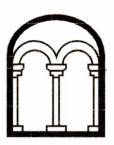
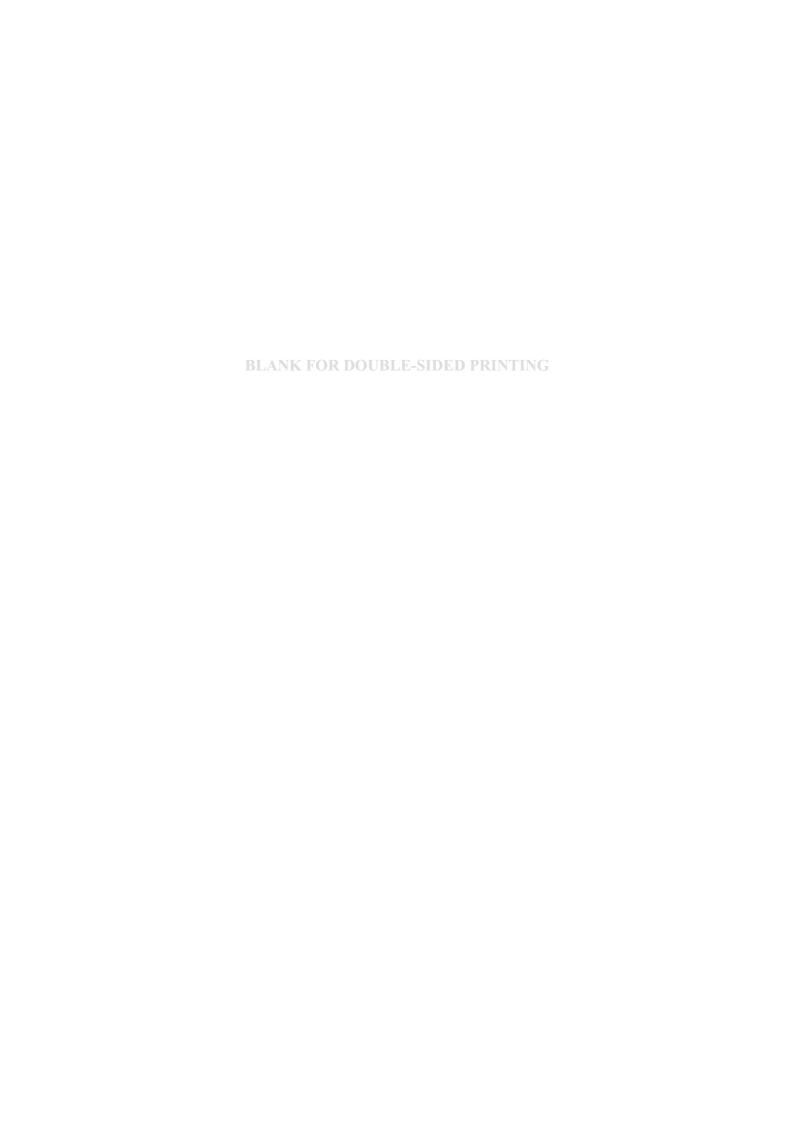
# ST MARY'S GARDENS CAULDWELL STREET BEDFORD

ARCHAEOLOGICAL OBSERVATION, INVESTIGATION, RECORDING, ANALYSIS AND PUBLICATION

# Albion archaeology







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Project: SMG 2155

Museum Accession no. BEDFM: 2013.18 Oasis: albionar1-145863

> Document: 2014/21 Version 1.0 Issue date: 23rd January 2015

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Produced for: Bedford Borough Council



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#### **Preface**

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the specification. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

The fieldwork was undertaken by Jo Barker, Marcin Koziminski, Wiebke Starke and Ian Turner (Archaeological Supervisors) and overseen by Ben Barker (Project Officer). This report has been prepared by Jo Barker with figures by Joan Lightning (CAD Technician). The project was managed by Jeremy Oetgen and all Albion projects are under the overall management of Drew Shotliff (Operations Manager).

The assistance and co-operation of Phil Nicholson (Parks and Countryside Officer) is gratefully acknowledged. Thanks are also due to Geoff Saunders (Archaeological Officer) of the Bedford Borough Council's Historic Environment Team, for monitoring the archaeological work on behalf of the local planning authority.

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#### Version History

Version	Issue date	Reason for re-issue
1.0	22/01/2015	n/a

#### Key Terms

Throughout this document the following terms or abbreviations are used:

BGL Below ground level

HET Historic Environment Team at Bedford Borough Council

IfAInstitute for ArchaeologistsWSIWritten scheme of investigationNHLENational Heritage List for England

OS Ordnance Survey

Procedures Manual Procedures Manual Volume 1 Fieldwork, 2nd ed, 2001

Albion Archaeology



# Non Technical Summary

A programme of archaeological works was undertaken between 25th March 2013 and 8th February 2014 by Albion Archaeology at St Mary's Gardens, Bedford. This was part of preparations for a new cycle and foot path, lamp stands and removal and replanting of trees, on the south side of the river between Town Bridge and County Bridge.

The site was centred at NGR TL 04948 49531, immediately south of the River Great Ouse, within the public open space of St Mary's Gardens. The works comprised the monitoring of hand-excavated test pits (dug to establish the location of a gas pipeline), the mechanical excavation of root barrier trench (to accommodate a membrane to prevent disturbance of the proposed new cycle path by tree roots), and the excavation of thirty-two tree planting pits alongside the riverbank. The latter were then backfilled with topsoil in readiness for the new trees. Two additional tree pits were later excavated, c. 30m to the south of the river.

The site lies on the river frontage of the southern burh of Bedford, established in the late Saxon period at the behest of King Edward the Elder. This was surrounded by a ditched boundary known as the King's Ditch, which survives in part as earthworks and as a drain. The development works straddled a modern concrete culvert which carries the line of King's Ditch.

The observations within the root barrier trench were limited due to waterlogged ground and a high water table. More detailed findings were obtained from the tree pits where a sequence of make-up layers and alluvial deposits were identified throughout the pits. All structural evidence encountered during the archaeological monitoring related to the reclamation and consolidation of the riverbank, which probably took place during the course of the 19th century, and subsequent phases of development and redevelopment, eventually leading to the establishment of the public open space.

The absence of earlier evidence, particularly for the Saxon and medieval periods, suggests that the alluvium beneath St Mary's Gardens has probably accumulated since the end of the Middle Ages. The groundworks were relatively shallow, so there is a high likelihood that Saxon and medieval remains lie sealed beneath the alluvium, below the present water table. If so, these deposits would be waterlogged with high potential for the preservation of organic remains, including artefacts and palaeoenvironmental indicators. Waterlogged deposits preserving remains of Saxon and medieval urban settlement would be of regional significance, at least.

No evidence was found for the original form of the King's Ditch, which now runs through St Mary's Gardens in a modern concrete culvert to its outfall on the bank of the river.

The project archive will be deposited with Bedford Museum (accession no. BEDFM: 2013.18). This report will be uploaded onto the Archaeology Data Service's OASIS website (ref. albionar1-145863).



#### 1. INTRODUCTION

# 1.1 Planning Background

Bedford Borough Council was granted planning permission (12/02245/MDC3) for the erection of nine replacement lighting columns and construction of a new foot and cycle path as part of the refurbishment of St Mary's Embankment, Bedford. The works also included the removal and replanting of trees along the edge of the river.

The Historic Environment Team (HET) of Bedford Borough Council advised that the area was archaeologically sensitive. A written scheme of investigation (WSI) was prepared by Albion Archaeology following consultation with the HET (Albion Archaeology 2013). The WSI detailed the methodology for a programme of archaeological observation, investigation and recording to be carried out during the groundworks. A recommendation for a programme of archaeological works was made by the HET in accordance with national planning guidelines in the form of *National Planning Policy Framework 2012* and Policy BE24 of the Bedford Borough Local Plan 2002.

Albion Archaeology was commissioned by Bedford Borough Council to undertake the archaeological works. Monitoring of the construction works took place between 25th March 2013 and 8th February 2014. The results are presented in this report.

# 1.2 Site Location and Description

The site is centred at National Grid Reference TL 04948 49531 and lies at a height of *c*. 26m OD. St Mary's Gardens are located immediately south of the River Great Ouse, between Town Bridge (a scheduled monument, NHLE 1005399) and County Bridge, within the Conservation Area and the historic core of the town (Fig. 1).

The underlying geology mainly comprises river-borne alluvium and gravels overlying the cornbrash limestone which outcrops on either side of the river.

