

# Report on Archaeological Monitoring at 'Jarrold's Bridge, Norwich, Norfolk'

NHER ENF126811

Prepared for: Bidwells Trumpington Road Cambridge CB2 9LD

on behalf of Jarrold & Sons Limited

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Licence No. 447333 Fig. 1 is based upon the Ordnance Survey 1:50000 colour raster map with the permission of the Controller of H.M. Stationery Office © Crown Copyright 'Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings' Chris Birks, 4 Well Green Row, Well Green, Frettenham, Norwich, Norfolk, NR12 7GL (28.02.2011). **Reference copy: no further** copies to be made.

# Summary

Archaeological monitoring was carried out 'Jarrold's Bridge, Norwich, Norfolk' (NHER ENF126811) in June 2011 during construction of a new footbridge across the River Wensum. No archaeological remains were encountered.

# 1.0 Introduction

- 1.1 Archaeological monitoring resulting from development proposals at 'Jarrold's Bridge, Norwich, Norfolk' (Grid refs. TG 2356 0930; was requested by Norfolk Landscape Archaeology (reference Ken Hamilton, 09 March, 2007). The scope of works comes under Updated Project Design and Method Statement (CB186, Birks 2009<sup>1</sup>), prepared following discussions with Ken Hamilton, Senior Archaeologist (Planning) at the Norfolk County Council Historic Environment Service, formerly Norfolk Landscape Archaeology (email Ken Hamilton/31 January 2011).
- 1.2 This report summarises the results of the archaeological monitoring and a *draft* copy was sent to the Norfolk County Council Historic Environment Service for consideration. Approval was received on 05 September 2011 prior to production of this *final* report.
- 1.3 NHER ENF126811 and OASIS ID; chrisbir1-108549 apply.

# 2.0 Project Background

- 2.1 A proposal for the construction of a pedestrian footbridge, a part of the Jarrold's site to the east of Whitefriars Street and south of Barrack Street, Norwich (*Figs. 1 and 2*) has been made by Bidwells on behalf of Jarrold & Sons Ltd. The proposal was granted by Norwich City Council subject to a condition for a Programme of Archaeological work. An Archaeological Watching Brief (constant attendance) was required to determine the presence/absence, date, extent, state of preservation and significance of any archaeological layers, subsoil or archaeological features
- 2.2 This archaeological watching brief was undertaken in accordance with a Brief issued by Norfolk Landscape Archaeology originally issued for archaeological monitoring during construction of office buildings D1/D2 (reference Ken Hamilton 09 March 2007) and a general Method Statement for Watching Briefs by Chris Birks (Birks 2004). Full details of research aims and standards are provided in the Method Statement.
- 2.3 Details of the relevant planning policy background can be seen in the original Norfolk County Council Historic Environment Service Brief (bullet 1, page 2).

# 3.0 Archaeological & Historical Background

- 3.1 There are a great number of entries in the Norfolk Historic and Environment Record (NHER) for Norwich and the surrounding area. Only those within the immediate vicinity of the site are included in this report and full details of these and other entries can be obtained from the NHER office based at Gressenhall, near Dereham, by prior arrangement.
- 3.2 Excavations in 1981 at St Martin-at-Palace-Plain (NHER 450), to the south of the River Wensum and immediately northwest of the present site, revealed a large urban waterfront site that included archaeological remains dating from the Middle Saxon (651-850 AD) to Post-medieval periods. Although no archaeological

features of the Middle Saxon period were discovered on the site, there were finds recovered of Ipswich-ware pottery, a Sceatta (Saxon coin) and an unfinished equal-armed brooch. Timber buildings of the Saxo-Norman period (11<sup>th</sup> century and early 12<sup>th</sup> century) were found with well preserved wickerwork fences interpreted to have helped form the waterfront. A large 12<sup>th</sup> century stone structure that had been built along the street frontage survived to a height of over two metres, the exact role of this building has not been determined but it has been proposed that its original function was a house/warehouse used for a store for the cathedral priory with accommodation for a cathedral official (Ayers 1987).

