces. The kilns were likely clamp-type kilns as no surviving evidence for permanent superstructures or subterranean flues survived. Clamp kilns were rudimentary affairs, consisting of stacks of air-dried bricks with fuel packed around them. Brick clamps were

constructed for a single firing, which could last for several days (Dobson 1850; Delaney 1990; Proctor et al. 2000). Set against the evidence for such temporary structures is the fact that the kilns appear on the 1891 Ordnance Survey map, indicating a degree of permanence.

Kilns

The Brickyard 1 kiln comprised four heavily vitrified brick surfaces laid on a bedding layer of burnt fuel and ash overlying natural clay.

The Brickyard 2 kiln (Fig. 2) survived as three parallel brick surfaces built directly onto natural clay with the central surface shorter than the outer two. Ceramic field drains running along each side of each surface connected into a larger field drain to the north. The brick surfaces had slumped in several places, probably due to the clay below drying out and the weight of the overlying brick clamps. As a result the surfaces had been levelled up on a number of occasions with spreads of crushed brick and mortar (Fig. 3). Bricks pressed into the surface of this mortar may have been left over from the final firing. High temperatures associated with the firing of the kiln were presumably responsible for the heavily heat-affected clay deposit extending beneath the brick surfaces, with this most intense at the southern end of the kiln.



Figure 2 Zac Nellist working on Kiln 2.



Figure 3 Details of repairs to Kiln 2. Scale: 1m units.

The Brickyard 3 kiln was of similar construction to the Brickyard 1 kiln, with a black ash and clinker bedding layer beneath a brick surface. This bedding layer overlay a pre-construction levelling layer, which in turn overlaid natural clay.

Other structures

A brick structure adjacent to the Brickyard 1 kiln did not include vitrified brick surfaces or evidence of heat damage. This structure had been constructed in part from brick wasters and part bricks. This may represent an ad hoc structure associated with brick manufacture, possibly constructed at the end of the life of the kiln.

To the south of the Brickyard 1 kiln a robbed-out wall and two stanchion holes represent the only surviving remains of a building shown on the 1891 Ordnance Survey map.

Brickyard 3 was the most well preserved and extensive and included a complex of buildings around a walled yard. The kiln lay outside of the yard. The earliest structure in this area was a small brick building at the east of the area which is probably contemporary with a pre-construction levelling layer of mixed clays, crushed brick, ash and clinker spread across the area. Next, two brick buildings were constructed on opposite sides of the central yard. On the north side, the brick building included brick wasters in its construction. The subdivision of this building into five separate rooms, one with a possible fireplace, suggests that the building was an office or possibly a dwelling rather than a workshop. An unusual feature of the room with the possible fireplace was the insertion of a ceramic drain through the external wall, perhaps for ventilation. The south building comprised a single fully enclosed room and an open-sided area facing the central yard. On the open side, the roof was supported by stanchions or posts, and the rear wall was supported by five brick buttresses.

The entrance to the yard was probably through a gate associated with two postholes. The interior of the yard included a brick path which had been repaired frequently, including a discrete deposit of reused roofing pan-tiles.

To the north of the yard, a substantial track or tramway ran from the direction of Ringrose Street in the east and led to the edge of a clay extraction pit in the west. The track was surfaced with a variety of materials including heavily burnt and vitrified bricks and brick wasters, and wooden sleepers. The 2.5m-wide track surface was built on a bedding layer overlying made ground and natural clay deposits. Parallel linear ruts approximately 1.5m apart are consistent with use by horse-drawn carts.

Several other slighter tracks were also present. It is unlikely that these tracks were in use at the same time, but detailed sub-phasing was not possible. Bricks, layers of chalk, layers of crushed bricks, mortar and flagstones were all used as surfaces. Further evidence of 1.5 m wide cart ruts was present.

A small machine brick security hut or dwelling was present at the main trackway entrance and probably post-dates brick production on site. It had an internal dividing wall, a fireplace and chimney. Outside of the building were a brick-lined well and two pits.

Postholes and post-pads indicated the presence of three probable storage platforms, possibly with raised floors. Further ancillary structures, possibly associated with machine processes such as clay-processing pug mills, were scattered across the area and appear to have developed on an ad hoc basis. A 1.2m square structure built on a timber raft comprised a ceramic tile base surrounded on three sides by brick walls. The base and the walls both showed evidence of high temperatures. Four brick pillars set in steep sided construction cuts formed the corners of a 6m by 6m structure. A circular pit with contaminated fills was found close by. Foundations of a further small brick and timber structure were found south of the main trackway.

The remains of a system of drainage ditches extended across Brickyard 3. The presence of 18th-century pottery in one of these ditches suggests that elements of the former agricultural drainage system were incorporated into the later drainage system. One drain ran from a wooden barrel set in a clay-lined pit connected to a second pit with a small iron pipe. This second pit had been sealed with clay at ground level but its contents could be accessed through a square timber-edged opening. The cover of this pit had been repaired with brickwork. These features may be associated with windmill powered pumps shown on the 1891 Ordnance Survey maps, and may have supplied water for use in the brickmaking process.

A further structure was identified some 80m to the south of Brickyard 3, which had been partially removed by the expansion of an adjacent clay pit.

Clay pits were mapped on the site in the 1890s and their presence and depth (up to 6.5m) confirmed by geotechnical works (Encia 2008). The edges of some of the clay pits were recorded archaeologically, and the sides and bases of some of the clay pits had been lined with re-deposited clay.

Documentary evidence

The 1871 census records a Mr Garbutt's brick yard and four properties occupied by brick makers, demonstrating that the brickyards were not only manufacturing premises but also contained dwellings for households dependant on the works. In 1872 John Goy, an established brick and tile manufacturer, purchased Brickyard 3 (Hull City Archives C DBHT/5/603). The 1881 census and White's directory of 1882 record 'Ringroses Brickyard' (the surrounding land was owned by the Ringrose family) as the address of four households, and likely refers to John Goy's yard. Henry James Ledger owned the 'Newington Brickyard' which may have been Brickyard 1 or 2. In 1882 a complex claim for trespass was heard against John Goy's yard for the construction of a tramway across neighbouring land, confirming Goy's ownership of Brickyard 3 (Hull City Archives, C DBHT/5/603). It is tempting to identify this with the substantial trackway excavated, although this identification cannot be confirmed. Kelly's directory of 1893 lists Goy's brickyard but not the Newington Brickyard although several other brick makers are listed on Chalk Lane, possibly associated with Brickyards 1 and 2. Goy sold Brickyard 3 in 1894 and was bankrupt by 1896 (Hull City Archives C DBHT/5/136; East Riding of Yorkshire Archives and Records Service zDDX715/1/2).

Later use of the site

Brickyards 1 and 2, adjacent to Hawthorn Avenue, were the first to be demolished and had been replaced by residential development on the Ordnance Survey 1:10,560 map of 1910. The remains of the kilns were covered with demolition debris used as a levelling deposit. The brick foundations of terraced houses were cut into

natural clay deposits and the fabric of these foundations incorporated fragments of heavily vitrified bricks clearly derived from the brickyards.

To the west of the railway line, Brickyard 3 was demolished after 1910 and the remains were sealed by brick rubble deposits. This land remained undeveloped until the mid-20th century when the ground was raised and levelled to create school playing fields.

Artefacts

The artefacts recovered from the excavations comprised 19th/20th-century domestic pottery, glass, clay pipe etc. The assemblage adds little to the understanding of the site, although a few pieces are of local manufacture.

Of the brick wasters and seconds, 27% were distorted 'Beart' type bricks (i.e. perforated), indicating that such bricks were manufactured on site. A small number of firebricks and engineering bricks were present, but included stamps such as HUNCOAT ACC— (Huncoat Brickworks, Accrington) and so were probably not produced on site. No tile wasters or seconds were identified, although it is not disproven that tiles were manufactured here. The majority of tiles recovered were floor tiles rather than roofing tiles.

Conclusions

The results of these excavations provide valuable information about 19th-century brick manufacture and also the multiple uses of the site beyond simple brick manufacture. Although the focus of activity on the site was brickmaking, it is clear from documentary records, consistent with the archaeological results, that people were also living on the site. Domestic occupation of the buildings excavated surrounding the yard associated with Brickyard 3 is possible. The surviving archaeological evidence included buildings, clay extraction pits, and structures relating to transportation, drainage, water supply, brick firing and storage.

Some of the archaeological record had been lost to clay extraction associated with the original operation of the site, and further impacts were caused by the construction of terraced housing east of the railway (Brickyards 1 and 2). Landscaping of the former school playing fields appears to have had little impact on the buried archaeology. The extent of the former clay pits appears to be reasonably consistent with the Ordnance Survey map of 1910, although near Brickyard 3 the clay pit was slightly larger and some limited extraction may have occurred after this date.

The occupation of the brickyards was relatively short-lived, beginning towards the end of the 19th century and in decline by 1910. In 1910 only Brickyard 3 was still present, and the regular manufacture of bricks may have concluded some time before this. Nonetheless, multiple phases of occupation, and multiple repairs to the kiln surfaces were evidenced.

The East Riding of Yorkshire does not contain rich resources of good quality building stone, and has long relied on the manufacture of bricks. Brick making activity at this site coincided with a period of expansion for the city of Hull. Few sites of this type have been investigated and these results are considered to be of local to regional significance.

Archives

The archive is currently stored under project number 74531 at the offices of Wessex Archaeology, Unit 6, Sheaf Bank Business Park, Project Road, Sheffield, S2 3DN, and will be deposited shortly with Hull and East Riding Museum, 36 High Street, Hull, HU1 1NQ under an accession number to be issued at the time of deposition. OASIS form wessex1-139827 has been completed for this work.

Acknowledgements

The project was commissioned by Stacey Chapell, Danny Betts and Jamie Moran at Keepmoat Homes Ltd. David Evans and James Goodyear (Humber Archaeology Partnership) monitored the work and approved the Updated Project Design respectively. The fieldwork and post-excavation analysis was managed by Andrea Burgess. The illustration is by Alix Sperr, and the report was edited by Philippa Bradley and Patrick Daniel.