# 1.3 Archaeological Background

The archaeological and historical background of this area has been fully described in the Bedford Extensive Urban Survey (Albion Archaeology 2005a). The relevant points are briefly summarised here.

The site lies on the river frontage of the southern *burh* of Saxon Bedford, founded by King Edward the Elder in 915 and thought to be one of the earliest *burhs* in England. The riverside may have been used for settlement and/or industrial activities during this period and, if such remains were to survive, they would be of major, regional interest.

The redevelopment area straddles the line of King's Ditch (Fig. 1), which was laid out in the Saxon period to demarcate the southern *burh*. Today, the King's Ditch



is largely contained in a modern culvert and, therefore, any evidence of its original course, associated internal bank, or entry point into the River Great Ouse would be of considerable significance.

During the medieval period the area within the southern burh remained in use, evidence for which has been encountered during previous archaeological investigations within land currently occupied by Bedford College. An evaluation in 1996 recorded the presence of probable domestic and/or industrial remains dated to the 13th to 15th centuries (BCAS 1996). Similar remains were found immediately west of St Mary's Street and south of the college (Baker 1979, Albion Archaeology 2005b). The extent of medieval settlement towards the riverbank is unknown and evidence of its presence within St Mary's Gardens would be of significant local and/or regional interest.

The post-medieval period saw a growth in the population of Bedford and the development of local land for industrial purposes. This included land within the study site, which was located not only in the centre of town but also on the banks of the river — a route used for the transportation of goods to and from the town.

The Town Bridge, designed by John Wing and completed in 1813, is a scheduled monument. It replaced a medieval bridge and is considered to be on the site of the ford which gave the town its name. The modern County Bridge was opened in 1992 to replace the iron structure dating from 1884<sup>1</sup>, which was originally known as Prebend Bridge.

Cartographic sources dating from the 17th century onwards were consulted at the Bedfordshire and Luton Archives and Records Service. It is clear from the map evidence that the south bank of the Great Ouse, between Town Bridge and County/Prebend Bridge, was a completely open area until the 19th century. From the 1850s onwards, it was subjected to a process of increasing urbanisation (Figs 8–18 and 20–21). Much of the development appears to have been commercial in nature, comprising a timber yard, malt house and boat yard. The OS first edition 25-inch map of 1884 depicts the west end of the embankment as a landscaped area, complete with regularly planted tree-lined bank (Fig. 16), but it is not clear whether or not this represents a private or public garden.

The first evidence of a public open space is on the OS second edition 25-inch map of 1901, which labels the east end of the south bank as 'St Mary's Embankment' (Fig. 17). By 1924, 'St Mary's Gardens' extends along the edge of the river, between the two bridges and a public lavatory has been constructed (Fig. 18). The bounds of the gardens remained the same until the 1960s (Figs 18–20). The opportunity to extend the gardens was taken following the eventual clearance of the land north of Cauldwell Street prior to the construction of Mander College and County Hall (now Bedford College and Borough Hall) in the 1960s (Figs 20–22). This process is also recorded in aerial photographs taken between 1946 (Fig. 19) and 1969 (Fig. 22).

http://virtual-library.culturalservices.net/webingres/bedfordshire/vlib//0.digitised\_resources/digitisation\_su bject\_county\_bridge.htm



Archaeological observations during the construction of the Bedford College Performing Arts Centre (Albion Archaeology 2006) revealed geological deposits, a back channel of the river that was enclosed within a culvert and a brick-lined basin that would have been joined, via a channel, to the river.

Historical plans show that the back channel of the river was enclosed in a culvert at some time between 1841 and 1854. The brick-lined basin appears to have been built as part of the same phase of construction work and probably functioned as a berth for the loading or unloading of barges, possibly in connection with the work of the timber yard that occupied the site around the basin (Albion Archaeology 2006).

Archaeological observations during the construction of the Bedford College Energy Centre (Albion Archaeology 2012) established evidence of footings and demolition material from structures dating from the 19th and 20th centuries in this western part of St Mary's Gardens. However, no evidence for activity predating the 19th century was observed.

# 1.4 Project Objectives

The research framework for Bedfordshire states that, while there have been many archaeological investigations in the centre of Bedford the chronology and character of the town, with the exception of the castle quarter, is still not well understood (Oake 2007, 15).

One example mentioned by Oake is the establishment of the boundary between the medieval and Saxon town; other themes that need to be explored are the role of manufacturing and industry within the urban landscape. The nature and role of post-medieval and industrial wharf structures for the loading and processing of industrial goods could conceivably be part of this theme.

The general objectives of the investigation were to determine:

- the nature of any archaeological remains present at the site;
- the integrity and state of preservation of any archaeological features or deposits present at the site.

The specific objectives of the investigation were to determine:

- what is the evidence for land use on the southern bank of the River Great Ouse in the Saxon, medieval and post-medieval periods?
- what is the palaeoenvironmental potential of the riverbank deposits, particularly where they may be permanently waterlogged?
- is there any evidence for the King's Ditch or evidence related to the King's Ditch that is earlier than the current modern culvert? What is its relationship with the riverbank deposits?
- Do the 19th-century wharf structures and culverts encountered on the site of the Bedford College Performing Arts Centre extend westwards into the development site? If so, what is there nature?



• What is the extent and survival of those potential structures and do any earlier remains (pre-19th century) survive?

The project aimed to add to our knowledge and understanding of Bedford and its river economy in the Saxon, medieval, post-medieval and modern periods. It has also resulted in an archive report (this document) that fully describes the archaeological works.

# 1.5 Methodology

Archaeological monitoring of groundworks was carried out between 25th March 2013 and 8th February 2014. The groundworks consisted of the excavation of a root barrier trench and 33 tree pits, using a mechanical excavator fitted with a flatedged bucket. Six hand-dug test-pits were also monitored.

Initially, six test-pits were excavated along the route of the proposed works to establish the precise location and depth of a known gas main (not illustrated). The pits were hand-dug to a depth of 0.8m and were generally 2m x 1m in size.

The second stage of work involved the excavation of a trench for the purpose of inserting a membrane barrier between the proposed new cycle/foot path and trees, thus minimising damage of the cycle/foot path by tree roots. The trench was excavated as one continuous length, 0.4m wide and 0.9–1m deep. It was broadly aligned NE-SW and positioned approximately 5m south of the riverbank. Additional short root barrier trenches were required around Tree Pits 2-11 (see Fig. 2) to compensate for a number of unexpected obstructions encountered.

Between the root barrier trench and the riverbank 31 tree pits (Tree Pits 2-32) were excavated. They were generally spaced 11m apart, but some had to be relocated to avoid concrete slabs and walls encountered during excavation. Tree Pit 17 had to be abandoned because inspection chambers and an underground culvert associated with the existing culvert of the King's Ditch were encountered.

The pits were approximately 4m by 3m across and 0.8m deep (BGL). After the deposits were recorded, a mechanical excavator fitted with a toothed bucket was used to 'rough-up' the base of each pit to aid drainage for the proposed new trees. As this was a deviation from the agreed methodology in the WSI (Albion Archaeology 2013), the Archaeological Officer (Bedford Borough Council HET) was contacted to gain his consent prior to this extra work.

A further two tree pits (Tree Pits 33 and 34) were excavated c. 30m south of the riverbank. These were approximately 1m square and 0.9m deep. They were part of an additional stage of work to accommodate trees left over from the main replanting work.

Monitoring visits were coordinated with the contractors. The root barrier trench and tree pits were inspected following the removal of the tarmac and monitored during the removal of the underlying deposits to the required depth.



Throughout the project the standards set out in the following documents were adhered to:

- If A's Code of Conduct (now revised, 2012);
- If A's Standards and Guidance for Archaeological Watching Briefs and Field Excavations and finds (now revised, 2012);
- Albion Archaeology's *Procedures Manual for Archaeological Fieldwork* and the Analysis of Fieldwork Records 2nd ed. (2001);
- English Heritage's Management of Archaeological Projects (1991) and Management of Research Projects in the Historic Environment (MoRPHE) Project Managers' Guide (2006).



#### 2. RESULTS

This section details the works monitored and the archaeological observations made during the excavation of tree pits, a root barrier trench and test-pits (Figs 2-7). It should be noted that a high water table and the narrowness of the root barrier trench severely hindered visibility and accessibility during the groundworks.

#### 2.1 Modern Made Ground

The existing path alongside the river consisted of a c. 0.15m-thick tarmac surface (01). This was removed prior to the excavation of the tree pits, revealing a layer of gravel in a light yellow-brown sandy-silty clay matrix (02), (22), and (23), which was up to 0.25m thick. This was presumably a bedding layer of hoggin beneath the tarmac path.