- 3.3 In March 2000 the Norfolk Archaeological Unit carried out an archaeological evaluation by trial trenching at 71-75 Barrack street (NHER 26537). Amongst the pits excavated that were thought to be of 13/14<sup>th</sup> century date one in particular produced an abundance of plant and animal remains that provided evidence of crop-processing and hornworking. It was also established that in the same period the ground level had been built up with the intention of raising it above the marshy land that was characteristic of the area. More activity attributed to the 15<sup>th</sup> century was evidenced by ditches and gullies that may have been associated with horticultural activities of the Monastery. The land had also been significantly raised further during the Post-medieval and modern periods.
- 3.4 Pockthorpe brewery complex is seen on various maps (e.g. Millard & Manning, 1830, Ordnance Survey 1<sup>st</sup> Edition, 1880) covering a large area on both sides of Pockthorpe Street present day Barrack Street. Water Lane (also known as River Lane) lay to the immediate west of the City Wall though it is no longer present. Buildings are depicted on both sides of the City Wall towards its southern end close to the river and to the east of the wall at the northern end close to Barrack Street. Many of these relate to 18<sup>th</sup>/19<sup>th</sup> century houses and the remains of a brick fireplace survive abutting the west side of the wall approximately 25m to the north of the river.
- Two phases of archaeological evaluation by trial trenching were carried out at Plot 3.5 H, Barrack Street in December 2007 and between May and July 2008 (NHER 50403 and 51751) by Chris Birks (2008). Excavations in 2007 revealed the survival of the medieval City Wall to a depth of c. 2.2m from present ground level and part of a 19<sup>th</sup> century brick building, most probably relating to the Pockthorpe Brewery complex had been constructed upon the remains of the medieval wall. No indications of the extra-mural defensive ditch were found in 2007 though a profile of the remains of the medieval extra-mural defensive ditch were recorded for the first time in 2008. A partial east-to-west section across the ditch had previously been identified during excavation of a generator pit for Jarrold's printing works in 1972 (NHER 178) though the precise location or dimensions of the ditch were not established. Evidence of recutting of the ditch during the Post-medieval period was observed in 2008 and the upper 1.1m of deposits had been disturbed during construction of the former modern printworks. The remains of a Post-medieval structure, probably the rear part/outbuilding of a property fronting Barrack Street were also observed in 2008 though they had also been partially destroyed through the construction of the former printworks.
- 3.6 In 1999 on the north side of the river at Jarrold's Bowling green (NHER 26505), to the northeast of the site, archaeological work was carried out prior to development of the site. Only modern build-up was recorded and no archaeological layers were

reached/encountered. A subsequent watching brief took place in the same area in 2000 (NHER 26572) during the construction of the leisure centre on St James's meadow, Barrack street - no archaeological finds, features or deposits were found.

- Middle Saxon (8<sup>th</sup>/9<sup>th</sup> century) settlement of the area north of the River Wensum 3.7 comprised 'Coslany', though evidence for this is sparse; most excavated material comes from secondary contexts and much evidence is derived from place-names. A later, probable 10<sup>th</sup> century settlement called 'Northwic' is known when the name first appears on coins of King Athelstan (925-939). It is highly possible that the name 'Norwich' derives from 'Northwic'. The Late Saxon town had a defensive ditch and/or bank, possibly with a timber palisade, on the north side of the River Wensum (NHER 639), seemingly enclosing the settlement of Northwic. Only the western part of the defences is known at St George's Street and there have long been discussions and suggestions regarding the locations of the northern and eastern defences. The eastern alignment may have been to the east of Cowgate Street (now Whitefriars Street), along Cowgate Street itself or along Peacock Street further to the west. Excavations on Whitefriars Street (NHER 318) in 1976 revealed a thick peat deposit interpreted as possibly forming the upper fill of the Late Saxon defence ditch. No conclusive evidence of the ditch was revealed during excavations in 2001/2 (see later description).
- Evidence of 10<sup>th</sup> century activities was revealed during excavations in 1985 at 3.8 Fishergate (NHER 732) immediately to the north of the River Wensum, west of the development site. Possible post-holes indicated 11<sup>th</sup> century structures on or close to the site and 12<sup>th</sup> to 13<sup>th</sup> century occupation was postulated though evidence for this was slight. Structural remains (two flint walls) were also present and may have been related to a building of 14<sup>th</sup> century or later date. The site produced the largest single assemblage of lpswich-type ware from the city, imported pottery of Middle Saxon and Saxo-Norman date, a range of finds including a sceatta (an Anglo Saxon coin dated to c.710-725 AD) and two brooches as well as quantities of later Saxon and Saxo-Norman material (Ayers 1994). The site was finally occupied by late 19<sup>th</sup> and early 20<sup>th</sup> century industrial buildings including a shoe box company ('Norwich Box Company') that formerly operated at 40 Magdalen Street in 1885 and moved to the site at Fishergate *c*.1895. Further archaeological works have been carried out at Fishergate and include watching briefs by NAU Archaeology at 17-27 Fishergate (NHER 41303), 'Former Last Factory site 9-11 Fishergate' (NHER 41021) and an archaeological excavation and watching brief at 'Fye Bridge, Fishergate' and details can be found in the relevant reports. A document dating to 1389 records that the south-east corner house of Fishergate was said to be against the gates of the Carmelite Friars (Kirkpatrick, 1845, p.178).
- 3.9 Excavations in 1981 at St Martin-at-Palace-Plain (NHER 450), to the south of the River Wensum, immediately west of the present site, revealed a large urban waterfront site that included archaeological remains dating from the Middle Saxon (651-850 AD) to Post-medieval periods. Although no archaeological features of the Middle Saxon period were discovered on the site, there were finds recovered including lpswich-ware pottery, a Sceatta (Saxon coin) and an unfinished equal-armed brooch. Timber buildings of the Saxo-Norman period (11<sup>th</sup> century and early 12<sup>th</sup> century) were found along with well preserved wickerwork fences interpreted to have helped form the waterfront. A large 12<sup>th</sup> century stone structure that had been built along the street frontage survived to a height of over two metres, the