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Sixty years of the Pontefract & District Archaeological Society

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Keywords Pontefract, Excavations

Here, the current chairman and a founding member of the Pontefract & District Archaeological Society remembers the beginnings of the Society and some of the highlights of archaeological activities during the last 60 years.

History and Activities

The Society, more commonly called PontArc nowadays, was formed in April 1957 as the result of a WEA (Workers' Educational Association) class in archaeology tutored by C. Vincent Bellamy. Excavation on St John's Priory site in the town, under the direction of Mr Bellamy, occupied the members, some of whom also recorded buildings being demolished in the town (Fig. 1).



Figure 1 St John's Priory Pontefract, Spring 1960. © Eric Houlder, LRPS.

By 1963 PontArc was able to mount its own excavation, on the St Richard's Friary site beneath the infirmary, under the direction of Kenneth Wilson, the then President. Mr Wilson's wife, Margaret (Peggy), had been a supervisor under Sir Mortimer Wheeler, and her tuition enabled several members to be asked to participate as supervisors in nationally important digs like Sutton Hoo, Silbury Hill and Mucking. In the mid 'sixties, PontArc became one of the first local groups to affiliate with CBA (4), as it was then.

During the following decades these members, with others, mounted excavations on Roman roads, particularly M28b. In 1985/6, members under the direction of Tony Wilmott of the West Yorkshire Archaeology Unit excavated a 6th-century onwards cemetery and church in the Old Town. Shortly afterwards, the Society gained the Ironbridge Award for its recording of a medieval building under the direction of professional David Heslop.

In retrospect it is now evident that these professionally directed projects added to the prestige of PontArc; the membership certainly increased at these times from an average of about sixty to an average of about 140.

When the River Aire burst its banks into St Aidan's opencast site in 1988, few realised that archaeological history would be made. As the riverbed was pumped dry nine years later, 18th century and earlier rivercraft were found, and the St Aidan's Sunken Ships Project was initiated, directed by John Buglass. PontArc provided many of the diggers, and much of the logistics for this operation, for which the Society received the Pitt Rivers Award.

PontArc acts as Steward to the medieval hermitage, Grade II*, under the leadership of Committee member David Wilcox, who regularly checks the condition of the monument and the levels of gases in the underground chambers, reporting back to Committee, the Hospital Trust, and English Heritage.

Work in the new century included providing the skilled diggers for Channel Four's famous Time Team when they dug Castleford, coincidentally adjacent to where they had dug in 1968/9 under the aegis of Castleford Historical Society (now Castleford and District Historical Society), though directed by the writer who was then also Chairman of the Society. Soon after, the PontArc team was able to record Darrington Windmill, which Robert McNaught, Society Secretary published recently.

More work on M28b, followed the discovery of a milestone of FLORIANVS, when the full width of the carriageway was excavated at a point where soil creep had preserved it well. When the local infirmary was demolished, PontArc obtained a substantial grant from the local NHS Trust to locate and dig more of St Richard's, and two summer seasons were spent on this work under Simon Tomson, which is nearing publication under professional member Dr Janet McNaught (Fig.2).



Figure 2 St Richards Priory, Pontefract, Summer 2012. Scale: © Eric Houlder, LRPS.

Whilst all these activities were going on, excursions, one as far as China, were taking place, and each winter since the foundation there has been a programme of lectures, many by leading figures. PontArc is fortunate to have Dr Peter Addyman as its President, and Tony Wilmott, now Senior Archaeologist at

Historic England, as its Vice President. There is an active committee which meets once each month; none of the activities outlined above could have taken place without the backing of an efficient Treasurer, currently Anne Hawkins, a professional accountant, an active Secretary, Robert McNaught, and a full supporting cast including the writer, a Founder Member, who is currently Chairman.

Raincliffe Woods Archaeological Survey by the Scarborough Archaeological and Historical Society

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Keywords Raincliffe Woods, Hollow-ways, Man-made platforms, Industrial archaeology

A survey of Raincliffe Woods near Scarborough has found archaeological remains from the prehistoric period onwards. The woods preserve numerous hollow-ways resulting from the movement of livestock from the Iron Age down to the medieval period. There are also many artificial platforms some of which are the result of charcoal burning connected with a nearby forge. The survey has shown that the woods have been managed for hundreds of years and have been important for agriculture, industry and leisure.

Summary and interim report

2017 has been a busy year for Scarborough Archaeological & Historical Society with a number of projects being undertaken the largest of which has been an on-going landscape survey of Raincliffe Woods that began in 2015. Raincliffe Woods are approximately 3 miles to the west of Scarborough town centre, clinging to the steep slopes of one of the Tabular Hills surrounding the town.

The study began in response to an enquiry about the names given to various tracks and trods in the woods. Initial investigations revealed a network of previously unrecorded hollow-ways and we've looked at the connection between these tracks and other features in the woods. This in turn led to studying the link between the features in the woods and the numerous archaeological features extant on the hilltop.

The survey shows that in several areas dykes and ditches have continued beyond the hilltop and into the wood. Furthermore, we have been able to see how later generations have reused the earthworks. The dykes, believed to be prehistoric in origin, were boundary features. They are reused in the Iron Age and through into the medieval period as hollow-ways for moving animals and in this way they could cross the entire hilltop.

A large number of man-made platforms have been identified and recorded. The platforms are typically about 5m in diameter where the back edge has been cut into the slope and the front edge has been built up using the earth excavated from the back. We know some were used for charcoal burning, but others could have been for bark drying or for bloomeries, primitive iron forges. Charcoal burning has been confirmed by magnetic susceptibility testing of the soil on the base of one platform. The charcoal would have provided fuel for the nearby forge in the appropriately named, Forge Valley.

We have identified areas where springs have been excavated to form ponds. Evidence has also been seen of streams being diverted across the sloping ground in a zig-zag pattern possibly with the aim of providing accessible water for livestock or industry. The platforms are often found in close proximity to the springs and this relationship is being investigated.

There also appears to be a relationship between the township boundaries of Seamer and Ayton with the water systems in the woods. The township boundary divides the woods along a watershed where the water flowing to the west is in Ayton and that to the east in Seamer. This suggests that water was an important consideration when that boundary was established.

Starting from a relatively blank sheet of paper in 2015 we have now plotted over 500 points of interest in the woods and the area surrounding them. We have shown how the woods have been managed over hundreds of years and their importance to agriculture, industry and leisure for countless generations. We have also surveyed a number of features that when added to what was already known on the scarp top has greatly enhanced our understanding of the wider area. Much still remains to be done but hopefully our work will form part of the future of the woods and will develop a much greater understanding and appreciation of this valuable and beautiful resource.



Figure 1 Several members of the team inspecting a platform in Raincliffe Woods. © Scarborough Archaeological and Historical Society.

Archaeology North Duffield: Review of Work Undertaken

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Keywords North Duffield, Iron Age, Roman, Pottery, Iron working, Flint

This article describes the results of two Lottery funded archaeology projects carried in North Duffield, a village south of York over the last six years.

Introduction

Archaeology North Duffield (AND) is part of North Duffield Conservation and Local History Society (NDCHS). The village is situated in the southern Vale of York, 12 miles south of York and 6 miles north east of Selby. Following my finding a piece of Roman grey ware in my garden and learning of extensive crop marks running through the village, the group was formed in 2008. We started field walking using local residents and primary school children and students from York University

Two Heritage Lottery funded projects

In 2011 we were granted £25,700 of Heritage Lottery Fund (HLF) money for a three-year project to investigate the historic landscape of the village. Amongst the many elements comprising the project, was the reconstruction of an Iron Age roundhouse which is used to this day as an educational resource with schoolchildren from surrounding villages as well as residents from North Duffield visiting and learning what it was like to live in the Iron Age.

We also investigated crop marks at Parkhouse Farm, north east of the village and uncovered a linear ditch and the ring ditch of a monumental ring ditch roundhouse of 20m diameters (Fig. 1). From these two features we recovered earlier Middle Iron Age calcite gritted pottery, evidence of iron working and Neolithic flint tools. In one fell swoop we drove the history of the village back from 1086AD to 3200BC, quite a result for a small community archaeology project. Radiocarbon 14 dates were obtained courtesy of the CBA Mick Aston Archaeology Fund, with a grant of £1000. Dr Jon Kenny, Community Archaeologist, oversaw our work. In 2015, a book was produced as well, *North Duffield: Archaeology and the Local Community*, Elsey B., and is available from the author at £12.50 plus £2.50 p&p.



Figure 1 Southern area of the ring ditch prior to excavation. © Archaeology North Duffield.

In 2017, I applied for a further grant from HLF and was awarded £79,400 for a further three-year project to extend our research into the area bounded by the Rivers Ouse and Derwent. Named the Ouse and Derwent Project (OADP), we aim to develop the argument for Iron Age settlement of the low-lying and wet areas of the Vale rather than just the higher land of the Wolds.

We have recently concluded the first dig, at West End Farm, Hemingbrough (Figs. 2 and 3) and recovered over 1000 sherds of Middle Iron Age pottery, thatch weights, evidence of iron working and perhaps glass making as well. This could well be the largest assemblage of Iron Age pottery yet found in the Vale of York. 80 people volunteered to dig, including adults with learning disability and a group being educated at home by their parents.



Figure 2 Excavation of one of the ring ditches in trench 5. © Archaeology North Duffield.



Figure 3 Two sections through ring ditch in Trench 2. © Archaeology North Duffield.

Conclusion

A full report will be submitted once all assemblages have been examined, carbon and thermo-luminescence dates obtained etc.

Archives

Location of archives currently with the author and available via nduffieldhistory@gmail.com, many have been released via Facebook and can be seen at @Iron Age Ouse and Derwent. Site access code is OADP17 for the current excavation.

