

LEEDS FLOOD ALLEVIATION SCHEME 2 STEP 2: APPERLEY BRIDGE, LEEDS, WEST YORKSHIRE

Archive Report for:
Archaeological Monitoring (Watching Brief)

Prepared by

NETWORK ARCHAEOLOGY

For

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Non-Technical Summary

An archaeological watching brief was conducted during groundworks associated with the Leeds Flood Alleviation Scheme at Apperley, Leeds. The project was commissioned by BAM Mott MacDonald Joint Venture (BMMJV). This report provides the results of the archaeological fieldwork undertaken and fulfils the requirements of Planning Application: 22/02545/LBC.

Site visits were conducted in October 2022 and February/March 2023. Work included the excavation of two test pits in the abutments at either end of the bridge and the reduction of the bridge deck infill. The existing bridge incorporates rebuilding dated to the 17th century, as well as widening on the downstream side which occurred at an unknown date, presumably before or concurrent with the addition of new parapets in the 19th century (Mott Macdonald 2022). In the absence of finds, the above information has been used to assign tentative dates to the uncovered archaeology.

The test pits exposed make-up deposits probably related to the widening of the bridge in the 19th century.

During the reduction of the deck infill, the northern and southern parapets, bridge arches, and a possible fragment of 17th century spandrel wall were exposed. There were no other archaeological features or finds found.

Introduction

1.1 Purpose of this Report

This archaeological monitoring report is designed to inform the relevant parties of the extent of archaeological remains recorded during the Archaeological Monitoring (Watching Brief) at Apperley Bridge, Leeds.

1.2 Project Background

1.2.1 The Development

The proposed development was that of the Grade II listed bridge at Apperley Lane, Leeds (NGR: SE 19435 37978), undertaken as part of the Leeds Flood Alleviation Scheme FAS 2 Step 2. The work was carried out by BMMJV Ltd on behalf of Leeds City Council (Consent Application 22/02545/LBC) This work was carried out following the generic Written Scheme of Investigation produced by BMMJV for the Leeds Flood Alleviation Scheme (Mott Macdonald 2022) The WSI included the proposal for an Archaeological Watching Brief to be carried out during the removal of fill below the modern deck surface. The construction works allowed the bridge to both form part of the flood defences forming the Leeds Flood Alleviation Scheme 2 (LFAS2) and provided flood resilience to the bridge structure itself. In addition to this work, BMMJV also requested NAL (13/09/2022) to extend the scope of the project to include archaeological monitoring for two trial holes, at each abutment of the bridge.

1.2.2 Location and description, and natural environment

The bridge is located on the outskirts of the village of Apperley Bridge at Apperley Lane, BD10 0PU Bradford (Figure 1) and straddles the River Aire. Upstream (north-west) of the bridge, the river banks are open and consist in the main of pasture and playing fields. Immediately downstream of the bridge, the banks are more built-up, with urban development on both sites.

The bridge was built in the later 16th or 17th century and is a Grade II listed building (List Entry No 1183826). The existing structure mainly represents a 17th century rebuild, together with 19th century parapets and a widened carriage on the downstream side which probably also dates to the 19th century.

Today, the bridge is largely circumvented by the modern A658 Harrogate Road bridge, which is situated circa 80m downstream.

1.2.3 Archaeological and historical background.

The production of woollen cloth was established as a major industry in England by the 14th century, with production for export originally focused in the south-western part of the country. However, the introduction of the water-powered fulling mill in the 13th century favoured rural production locations with access to fast-flowing rivers and streams, and in this context, the West Riding of Yorkshire had by the mid-18th century risen to prominence as a major producer of woollen cloth (Buchanan 1974). In his 1724 survey, for example, Daniel Defoe was able to speak of the West Riding woollen trade in the following terms *‘every way to the right hand and the left, the country appears busy [...] a noble scene of industry and application is spread before you here’* (Defoe 1971 p. 500)

As a result of the increasing regional prosperity and the need to efficiently move raw materials and finished goods, key aspects of the transport infrastructure were improved over time. The original Apperley Bridge was built in the 16th century on a main route from Shipley, joining the Bradford to Leeds Road at Bramley. The bridge and its approach roads (Apperley Lane and Apperley Road) thus formed an important crossing over the River Aire. This importance is reflected in the fact that the bridge was reconstructed in the 17th century and was then subsequently widened to a two carriageway crossing, most likely in the early part of the 19th century.

