

# Chapter 3 The Later Development of the Site from c 1600 to the Present Day

## SITE 29: THE ORACLE WORKHOUSE

### Project Phase 7: c 1600-1680

#### *The decommissioning of the 16th-century tannery or clothiers' works* (site sub-phase 2908e)

The wooden vessels that belonged to the tannery/clothiers works (see Chapter 2, Project Phase 6, above) were left in the ground, filled in, and then buried below a thick layer of numerous dumped deposits (site sub-phase 2908e). These dumps were relatively large-scale indicating that this activity probably occurred over a short space of time. It is not possible to say in what order the disused vessels were backfilled, although practical considerations of access would suggest that the vessels to the outside of the complex were infilled first, and that this probably occurred from north to south. The evidence demonstrates that the area had been deliberately covered over, possibly to mask the stench that a disused tannery would have exuded or to reclaim and raise the ground level in preparation for construction of the Oracle workhouse (see below). The presence of significant quantities of broken roof tile and mortar suggests that some of the dumps derived from the demolition and clearance of buildings, possibly those that belonged to the tannery/clothiers' complex on the site. The absence of stone in these deposits indicates that this building material was reclaimed for re-use. The localised subsidence of the later Oracle courtyard in the locations of each former vat (see Plate 2.21) also suggests that there was much organic waste in these dumps that did not survive.

#### *The workhouse*

In the latter half of the 16th century there were very few establishments outside London that provided for society's poor and infirm. This had been an important function of the country's great religious institutions, such as Reading Abbey, until they were dissolved by Henry VIII in the late 1530s. In 1578 the Corporation of Reading established a 'hospital' in the former Greyfriars Church in Friar Street (Phillips 1980, 40). By 1591 this had been 'converted to a house of correction, as well as for setting of the poore people to work' (Guilding 1892-96, vol 1,

403). *Ad hoc* institutions like this did not really address the problems of poverty and 'idleness' either nationally or locally, and these became a focus of Elizabethan and later legislation. In 1623 an Act of Parliament encouraged charitable donations to assist in the construction of new establishments for the poor (Morrison, 1999). In the following year John Kendrick a very successful local clothier and Master Draper and Merchant Adventurer of the City of London died. In his will he left the sum of £7500 to the Corporation of Reading to 'build a strong house of Bricke fit and commodius for the setting of the poore on worke therein', thus making him one of the 'great charitable benefactors' of the period (Jackson 1994, 44, 45).

Three years later, in 1626, the Corporation bought a house and land located on Minster Street from John Kendrick's brother William, who ran his cloth making business from the site where 'all the major cloth making processes were carried out in workshops on the Minster Street site' (ibid., 30). An inventory of the purchase lists a dyehouse within which were 'three furnaces, a flat vat, two woad vats and racking hurdle and frame' (ibid.). Some of the remains of the wooden vats, troughs and furnace house on site 29 described in Project Phase 6 (Chapter 2, above) may well be the remains of Kendrick's cloth workshops. An adjacent plot of land was bought from Anthony Blgrave. It is possible that it was at this time that the wooden vessels were infilled and the tannery, possibly Kendrick's cloth works, was demolished and infilled.

A clear plan of the layout of the Oracle is shown on Tomkins' map of 1802 (Plate 1.5) and in a Reading Corporation Terrier of 1807 (Plate 3.1; the plan is drawn with south at the top). The general layout represented on these plans had probably altered very little from when the workhouse was first built. In 1850 when the building was sold it was fully described in the *Reading Mercury*. The structure comprised a large courtyard, or quadrangle, with the Holy Brook running as an open water course along its southern edge, surrounded on all sides by ranges of buildings. Entry was provided from Gun Street through substantial wooden gates flanked by Ionic stone columns and housed in a stone gatehouse (Plate 3.2). South of Gun Street, the west edge of the workhouse complex was formed by the long-lived lane first seen in Project Phase 3 (labelled 'Passage' on the Terrier, Plate 3.1).