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The Swaledale and Arkengarthdale Archaeology Group in 2017

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Keywords Fremington, Romano-British, The Hagg

The Swaledale and Arkengarthdale Archaeology Group (SWAAG) is a charitable, voluntary group centred on Reeth in Swaledale in the Yorkshire Dales National Park. The Group engaged in a wide range of activities in 2017, including excavation of a Romano-British site, interpreting the Swaledale Tithe database and the Muker Manorial Court records, conducting geophysical surveys, and offering talks and walks.

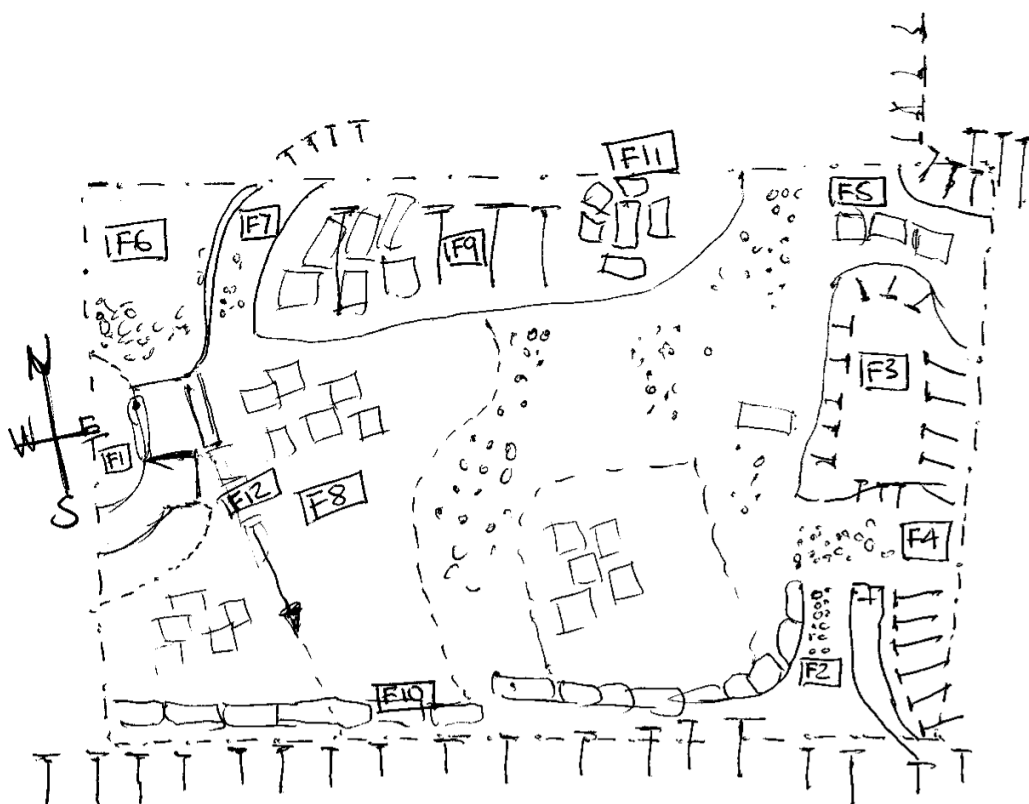
Introduction

The Swaledale and Arkengarthdale Archaeology Group (SWAAG) is a charitable, voluntary group centred on Reeth in Swaledale in the Yorkshire Dales National Park. The following is a brief description of our activities over the past year.

The Hagg

The Hagg is a Romano-British site east of Fremington and about half way below Fremington Edge. We have worked on the area since about 2010: we have surveyed it and opened a series of evaluation trenches.

In 2017, following discussions with local archaeologists, we decided to carry out an open area excavation to begin to develop a more holistic view. We were very fortunate to gain the support of the Yorkshire Dales National Park's Sustainable Development Fund for the project, and so ran a 2 week excavation in mid-July (Figs. 1 and 2).



FEATURES

- F1 - Roundhouse
- F2 - Southern Entrance to central Platform
- F3 - Rubble Bank (Paved or Rebed wall)
- F4 - Eastern Entrance (South)
- F5 - Eastern Entrance (North)
- F6 - Curved Wall Embankment
- F7 - Path/Track to Northern Platform
- F8 - Main Yard (cobbled then flagged)
- F9 - Raised Flagged Platform
- F10 - Southern Enclosure Wall
- F11 - Limestone Features
- F12 - Surface Drain.

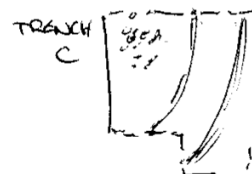


Figure 1 Sketch of the features of the Hagga. © SWAAG.



Figure 2 Overhead view of the site. © SWAAG.

We managed the excavation as a community dig. In total we had the help of 96 volunteers of varying ages and skill levels, and some 25 volunteers per day on site (Fig. 3). We also carried out an outreach programme with the Reeth/Gunnerside and Arkengarthdale primary schools involving classroom activities related to the dig and a site visit by the Arkengarthdale school (Fig. 4),



Figure 3 Hard at work. © SWAAG.



Figure 4 Site visit from local school. © SWAAG.

During the two weeks of the dig we opened up an area some 400 square metres. Previous evaluation trenches had suggested that the excavation site might contain round houses. However, that was not to be the case; the site proved to be a paved and cobbled area, possibly a yard. It was bounded by the remains of walls and there were several entrances. One paved entrance featured a door sill, and from the topography and previous excavations of the adjoining area, it may well be the entrance to a round house (Fig. 5). Several of the paving slabs in different areas of the site were lifted but there were no visual indications of earlier occupation but we took soil samples for analysis.

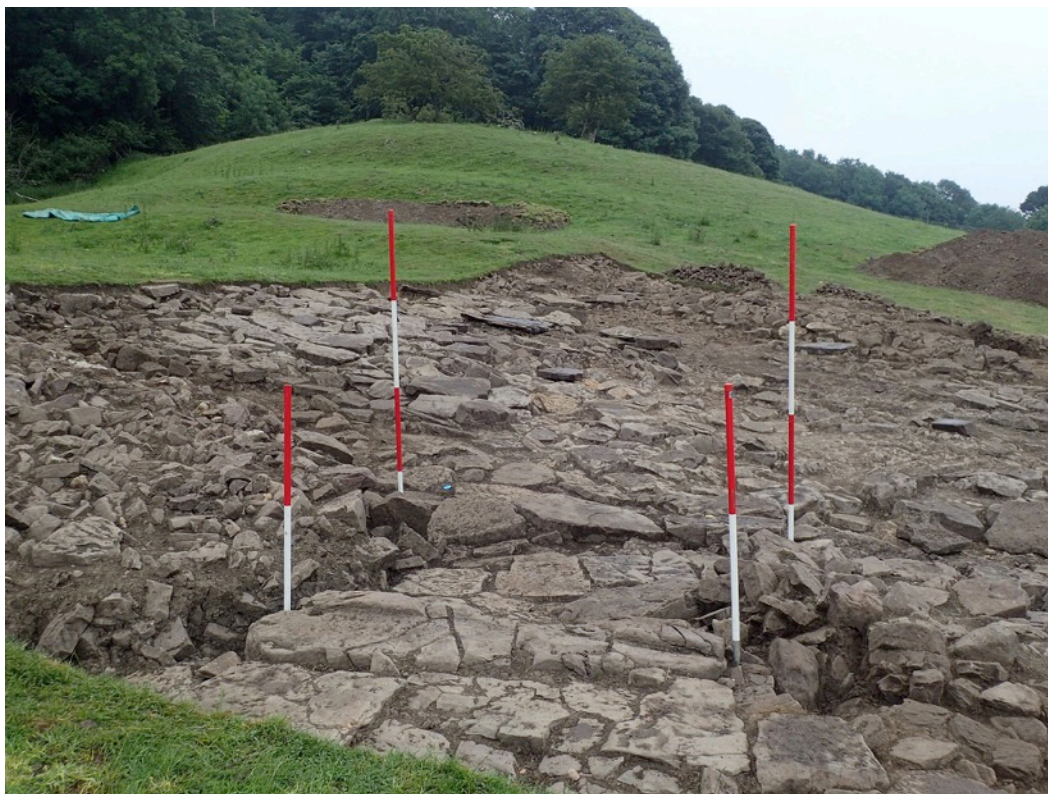


Figure 5 Entrance and "porch" to round house. © SWAAG.

The site yielded a range of finds: pottery sherds, rubbing and sharpening stones, game counters, animal bones, several pieces of broken querns (collared), a steelyard weight, a Roman coin, a fibula, cosmetic/medicine palette; all are now with appropriate experts for conservation and identification, and analysis. Preliminary results to date continue to suggest that the site is Romano-British and was abandoned towards the end of the fourth century.

The excavations were supervised by Tony Liddell of Vindomora Solutions Ltd. He provided tuition and guidance where necessary and will contribute towards the excavation report.

Subject to funding, it is our intention to revisit the Hagg in 2018 and to open an area(s) adjacent to this year's dig to further expand our knowledge of the site.

A report of the excavation will in due course be lodged on the SWAAG web site and on OASIS.

Local History Group

The Local History Group is a legacy of the Big Dig project. The Group meets several times a year in Reeth to discuss members' research and topics of mutual interest. In the past year or so, the Group has worked on the Swaledale Tithe Database and the Muker Manorial Court record: both are now on the SWAAG web site and are searchable. For information on past meetings and details of the next meeting see the SWAAG web site.

Walks and Talks

We have continued to offer a wide range of talks with “in house” and invited speakers to which the public are invited. We have also led a series of walks, covering the geology, archaeology, natural and social history of the Dales for members and for the Swaledale Festival.

Surveying

We continue to put our geophysical survey equipment to good use for both our own projects and those of other local groups:

- On behalf the Ingleborough Dales Landscape Partnership, and David Johnson we have carried out a gradiometer survey of Southerscales an early medieval/medieval settlement at Chapel-le-Dale.
- We have provided surveying assistance to Altogether Archaeology.
- We have carried out a gradiometer survey and a resistivity survey of Bainbridge Village Green and an adjacent paddock on behalf of the Dales’ Young Archaeology Club’s “We Dig Community” project.