Tree Pits 33 and 34 were set in the lawn to the south of the path. Here the sequence of deposits consisted of turf above a mid grey-brown sandy silt topsoil (33) that was 0.5m thick. Below this was a c. 0.45m-thick deposit (34) consisting of mixed sand and gravel. Within the gravel were dumps of modern refuse, such as fragments of scrap metal, glass bottles and burnt debris. The deposits within this part of St Mary's Gardens are likely to have been imported as part of the landscaping of the park.

## 2.2 Alluvial Deposits

Below the modern made ground, the tree pits and root barrier trench revealed layers of light brown-grey silty clay (05), (26) and grey-orange sandy silt (27), (29) (Figs 3-6). The majority of these were sterile, but deposit (29) contained fragments of post-medieval tile and small stones. These clays are likely to be alluvial river bank deposits, but the inclusion of anthropogenic material suggests that they were laid down relatively recently. It is possible that they comprised redeposited alluvium, perhaps dredged from the river bed.

A dark grey-black silty clay (19) and (28) was observed in Tree Pits 31 and 25 respectively, beneath alluvial deposits (5) and (29) (see matrix Fig. 7 and Figs 5 and 6). These darker silts had a higher organic content; they contained stones and fragments of post-medieval brick and tile. The composition of these layers suggests that they might have originally been topsoil or a peaty deposit that had incorporated a variety of residual material.

The oldest deposit was waterlogged alluvium, comprising a plastic, dark grey-blue silty clay (11) and (30), encountered at a depth of c. 0.7m below ground level (BGL) (Figs 3-5). No finds were recovered so there was no evidence for the date of its deposition.

#### 2.3 Structural Features

The structural remains consisted of:

• Three brick walls and a brick-paved surface. The bricks used were very similar: dark orange-red and unfrogged, measuring 230mm x 110mm x 80mm. They were typical of the type used in Bedford in the mid- to late 19th century.



- Twelve wooden posts and a wooden revetment (16), all found west of the King's Ditch.
- Thirty-one concrete slabs, located at intervals of approximately 10m along the length of the embankment.

#### 2.3.1 Brick walls near the east end of St Mary's Gardens

Part of a brick wall [21] was identified in Tree Pit 31 (Fig. 5) and another (20) was visible in the root barrier trench adjacent to Tree Pit 32. The top of wall [21] was encountered at a depth of 0.3m BGL and wall [20] lay immediately below the tarmac surface. They were set into the alluvial deposits described in Section 2.2. The walls were up to 0.69m wide and three courses deep. The bricks were bonded with a lime mortar and likely to be of mid- to late 19th-century date

#### 2.3.2 Brick walls near Tree Pit 6

Part of a brick wall [8] was exposed in the root barrier trench adjacent to Tree Pit 6 (Fig. 3), at a depth of 0.3m BGL. It was set into the alluvial deposits described in Section 2.2. This wall was up to 0.69m wide and three courses deep. The bricks were bonded with a lime mortar and are likely to be of mid- to late 19th-century date

#### 2.3.3 Brick surface in Tree Pit 8

A brick surface [18], at least a 2m wide, was identified in Tree Pit 8 (Fig. 3), at a depth of 0.3m BGL. It post-dated the alluvial deposits described in Section 2.1 and was encountered immediately below the hoggin layer (2).

The surface was at least five bricks wide, but it extended beyond the south-western limits of the tree pit. No continuation of this surface was identified in the adjacent root barrier trench or Tree Pit 7. The bricks did not appear to be mortared. It is likely that they formed a pathway or hard standing and thus provide good evidence that the ground in this area was raised by c. 0.3m at some point during the 20th century.

#### 2.3.4 Wooden posts, possible walings and iron tie-rods

Various wooden structures and apparently related iron fittings (probably tie-rods) were identified in the root barrier trench and tree pits in the locations indicated in the table below and illustrated in Figs 2-4.

Within tree pit	Adjacent to tree pit	Timber no.	Iron tie-rod no.
-	5	(6)	-
-	13, 14	(31-36)	-
13, 14	-	(39), (40), (44)	(42), (43)
16	-	-	(41)

The tops of the posts lay immediately below the tarmac bedding layer (02), at c. 0.3m BGL. They had probably been driven into the alluvial layers. Where observed, the surviving portions were c. 1.5m long, but had probably been truncated at the top either by decay or deliberate action prior to the deposition of the bedding layer (02). The timbers were c. 260mm by 130mm in section.



The iron tie-rods lay on top of the alluvial deposits, but were dislodged during machine excavation before they could be accurately recorded *in situ*. Many were bent. The rods were approximately 25mm in diameter and *c*. 2.6m long. Each end was threaded to receive a square-headed nut and 120mm-square rove plate (Fig. 4). All the rods were aligned NW-SE, perpendicular to the present-day riverbank.

The largest group of posts was a NE–SW alignment of six (31), (32), (35), (36), (37), (38) in the root barrier trench adjacent to Tree Pits 13 and 14. They extended over a distance of 14m and were spaced approximately 2.5m apart. One timber post (32) was sampled for species identification (see below). Timber (36) was closely associated with one end of an iron tie-rod that emerged from the northwest side of the trench (Fig. 4) and it appeared that the end of the tie-rod had probably originally passed through the post, being fastened on the landward side by the square-headed nut and rove. The top of the post was damaged when struck by the machine bucket so this relationship could not be unequivocally demonstrated. Nevertheless, it would be logical to interpret the post as a ground anchor for the attachment of the rod acting as a tie-back for an old riverbank revetment.

Timbers (39), (40) and (44), along with iron tie-rods (41), (42) and (43), were located closer to the existing river's edge, within Tree Pits 13, 14 and 16. These may have been contemporary with those identified in the root barrier trench, but there does appear to have been two overlapping alignments, suggesting two phases of revetment. Timbers (39) and (40) comprised four posts.

In Tree Pit 13 two horizontal timbers (44) were found, lying parallel to the river's edge, at right angles to the iron ties. These were badly decayed, but their position suggests they were the remains of a waling running between the posts.

A further isolated timber post (6) was identified in the root barrier trench between Tree Pits 5 and 6 at the south-western end of the groundworks (Figs 2 and 3). This post may be associated with others located beyond the limits of the excavation.

Where possible, the timbers were left *in situ*, but most of the ironwork was unavoidably removed and not retained.

The date of these structures is uncertain, but they exhibit a number of significant features. The sampled timber (Fig. 4), along with photographs of the wood and ironwork, have been examined by Damian Goodburn, ancient wood technologist, who has provided the following comments:

- The species is a fast-grown softwood, most likely of American origin.
- The post had been prepared using an axe to point and trim a rectangular-section baulk of sawn timber. Sawn, then hewn baulks are common in the post-medieval period and Goodburn has seen them in London wharfs from the 16th century. Such work can still occur in 20th-century contexts.
- The sample had a distinctive odour indicating that the wood had been treated with coal tar, a practice originating in the early 19th century.
- The associated ironwork looks typical of tie-backs for a revetment.



• Threaded bolts were used from the 16th century onwards. Early nuts are square (like those found at St Mary's Gardens), but square nuts persist into the 19th century.

These factors suggest that a mid to late 19th-centry date is most likely for these structures.

#### 2.3.5 Timber revetment in Tree Pit 7

A NW-SE alignment of timber posts (16) was identified in Tree Pit 7 (Fig. 3). It was located immediately below the hoggin layer (02) at a depth of c. 0.3m BGL. The timbers extended for 3m, aligned perpendicular to the current river bank. Unlike the posts described in Section 2.3.4, these were tightly spaced and may have been part of a timber revetment associated with a wharf or inlet. It is most probable that they supported the side of the inlet shown on the Mercer map of 1878 (Fig. 15), but it is not possible to say on which side of the inlet they lay, because the alluvial deposits on either side of the structure were indistinguishable. The inlet is also present on the OS maps for 1884 and possibly 1901, but it is not shown on the 1924 map.

The tops of the posts were damaged by machining, but the intact portions were left *in situ*.

#### 2.3.6 Concrete

Thirty slabs of concrete (13)/(14) were encountered in twenty-three of the tree pits and also within the root barrier trench adjacent to Tree Pits 4, 15 and 16 (Fig. 2). They were encountered below the hoggin layer and were 0.3–0.8m BGL. They were all deemed to be later than the alluvial deposits, although it is possible that the alluvium had accumulated around them. They varied in size and shape from square to rectangular and were up to 1m long and 0.5m wide.