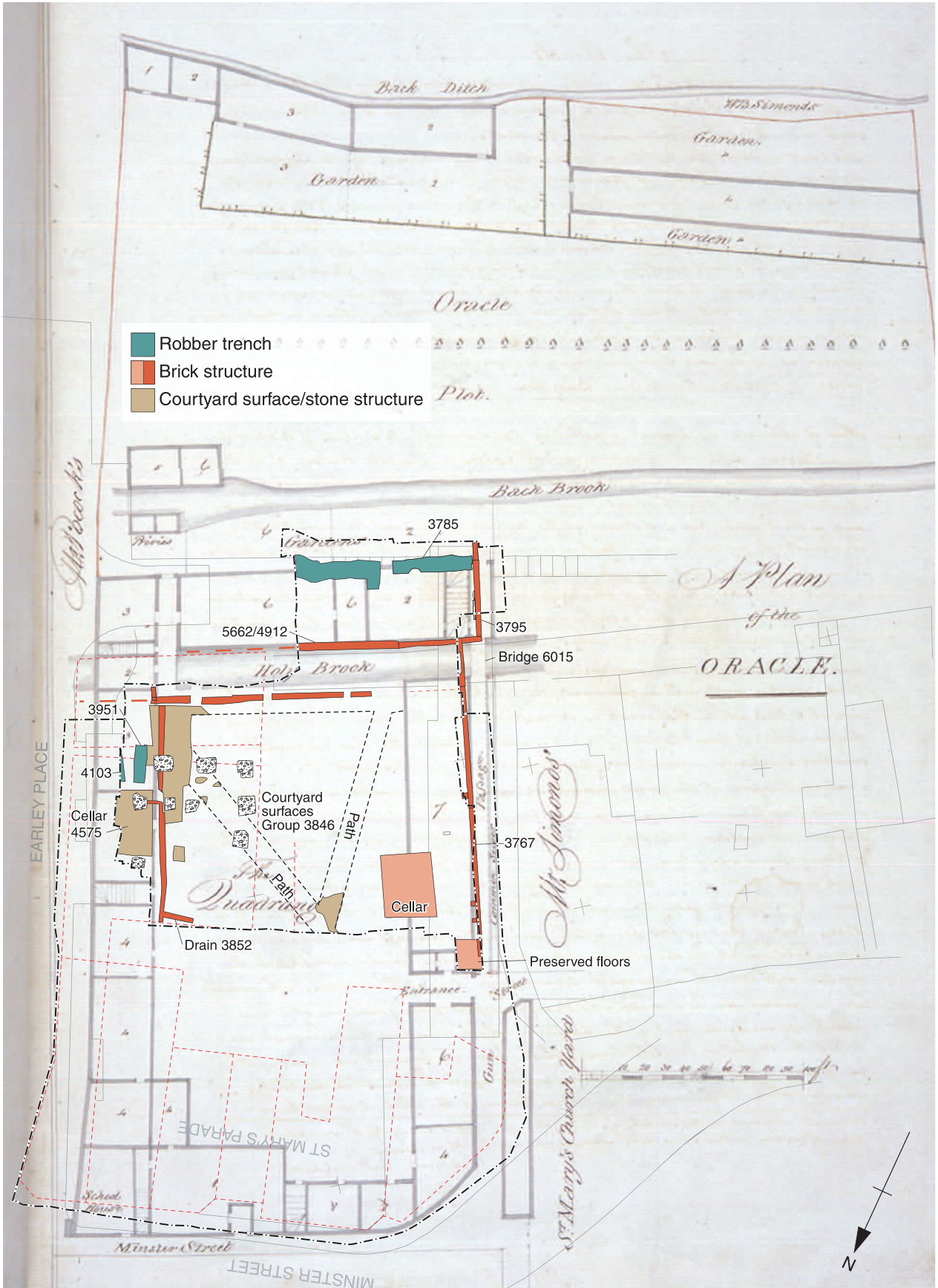


Plate 3.1 Reading Corporation Terrier of 1877 showing the Oracle workhouse, with the location of the excavated remains superimposed



Chapter 3

The east, west, and southern ranges were constructed from new, in bricks that had been locally supplied by William Brockman of Tilehurst (see Smith, Chapter 8 below). Various views show these ranges were two storeys high, with a further storey in the loft. In addition they show that the brickwork was patterned, probably using overfired vitrified

bricks to pick out a loose checkerboard appearance, which was interrupted by small but frequently spaced leaded glass windows. The loft space was lit from windows within regular gable projections. A sketched view of this structure can be seen in the landscape presented in Plate 1.7, here shown as a detail (Plate 3.3). Plate 3.4 shows a view of the north-