Conclusion

All of SWAAG’s work and activities are published on its web site at www.swaag.org; if you would like more information please email us at: info@swaag.org

We have a Twitter feed [@archaeology_s](https://twitter.com/archaeology_s) which will also keep you up to date on our activities and issues of interest. Our Twitter feed can be accessed in the normal way or via our web site. Please follow us!

St Michael and St Lawrence Church and the Washburn Heritage Centre

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Keywords Fewston Assemblage, Osteoarchaeology

The plan for an extension at St Michael and St Lawrence Church in Fewston and Blubberhouses Parish resulted in a major excavation project of graves. The remains uncovered have undergone osteoarchaeological analysis and the marked graves have allowed genealogical research to identify the individuals including decedents. This information can be viewed in the Washburn Heritage Centre.

Introduction

St Michael and St Lawrence Church, the site of our project, sits above Swinsty reservoir, one of the four reservoirs in the Washburn Valley in North Yorkshire close to the A59 between Harrogate and Skipton. The walks around the reservoirs are accessible and attract hundreds of visitors each year. The church has a long history with the first rector recorded in AD 1234 and is in the Washburn and Mid-Wharfe United Benefice. The building is grade II* listed based on its medieval tower and largely 17th-century nave and chancel.

Traditionally, the church hosted concerts and art exhibition beside regular church services. In 2005, the Fewston and Blubberhouses Church Parochial Council looked for ways to improve the facilities, as there was only one outside cold-water tap. The idea for a small extension was born and the proposed site for this was the former hearse house on the north side of the church (Fig. 1).



Figure 1 The site of the proposed Washburn Heritage Centre showing the former hearse house. © Washburn Heritage Centre.

The Washburn Heritage Centre

After three years of much discussion, planning, consultation and investigation we submitted our successful application to the Heritage Lottery Fund (HLF) in March 2008. But by now ‘the small extension’ had grown into a full sized heritage centre with project costs of £800,000.

As part of the preparation for the construction of the Centre we had to clear the site – and this is where our archaeologist, John Buglass came in. What John, with the help of volunteers, found was much more than anticipated. We expected around 50 sets of unmarked remains but we uncovered :-

- 154 sets of remains, 90 of which were interred in coffins, of these 80 with coffin handles; a total of 389 coffin handles were recovered
- 80 coffin plates
- three coffin burials had glass panes to the lids
- 20 burials contained clothing – including one who was buried in his wig and socks
- three burials had rings and one burial contained a coin

The Fewston Assemblage, as the collection became known, was carefully recorded by John and sent to York, but at this stage it was only partially examined by osteoarchaeologists as there was insufficient funding to complete the work. The construction of the Washburn Heritage Centre (WHC) began in 2010 and it opened in February 2011. The purpose of the Centre is to increase opportunities for people to care for, learn about and be involved in the unique heritage of the Washburn Valley. To achieve this aim there is a permanent exhibition, but there are also changing programmes of walks, talks, workshops about different aspects of the valley's heritage. It was as part of this events programme that we discovered a huge interest in the archaeology of the site and a real thirst from people to know more.

The Fewston Assemblage: Churchyard Secrets Revealed

At one of these heritage talks given by an osteoarchaeology colleague we were told that the Fewston Assemblage was 'globally significant.' Given this new found significance, and the interest from both the community and the archaeologists, we applied in 2014 for our second successful HLF grant £64K. But without our first project – the creation of the Centre we would never have known that there was another project just waiting to be discovered. In our grant application we said our aim was to use the osteological research and combine it with social history research to create a detailed sense of 19th-century Washburn Valley life. The funding enabled us :-

- Firstly, to commission York and Durham Universities and York Osteoarchaeology Ltd to complete the analysis. The detailed records are in our archive and a summary of the findings is contained in the book we produced.
- Secondly, to commission a historian to work with our team of volunteers to research and collect the social history information.
- Thirdly, to employ a media company to help us interpret the findings and turn them into an exhibition, film, book and walks trail.
- Finally, it also enabled us to commission from the Facelab at Liverpool John Moores University facial reconstructions of two of the named individuals in the Assemblage.

We did all we said we were going to do – but it felt like much more. If you visit the WHC you can see the exhibition, watch the film, buy the book and the leaflets of walks. What is harder to capture and describe is the way we worked and the additional benefits this brought. We managed to create a real team spirit between the osteologists, the direct descendants and the volunteers, which was mutually supportive and not in any way hierarchical. It was apparent that we all had respect for each other and for the Assemblage. The monthly team meetings seemed to be eagerly anticipated and were always well attended.

Of the 154 sets of remains we positively identified 22 individuals. This was through a combination of coffin plate, headstone and research. Our volunteers, who included living descendants, were paired up with the known people and asked to discover all they could about them and their families. Some of them also researched particular aspects of the Assemblage, such as the children who worked in the mills, or the folk with no known name – whom we called the anonymous dead. This approach meant that a sense of loyalty was developed between the volunteers and the object of their research. So the 22 named individuals, who started off just as numbered items on a list, gradually assumed the identity of Mary or Elizabeth, George or Rowland. A similar process happened when people were studying the mill children and indeed all the anonymous dead.

It was fortunate that we had the support and encouragement of a number of direct descendants – without whom the project would not have been possible. If they had not given their blessing to the work we might have found official approval much more difficult to obtain. George Lister's direct descendant, Mervyn Lister, one of the volunteers, was a critical part of the team. We chose George for one of the facial reconstructions, not because of Mervyn's support, but because we had some idea as to what his descendants looked like and this was useful to the Facelab in Liverpool (Fig. 2). We chose Elizabeth Dibb because we found her medical records at the West Yorkshire Archive and they gave a description of her as 'a tall, thin old woman, hair brown and grey with blue eyes.'



Figure 2 The facial reconstruction of George Lister, and three of his direct descendants. © Washburn Heritage Centre.

We were very lucky to have a team of volunteers who were not only diligent but also creative. It is this creativity, or looking at things in a different way, which really enhanced the project.

We knew that at some stage the Assemblage would have to be reburied but we never thought that one of the skills we would acquire would be grave digging. All but one of the 154 individuals were reburied in early Sept 2016. Then on September 15th, a gloriously sunny autumn day, we held a commemoration service. This could have been a very simple ceremony with just the known direct descendants.... but we held an event, attended by well over 100 people, which included time for reflection, singing, input from an archaeologist, a direct descendant and a volunteer and the symbolic reburial of one set of remains in a commissioned wicker coffin (Fig. 3). Ken Fackrell, one of the volunteers, wrote a piece of music for the occasion and this was sung at the graveside. Some of the volunteers researched the custom of giving funeral biscuits to mourners to absorb the sins of the deceased – these were provided, specially wrapped, for all in the congregation.



Figure 3 The congregation gathered to witness the reburial of the symbolic set of remains on Sept 15th 2016. © Washburn Heritage Centre.

Towards the end of the project, inspired by the textile design ideas of one of the research volunteers, we embarked upon creating a hanging which seeks to give a visual overview of the composition of the Assemblage and to give an identity to all of the 154 – even if we did not discover their name (Fig. 4). Each of them now has an appropriate individual emblem, beautifully stitched and numerically linked with the original catalogue, which John Buglass created. Maureen Fackrell worked with a team of about 20 stitchers of varying abilities, who between them created this amazingly touching way of remembering people whom none of us have met – but we actually feel that we know them!



Figure 4 The textile hanging created to honour all 154 individuals in the Assemblage. © Washburn Heritage Centre.

The project is officially finished and ‘signed off’ by HLF – but the work (and the enthusiasm) continues. We are in the process of compiling a ‘bigger book’ which includes more details of the research and some creative writing about some of the individuals. Ken has written a play ‘We the people’ which we are rehearsing and hope to perform in 2018. The project findings are included in university research papers and Liverpool John Moores asked us if they could use the story of George Lister in a conference they were speaking at – in South Korea.

The title of the song *We Stand Here in a Speck of Time* written by Ken, and performed by the Fewston Musick at the reburial service, has become the strapline for the project and seems to capture our approach to this continuing human story.

Archives

The Fewston Assemblage Archive is contained within the Centre’s archive

The book *The Fewston Assemblage: Churchyard Secrets Revealed* can be obtained from the Washburn Heritage Centre HG3 1SU tel. 01943 880794 Price £4

The film can be viewed on the website www.washburnvalley.org

Throwing Light upon the Past: the St Mary the Virgin Embsay with Eastby Churchyard Project

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Keywords Churchyard Recording, Gravestones,

This article describes the Embsay with Eastby churchyard project. The team members survey the gravestones, noting dimensions, type of stone, style, design, location using triangulation and the stone mason. They take photographs of each stone; when the inscriptions are difficult to read, enhanced methods of photography using off-camera flash and Reflectance Transformation Imaging are employed.

Introduction

St Mary the Virgin Embsay with Eastby Churchyard Project commenced in May 2015, as part of a Heritage Lottery funded project to re-roof the church. The village is near Skipton, North Yorkshire. The church and churchyard (Fig. 1) were consecrated on 17th May 1853 and is very fortunate in having a grid form churchyard plan with alphabetical rows and numbered plots. There are 1033 grave plots containing over 2000 burials, as well as 80 ash interment plots containing over 115 ash interments. It is very much a village churchyard and still in use today. For more information about St Mary's visit <http://www.stmaryembsay.org.uk>



Figure 1 St Mary the Virgin Embsay with Eastby.

The Project

The aim of the project is to update and enhance the churchyard plan and burial list, and produce a detailed survey of the churchyard recording its physical, cultural, and social aspects.

The project team consists of members of St Mary's congregation, Upper Wharfedale Heritage Group (UWHG) and its sub group Embsay Research Group. We are also working in collaboration with Drs Gareth and Nicole Beale of the University of York's Digital and Creative Arts Department.

We have made a comprehensive survey of all the gravestones, noting dimensions, type of stone, style, design, location using triangulation and the stone mason. Grave plots with known burials or those that are possibly empty have also been surveyed. Plain digital photographs are taken of each gravestone and grave plot.