One concrete slab (13), located in Tree Pit 2, was demonstrably a ground anchor, because it was attached to an iron tie-rod that extended beyond the pit towards the riverfront. It is likely that the other slabs had a similar purpose and that they comprised a series of ground anchors inserted as part of a recent reinforcement of the current river revetment wall. The slabs were observed along the full length of the riverbank, which suggests that they postdate the opening up of St Mary's Embankment between Town Bridge and County/Prebend Bridge in the early 20th century.

The slabs were left in situ.



# 3. INTERPRETATION AND CONCLUSIONS

## 3.1 Synthesis of the Results

The archaeological observation did not identify any evidence for Saxon or medieval activity at this location on the southern river bank, nor was there any evidence for a Saxon or medieval earthwork on the line of the King's Ditch. The latter is consistent with the historical map evidence, which indicates that the ditch originally had its outfall into a back-channel lying 60–70m south of the line of the present embankment.

It is possible that in the Middle Ages the river was much broader than it is now. The silty clay deposits recorded in the tree pits and root barrier trench adjacent to the river demonstrate that the embankment was initially formed by a process of natural alleviation, followed by the artificial embankment along the river frontage. No artefacts were recovered from the oldest silty clay deposits, so the alluviation cannot be dated archaeologically, but it is notable that Speed's map does not depict the back-channels and islands that are present on the 18th- and 19th-century maps. It might be reasonable to expect that factors such as land management associated with the Agricultural Revolution or the management of the river flow to create the Ouse Navigation could have led to increased silting of the channel.

Map regression analysis suggests that the riverbank had largely stabilised in its present location by the end of the 18th century. Only at the western end of the embankment does it appear likely that alluviation remained active until the second half of the 19th century. By the 1880s — on the evidence of the first edition OS map of 1884 — the river's edge was established at its present location.

The timber posts and iron tie-rods in Tree Pits 13 to 16 are associated with the establishment of an artificially revetted river bank west of the line of the King's Ditch. Intrinsic dating of the revetment structures is imprecise, but they exhibit features that would be consistent with a 19th-century date. This would fit the historical map evidence, which suggests the revetting of this stretch of the embankment is likely to have occurred after 1854, because the Salmon Map (Fig. 14) still shows the land adjacent to the river as largely undeveloped, but before the modern line of the bank is recorded on the 1884 OS map (Fig. 16). This is supported by Dawson's panorama drawing of 1833 (Fig. 23), which illustrates the pastoral character of the south bank at that time and shows no indication of any substantial revetting at the water's edge.

The location of a timber revetment in Tree Pit 7, at right angles to the river, corresponds with an inlet present on the 1878 map but gone by 1924.

The wall and brick surface in Tree Pits 7 and 8 and the root barrier trench adjacent to Tree Pit 6, broadly correspond to the boat yard depicted on OS maps of 1884 and 1901 (Figs 16 and 17). These appear to have gone out of use before the OS map of 1924 (Fig. 18), by which time the formal embankment of the river had removed all the inlets along the south bank.



Towards Town Bridge the inlet, labelled 'New Wharf' on the OS map of 1884 (Fig. 16) broadly corresponds to the walls identified in Tree Pit 31 and the adjacent root barrier trench. This is an indication that the 19th-century wharf structures and culverts encountered on the site of the performing arts building (Albion Archaeology 2006) still survive beneath St Mary's Gardens and that other subsurface remains may survive in the wider locality. It is likely that the layers of build-up identified in Tree Pits 33 and 34, set back from the river, relate to the demolition of the New Wharf timber yard and subsequent landscaping. The yard itself is no longer depicted on the 1924 map (Fig. 18) and the wharf inlet appears to have been backfilled (even though the label 'New Wharf' is retained). This date of demolition is supported by the observation of a mixture of domestic refuse during the recent works; these included bottle glass, scrap iron and other debris dating from the earlier 20th century.

# 3.2 The Overall Significance of the Results

All structural evidence encountered during the archaeological monitoring relates to the reclamation and consolidation of the riverbank, which probably took place during the course of the 19th century, and subsequent phases of development and redevelopment, eventually leading to the establishment of the public open space.

The absence of earlier evidence, particularly for the Saxon and medieval periods, suggests that the alluvium beneath St Mary's Gardens has probably accumulated since the end of the Middle Ages. The groundworks were relatively shallow, so there is a high likelihood that Saxon and medieval remains lie sealed beneath the alluvium, below the present water table. If so, these deposits would be waterlogged with high potential for the preservation of organic remains, including artefacts and palaeoenvironmental indicators. Waterlogged deposits preserving remains of Saxon and medieval urban settlement would be of regional significance, at least.

Furthermore, the majority of archaeological contexts identified were positive deposits, relating to ground-raising activities, with few 'negative' features (such as deep foundations) that would have had an adverse impact upon the survival of any earlier remains beneath the alluvium.

#### 3.3 Potential for Further Analysis

No artefacts were recovered during the archaeological monitoring. The site records do not merit any further analysis or reporting beyond that included in the present report.

The project archive will be deposited with Bedford Museum (accession no. BEDFM: 2013.18). This report will be uploaded onto the Archaeology Data Service's OASIS website (ref. albionar1-145863).



#### 4. BIBLIOGRAPHY

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# 5. APPENDIX 1: CONTEXT SUMMARIES

Area: 1
Extent (ha): 0.6

OS Co-ordinates: TL0494849531

Description: Monitoring of groundworks in preparation for a new cycle and foot path, lamp stands and

removal and replanting of trees, on the south side of the river between Town Bridge and

**Prebend Bridge** 

<b>Context:</b>	Type:	Description: Excava	ated: Find	s Present:
1	Tarmac	Compact dark grey black . The current tarmac surface, 0.05m thick	<b>✓</b>	
2	Make up layer	Loose light yellow brown silty clay frequent medium stones. 0.25m thick	<b>✓</b>	
5	Alluvium	Plastic mid brown grey silty clay. Alluvium that was observed at the base of me tree-pits. All walls, concrete and timber posts were dug into this layer. Its thickness is unknown	ost✔	
6	Timber structure	N-S dimensions: max breadth 0.3m, min length 0.15m		
7	Timber	A N-S alignment of at least three upright timber posts, located wihitn cut [6]. They wer tightly packed together. They were at least 0.46m high, but were sealed by make-up layer (2) and tarmac surface (1)	е 🗌	
8	Wall	Linear N-S sides: vertical dimensions: max breadth 0.35m, min depth 0.4m, min length 0.4m $$	ı 🗌	
9	Concrete	Linear N-S sides: vertical . Part of a wall observed within the root barrier trench. The concrete was within wall foundation trench [8]. t was sealed by make-up layer $(2)$ and tarmac $(1)$		
10	Brick rubble	This loose brick rubble overlay concrete wall footing (9), but is part of the same wall.		
11	Alluvium	Plastic dark grey blue silty clay . Alluvial clay that was at least $0.15m$ thick and underlay alluvium (5)	ı <b>V</b>	
12	Concrete	Part of a concrete slab observed in tree-pit 3.		
13	Concrete	Sub-square dimensions: max breadth 0.7m, max depth 0.5m, min length 1.m. Pa of a concrete slab observed in tree-pit 2 that appeared to be joined to the river bank by an iron tie-rod. It may have been part of a support for the river revetme wall	_	
14	Concrete	Concrete slabs, either square or rectangular, were observed in most of the treepits and some of the root barrier trenches. They were not fully excavated and mabe similar to concrete (13). They were dug into alluvium (5) and underlay make (2)	ny	
15	Service Trench	Linear E-W sides: near vertical dimensions: max breadth 0.6m, min depth 0.8m Gas pipe service trench that was observed in test-pits.	. 🗸	
3	Backfill	Compact mid red brown clay sand moderate medium stones. Top fill of a gas service trench. It was $0.32 m$ thick	$\checkmark$	
4	Backfill	Plastic mid blue grey clay . Lower fill of a gas service trench. It was $0.27 m$ thick and underlay fill (3)	✓	
16	Timber structure	Linear N-S sides: vertical dimensions: min breadth 0.3m, min length 0.2m		
17	Timber	Part of an alignment of upright timber posts, located wihitn cut [16]. They may have been part of a fence or revetment associated with an earlier wharf		
18	Surface	Part of a brick surface that may have been a path. It was sealed by make-up layer (2)	. 🗌	