exact role of this building has not been determined but it has been proposed that its original function was a house/warehouse used as a store for the cathedral priory with accommodation for a cathedral official (Ayers 1987).

- 3.10 The site lies to the west/southwest of remains of a section of the City Walls that formed the medieval defences of Norwich (NHER 384). This section is thought to be a late addition to the circuit and may date to *c*. 1377 (Ayers 2004). Work on the city defences started in 1253 when a bank was erected with upcast material from a ditch, and, presumably, a timber revetment was set on top of the bank (Ayers 2004). Construction of the masonry wall started following a grant in 1297 and the majority of the circuit was completed by 1344 with large parts of the wall privately funded by a wealthy citizen, Richard Spynk. The walls were more substantial in an area where the circuit approaches the river and the full height of the wall was some 4m (Ayers 2004).
- 3.11 A partial east-to-west section across the extra-mural ditch was identified during the excavation of a generator pit for Jarrold's printing works in 1972. Unfortunately, the record (NHER 178) states that 'neither the lip of the ditch, nor the bottom was reached by the cutting (240cm (deep))'. It would appear, therefore, that the precise location or dimensions of the ditch were not established.
- 3.12 A trial excavation was carried out in 1987 (NHER 779) to the south of the remains of the City Wall on the Jarrold's site, west/southwest of the development site. The works discovered that the remains of a turret visible above ground next to the River Wensum are of modern construction, though they overlie the buried *in situ* remains of the original turret. Details relating to refacing of the wall were recorded and that the wall extends to a depth of approximately 2.3m from ground level. It was also established that intra-mural archaeological deposits remained *in situ* and extended a minimum of 3m to the east of the interior face of the wall.
- 3.13 An archaeological watching brief was carried out at 'Areas D1 and D2, Jarrold's, Barrack Street, Norwich, Norfolk', immediately northeast of the site (NHER 51750) in 2007/8 (Birks 2009<sup>2</sup>). Monitoring was carried out during excavations associated with the construction of two new office blocks to the immediate north of the River Wensum and east of the proposed development site. There was evidence of activity within the vicinity of the site in the form of unstratified finds of undetermined prehistoric date, medieval and Post-medieval periods. Two *in situ* linear features were present, probably the remains of a modern drainage system.
- 3.14 An archaeological evaluation by trial trenching was carried out '3 St James' Court (Plot K), Jarrold's, Norwich, Norfolk' (NHER ENF122928), to the northwest of the site in June 2009 prior to proposed development of the site. The remains of a structure and associated culvert of probable Post-medieval date were present beneath a 21<sup>st</sup> century road surface of Cowgate Street, the forerunner to Whitefriars Street, indicating an earlier form of the road existed further towards the west. The construction of numerous modern mains services had caused considerable damage to these structures and *in situ* deposits. A possible northern extent of the Carmelite Friary was indicated though no remains definitively associated with the Friary were observed. No human burials and no further archaeological remains were encountered. The site at 3 St James' Court lies within the north western part of the Carmelite Friary precinct, founded in 1256 and south of St James' Church, now a puppet theatre. A number of investigations have taken