Where inscriptions are difficult to read or carvings difficult to see due to lichen or weathering, we use two other photographic techniques: one involves taking photographs with an off camera flash at 15 degree angle to a gravestone and the other is Reflectance Transformation Imaging (RTI).

RTI has transformed the project and was introduced to members of the team in 2014 by Drs Gareth and Nicole Beale. It has been used for a number of years in Archaeology. It is a non-invasive computational photographic method that captures a subject's surface shape and colour and enables the interactive re-lighting of the subject from any direction. It consists of taking multiple photographs from a fixed position, moving the light source between each exposure and processing the resulting images in RTI Builder and then RTI Viewer. We have completed over 150 RTI's at St Mary's (Figs. 2 and 3).



Figure 2 Plain digital photograph of Tomlinson gravestone. © Alan Williams.

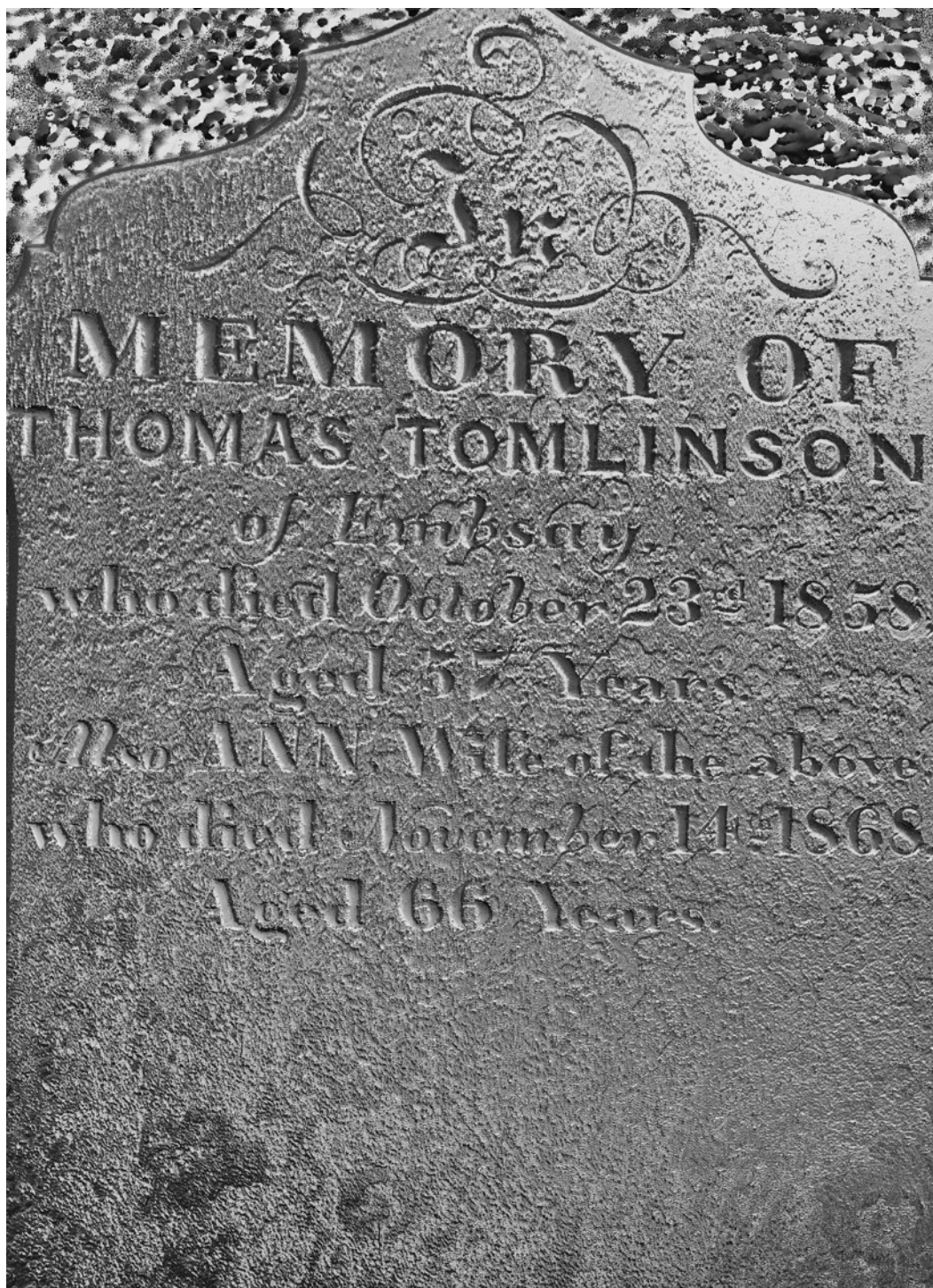


Figure 3 RTI photograph of the same gravestone! © Alan Williams.

For more information on RTI visit :-

1. Cultural Heritage imaging <http://culturalheritageimaging.org/>
2. UWHG website <http://www.uwhg.org.uk> look under Fieldwork tab and click on RTI, where Alan Williams the project's main photographer has put more information about RTI. See the Embsay Research Group blog to learn more about our work and the team.

RTI has allowed us to read inscriptions that were previously difficult to read, this has increased our knowledge of individuals and families, which in turn helps us answer genealogy enquiries, adds to the historical knowledge of the area and helps update the churchyard plan and records.

We are now in the process of creating a digital record for each grave plot composed of survey results, design and style of the gravestone, transcript of the inscription and any iconography. Also family history information, thanks to the wonderful database of people in the village from 1329 - 1921 that Jane Lunnion and David Turner of Embsay Research Group have put together. The information we have gathered has many uses, e.g. themed churchyard tours in the older part of the churchyard and data analysis.

Churchyards and cemeteries are a great heritage asset. Gravestones especially older ones are at risk from weathering, being removed and used as paving slabs. We need to survey and photograph them before the information they can give us is lost forever.

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Community Archaeology: South Leeds Archaeology Bucking the Trend

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Keywords Community archaeology, South Leeds, Magnetometry survey, Excavation

South Leeds Archaeology was facing an uncertain future when the remaining members revitalised the Group. Here, the author describes their approach through a varied programme of fieldwork training, a conference and talks.

Introduction

The region around Leeds used to have a number of community groups who were actively engaged in practical archaeology. By practical, I mean projects, based on comprehensive archaeological research, which involve at least an element of archaeological excavation and other fieldwork. One by one these groups have either disbanded or, as is the case with, for instance, the East Leeds History and Archaeological Society, have shifted their interest into local history studies. One of the reasons most often given for this change in approach is the increasing age of the surviving members and an understandable reluctance to jump into muddy trenches. Also there is an implication that these groups are not successful in encouraging new younger members.

South Leeds Archaeology (SLA) was in danger of following this trend. After ten years of varied and successful projects, the number of active members had dropped to single figures. There had also been a trend towards projects away from the immediate Leeds area and only a handful of members were prepared to travel up into North Yorkshire where the focus of activity had shifted. In 2015, Paul Boothroyd, the founder and chair of the group, passed away. Paul had been the inspiration and had provided the leadership for the group since it started.

The Group's new focus

In October 2015 we had an AGM and fortunately the remaining group members agreed that we should try and carry on. It was clear that before we could plan a survival strategy we needed to increase our membership. Three ideas emerged from our discussions:

First idea

We were aware of the interest in archaeology amongst the wider community, based on the success of T.V. programmes such as Time Team and many others. It was proposed that we offer an 'Introductory Course in Community Archaeology'. The idea being that we could provide the necessary background to archaeology and archaeological techniques, so that the participants would feel confident to volunteer their services on working sites. We have now run the course twice with some success.

Second idea

We organised a regional conference. This seemed like an ambitious idea for such a small group but we were passionate about bringing together the various sectors in archaeology. This took place in July 2016 at Oakwell Hall near Birstall, which provided the ideal conference venue and we were very grateful for the support we got from the staff at the hall.

We were able to invite speakers from the academic, advisory and commercial sectors together with representatives from community groups within Yorkshire. Neil Redfern, Principal Inspector of Ancient Monuments for Northern England, agreed to provide what proved to be a most entertaining keynote address. There are very few conferences which address the issues associated with community archaeology and probably for that reason we attracted an audience which represented the same broad sectors from archaeologists in the region.

The conference feedback was very positive and in terms of our objectives, we were able to recruit new members interested in what we were hoping to achieve. What the conference demonstrated was the wide range of attitudes that different sectors have regarding the opportunities for community based archaeology and willingness to offer support. Indeed, there was also a quite significant variation within individual sectors.

Third idea

Following on from the introductory course and the conference, it was considered important to offer some kind of practical fieldwork experience. Shortly after the 2015 AGM, we had a fortunate break. One of our members, Reb Ellis, was using Google Earth to explore signs of historic Rigg and Furrow cultivation near where she lived south of Leeds near Birstall. A field appeared to have some interesting crop marks which were only visible on one of the 'historic' Google Earth images (Fig. 1).



Figure 1 The field near Birstall with crop marks which SLA us as a 'training site.'. Map Data Google © 2017 The Geoinformation Group.

After identifying the landowner, we had an initial meeting and he proved very supportive to the idea that we use his field as a 'training site' subject to the usual crop management. We were also fortunate in that we were able to borrow a RM15 resistivity kit from the Roman Roads Research Association. We were able to introduce some of our new members to surveying with a Total Station and carrying out a geophysics scan. The results proved interesting in terms of anomalies but few conclusions could be reached.

The Group in 2017

At the start of 2017 we moved to a new venue in Rothwell. Leeds City Council were reorganising some of their libraries as 'Community Hubs.' This provided the opportunity for us to introduce a series of public talks. We have been very fortunate in the speakers who have volunteered to provide their services. In addition to drawing in more recruits to our group, the talks have proved to be an opportunity for members of other regional groups, such as Huddersfield and District Archaeology Society, East Leeds History and Archaeology Society and Pontefract Archaeology Society to name but three, to meet and interact over coffee after the talks. Our membership reached over sixty by the end of the summer.

2017 has also seen the meeting room in the Hub used for the second run of the introductory course and there has been some discussion about what else we might do in terms of workshops, either at our monthly members' meetings or by additional bookings of the room.