Area: 1
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Prebend Bridge

19	Levelling layer	Loose dark brown black clay silt moderate small CBM, frequent medium stones. Part of a levelling layer that underlay make-up (2). It was 0.2m thick.	✓	
20	Wall	Linear NW-SE dimensions: max breadth 0.5m, min length 0.4m. Part of a wall that was observed in the root barrier trench at the east end. The dimension of the bricks was $0.23  \text{m} \times 0.11  \text{m} \times 0.08  \text{m}$ .		
21	Wall	Linear NW-SE dimensions: max breadth 0.5m, min depth 0.3m, min length 2.m. Part of a brick wall that was observed in tree-pit 31. The dimension of the bricks was 0.23m x 0.11m x 0.08m.		
22	Make up layer	Friable light orange brown sandy silt occasional small CBM, frequent medium stones. Make-up material that was 0.5m thick. It is the same as make-up (2)	<b>V</b>	
23	Levelling layer	Friable mid orange brown sandy silt occasional small CBM, moderate small stones. Levelling material that was observed in tree-pits 27 and 28	<b>V</b>	
24	Foundation	Linear E-W dimensions: min breadth 0.5m, min length 1.m. Possible foundation trench that extended west from a concrete slab observed in tree-pit 27. However, is more likely to be redeposited material associated with the removal of a tree during the excavation of the root barrier trench.		
25	Fill	Friable dark brown grey sandy silt occasional small CBM, moderate small stones. Fill of possible foundation trench [24]		
26	Alluvium	Firm light brown grey silty clay. An alluvial layer observed in tree-pit 27		
27	Alluvium	Friable light grey orange sandy silt . An alluvial layer observed in tree-pit 26		
28	Dump material	Friable dark grey black silty clay occasional small CBM. A very dark humic fill observed in tree-pit 25, which may have been material derived from river dredging. It was at least 0.2m thick.	<b>✓</b>	
29	Alluvium	Friable light grey orange sandy silt occasional small CBM, occasional small stones. A layer observed in tree-pit 25, which was very similar to alluvium (5). A it contained small fragments of CBM it was interpreted as levelling material.	s	
30	Redeposited natural	Plastic dark grey blue clay . A dark blue clay (at least 0.2m thick) observed in part of the root barrier trench. It was 0.6m below the current ground level and may represent redeposited natural. Same as (11).	<b>V</b>	
31	Timber	Part of an upright timber post observed in part of the root barrier trench. It was rectangular in cross-section and tapered to a wedge-shaped end. It was sampled.	<b>V</b>	
32	Timber	Part of a timber post observed in part of the root barrier trench. It was rectangular in cross-section and tapered to a point at one end. It was found in an upright position beneath make-up layer (2). It was recorded and then discarded of site.	<b>✓</b>	
33	Topsoil	Friable mid grey brown sandy silt . Topsoil layer observed in two tree-pits dug t the south of the main line of tree-pits and root barrier trench. It was 0.5m thick.	<b>d</b> ✓	



Area: 1
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Prebend Bridge

34	Levelling layer	Friable mid orange brown sandy gravel frequent small stones. A levelling layer identified below topsoil (33). It contained modern rubbish, such as bottles, scrap metal and burnt material.	<b>✓</b>	
35	Timber	A timber post in the root barrier trench adjacent to tree-pits 13 and 14. It was insitu and encountered 0.3m BGL. It was at least 0.8m long.		
36	Timber	A timber post in the root barrier trench adjacent to tree-pits 13 and 14. It was insitu and encountered 0.6m BGL. It was at least 0.1m long.		
37	Timber	A timber post in the root barrier trench adjacent to tree-pits 13 and 14. It was insitu and encountered 0.3m BGL. It was at least 0.6m long.		
38	Timber	A timber post in the root barrier trench adjacent to tree-pits 13 and 14. It was insitu and encountered c. 0.3m BGL. It was at least 0.6m long.		
39	Timber	Two timber post in tree-pit 13. They were insitu and encountered 0.55m BGL. The posts were at least 0.2m long.		
40	Timber	Two timber posts in tree-pit 14. They were insitu and encountered at a depth of 0.65m BGL. They were at least 0.1m long.		
41	Pipe	Two iron tie-rods recovered from tree-pit 16.  They were up to 2.75m long and encountered at a depth of 0.3m BGL. There was a square iron plate at either end of the rod. They were not attached to anything structural and were bent.	✓	
42	Pipe	Two iron tie-rods recovered from tree-pit 13.  They were up to 2.75m long and encountered at a depth of 0.3m BGL. There was a square iron plate at either end of the rod. They were not attached to anything structural and were bent.	<b>V</b>	
43	Pipe	An iron tie-rod recovered from tree-pit 14.  It was encountered a depth of 0.3m BGL. There was a square iron plate at either end of the rod.	✓	
44	Timber	Two badly decayed timbers lying horizontally parallel to the river bank. Possibly	<b>✓</b>	



# 6. APPENDIX 2: OASIS DATA COLLECTION FORM

#### OASIS ID: albionar1-145863

#### **Project details**

Project name St Mary's Gardens, Bedford, 'Revitalisation'

Short description of

the project

A programme of archaeological works was undertaken by Albion Archaeology at St Mary's Gardens, Bedford. This was part of preparations for a new cycle and foot path, lamp stands and removal and replanting of trees, on the south side of the river between Town Bridge and County Bridge. The site was centred within the public open space of St Mary's Gardens. The works comprised the monitoring of hand-excavated test pits (dug to establish the location of a gas pipeline), the mechanical excavation of root barrier trench (to accommodate a membrane to prevent disturbance of the proposed new cycle path by tree roots), and the excavation of thirty-two tree planting pits alongside the riverbank. The latter were then backfilled with topsoil in readiness for the new trees. Two additional tree pits were later excavated, c. 30m to the south of the river. The observations within the root barrier trench were limited due to waterlogged ground and a high water table. More detailed findings were obtained from the tree pits where a sequence of make-up layers and alluvial deposits were identified throughout the pits. All structural evidence encountered during the archaeological monitoring related to the reclamation and consolidation of the riverbank, which probably took place during the course of the 19th century, and subsequent phases of development and redevelopment, eventually leading to the establishment of the public open space. No evidence was found for the original form of the King's Ditch, which now runs through St Mary's Gardens in a modern concrete culvert to its outfall on the bank of the river.

Project dates Start: 25-03-2013 End: 08-02-2014

Previous/future work Yes / Not known

Any associated project reference

codes

SMG2155 - Contracting Unit No.

BEDFM 2013.18 - Museum accession ID 12/02245/MDC3 - Planning Application No.

Type of project Recording project

Monument type WALLS Post Medieval

POSTS Modern

STRUCTURES Post Medieval REVETMENT Post Medieval REVETMENT Modern

Significant Finds NONE None

Investigation type "Watching Brief"

Prompt National Planning Policy Framework - NPPF

#### **Project location**

Country England

Site location BEDFORDSHIRE BEDFORD BEDFORD St Mary's Gardens, Bedford,

'Revitalisation'

Study area 2500.00 Square metres



Site coordinates TL 0495 4952

**Project creators** 

Name of

Albion Archaeology

Organisation

Project brief originator

Local Authority Archaeologist and/or Planning Authority/advisory body

Project design

originator

Albion Archaeology

Project

Jeremy Oetgen

director/manager

Project supervisor Joanne Barker

**Project archives** 

Physical Archive

Exists?