place within the precinct of the friary including an archaeological desk-based assessment (Penn 2001) carried out prior to the construction of the Carmelite House and Mills and Reeve buildings to the south of the proposed development site at 3 St James' Court. There is historical evidence for post-Conquest development of this area including the construction of St James' Church, St Paul's Hospital to the west of the site and present day Whitefriars Street and a bridge over the River Wensum to the south of the site by 1106. The main area of the friary cloisters was partially excavated in 2001 and 2002 by A.F. Howland (Hadley 2002) and Norfolk Archaeological Unit. A report on the 2002 excavations has yet to be published (Clarke, R., in prep., Norwich Whitefriars, East Anglian Archaeology) though an assessment report and updated project design has been prepared (Shelley 2004). The 2002 excavations uncovered parts of the friary cloisters including a heated room, claustral walk, east walk, chapter house and several human remains associated both with the friary and later use of the site by Anabaptists from 1697 to 1875. The friary church was revealed to have been a substantial structure with north and south aisles standing at the southern extremity of the site, dominating the bridge over the river and as close as possible to the centre of the city (Ayers 2004, p.104). There have been various and often contradictory references relating to the location of the church and these excavations have identified its location to the south of the cloisters, similar to the Dominican Friary site at Blackfriars' Hall and St Andrew's Hall to the south of the river. The proposed development lies north of the 2002 excavations, possibly within an area of open ground not developed until modern expansion. A publication based on research sources provides interesting information regarding the history of the Carmelite Friary (Copsey 2006) including earthquakes in 1272 (Copsey 2006, p.3) and 1480 (Copsey 2006, p.22) and an attack on the monastery by the citizens of the city that burnt a large part of the buildings (Copsey 2006, p.3). Burials and wills leaving bequests of money and land to the Carmelites are described.

The Carmelite Friary was built on marshy low lying ground that required 3.15 considerable consolidation prior to its construction (Emery and Ayers 1999, Shelley 2004). Evidence of consolidation and ground-making dating to the 13<sup>th</sup> to 15<sup>th</sup> centuries has been found during excavations in 1992 on the site of the former Jarrold's print works loading bay (Emery and Ayers 1999), during the 2009 evaluation by trial trenching (Birks 2009<sup>3</sup>) and at 71–75 Barrack Street (Hutcheson 2000). The 1992 excavations also revealed post holes, floors, hearths and timber framed buildings dating from the 13<sup>th</sup> and 14<sup>th</sup> centuries. A wall also exposed on the site may belong to the friary itself. A small number of archaeological finds were retrieved during excavations including a Roman spindle whorl, medieval wool comb and an Elizabethan weight displaying the city's coat of arms. The excavations in 2000 at 71-75 Barrack Street (NHER 26537) were carried out by the Norfolk Archaeological Unit. Amongst the pits excavated which were thought to be of 13/14<sup>th</sup> century date one in particular produced an abundance of plant and animal remains that provided evidence of crop-processing and hornworking. It was also established that in the same period the ground level had been built up with the intention of raising it above the marshy land that was characteristic of the area. More activity attributed to the 15<sup>th</sup> century was evidenced by ditches and gullies that may have been associated with horticultural activities of the Monastery. The land had also been significantly raised further during the Post-medieval and modern periods. A few elements that were possibly part of the friary still exist

including a vaulted undercroft (NHER 36) dating from the 13<sup>th</sup> or 14<sup>th</sup> century with brick vaulting added during the 15<sup>th</sup> century (Smith 2001). In the south-west corner of the precinct there is a fragment of wall reputed to be the remains of an Anchorite House though the excavations in 2002 indicate this was a doorway into the church. In 1920 the river was cut back, probably removing the Anchorite's House (Penn 2001). The 'Arminghall Arch' is an early 14<sup>th</sup> century limestone arch, once set within a porch at Arminghall Old Hall to the south of Norwich from the 16<sup>th</sup> century until 1910 and now re-erected inside the Magistrates' Court, southeast of Whitefriars Bridge. The arch was almost certainly removed from the friary at the time of the Reformation (Ayers 2004 p.105).