The main event has been the continuation of the Birstall field project. A chance meeting with Dr Chris Gaffney at Bradford University resulted in a day of magnetometry surveying on our field in March 2017 (Fig. 2). As well as his students, he persuaded Geoscan to come out and test a new device as well as getting Magnitude, a commercial survey company in Bradford, to carry out a full survey of the field with a 4-magnetometer array on a trolley. Our group also carried out some more resistivity work before the grass crop started to grow.

Once the grass was cut, our friendly farmer agreed that we could put a test trench into his field. We eventually agreed to a 4m x 2m trench. Professional archaeologists within our group would have liked to see a much bigger trench across more of the geophysical anomalies, mechanical diggers even entered the conversation! However, there were two main issues to take into account other than how the archaeology might be done.



Figure 2 The magnetometry survey in the field. © Mike Turpin.

1. Our project was not based on a known archaeological or historical site where we might have a good idea in terms of expectations resulting from a desktop survey or previous archaeological investigations. Instead we planned to see the project as a training exercise to bring together the new group members and give them some practical experience of opening trenches and practising appropriate archaeological methods.
2. We were also very aware that we needed to convince the farmer of our responsible attitude towards his field and to demonstrate the minimal degree of disruption which might result.

In the event, we started with a 4m x 2m trench which was located over one of the many geophysical anomalies, which we had identified as potentially interesting. De-turfing and removing the plough soil was relatively straightforward. The only finds were a small number of pieces of typical 'night soil' type pottery, together with a few fragments of clay pipe stems. As soon as the plough soil was removed we came down onto very heavy clay which proved to be hard work for the rest of the excavation!

The first trench showed signs of some archaeology with changes in the nature of the clay. The natural clay had a feature running through it filled with clay mixed with signs of burnt material and coal within a linear cut (Fig. 3). It is suggested that this might be a robbed out wall foundation. No finds were excavated and so no dating evidence could be found.



Figure 3 A section through the clay suggested a filled feature which was provisionally identified as a robbed wall foundation. Scale: 0.1m units. © Mike Turpin.

The geophysics showed a particularly high resistance response just to the side of where we had positioned the trench. After a discussion with our interested farmer, he agreed that we could extend the trench by another 4m x 2m (Fig. 4). The high resistance response turned out to be a linear cut which had been filled with randomly shaped pieces of sandstone. Our farmer suggested that we could be looking at an early field drain of a type called a French Drain. Again, we found no dating evidence in the trench, with no finds in either the clay or amongst the stones in the drain which had been removed and then replaced. An interim report is planned to be published over the winter.



Figure 5 The original trench is in the background with the extension showing the field drain. © Mike Turpin.

What did our project achieve?

1. In terms of answering archaeological questions, the only conclusion reached was that we need to do a lot more, completing the investigation of the current anomaly and looking at other features in the field.
2. A real positive achievement was the enthusiasm generated amongst members of the group and the mutual agreement that we should continue the project into next year. There is still some surveying to be completed and once the crop is harvested next year, we would hope to do more excavations.
3. There were opportunities to train those new members who had not had any practical experience of archaeology, only watching it on the T.V.! The team who carried out the back fill of the trenches even said they enjoyed that!

Conclusion

What can we learn from our last two years and what more needs to be done within the wider context of volunteer community archaeology? Our experience demonstrates two fundamental ‘truths:’ firstly, archaeology as a subject is interesting and given the right opportunities members of the public like to get involved, and secondly, members of other active groups are interested and willing to collaborate with us.

The talks at the CBA Yorkshire Autumn showcase illustrated many different approaches. On the one hand a demonstrably historic site, Conisbrough Castle, offered opportunities for volunteer involvement in a managed excavation with a top down approach. On the other hand a community group in a small village

were brought together by an interest in the history associated with their church grave yard. SLA has adopted a different approach with a training site where there was no initial archaeological objective other than to provide a training opportunity for new members. However following on from this, new opportunities present themselves. Two of the new members have suggested a project in their village where antiquarian writings suggest a site which is variously described as a Roman Station through to a medieval castle. This will provide an archaeological focus and first steps have been made towards initial survey work with the agreement of the site owner.

As far as possible we want to adopt a bottom up approach to project management, in which we use the expertise within the group, including professional members and then look for support from external sources as and when required.

So where is this external support to come from? At one level we need to acknowledge the financial benefits of funding from the Heritage Lottery Fund (HLF) which enables professional archaeologists to give their time. But not all projects justify an early application to HLF, we were advised by one of these professionals, at an early point in the Birstall project, to work within our own resources until we had a broader set of objectives other than the training. Some of these professionals are generous and are prepared to offer advice and occasionally resources on the chance that paid work may eventually arise. SLA has had these offers in the past and has taken grateful advantage of this. It is difficult to find out where other funding opportunities might exist.

What about the academic sector? It was noticeable that the CBA Yorkshire Showcase did not feature much in the way of academic involvement. We were very fortunate to meet up with Chris Gaffney at Bradford and very grateful for what he was able to offer us. However it was a chance meeting and perhaps there might be a way forward to encourage the universities to adopt a more systematic approach to their outreach amongst volunteer groups. From the university perspective it would provide more opportunities for their students to gain experience and also, where groups can attract young people, a source of potential applicants for archaeology courses. At the moment the response varies from those who are actively offering support or inviting volunteers to share in university research projects to those who pay lip service to volunteers but demonstrate their reluctance to involve other than their own students in any meaningful fieldwork activity.

Another important source of support could be that of mutual support amongst volunteer groups. I have come across a number of reasons why groups tend to be insular, ranging from an overly parochial approach to a sense of lack of confidence when bringing other groups in who might 'show them up' and wanting to take over. These attitudes may be difficult to resolve. As far as SLA is concerned, the programme of talks has brought visitors in from other groups and a number have joined our group. We were pleased to welcome these new members to join us at Birstall and perhaps in the future we will be able to do more in order to jointly plan projects to take advantage of their expertise and experience.

Talking of expertise and experience, a subject that I'm personally interested in is that of training. When my interest first got started in archaeology, I looked for opportunities to increase my knowledge of archaeological techniques by attending courses. These opportunities just weren't there! I acquired a 'Total Station' but finding a source of advice and training that I could afford proved impossible. The only alternative was to teach myself with the limited information from You-Tube videos and other on-line resources which are no real substitute for face-to-face training and were not necessarily orientated towards archaeology. I'm pleased to say that some courses are now starting to appear, such as those organised by Jim Brightman as part of the Thornton-Le-Street HLF funded project and of course we have offered our Introductory Course to Archaeology through our website and had a local response.

How do we find out what is available? Is there a need is for some central clearing system? CBA Yorkshire has just launched a discussion group on Facebook and a lot of useful and interesting material is being posted. It may be I do not understand how to use Facebook properly, but it seems to me that more

functionality is required to search and categorise the posts in order to keep them in view. Might the new CBA Yorkshire website be able to address this and provide a better platform than Facebook?

What happens when projects are finished? At SLA, we are aware that once we have a preliminary report for Birstall, the accepted destinations for our report should be the local H.E.R and ADS. But how do other groups get to know about the work and how that might impact on what they are planning to do? Should we have a separate repository for community led projects, describing the community involvement, as well as the repositories concentrating mainly on the archaeological research?

The plenary discussion at the CBA Yorkshire Showcase touched on all these issues leaving the big question asked but unanswered and that is how do we encourage better communication and from that better support and cooperation between the diverse groups across a county as large as Yorkshire? CBA Yorkshire should be congratulated for their Showcase which brought together groups from different parts of the region and has encouraged debate. I would, however, welcome any initiative that further improves what has been started.

The Fridaythorpe Fimber Wetwang Archaeology Project – its First Frontier

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Keywords Archaeology, Community project, Magnetometer survey, Excavation

The Fridaythorpe Fimber Wetwang Archaeology Project (FFWAP) was established in 2017 to investigate artefacts collected by farmer Chris Whitfield and cropmarks in a field near Fridaythorpe, East Yorkshire. The magnetometer survey identified specific areas for an excavation carried out in September 2017. The interim report will be completed in 2018.

Introduction

Farmers know their fields better than anyone else, and many take great interest in the archaeological features and finds from their land, which is certainly the case with Chris Whitfield. Now almost 80, Chris has been collecting artefacts from his fields since ‘he was now’t but a lad.’ His collection of finds is impressive, and includes some samian, but mostly grey ware, with Crambeck and Huntcliff wares indicating activity from the early 2nd to the 4th centuries AD. This was confirmed by the finds of a few Roman coins, found mainly by metal detectorists and recorded under the Portable Antiquities Scheme, dating from AD 260 to AD 400. At the back door of the farm are two ‘ornaments’ – quern stones identified by John Cruse as of Iron Age and Roman date. The site was also known from the cropmarks identified by Catherine Stoertz (1997) which indicated the presence of a ladder settlement.

In order to confirm the cropmark evidence, and to identify targets for excavation, a magnetometer survey was carried out by James Lyall of Geophiz.biz. The survey (see below) identified 190 anomalies relating to archaeological features, an excellent return and thus our group was born.

Based on the results of the geophysical survey, three areas with different research aims were selected for excavation.

Trench AA – situated to establish the date of three linear features (believed to be two ditches and a trackway).

Trench AB – to investigate a circular anomaly some 6.35m in diameter.

Trench AC – located to intersect the line of two enigmatic parallel features visible in the magnetic data.