No

"other"

Digital Archive

recipient

Albion Archaeology

**Digital Contents** 

Digital Media available

"Database", 'GIS", "Images raster / digital photography", 'Text"

Paper Archive

recipient

**Bedford Museum** 

Paper Archive ID BEDFM:2013.18

**Paper Contents** "other"

Paper Media

"Context sheet", ''Correspondence", "Drawing", "Microfilm",

available "Miscellaneous Material" "Photograph", "Report"

**Project** bibliography 1

Grey literature (unpublished document/manuscript)

Publication type

Title St Mary's Gardens, Cauldwell Street, Bedford: Archaeological

Observation, Investigation, Recording, Analysis and Publication

Author(s)/Editor(s) 'Barker, J' & 'Oetgen, J'

Other bibliographic

details

2014/21

Date 2015

Issuer or publisher Albion Archaeology

Place of issue or

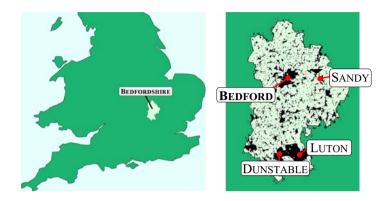
publication

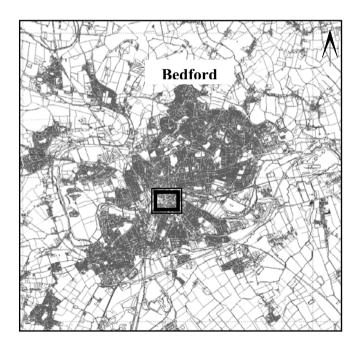
Bedford

Entered by Helen Parslow (hl.parslow@albion-arch.com)

Entered on 20 January 2015







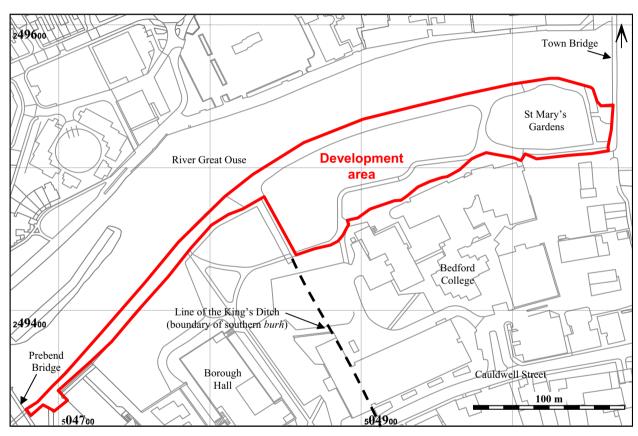


Figure 1: Site location

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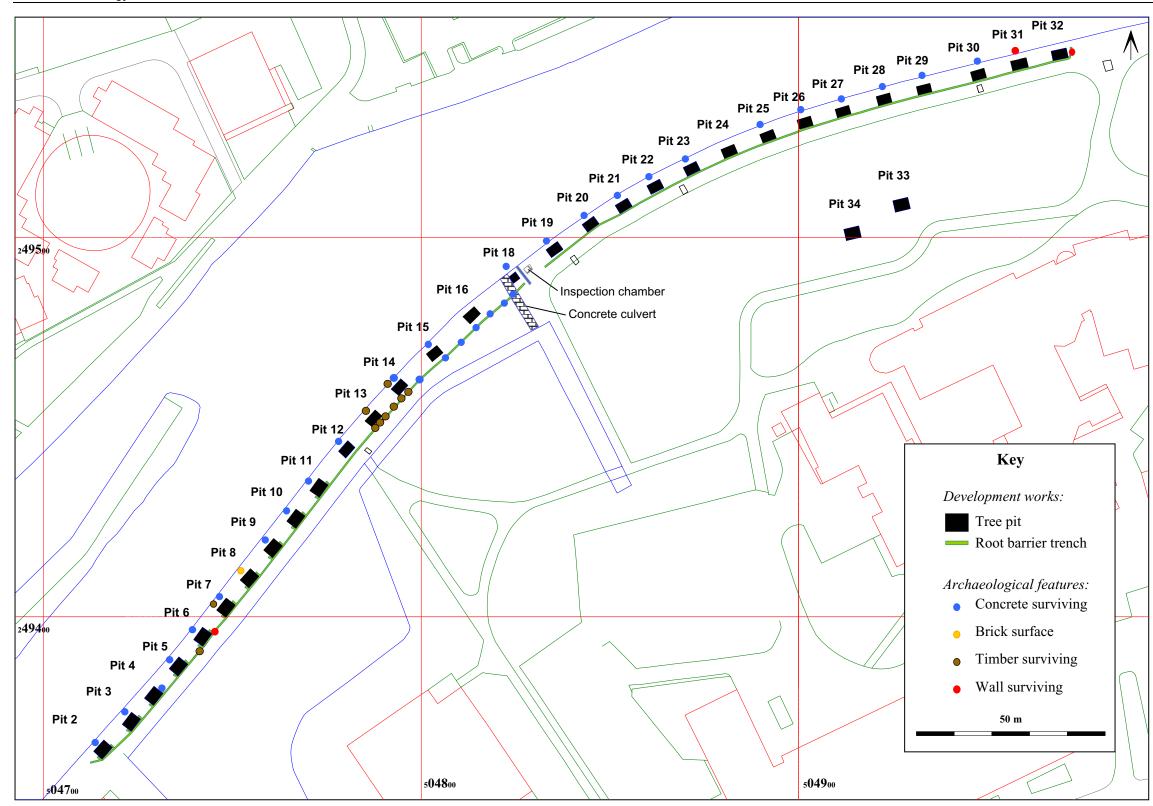
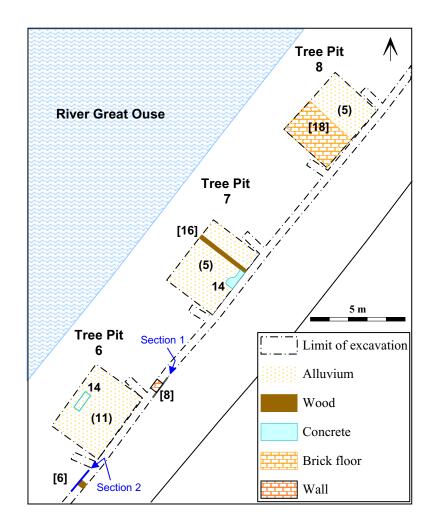


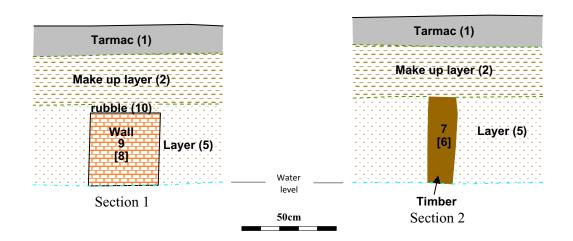
Figure 2: Summary of results plan

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Root barrier trench. Post [6] Scale 1m