It's possible that the upgrading of Apperley Bridge was associated the creation of the Leeds and Liverpool Canal (authorised by Act of Parliament in 1770); the Millman Swing Bridge, constructed to cross the canal in circa 1810 (Historic England Monument Number 1150926), lies some 500m to the west of Apperley Bridge on Apperley Road. The creation of the canal and the subsequent arrival of the Midland Railway (with a station at Apperley Bridge) in 1849 appear to have stimulated the growth and development of the modern village. In this respect, much of the surviving historic infrastructure of the village, (for example the cottages at Dobson's Locks WYHER ref. MWY8595) date to the 19th century.

Harrogate Road Bridge was constructed downstream of Apperley Lane in the early 1930s. As a result, Apperley bridge has displaced it as the main crossing point over the River Aire in this area.

Results

1.3 Overview

The monitoring works were undertaken at different times, according to the Leeds Flood Alleviation Scheme 2 works schedule.

The monitored groundworks consisted of the following:

1. Excavation of test pits at either end of bridge: 10th to 12th October 2022.
2. Reduction of the downstream (south-eastern) section of deck fill: 1st to 9th February 2023.
3. Reduction of the central section of deck fill: 3rd to 9th March 2023.
4. Reduction of the upstream (north-western) section deck fill: 24th to 30th March 2023.

All works were undertaken in accordance with current industry best practice and the detailed methods set out in the WSI (Mott Macdonald 2022)

1.4 Results

1.4.1 Bridge abutment test pits.

Test pit 1

Test Pit 1 was located on the southern bank of the River Aire, 2m from the junction with Apperley Road and opposite the George and Dragon public house (Figure 2). The test pit measured 2.4m by 1.5m and was excavated to a depth of approximately 2.00m. A 1.6m deep deposit of silty rubble, 10002, was identified in the base of the test pit. This was covered by a 0.3m deep hardcore bedding layer, 10001, which supported the existing tarmac road surface, 10000.

No archaeological features or finds were encountered within the test pit.

Test pit 2

Test Pit 2 was located adjacent to Apperley Lane, on the northern bank of the River Aire (Figure 2). The test pit measured 3.1m by 1.75m and was excavated to a depth of approximately 2.00m. A 1.75m deep mixed deposit of silty rubble 10003 was identified in the base of the test pit. This was covered by a 0.3m deep hardcore bedding layer, 10001, which supported the existing

tarmac road surface, 10000. No archaeological features or finds were encountered within the test pit.

1.4.2 Deck fill excavation

The reduction of the bridge deck infill was accomplished in three discrete longitudinal strips along the length of the bridge deck (Figure 2). For ease of location, the strips are referred to here as the **upstream** section (located along the north-eastern side of the bridge,) the **central** section (located centrally within the bridge deck) and the **downstream** section (located along the south-eastern edge of the bridge).

Upstream section.

The upstream section of the deck fill excavation measured 35.3m by 2.1m and was excavated to a depth of 50.1 mOD.

Excavation exposed a 0.15m to 0.75m deep deposit of bridge infill material, 100007. This deposit butted against the existing bridge parapet, 100009, and consequently is likely to be contemporary with, or to post-date, the 19th century rebuilding of the bridge. Deposit 100007 was sealed by a sandy deck fill 100005 which varied from 0.10m to 0.50m in depth.

Deposit 10005 was sealed by a sequence of modern deposits relating to the existing bridge deck, the earliest of these being a 0.05m deep aggregated concrete layer, 100002. Layer 100002 was sealed by a 0.8m deep gravel bedding layer, 100001. This acted as the bedding layer for the existing 0.10m thick tarmac road surface, 100000.