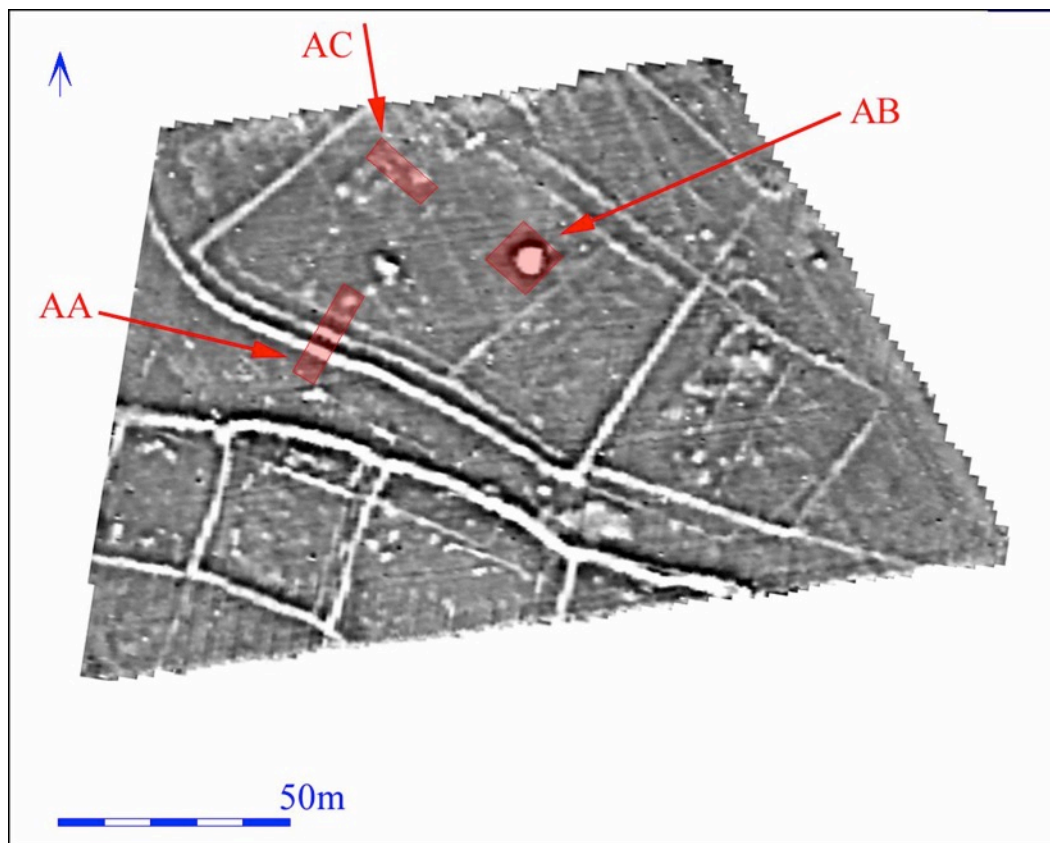


Figure 1 Site Plan.

That was actually the easy part – what came next was creating an organisation and obtaining the necessary resources to carry out the excavation. Firstly the name (always a difficult task). We became FFWAP – it is memorable and says what we do – Fridaythorpe Fimber Wetwang Archaeology Project.

Funding and Excavation

Next came the funding, which proved to be more problematic. Heritage Lottery Funding was applied for but unfortunately our bid was unsuccessful. Just when it was felt that all was lost the Roman Roads Research Association (RRRA) came to the rescue. In order to further develop the aims of the association, the RRRA were looking for a partner to mentor, particularly in relation to carrying out a community-based excavation. They assisted us in so many ways that they cannot all be mentioned here, suffice to say our administration and procedures are now all of a professional standard. Without them FFWAP would not have been created – thank you.

The excavation was fully supported by both the Scarborough Archaeological and Historical Society (SAHS) and the East Riding Archaeological Society (ERAS). Both organisations had members participating in the dig. The equipment used on the dig was lent to us by SAHS and ERAS arrived with their publicity stall and new resistivity meter on our open Family Day, much to the joy of the children who fully participated in all of the activities available to them on the day.

Approval for the excavation was obtained from the East Riding of Yorkshire Council (the landowner) and a written scheme of investigation (WSI) was submitted to and approved by the Humber Archaeology Partnership.

All that was needed now were the people to carry out the excavation. Under the directorship of James Lyall, the excavation was conducted from the 2nd to the 18th September, 2017. In the event 68 people participated in our excavation, 30 of whom had their first taste of archaeology on the site. Over 2,200 volunteer hours were worked during the two week project, and it was their enthusiasm which helped to make it such a successful project.

So, what did we find? Here are a few photos to whet your appetite until the Interim Report is published (hopefully early in 2018).

In trench AA (Fig. 2), the two ditches and a trackway became three ditches, all of which contained Roman pottery. Precise phasing of the ditches awaits the specialist report.



Figure 2 Trench AA.

The two photographs (Figs. 3 and 4) below are of Trench AB. Removal of the topsoil revealed a circular feature of 6.35m diameter and excavation resulted in the section as illustrated. The feature is a large pit, almost perfectly circular and over 1m deep. It was backfilled in the late Roman period, but its original purpose remains enigmatic. We are open to suggestions as to its function if you have seen anything similar.



Figure 3 Trench AB revealing the circular feature.



Figure 4 Trench AB showing the 1m deep large pit.

Trench AC proved to be the most complex. As the topsoil was removed several unexpected features were encountered. A segment of a grooved red sandstone quernstone found in association with large parts of a Huntcliff ware jar, post holes and the remnants of wall footings all hinted at occupation on the site.



Figure 5 Trench C.

Since work ended, the interim report is now underway and reports from specialists are eagerly awaited. The work of FFWAP has continued with further magnetometer survey which is indicating additional areas of archaeological interest. Consequently all that is needed now is the funding to match the enthusiasm of the group.

Selected Recent Work in Yorkshire by JB Archaeology Ltd

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Keywords Excavations, Watching briefs, Community Archaeology

2017 saw JB Archaeology Ltd involved in a wide range of developer funded and community projects across many parts of the various Yorkshires and beyond. As ever many of these projects were simple 'watching briefs' which tended to encounter somewhat modest archaeological remains, the results of which can be found in the relevant counties Historic Environment Record. Summaries of the results of some of the more significant projects are given below.

Manor House Barn, Thorpe

NGR SE 01339 61800

Although the date stone over the main cart doors of Manor House Barn is inscribed IBM 1697 (which refers to John Batty (I = J) and his wife Mary) the current building dates from the later 18th or early 19th century, the date-stone having been re-used from an earlier building on the site. The historic building survey recorded the remains of a large, rectangular, stone-built barn which had originally been built as a large hay barn with a small coach house-cum-stable at its northern end (Fig. 1). Above the coach-house there appears to have been some form of accommodation which was probably originally served by an internal staircase.

The barn has a pair of large double doors in its western elevation with a smaller doorway in the opposite, eastern, wall. This combination of openings may well have provided sufficient through flow of air for some small-scale threshing as well as hay storage.

At some point, probably in the latter 19th century, a series of alterations were undertaken on the barn. The main ones of these included a sub-division of the main hay barn to create of a series of new rooms at the northern end; the construction of an external staircase to the over coach-house accommodation and the refurbishing of this accommodation with larger windows and a fireplace for use as a meeting room. Local testimony records that this meeting room was used during the 19th century for services on Sunday afternoons, alternating between the Church of England and the Wesleyan Methodists (Townend 2016).



Figure 1 Manor Barn looking south-east, with meeting room on upper floor over stables. © J. Buglass.

Red House Ripon

NGR 30943 72311

A desk-based assessment (DBA) and watching brief was undertaken at *Red House*, Palace Road, Ripon. The results of the DBA show that the area around *Red House* appears to have been used as agricultural land, probably from at least the medieval period onwards. Archaeological and cartographic evidence show the area being developed from the later 19th century onwards with the enclosure of the open, common land along either side of Palace Road. With this enclosure of the common land, piecemeal building developed along Palace Road with a number of dwellings being erected, mainly towards the southern end of Palace Road.

Within the development area the first recorded building is *Hope House* at the southern end of the site which was built between 1832 and 1846. This was re-named *Red House* by 1890 but had been demolished by 1907 and replaced with the current *Red House* located towards the middle of the site.

The watching brief recorded a range of 19th century archaeological remains. These remains consisted of part of the northern wall of the earlier *Hope House* along with various minor elements of its associated garden. These elements included the corner of the walled garden to the rear of the house; the line of a further three sections of garden walls; sections of cobble paths which would have wound round the garden and a flight of stone steps linking two terraces. In addition to these the outline of the foundations of the greenhouse to the east of *Hope House* along with what appeared to be an associated ‘boiler room’ were also recorded. Probably the most interesting garden feature was the remains of the base of a brick-built structure – probably the base for statue, sundial, armillary globe or similar (Fig. 2).



Figure 2 Red House Ripon, brick base of garden feature looking south-east. Scales 1 and 0.5m. © J. Buglass.

De Grey Walk, Fountains Abbey

NGR SE 2788 6836

As part of Scheduled Monument Consent an archaeological watching brief was undertaken on behalf of the National Trust on drainage works and wall repairs along the de Grey Walk in the area of Robin Hood's Well at Fountains Abbey, Ripon, North Yorkshire.

The results of the watching brief showed that the whole of the hillside around Robin Hood's Well had seen significant and widespread dumping and/or landscaping in the past. The earliest activity appeared to be the dumping of significant amounts of quarry waste across the slope and directly on top of the underlying natural geology. The lack of dateable artefacts means that this cannot be pinned down to any particular time but it would seem possible that this happened during the earlier years of the main construction of the abbey.

This layer of quarry waste then developed a covering of topsoil through which a lead water pipe had been laid. This pipe was then severed during the construction of the de Grey Walk in 1848. The pipe has two possible origins, one is that it taps into a spring discovered during the quarrying carried out upslope of where it was found and was used to carry fresh water to the Abbey's Infirmary. Alternatively it may relate to a 17th century supply from nearby Markenfield Hall.

Although the stratigraphic sequence behind the wall on de Grey Walk clearly showed a buried ground surface the excavation of the drain runs on the southern bank of the River Skell failed to identify the same ground surface. Instead the excavations encountered a very mixed sequence of deposits which included not only quarry waste but large amounts of re-deposited soil and drift geology. Although there is no obvious source for this mixed material it would seem quite likely that it

is a combination of the various clearances of the abbey ruins (both Georgian and Victorian) and the creation of a Georgian walk and its subsequent removal to create the de Grey Walk. All of these major landscaping works will have resulted in the moving of significant amounts of the earlier quarry waste which will have become mixed with natural deposits. This would explain the very jumbled nature of the material on the slope between the de Grey walk and the river. The presence of small amounts of ceramic building material and architectural fragments derived from the abbey within the upper layers of quarry waste would seem to suggest that this material was being deposited at the same time as the abbey ruins were being cleared of debris and the material being re-used for landscaping.