Tree Pit 7: Timber [16]. Looking NE. Scale 1m



Tree Pit 8: Brick surface [18]. Looking NE. Scale 1m



Root barrier trench. Wall [8] Scale 1m



Tree Pit 7: Timber [16] and concrete [14]. Looking NE. Scale 1m

**Figure 3:** Tree Pits 6, 7 and 8 details



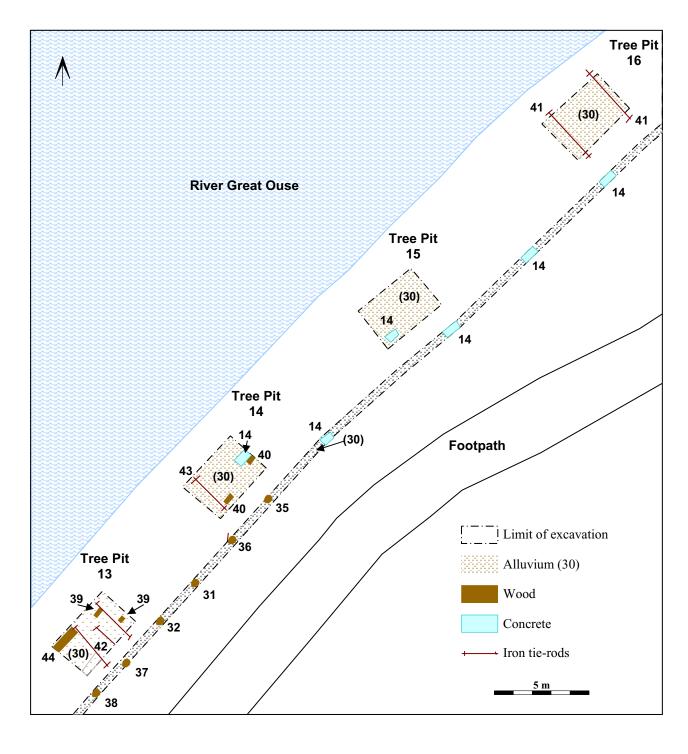


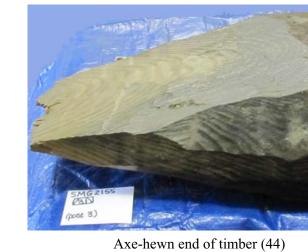
Figure 4: Tree Pits 13-16 details

Tree Pit 16

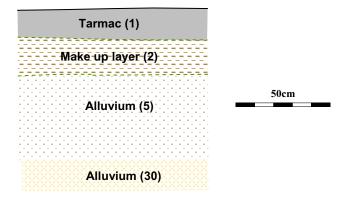


Timber and iron tie-rods found in Tree Pit 13





Root barrier trench. Post (36) and iron tie-rod

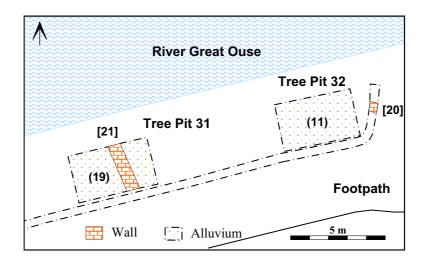




Indicative section of Tree Pits 13-16

Close up of iron tie-rod bolt







Wall [21] Scale 1m

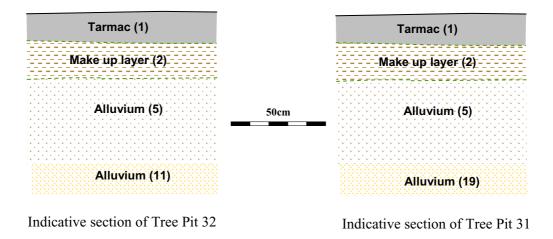
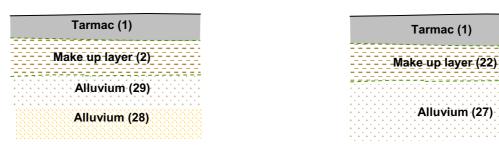
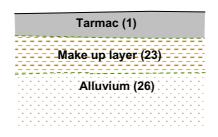


Figure 5: Tree Pits 31 and 32 details





Tree Pit 25 Tree Pit 26

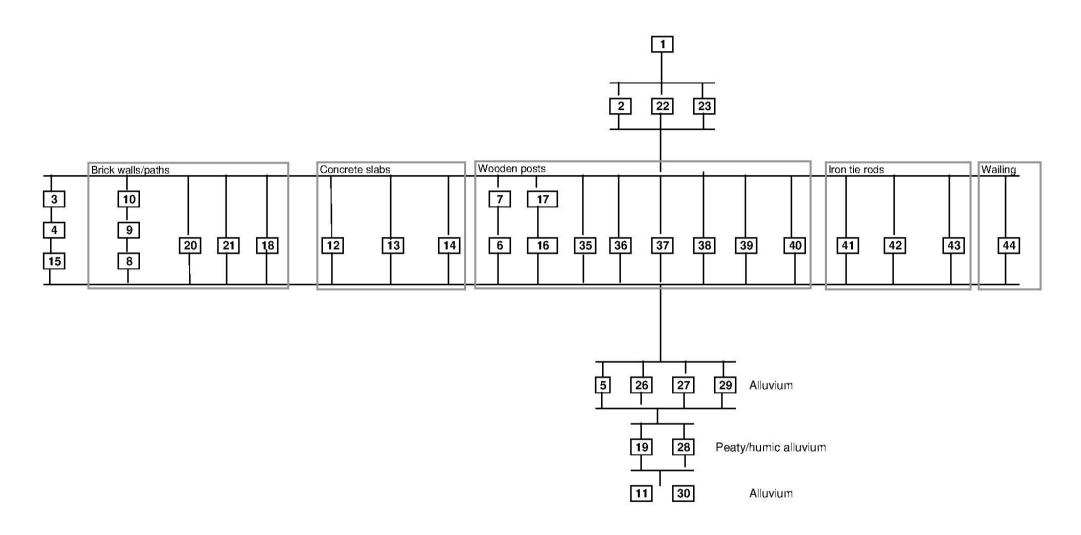


Tree Pit 27

50cm

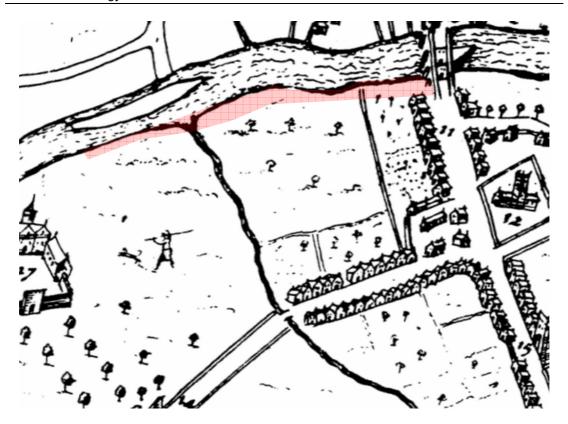
Figure 6: Indicative sections of Tree Pits 25-27



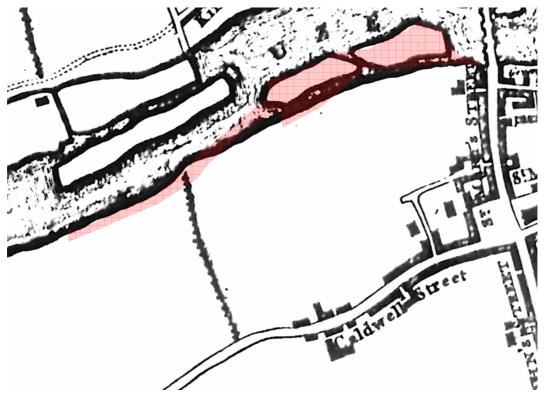


**Figure 7**: Stratigraphic matrix





**Figure 8:** 1610 John Speed map (Scale very approximate)

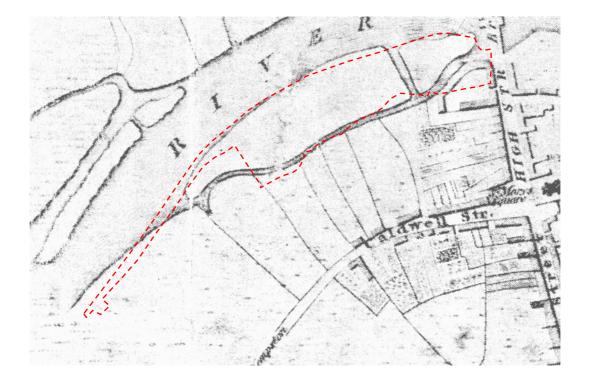


**Figure 9:** 1765 Thomas Jefferys map (Scale very approximate)





**Figure 10**: 1795 pre-Enclosure map (Scale approximate)

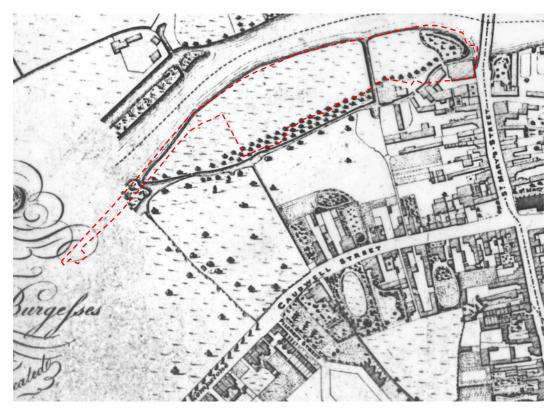


**Figure 11:** 1807 Brayley map (Scale approximate)





**Figure 12:** 1836 Dewhurst and Nichol map (Scale approximate)



**Figure 13:** 1841 Reynolds map (Scale approximate)





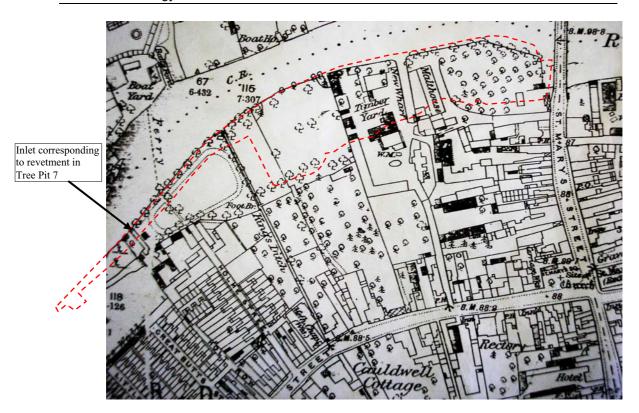
**Figure 14:** 1854 E W Salmon map (Scale approximate)



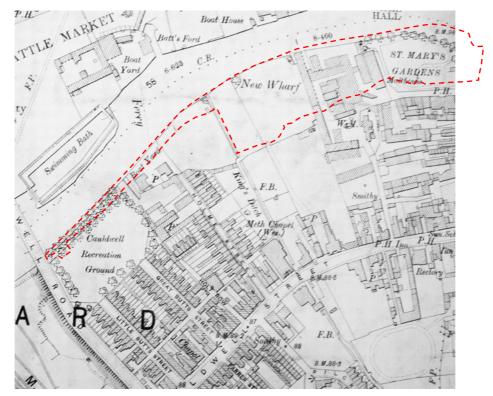
Figure 15: 1878 Mercer map

(Scale approximate)