Plate 3.2 Calotype by William Henry Fox-Talbot of the Oracle workhouse entrance, Gun St, in the 1840s (Science Museum SCM/541/69)



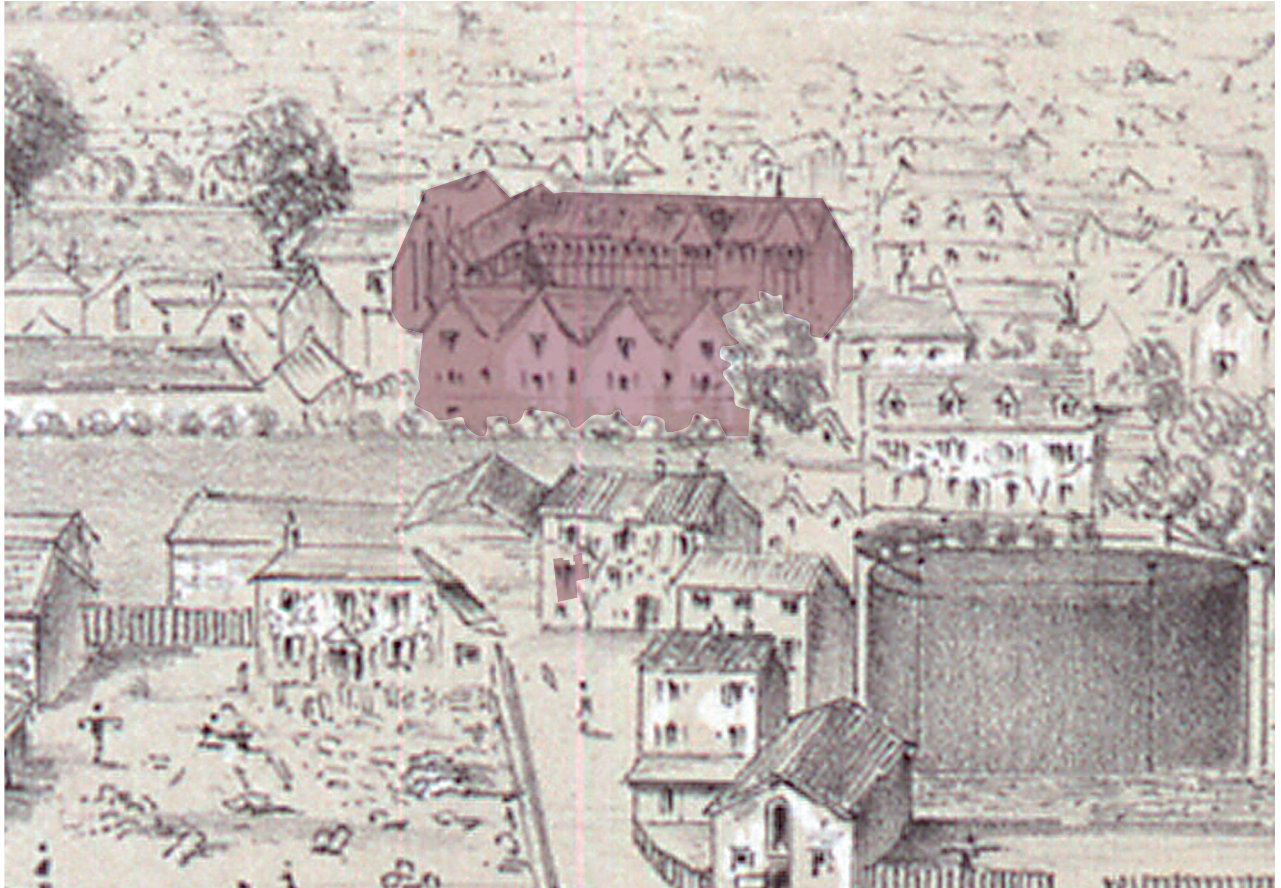


Plate 3.3 A detail from the E H Buckler view of Reading, looking north-west (see Plate 1.7), as seen from the water tower with the Oracle highlighted



Plate 3.4 'The Oracle and Minster St 1628', an artist's impression looking NE



western corner of the Oracle from the west, with elements of the north and west ranges as well as the gateway. The northern range incorporated late medieval jettied timber-framed structures, one of which was probably William Kendrick's house.