- 3.16 An archaeological watching brief was carried out at 'Jarrold's Printworks, Whitefriars, Norwich' in 2002. The general character of the sub-surface deposits observed was of made ground from two distinct periods overlying alluvium and gravels (Moss 2002). An archaeological excavation was carried out in 1973 (NHER 234) on land thought to have accommodated the Carmelite Friary (north of the river Wensum at Whitefriars). The excavations revealed late 14<sup>th</sup> century building foundations along with a piece of carved stone and two fragments of stained glass.
- 3.17 The site was sold at the Dissolution in 1542 and many buildings are thought to have survived for some time. Cleer's map of 1696 does not provide any detail of this area but, unlike his drawn description for other Norwich friaries, he refers to the area as 'The Priory', possibly indicating that some recognisably monastic remains survived. Although rather stylistic, Hoefnagle's map of 1581 contains much detail for an early map. St James' Church can be seen as can Cowgate Street and Whitefriars Bridge. A row of house are shown fronting Cowgate Street and it is interesting that the street is shown much straighter than on later maps, possibly indicating an earlier alignment.
- 3.18 To summarise, there was a potential that archaeological remains survive as subsurface archaeological finds, features and/or deposits. The recovery of such information provided a potential to contribute to the Research Topics for the urban medieval and Post-medieval periods.

## 4.0 Geology and Topography

- 4.1 The site lies within the City of Norwich upon a solid of the Cretaceous Upper Chalk series that contains characteristic flint nodules (Funnell 2005) Overlying glacial sands and gravels of Anglian and later stages are present (Funnell 1994), as are river alluvium deposits from the River Wensum, known as Wensum Sands (Corbett & Dent 1994). River terrace (sand and gravel) deposits between 5m and 8 m thick overlie the solid chalk, products of the formation of the Wensum valley. Land reclamation and occupation deposits form the uppermost deposits and such deposits have been recorded at various places along the river valley up to and greater than 4m in depth closest to the river. Borehole results on this site show made-ground at depths of between 2.6m and 3.4m below present ground level.
- 4.2 The site is located on the north and south banks and spanning the River Wensum, east of Whitefriars Street and south of Barrack Street (*Fig. 1*). It lies on level ground at an elevation of *c.* 3m OD.

### 5.0 Aims and Objectives

- 5.1 The Brief for Archaeological Monitoring prepared by Norfolk Landscape Archaeology and the updated project design require the recovery of as much information as possible on the extent, date, phasing, character, function, status and significance of the site.
- 5.2 Specific aims are to establish the states of preservation of archaeological features and/or deposits within the areas indicated. These form part of the research agenda for the eastern counties of England in *Research and Archaeology: a Framework for the Eastern Counties, 1. Resource Assessment* (Glazebrook, J. (ed) 1997) and *Research and Archaeology; a Framework for the Eastern Counties 2. Research agenda and strategy* (Brown, N., and Glazebrook, J. (eds) 2000)
- 5.3 Generic Aims of the project are to;
- 5.3.1 Determine the presence of archaeological remains.
- 5.3.2 Establish the extent, condition, nature and date of any such archaeological remains.
- 5.3.3 Create datasets relating to the stratigraphic, artefactual and environmental information recovered during excavations for analysis.
- 5.4 The specific aims of the project are;
- 5.4.1 Determine the presence and nature of archaeological remains archaeological monitoring during all piling and groundworks associated with the proposed development.
- 5.5 The specific aims of the project are to seek information regarding the following Research Topics in *Research and Archaeology; a Framework for the Eastern Counties 2. Research agenda and strategy* (Brown, N., and Glazebrook, J. (eds) 2000)) through this programme of archaeological works;
- 5.6 Research aims regarding demography, social organisation, economy and culture & religion have been identified (Ayers, 2000). It is hoped that information resulting from this project would contribute to some or all of these research aims.
- 5.7 Contributions may also be made to environmental archaeology research aims. Categories include the following and apply to both rural and urban sites (Murphy 2000);
- 5.7.1 Events. Assemblages resulting from discrete (commonly catastrophic) events of short duration produce biological assemblages which are unequivocally interpretable in terms of on-site activities immediately before the event (*e.g.* fires, where constructional wood and timber, and products stored within buildings may be preserved by charring) or relate directly to that event (*e.g.* floods).
- 5.7.2 Processes. Among the on-site processes which have been distinguished from biological evidence at sites are textile processing, dyeing, malting, the processing of shellfish, bone and/or hornworking, all of which generate distinctive wastes. Wherever characteristic residues from activities of this type are encountered, extensive sampling is necessary to define the spatial layout of activity and details of the processes.

## 6.0 Method Statement

### 6.1 Introduction

- 6.1.1 Archaeological monitoring was carried out during groundworks and piling operations associated with the construction of the new bridge.
- 6.1.2 The required archaeological works identified through discussion with Ken Hamilton specified that the primary aim was to record any archaeological remains that cannot be preserved *in situ* in order to recover as much information as possible on the extent, date, phasing, character, function, status and significance of the site. The states of preservation of archaeological features or deposits within the areas indicated were determined.