Central section.

The central section of the deck fill excavation measured 35.7m by 1.9m and was excavated to a depth of 51.01 mOD (Figure 2).

Excavations revealed the upper surface of the stonework forming the bridge arches, 100004. Bonded to stonework 100004 was a fragment of what appeared to be a spandrel wall, 100008. The spandrel of a bridge is the part that is built up over the arch to provide a reasonable grade for the roadbed. The spandrel walls are located above the arch.

Unless the arch is extremely flat, something must be done to make it practical to drive over. In some cases, spandrels are solid masonry, but they are usually hollow walls filled with dirt or

rock. It is likely that this feature represented the original eastern extent of the 17th century bridge structure, prior to its widening on the downstream (eastern) side.

Wall 100008 was sealed by a 0.15m to 0.75m deep layer of infill material, 100007. This was sealed by a similar 0.10 to 0.50m deep deck infill deposit, 100005.

Deposit 10005 was sealed by a sequence of modern deposits relating to the existing bridge deck, the earliest of these being a 0.05m deep aggregated concrete layer, 100002. Layer 100002 was sealed by a 0.8m deep gravel bedding layer, 100001. This acted as the bedding layer for the existing 0.10m thick tarmac road surface, 100000.

Downstream section.

The downstream section of the deck fill excavation measured 38.3m by 3.2m and was excavated to a depth of 50.4 mOD.

Excavations revealed the upper surface of the stonework forming the bridge arches, 100004. Bonded to stonework 100004 was a 2m long continuation of the probable 17th century spandrel wall, 100008, which was also identified in the central section of the bridge.

Extending along the existing eastern edge of the bridge was a stonework structure 100006 formed of sandstone blocks measuring 0.40m by 0.33m by 0.20m at maximum dimensions. This feature appeared to be a compact infill deposit associated with the widening of the bridge. It acted as a foundation for the existing 19th century parapet, 100003.

Structures 100008 and 100006 were sealed by a 0.15m to 0.75m deep layer of infill material, 100007. This was sealed by a similar 0.10 to 0.50m deep deck infill deposit, 100005.

Deposit 10005 was sealed by a sequence of modern deposits relating to the existing bridge deck, the earliest of these being a 0.05m deep aggregated concrete layer, 100002. Layer 100002 was sealed by a 0.8m deep gravel bedding layer, 100001. This acted as the bedding layer for the existing 0.10m thick tarmac road surface, 100000.

Conclusions

The stratigraphy of Test Pits 1 and 2, located in the bridge abutments, was very similar. It is possible that these deposits are associated with the bridge widening in the 19th century.

The excavation and reduction of the bridge deck infills yielded two significant results. Firstly, the upper surfaces of the existing arches were revealed. Secondly an undated fragment of wall, 100008 was identified which appeared to be a fragment of 17th centrally located eastern spandrel wall of an earlier bridge. It is likely that this feature represented the former south-eastern face (downstream) of the bridge, prior to its widening.

This Archaeological Monitoring Report confirms that the full program of archaeological monitoring (watching brief) works at Armley Mills, Leeds, West Yorkshire was completed as stipulated in the WSI.

Photographs



Plate 1: Test pit 1, facing east.



Plate 2: Deck fill excavation, North section, overview 100009, facing north.