The complex extended across the Holy Brook, and the south range was built against the south bank of the channel. Beyond the south range was a large plot of open land on the valley floor. This area also belonged to the Oracle, and is probably the plot of land bought by the Corporation from Anthony Blagrave.

*The archaeological evidence* (Plate 3.1)

*The construction of the workhouse*  
(site sub-phase 2909a )

Archaeological remains from the construction, occupation and use of the workhouse were

limited. Large basements had been dug into the area of site 29 during the 19th century (see below), and these had destroyed much of the evidence. Some structural fabric of the east, west and south ranges remained, and a new revetment on the north bank of the Holy Brook. The central courtyard partially survived and three semi-celled rooms not represented on historic maps were discovered.

Two adjacent pits (4326 and 4410), probably saw-pits (Plate 3.5), show that the area that had first been used as a builder's yard in the 16th century (see Chapter 2 Project Phase 7) was probably used again in this way during the construction of the workhouse in 1627 and 1628. The primary courtyard surfaces 3755=3743, 4207 and 4621 sloped gently down to the south and consisted of rubble fragments and small stone cobbles. They survived only in patches, some of which had slumped into the softer infills of the



*Plate 3.5 Site 29 the Oracle:  
view looking SE of the saw  
pits (Project Phase 7)*



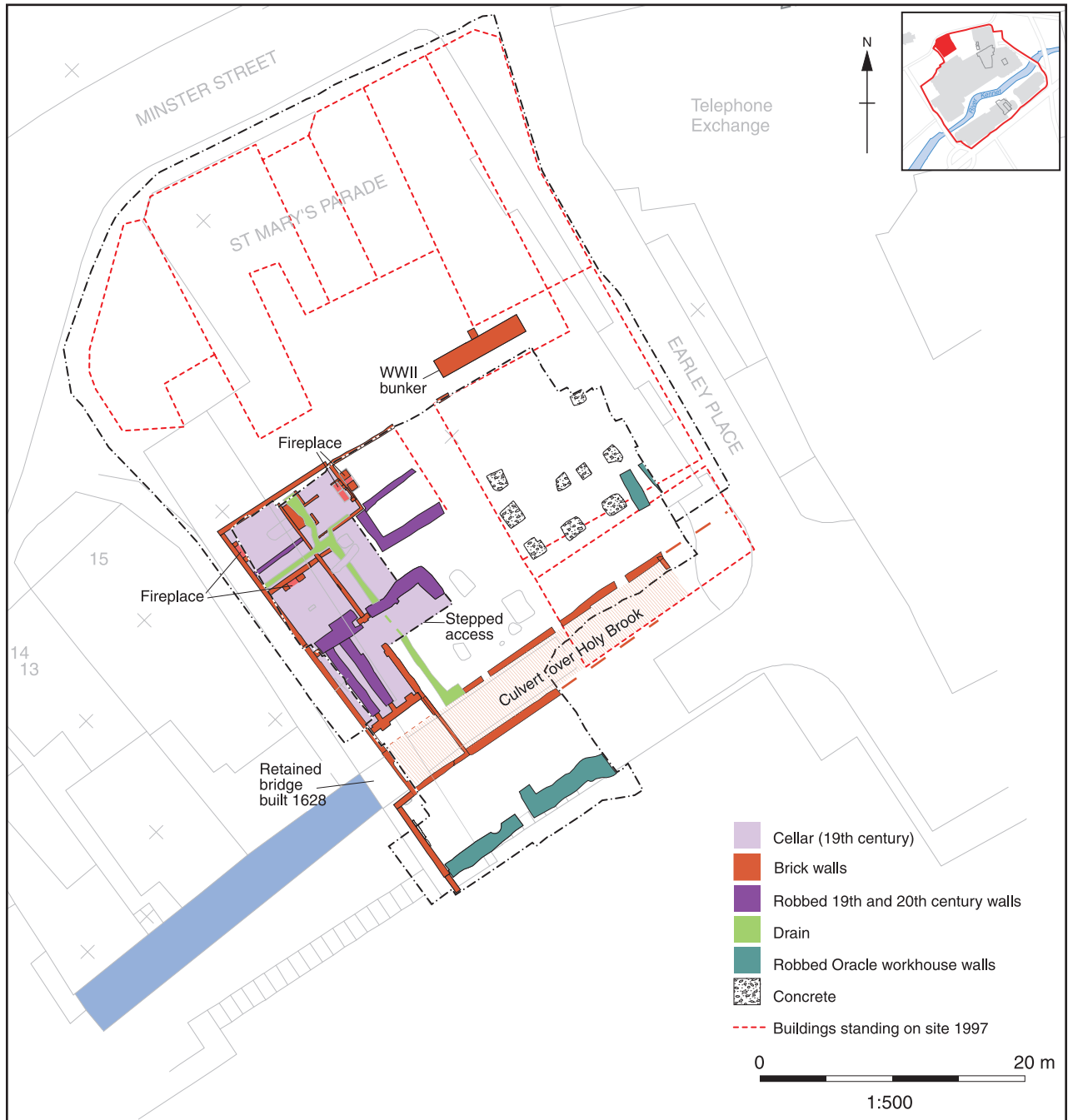


Fig. 3.1 Site 29: plan showing the 19th- and 20th-century archaeological features, and standing buildings on the site at the time of the excavations in 1997

vats from the tannery / dyehouse (see Plate 2.21). In the south-east corner a cobbled surface (4455/4456) had a central drainage gully that was floored with bricks set on edge. There was a distinct lack of finds from the occupation deposits that overlay these surfaces, suggesting that the courtyard was kept relatively tidy.

*The east range*

Some structural evidence survived for the east range, although its eastern edge lay outside the limits of the excavation. The position of the main

western wall of the east range was represented by robber trench 3951 and/or 4103 in the south-east corner of the site. The west part of a cellar (4575) was found in the southern half of the courtyard, on the east side, some 8 m north of the Holy Brook (Plate 3.6). It was built within a large pit 4973 which measured 5.2 m (N-S) by 3.2 m+ (E-W). The lower element of the walls was constructed from re-used masonry, some of which seems to have come from Reading Abbey (see Preston, Chapter 8). The upper elements of the walls were constructed of brick, and were keyed into a brick-built drain, 3852, which ran