#### 6.2 Archaeological Monitoring

- 6.2.1 An OASIS online record was initiated and key fields completed on Details, Location and Creators forms prior to fieldwork commencing.
- 6.2.2 The Historic and Environment Record (HER) Officer was contacted to obtain a HER number for the site.
- 6.2.3 Topsoil, subsoil, archaeological features & deposits and spoil were metal detected during machine and manual excavation and finds were recovered, labelled and bagged, and retained for later analysis by relevant specialists.
- 6.2.4 Archaeological features and deposits were recorded on Chris Birks *pro-forma* context sheets. Section and plan drawings were recorded at appropriate scales (1:50;1:20;1:10) depending upon the level of detail required.
- 6.2.5 A photographic record was made using digital, 35mm colour transparencies and 35mm black & white film.
- 6.2.6 Appropriate registers for contexts, drawings, photographs and environmental samples were made.
- 6.2.7 All finds of archaeological significance were collected, bagged and labelled for processing, cataloguing and subsequent analysis by relevant finds specialists.
- 6.2.8 Environmental samples were taken from suitably well-sealed and dated archaeological features/deposits. Advice was sought from the Regional Science Advisor for English Heritage as required.
- 6.2.9 A single-context planning methodology was employed and a matrix of the sequence of deposits was made on-site.
- 6.2.10 Suitable temporary fencing was used to secure the site and appropriate signage was displayed.
- 6.2.11 Any environmental sampling and finds conservation requirements were discussed with Norfolk Landscape Archaeology and in consultation with the Regional Science Advisor for English Heritage, as required.

#### 6.3 **Post-excavation Analysis and Report**

6.3.1 Artefactual remains recovered during excavations were cleaned, catalogued and analysed by relevant finds specialists following fieldwork, in accordance with Standards and Guidelines for the collection, documentation, conservation and research of archaeological materials (Institute of Field Archaeologists 2001).

- 6.3.2 An assessment of the recorded evidence was made in accordance with Management of Archaeological Projects (MAP2) (English Heritage 1991).
- 6.3.3 The analysis of stratigraphical/structural records, Artefactual and environmental materials was made for inclusion in the updated project design and site reports.
- 6.3.4 Three copies of the *final* reports will be submitted to the Norfolk County Council Historic Environment Service, two copies to the Norfolk Historic and Environment Record, one copy to the Local Planning Authority, one copy to the Client, one copy to archive and one copy to the Science Advisor for English Heritage.
- 6.3.5 The OASIS online form will be completed and submitted to the Norfolk Historic Environment Record, including an uploaded .pdf version of the report.
- 6.3.6 The archive will be prepared in a form suitable for microfilming, if required. It will be prepared consistent with the principles of *Management of Archaeological Projects* ('*MAP2*', English Heritage 1991) and submitted to the Norfolk Museums Service for long-term storage.
- 6.3.7 Excepting those covered by the Treasure Act of 1996, all archaeological materials will remain the property of the landowner/s. A formal agreement will be sought regarding any items of local, regional or national significance for donation of finds to an appropriate Museums Service.

## 7.0 Results

#### 7.1 Introduction

- 7.1.1 Monitoring was carried out in June 2011 during groundworks and piling operations associated with the construction of the new bridge (*Fig. 3*).
- 7.1.2 Site conditions were generally good though areas occasionally became waterlogged and unsafe to access. The weather varied between dry, sunny periods and heavy rain.
- 7.1.3 All deposits, exposed surfaces and spoil arisings were scanned with a metal detector. Context numbers were allocated during fieldwork and are summarised in *Appendix 1*.

## 7.2 Archaeological Monitoring

- 7.2.1 In order to install piling mats, 2 areas were excavated on the north and south sides of the river, each measured approximately 10m by 10m (*Fig. 3*). A maximum depth of *c*. 0.5m was mechanically excavated in both areas removing disturbed modern dark grey silty sand [1] with frequent rooting on the south side of the river, the full extent of which was not reached. Modern dark grey brown silty sand [2] with lenses of yellow building sand extended *c*. 0.25m deep on the north side that overlay dark grey silty sand buried topsoil [3]. Deposit [2] was formed through landscaping following the construction of office building D1 in 2007.
- 7.2.2 A total of 14 continuous flight augured piles were drilled; piles 1 to 7 on the south bank and 8 to 14 on the north. Dark brown silty deposits [4] were observed to a depth of *c*. 1.5m from present ground level overlying *c*. 2m of orange/brown very sandy angular to sub-rounded fine to coarse flint gravel [5]. Deposit [5] overlay *c*. 1.4m of dark grey/brown peaty slightly gravelly silty clay [6] with occasional

organic remains and *c*. 1m of mid grey very gravelly silty clay [7] and white chalk deposits [8], the full extent of which was not reached.