The northern end of the drain runs exposed small sections of the 1770s riverside wall created by William Aislabie in which could be seen small amounts of re-used architectural stone from the abbey ruins. In addition to these re-used fragments six pieces of architectural stonework were recovered during the re-building of the wall along de Grey Walk. The various pieces of architectural stone were cleaned, photographed and placed in the abbey's stone store.

Yorkshire Water Woodlands

NGR Various

In order to create a baseline of information on the known and potential sites of archaeological/historic significance within the woodland holdings around Yorkshire Waters' reservoirs, JB Archaeology Ltd was commissioned to survey and report on each of the individual holdings. The survey reviewed the readily available documentation relating to each holding and undertook a basic walk-over survey.

The various woodlands were located across North Yorkshire (19), South Yorkshire (13), West Yorkshire (7) and a single site in the East Riding of Yorkshire. The sites covered some 30 parishes in 11 districts or unitary authorities. The historic woodland assessments identified a total of 406 archaeological/historic sites within the 40 woodland holdings which covered c.1300 hectares. The majority of the sites identified could be regarded as being of local significance, with 10 sites considered to potentially be of regional and no sites of national significance. Unsurprisingly the majority of sites reflected the post-medieval development of a mainly agricultural landscape – often because earlier sites are buried or obscured by later features.

Overall the numbers of archaeological/historic sites identified by county were: North Yorkshire 274; South Yorkshire 78; West Yorkshire 50 and the East Riding 4. Unsurprisingly the majority of sites identified were related to the development of an agricultural landscape in the form of small farmsteads and associated barns, all often linked by historic track ways. Although recorded on historic mapping from the 18/19th century onwards, some of these farmsteads may well have origins in the medieval period.

A second group of sites identified could be broadly linked to the use of water power and water supply. These included several early (18th century) mills, the majority of which have been submerged or demolished for the creation of the reservoirs (Fig. 3). The other water-related features included the infrastructure of reservoirs themselves, some of which date from the early/mid 19th century and are now becoming of historic interest.

The third group of sites related to often widespread quarrying which appears to fall into two categories: small-scale extraction for local building and larger workings for the construction of the dam and associated features.

The remaining sites covered a range of activities and included several Second World War defensive features (e.g. the catenary barriers at Langsett, South Yorkshire), two 19th century rifle ranges, a vicarage (at Fewston), a colliery (Grimwith) and a possible drovers inn (Thruscross).

The results show that just over half (52%) of the historic sites identified during the project had previously been recorded on archaeological databases. The identification of the remaining sites was almost evenly split between being recognised from historic OS mapping (21%) and during the walk-over survey (27%). In terms of the density of sites overall there was one site per 3.2 hectares but this varies markedly between counties with the lowest density in the East Riding at 1 per 15ha and the highest in North Yorkshire at 1 per 2.7ha.



Figure 3 Remains of Low Mill at Thruscross Reservoir, looking north-east. © J. Buglass.

St Agnes Lodge, Ripon

NGR SE 31526 71025

As a result of an unexpected discovery during ground works for a conservatory a short programme of archaeological recording was undertaken on part of the substantial foundations of an earlier building. The remains were discovered to the rear of St Agnes Lodge in Ripon and although the ground works were part of a planning application no archaeological condition had been placed on this element of the works.

The archaeological investigation recorded a part of the remains of a substantial earlier building and appear to be a section of its eastern wall with a return at its southern end to the west along with a base of a fireplace (Fig. 4). The remains had been built from roughly dressed local stone and in places survived to at least two courses. The lowermost course that was visible had been bonded together using a very stiff clay matrix whilst the surviving second course had been bonded with lime mortar.



Figure 4 Remains of wall and fireplace at St Agnes Loge, looking north-west. Scale 1m. © J. Buglass

The remains of the fireplace were represented by a rectangular recess set in to the inner face of the eastern wall. Within this recess there were the remains of a stone base with a few bricks from its original hearth surviving under the base of the 17th century fireplace and chimney which had been built over it. From a study of St Agnes Lodge carried out by Jen Deadman the current building on the site is dated to the 17th century (house owner *pers. comm.*) and it appears to have been built from a certain amount of re-used material from an earlier building. The portion of the foundations uncovered during building works would appear to be the remains of that earlier building.

Brooklyn House, Norton on Derwent

NGR SE 7930 7086

The watching brief which followed on from the open area excavation mentioned in last years *Forum* at the new school at Norton came to an end in late 2017 and continued to produce archaeological surprises. In addition to the extensive Roman remains previously covered the excavation of a service trench revealed an unusually complete Roman cremation burial known as a *bustum* (Fig. 5). The on site excavation of the pot produced a small enamelled brooch and two copper alloy belt plates – one of which has been provisionally dated as Severan (3rd century) to early 4th century AD and appears to have a close parallel with one found at Catterick in 1972. The pot itself is currently considered to be a Dales ware jar of 4th century date and having undergone x-ray at Leeds Royal Armouries it was micro-excavated in the YAT conservation laboratory. The micro-excavation recovered a further 14 copper alloy and 11 iron finds which are now under going identification and conservation.



Figure 5 Part excavated *bustum* at Norton School, looking south-west. Scale 2cm on copper alloy brooch. © J. Buglass.

Nidderdale Big Dig

NGR SE 09747 73287

As part of a programme of community archaeology events, a week-long excavation was organised by Nidderdale AONB on land at Studfold Farm in Upper Nidderdale. The excavations were undertaken by a wide range of volunteers from both the local community and from groups based outside North Yorkshire (Fig. 6). The excavation was carried out between the 3rd and 7th July 2017. During the course of the excavation pupils from four local schools took an active part in the dig.

The excavation took the form of five trenches which totalled an area of c.114m². The trenches were located in order to investigate potential archaeological features which had been identified during earlier surveys of the area. These features included a possible Iron Age hut circle, a hollow-way and a spoil mound from mineral prospecting.

The results of the excavation were generally very modest with the three trenches aimed at investigating the possible Iron Age hut revealing only natural features. However, recovered from the topsoil of two of these trenches was a very small amount of iron slag and late Saxon pottery. The presence of this significant pottery in the upper deposits points to some form of late Saxon activity, possibly some form of settlement, located up-hill of the area investigated.



Figure 6 Volunteers working on trenches, looking north. © J. Buglass.

Harlsey Castle, North Yorkshire

NGR SE 41488 98066

A watching brief was carried out as part of an extensive programme of consolidation works on the remains of Harlsey Castle. In addition to monitoring the ground-works a photographic record was made of the repair and consolidation works as they progressed. This part of the process recorded ten areas of interest which contained architectural features of earlier phases of the castle. In addition eight fragments of architectural stone-work were recorded. The architectural stones were mainly elements of doorways but included at least one fragment of a stone chimney pot. Probably the most significant discovery was a small area of apparently *in situ* medieval floor tiles adjacent to a door sill on what is now the roof of the castle – the upper storeys having been demolished on the past (Fig. 7).



Figure 7 Harlsey Castle, *in situ* late medieval/early post medieval tiles on upper floor, looking west. Scale 1m. © J. Buglass.

High Peak Cottage, Ravenscar, North Yorkshire

NGR NZ 97867 01600

A watching brief was undertaken on behalf of the National Trust on the substantial alterations to High Peak Cottage at Ravenscar. The cottage is a stone-built 19th century farmhouse that had undergone many, generally unsympathetic, alterations in the past before becoming part of the Trust's estate. During the alterations much of the modern plaster was removed from the internal walls which clearly showed that the cottage had originally been built as a single storey structure. Although it is uncertain when the upper floor was added it could be seen that at the same time a large brick chimney-breast was added at the northern end. This had been built from hand made bricks – possibly from the brickworks that were located in the remains of the old alum quarry to the north.

With the lifting of the existing floor a serpentine drain like feature was revealed (Fig. 8). This was initially thought to be a simple drain leading to a soak-away. However, closer examination of the feature showed that it would have flowed into the hillside and it ended in a small stone lined sump inside the building adjacent to a window. If this were a drain it would be expected to have flowed down slope and ended outside the building. The current interpretation of the feature is that is a water supply, possibly to a small hand pump, and its serpentine nature is so that it avoided the fireplace.



Figure 8 High Peak Cottage, serpentine stone lined channel, looking north. Scale 1m and 0.5m. © J. Buglass.

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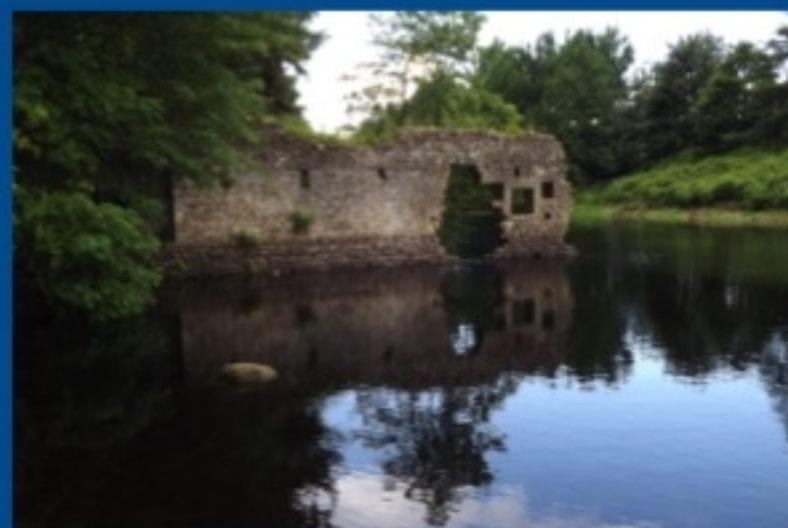
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