*Plate 3.6 Site 29: view looking NW of cellar 4575 in the east range of the workhouse (Project Phase 7)*



*Plate 3.7 Site 29 the Oracle: view looking SE along drain 3852 (Project Phase 7)*



towards the Holy Brook (Plate 3.7). Access via a set of steps (that did not survive) was provided from the north end. The cellar floor consisted of large well-laid cobbles, 4604, around a brick hearth setting, 4605, in the northern half of the room. The hearth and to some extent the surrounding floor was overlain by charcoal-rich occupation deposits 4790 and 4510, although there were no finds. It is unclear whether this hearth was purely for heat, or whether it had some function in a production process.

*The south range*

Only the western third of the south range, beyond the Holy Brook, fell within the excavated area. Construction began immediately adjacent to the channel, where a substantial brick river wall (5662/4912) was built upon flint foundations (10568). This wall also acted as the structural north wall for the southern range. A brick bridge (6015, see below) was sprung across the Holy Brook (Plate 3.8) from a point six courses high within this wall. The entire length of the western wall (3795) survived to just above floor level and formed a corner with the southern wall (3785), which survived as only a short length but to a similar height. These walls showed similar construction methods and were achieved in a series of stages. Flint foundations lined the base of the construction cuts, with substantial brick footings above, raised in stages much like the north wall. This method appeared to be linked to episodes of ground level raising within the space enclosed by the walls, prior to the laying of the floors. The range was 6 m

wide from north to south. On the western side (in the south-west corner of the complex) there was a greater height of made ground and floor levels were higher than those to the east. This suggests a division of the internal space for which no partition wall survived. To the east of this area, evidence for flooring from this phase was restricted to isolated patches of crushed chalk and mortar, probably the remains of a bedding layer for a brick surface. Two burnt deposits belong to this phase, 5610 and 5581, and there was one oval pit and a slot whose functions are unknown.