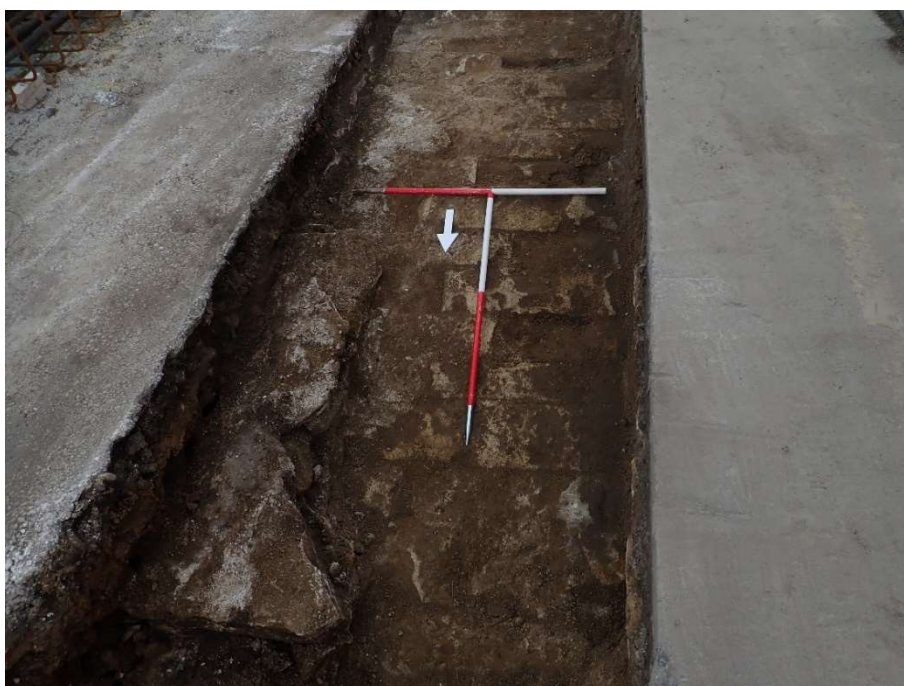


Plate 3: Deck fill excavation, Central section, Overview of bridge 17th C arches 100004 & possible spandrel wall 100008, facing south.



Plate 4: Deck fill excavation, South section, overview of 100004 & 100006, facing east.



Plate 5: Deck fill excavation, South section, overview 100006, facing south.



Plate 6: Deck fill excavation, general shot, work in progress.

Archive

The archaeological works produced the following document archive, under the site code of APB16. The recipient museum will be Leeds Museums & Galleries, Leeds Discovery Centre Carlisle Road, Leeds LS10 1LB. The project has been treated as an sterile archive, therefore no accession number was allocated.

Table 1: Archive Quantification

Archive component	Count
Context registers	2
Context sheets	13
Photographic registers	4
Digital colour photographs	312

Bibliography

1.5 Secondary sources

Reference	Year	Title	Published
AAF	2007	Archaeological Archives: A Guide to best practice in creation, compilation, transfer and curation	
BMMJV	2022	Written Scheme of Investigation: Archaeological Watching Brief	
Buchanan, R.A	1974	Industrial Archaeology in Britain	
CifA	2007	Archaeological Archives: A Guide to best practice in creation, compilation, transfer and curation	BCA
CifA	2014a	Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology	
CifA	2014b	Standards and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials	
CifA	2014c	Standard and Guidance for an archaeological evaluation	
CifA	2014d	Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives	
Defoe, D.	1971	A Tour through the Whole Island of Great Britain	Penguin
Ferguson L.M. & Murray D.M.	1997	Archaeological Documentary Archives: Preparation, Curation and Storage, Paper 1,	Institute of Field Archaeologists' Manchester
Historic England	1991	Exploring Our Past	London
Historic England	1997	English Heritage Archaeology Division Research Agenda (Unpublished draft)	London
Historic England	2009	Management of Research Projects in the Historic Environment and MoRPHE Project Planning Note 3: Excavation	London
Historic England	2011	Environmental Archaeology: A Guide to the Theory and Practice of Methods, from sampling and recovery to post excavation (second edition) (Centre for Archaeology Guidelines)	London
Mott Macdonald	2022	The Bridge, Apperley Lane: Written Scheme of Investigation for Historic Building Recording and Archaeological Monitoring	Leeds
Museums & Galleries Commission	1992	Standards in the Museum Care of Archaeological Collections	London
Network Archaeology	2006	Health, Safety and Welfare Policy	
Society of Museum Archaeologists	1995	Towards an accessible archaeological archive - the transfer of archaeological archives to museums: guidelines for use in England, Northern Ireland, Scotland and Wales	Society for Museum Archaeologists, London
UKIC	2001	Excavated Artefacts and Conservation	United Kingdom Institute for Conservation, Conservation Guidelines No. 1, revised