7.2.3 No archaeological finds or deposits were observed.

#### 8.0 Conclusions

- 8.1 No archaeological remains were encountered during construction of the new bridge. The exact reasons for this are unknown, it may be due to the limited size and depth of excavations that did not extend beyond disturbed modern deposits and landscaping deposits associated with office building D1 on the north side of the River. Equally, activities may simply not have occurred at this location.
- 8.2 Deposits revealed during piling are typical of such a riverine location in Norwich.

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Fieldwork was undertaken by Chris Birks. The report was written by Chris Birks.

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Context No.	Туре	Description	Initials/Date	
1	D	Dark grey silty sand with frequent rooting	CB 02/06/2011	
2	D	Dark grey brown silty sand with lenses of coarse yellow building sand	CB 02/06/2011	
3	D	Dark grey silty sand buried topsoil	CB 02/06/2011	
4	D	Dark brown silt	CB 09/06/2011	
5	D	Orange/brown very sandy angular to sub-rounded fine to coarse flint gravel	CB 09/06/2011	
6	D	Dark grey/brown peaty slightly gravelly silty clay with occasional organic remains	CB 09/06/2011	
7	D	Mid grey very gravelly silty clay	CB 09/06/2011	
8	D	White chalk	CB 09/06/2011	

# Appendix 1. Context Summary

D = Deposit

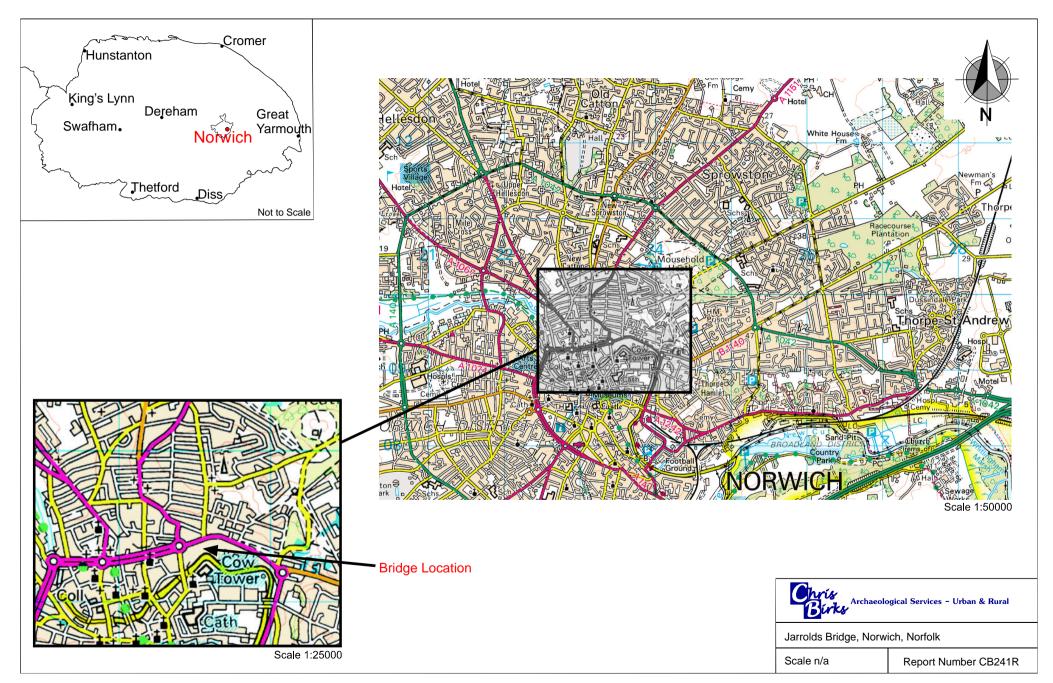


Figure 1. Site Location

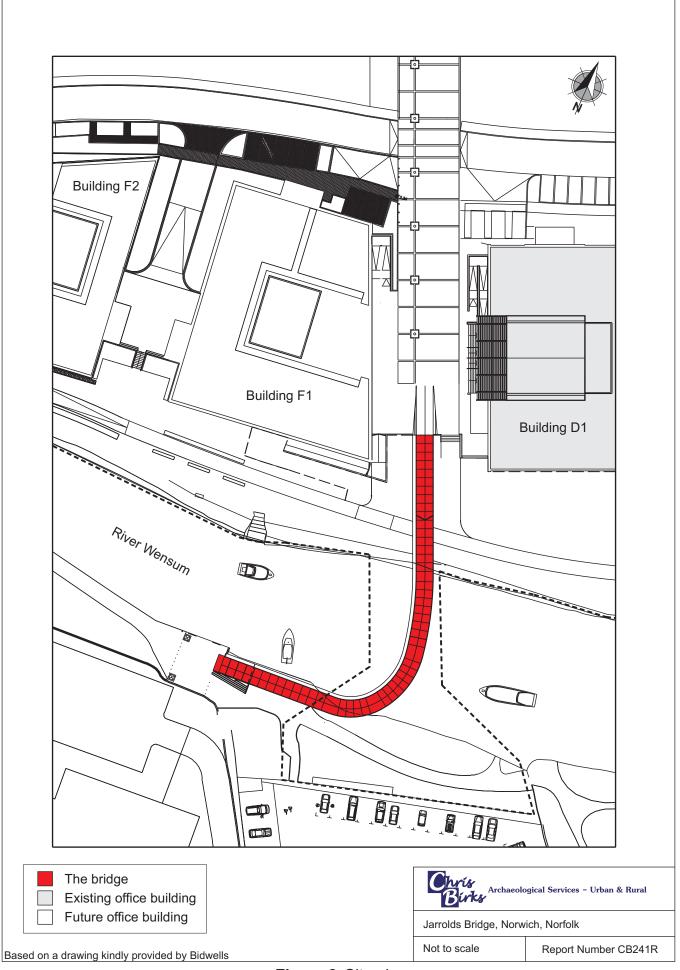


Figure 2. Site plan

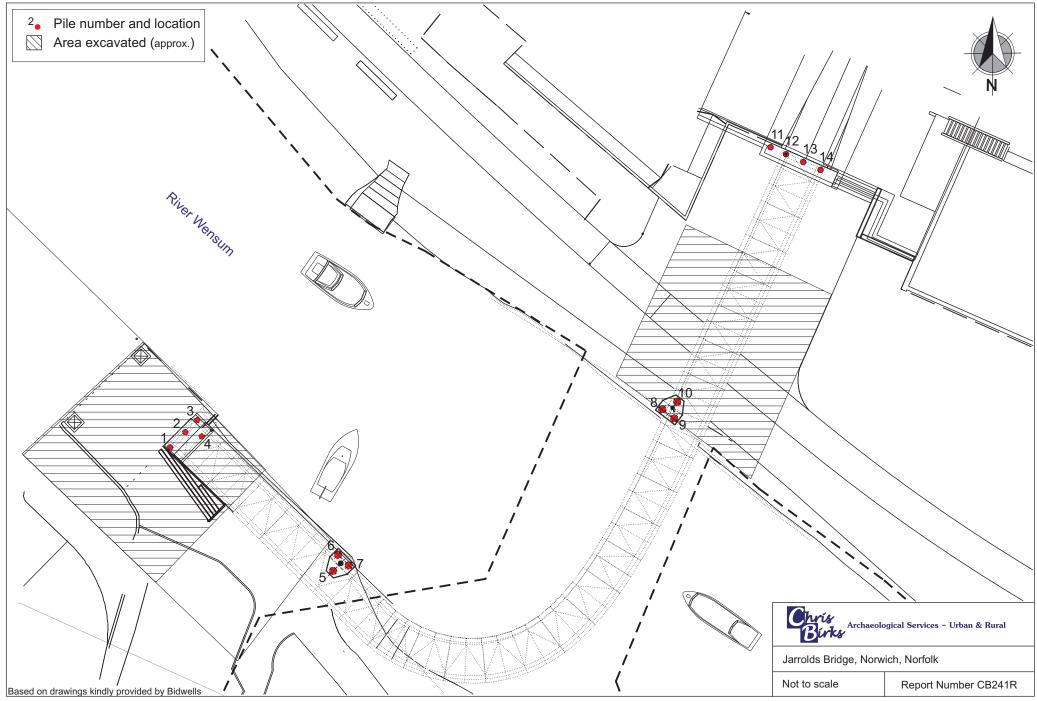


Figure 3. Bridge plan