*The west range*

The western wall of the west range, and its foundation, were revealed. This wall (3967) was 0.40 m wide and was constructed of brick laid in a random bond. To the south it was founded upon the remains of the 16th-century sandstone building that had previously occupied the site (see Chapter 2, Project Phase 6, above); however to the north of this it sat upon a contemporary foundation of reused bricks, tiles, flint, chalk and limestone (4181) (Plate 3.9). The eastern wall and the majority of the internal occupation levels of the west range had been removed when the floor levels for almost the entire range were lowered to provide a new basement in the mid 19th century (see below). The later basement did not extend to the full northern limits of the west range, and it was in this location that a comprehensive sequence of construction, repair, re-use and finally disuse of the interior of



*Plate 3.8 Site 29 the Oracle: view looking SW at original brick bridge 6015 which carried the western range of the workhouse over the Holy Brook (Project Phase 7)*





Plate 3.9 Site 29: view looking SW at the west wall (3967) of the west range of the workhouse (Project Phase 7)

the range was preserved. Here it was seen that the original floor (4200) had been repaired (4199) and subsequently needed complete replacement (4122) due to subsidence. Each re-laying consisted of a mortar bedding layer for a brick surface, which was all that remained, the bricks having been removed.

Towards the northern end of the west range and off-set from its alignment so as to be positioned half projecting into the courtyard and half under the range were the partial remains of a brick lined cellar which measured 4.5 m square. The brick floor and any occupation deposits were absent although the mortar bedding remained. The relationship between this cellar and the western range had been destroyed by later demolition and remodelling work, but it was probably built during this primary construction phase.

*The bridge over the Holy Brook*

Bridge 6015 (Plate 3.8), of four-centred arch design, was 2.4 m wide and constructed entirely of non-vousoired brick. It had a centre span of 3.30 m between the two east-west orientated brick walls with flint foundations that acted as abutments on either side of the Holy Brook. The apex of the arch sat 1.2 m above the uppermost level of the flint foundations. Until its demolition to make way for the shopping centre this was the oldest surviving bridge in Reading and the only surviving element of the Oracle Workhouse from which the shopping centre took its name.

**Project Phases 8 and 9: 1680-1850: The later development of the workhouse**

*The remodelling of the Oracle Workhouse  
c 1690–1710+  
(site sub-phase 2909b)*

In the event, Kendrick's original intention that the Oracle workhouse would offer gainful employment for the poor of Reading in the cloth industry was never realised. There were a number of reasons for this failure. On the local level there was a certain amount of mismanagement of the workhouse, but the problems were in essence due to greater forces. The declining popularity of English cloth on the international markets during the later 16th century and the first half of the 17th century had led to a persistent fall in demand and a decrease in price, putting pressure on the industry nationally. This trend was further exacerbated in the 1640s by the English Civil War, which severely disrupted productivity and trade in many goods including cloth, and by the outbreak of infectious diseases including typhus (Dils in Petyt 1993, 76). As a consequence the Oracle had already diversified into other activities. In the 1720s, while John Watts was Mayor of Reading, the Oracle was partially restored to improve the accommodation for the poor and provide for activities such as pin making, silk weaving and sailcloth manufacture which took place there (see Chapter 4, below).



Limited archaeological evidence was recovered to add to our knowledge of these activities. A small brick furnace and an associated quench pit in the east range were perhaps used for the small-scale production of metal objects, and may represent a pin maker's workshop. However, there was more evidence that the complex underwent some major structural alterations and repair. The courtyard was furnished with new cobbled paths/carriageways, the two cellars were infilled, and significant internal renovation occurred in the west range. Finds associated with these changes date to turn of the 18th century and probably represent the documented restoration project of the 1720s.

### *The archaeological evidence*

#### *The courtyard and the Holy Brook*

A new, formal courtyard layout was established (Group 3846) represented by a series of paths or carriageways. The evidence, although heavily damaged by later activity especially in the central and western side of the courtyard within the excavated area, clearly showed the layout and organisation of the courtyard. The pathways were constructed of closely packed rounded pebbles laid upon a bedding layer. Some pathways had a central drainage channel (the two sides sloping to the middle) whereas in others this feature was absent. The path edges were marked by limestone or flint nodule kerbs. The pattern that was revealed showed a major N-S path running down the eastern side of the courtyard

(4145=3879, 3.9 m wide and over 13 m long; Plate 3.10). At its south end, it joined an east-west path (4161 and 4267) that ran parallel, and adjacent to, the open Holy Brook. A third, narrower path (4129, 1.82 m wide) joined 4145 just north of its junction with path 4161/4267, and ran in a north-westerly direction. Its line was picked up again around 20 m to the north-west (4160), and it continued out of the excavated area towards the location of the entrance gateway. Path 4160 was joined by a further cobbled path (3964, 1.9 m wide) which ran in a south-westerly direction for over 3 m (its make-up layer ran for a further 3.5 m). These remains suggest that the complete pattern of pathways would have formed a square of wide paths around the outside of the courtyard, enclosing narrower paths forming a 'X' shape inside.