Reference	Year	Title	Published
Walker, K.	1990	Guidelines for the preparation of excavation archives for long-term storage.	United Kingdom Institute for Conservation, Archaeology Section (London)

1.6 Website sources

Reference	Title	Link
British Geological Survey, undated	Geology of Britain viewer	http://mapapps.bgs.ac.uk/geologyofbritain/home.html [Accessed 29/09/2017]
Cranfield University	Soilscapes Viewer	https://www.landis.org.uk/soilscapes/ [Accessed 29/09/2017]
Heritage Gateway	Heritage Gateway Online Viewer	http://www.heritagegateway.org.uk/Gateway/Results.aspx [Accessed 09/07/2021]

Appendix 1

Context listing

Context No.	Type	Fill of / filled by	Description
10000	Layer	-	Tarmac surface in Test Pits 1 and 2
10001	Layer	-	Tarmac bedding layer in Test Pits 1 and 2
10002	Layer	-	Make up deposit in Test Pit 1
10003	Layer	-	Make up deposit in Test Pit 2
100000	Layer	-	Tarmac in bridge
100001	Layer	-	Tarmac bedding in bridge
100002	Layer	-	Concrete layer
100003	Masonry	-	Bridge parapet
100004	Masonry	-	Top of 17 th century bridge arches
100005	Fill	-	Sandy/stony deck fill
100006	Masonry	-	Stone coursing – extended 19 th century south-eastern (downstream) parapet foundation
100007	Fill	-	Silty/clay deck fill
100008	Masonry	-	Wall - possible original 17 th century spandrel wall
100009	Masonry	-	Stone coursing – 19 th century north-western (upstream) parapet foundation