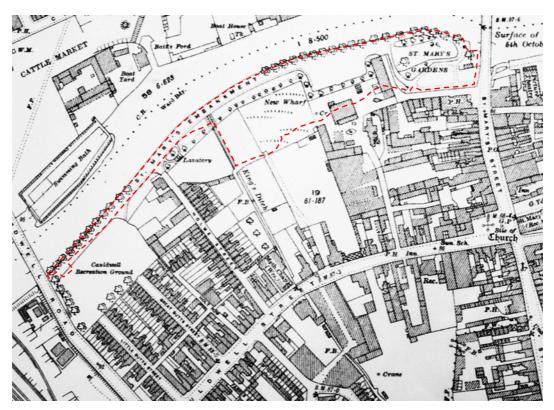


**Figure 16:** 1884 1st edition Ordnance Survey 25-inch map (Scale approximate)

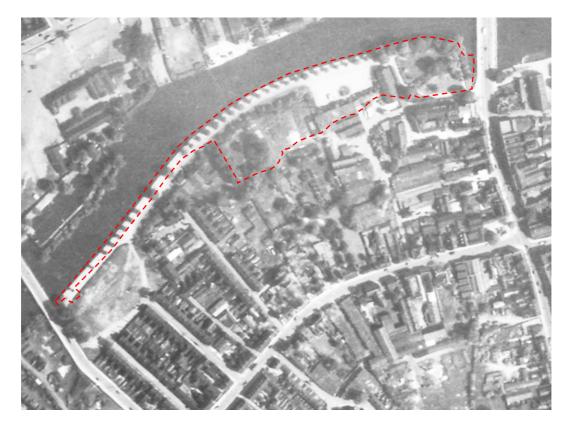


**Figure 17:** 1901 2nd edition Ordnance Survey 25-inch map, showing the boat yard and ferry route (Scale approximate)



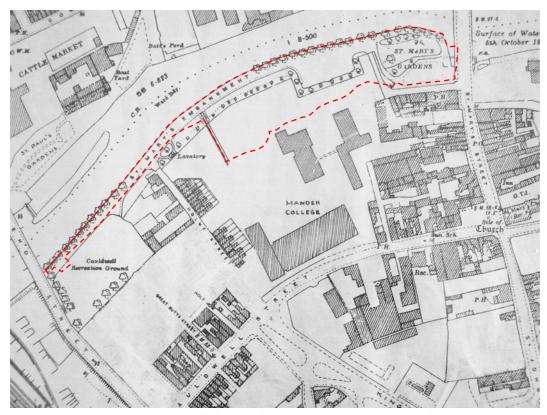


**Figure 18:** 1924 3rd edition Ordnance Survey 25-inch map, showing 'St Mary's Embankment' and 'St Mary's Gardens' (Scale approximate)

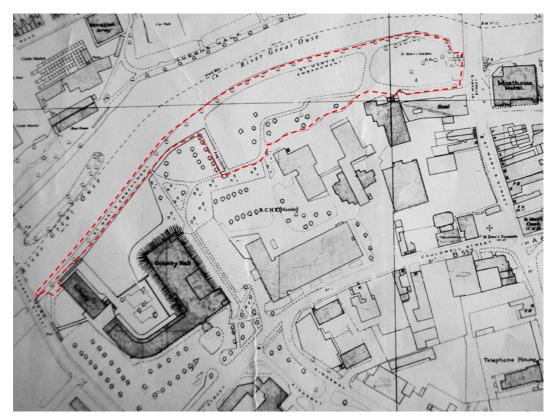


**Figure 19:** 1946 aerial photograph (Scale approximate)



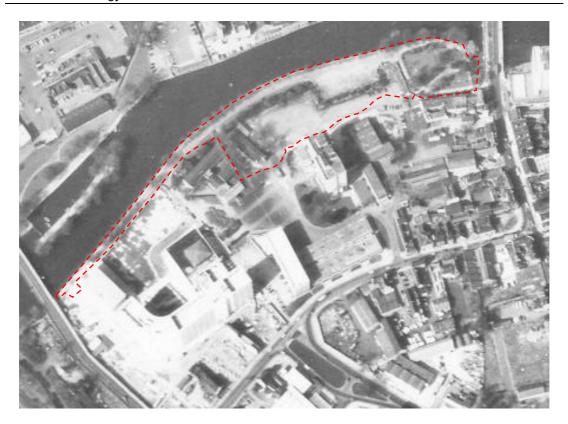


**Figure 20:** 1960 edition Ordnance Survey 1:2,500 scale map (Scale approximate)



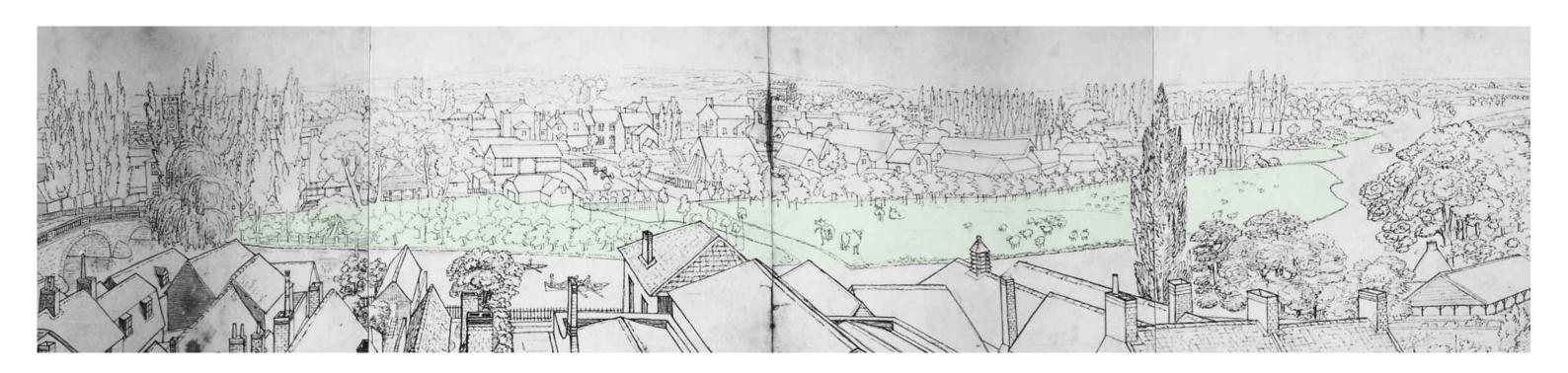
**Figure 21:** 1967 Ordnance Survey 1:2,500 scale map, annotated diazo print (Scale approximate)





**Figure 22:** 1969 aerial photograph (Scale approximate)





**Figure 23:** Detail from Dawson's 1833 panorama (BLARS ref: BP28-14a+b)





Figure 24: View of St Mary's Gardens from County Bridge on completion of groundworks, February 2014

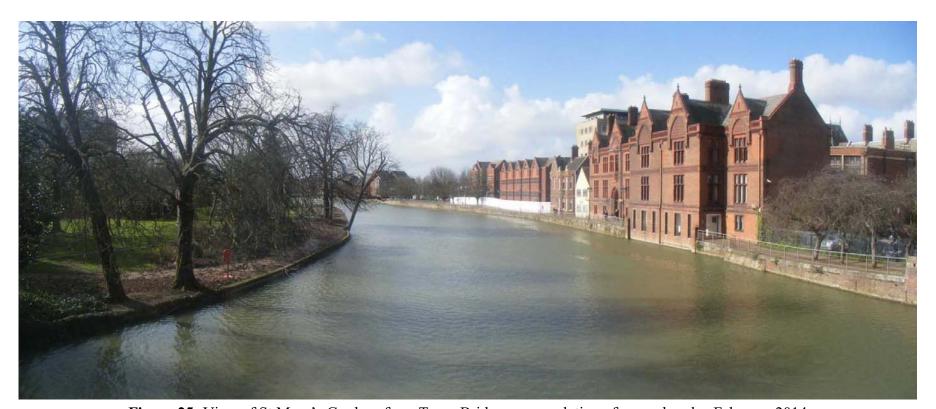


Figure 25: View of St Mary's Gardens from Town Bridge on completion of groundworks, February 2014



Albion archaeology



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