#### *The east range*

The 17th-century cellar towards the south end of the east range (4575) and its hearth went out of use, and the cellar was backfilled (Plate 3.11). The initial dumps of sand and brickearth-rich mortar suggest they were the product of demolition activity, probably within the Oracle, and they included broken medieval tiles and post-medieval brick with occasional metal fittings such as hinges and metal straps. Later infilling included material indicative of more domestic activity, such as pottery, animal bones, shell, clay pipes (including locally-made examples, see Higgins, Chapter 9, below), pins and two fragments from an attractive maiolica tile (Plate 3.12). Some of these finds probably derived from the



*Plate 3.10 Site 29 the Oracle: view looking NW along the main NW-SE pathway of the Oracle Courtyard (Group 3846) (Project Phase 8)*





*Plate 3.11 Site 29 the Oracle: view looking SW showing the back-filling in the cellar in the east range of the workhouse (Project Phase 8)*



*Plate 3.12 Site 29 the Oracle: a maiolica tile from the backfill to the eastern cellar, perhaps from an original wall of the workhouse*





*Plate 3.13 Site 29 the Oracle: vertical view of the furnace (Project Phase 8)*

domestic quarters in the Oracle; the maiolica tile might have been used in a tiled floor, wall or fire-surround, and demonstrates the quality of internal decoration in the better-appointed rooms. The pottery is typical of the period and includes standard English wares such as Surrey borderwares, and locally produced post-medieval redwares. Imports included Frechen and Westerwald stoneware from the Rhineland in Germany, and small quantities of decorative tinglazed wares. The pottery from these traditions was used for the consumption and storage of food and drink. Animal bones included domestic fowl, sheep, and cow and indicate a varied meat diet. One of the tips (4463) was rich in ash and charcoal, which suggests that the building (and perhaps more specifically the domestic quarters) were cleared of rubbish which was first burnt before disposal. The significant numbers of pins present in these later fills suggest that activities involving some form of fabric processing took place at the Oracle, or indeed that pin manufacture had taken place prior to 1720. The former access doorway to the cellar, in the north wall, was blocked (4390) and access from the courtyard was moved to the west wall. Once the cellar had been filled up, a new floor of rammed chalk (4394) was laid. Within the new floor a brick-built sub-circular structure (internal diameter 0.7 m) was constructed adjacent to the southern wall, with a brick-built trough measuring *c* 1.1 m square to its north (Plate 3.13). These structures were probably a small-scale furnace and quenching pit and represent small-scale industry, possibly for the manufacture of metal items, such as pins.

#### *The south range*

Within this structure, major resurfacing commenced on the ground floor with the deposition of a preparation layer of clay (5525). The use of clay may indicate that this structure had experienced a significant damp problem after it was first constructed. These later flooring episodes were similar to the previous sub-phase, with isolated patches of crushed chalk, sand and mortar possibly suggesting that no formal brick floor had been laid in the area east of the corner. Occupation deposits were characterised by ash and charcoal (5533, 5508, 5384, and 5447). There was a significant lack of finds that related to domestic activity in these deposits. This absence may indicate that the area was kept clean or, probably more likely, that this part of the ground floor of the southern range housed some aspect of the production processes documented to have taken place on the site. The small number of clay pipe fragments that were recovered from these deposits dated to the last decades of the 17th century and the beginning of the 18th century.

#### *The west range*

This sub-phase saw major remodelling of the north end of the western range. Echoing changes seen in the east range, the brick-built cellar described in the previous phase in the west range went out of use. Its brick walls were almost totally dismantled, and the resulting hole infilled with material derived from demolition activity (Plate 3.14). The fills contained significantly fewer finds than the backfilled cellar in