Appendix 2

Oasis Submission

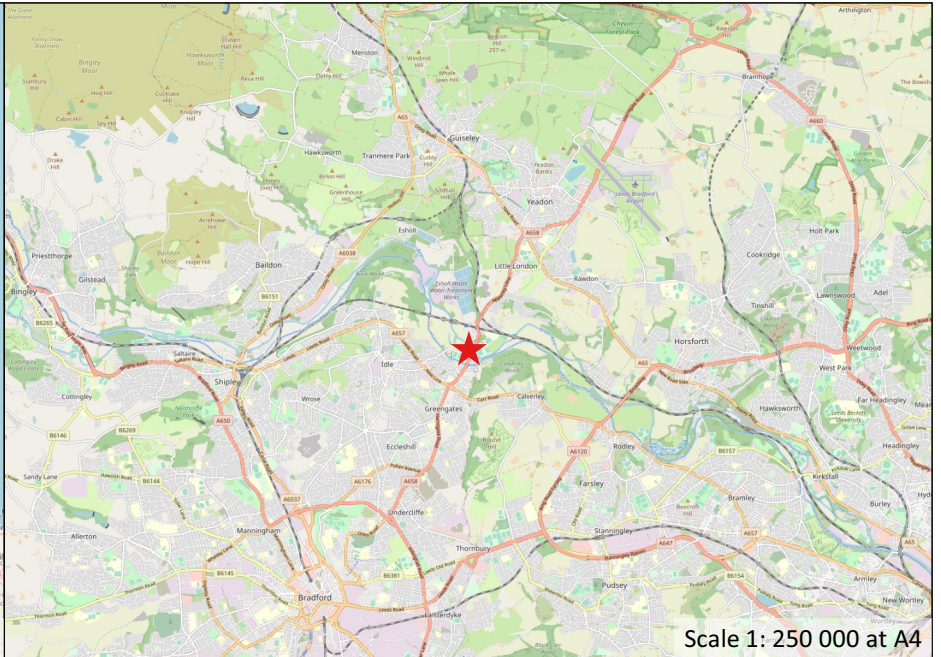
Summary for networka2-514538

OASIS ID (UID)	networka2-514538
Project Name	Watching Brief at Leeds Flood Alleviation Scheme 2 Step 2: Apperley Bridge, Leeds, West Yorkshire
Sitename	Leeds Flood Alleviation Scheme 2 Step 2: Apperley Bridge, Leeds, West Yorkshire
Activity type	Watching Brief
Project Identifier(s)	Leeds Flood Alleviation Scheme 2 Step 2: Apperley Bridge, Leeds, West Yorkshire
Planning Id	22/02545/LBC
Reason For Investigation	Planning requirement
Organisation Responsible for work	Network Archaeology Ltd
Project Dates	10-Oct-2022 - 30-Apr-2023
Location	Leeds Flood Alleviation Scheme 2 Step 2: Apperley Bridge, Leeds, West Yorkshire NGR : SE 19435 37978 LL : 53.83769460275978, -1.706145559858211 12 Fig : 419435,437978
Administrative Areas	Country : England County : West Yorkshire District : Bradford Parish : Bradford, unparished area
Project Methodology	An archaeological watching brief was conducted during groundworks associated with the Leeds Flood Alleviation Scheme at Apperley, Leeds. The project was commissioned by BAM Mott MacDonald Joint Venture (BMMJV). This report provides the results of the archaeological fieldwork undertaken and fulfills the requirements of Planning Application: 22/02545/LBC. Site visits were conducted in October 2022 and February/March 2023. Work included the excavation of two test pits in the abutments and the reduction of the bridge deck infill. The existing bridge "structure incorporates rebuilding dated to the later 16th or 17th century, as well as widening on the downstream side (to allow for two-way traffic), which occurred at an unknown date . Due to the fact that both the upstream and downstream parapets match, this work presumably predated or was concurrent with the addition of new parapets in the 19th century (Mott Macdonald 2022). In the absence of finds, the above information has been used to assign tentative dates to the uncovered archaeology. The test pits exposed make-up deposits probably related to the latest bridge modifications, to allow a dual carriageway, in the 19th century. During the reduction of the deck infill, the northern and southern parapets, bridge arches, and a possible earlier foundation for the parapet from its 17c fabric were exposed. There were no other archaeological features or finds found.

Project Results	<p>The test pits 1 and 2, located in the bridge abutments exposed a very similar make up stratigraphy. These deposits are possibly related to the 19c bridge enlargement for dual carriageway.</p> <p>The excavation of the bridge deck fills was done in three different phases, related to three sections north, central and south.</p> <p>The north section exposed 100009 – the northern current parapet. Sections central and south exposed undated elements, possibly ascribed to the 19c bridge structure: 100006, interpreted as part of the southern current bridge parapet and 100004, interpreted as the 17th C top bridge arches. An undated support wall, 100008, was also exposed – interpreted as a possible original 17th C parapet.</p> <p>This Archaeological Monitoring Report confirms that the full programme of archaeological monitoring (watching brief) works at Armley Mills, Leeds, West Yorkshire were completed as stipulated in the WSI.</p>
Keywords	
Funder	
HER	West Yorkshire HER - unRev - STANDARD
Person Responsible for work	Ruben, Lopez Catalan
HER Identifiers	
Archives	

Appendix 3

Figures



- ★ Site location
- Site outline

(Contains Ordnance Survey data @ crown copyright 2010)

Ver	Date	Description	Drn	TQ	TQ	App
1.0	02/05/23	First Issue	HT	TQ	TQ	

Apperley Bridge, Bradford, Leeds Flood Alleviation Scheme, FAS 2 Step 2

Figure 1 Location of proposed development site



- Proposed development area
- Wall fragment 100008
- Test pits
- Deck fill excavation: downstream section
- Deck fill excavation: central section
- Deck fill excavation: upstream section



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Ver	Date	Description	Drn	Chk	App
1.1	27/04/23	Second Draft	HT	RL	TQ
1.0	04/04/23	First Draft	BD	RL	TQ



Apperley Bridge, Bradford, Leeds Flood Alleviation Scheme, FAS 2 Step 2

Figure 2: Monitored groundworks

Scale 1: 300

FILE NAME: \\APB\16\Workspaces\Figure2