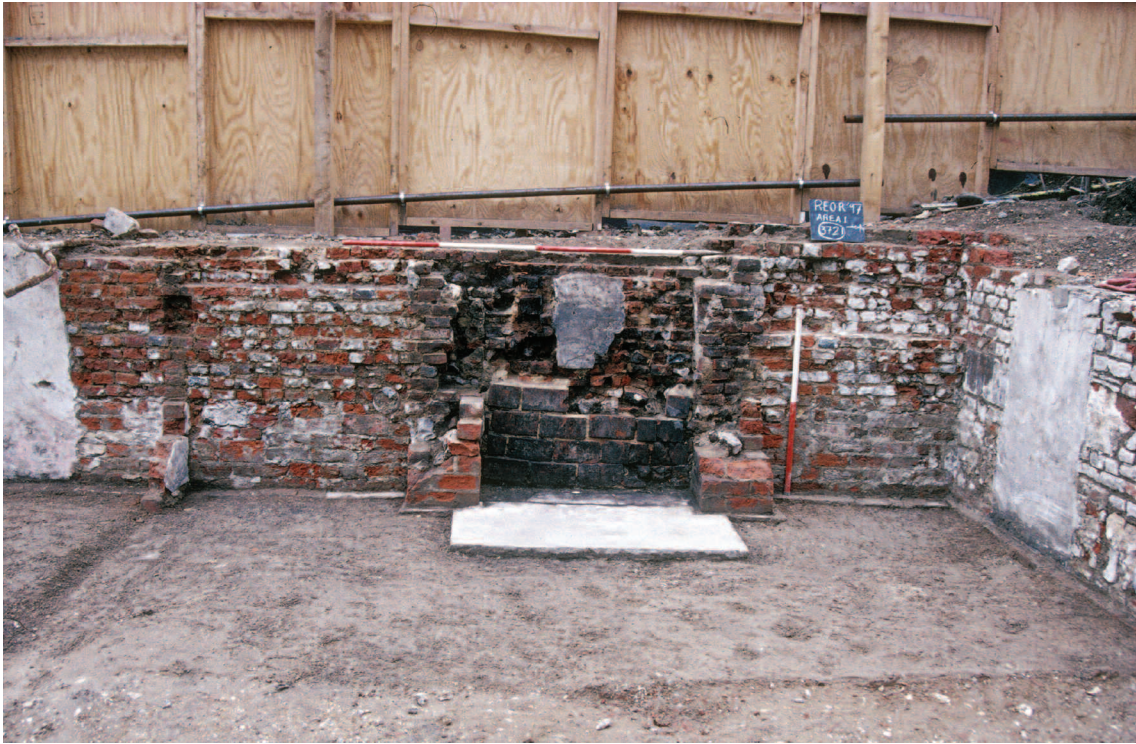
Plate 3.14 Site 29 the Oracle: view looking E showing material dumped into the cellar (3967) in the west range of the workhouse (Project Phase 8)



Plate 3.15 Site 29 the Oracle: view looking NW at a detail of demolished or collapsed workhouse wall and ceiling plaster showing the impressions of laths in the untruncated northern part of the west range (Project Phase 8)



*Under the Oracle*



*Plate 3.16 Site 29 the Oracle: fire places: (above) view looking SW at the western fireplace 3721 and (below) looking NE at the eastern fireplace 3775 (Project Phase 10)*





the east range. Some pottery was recovered, with the majority of the sherds from the pottery traditions already described, although there was also a sherd of Chinese Porcelain, a luxury import. At the same time, the floor in the north end of the west range was removed, and a substantial dump of internal wall and ceiling plaster and other material deriving from demolition works then accumulated. The dumped plaster retained the impressions of the wooden laths to which it had been applied (Plate 3.15). As a result of these works the new internal floor level in this part of the range was raised by 0.30 m. Only a very small section of the make-up for this floor was excavated as it had subsequently been removed by further internal changes.

***The demise of light industry and limited remodeling at the Oracle, 1750-1850***  
(site sub-phase 2909c)

No evidence for new works or changes during the later 18th century was revealed in the courtyard, the revetment walls to the Holy Brook or the west range. In the east range the small brick furnace and quench pit that were built in the previous sub-phase went out of use and were partially dismantled and

buried under further dumped deposits. In the south range limited work was undertaken to correct the worn and uneven nature of the earlier floors. Large spreads of chalk-rich dump deposits (3859 and 5273) were laid to prepare for a new brick floor 3857.

(site sub-phase 2909d)

Apart from limited localised patching of the Holy Brook river walls no further major changes occurred to any of the main surviving structural elements of the workhouse, and evidence from this sub-phase is limited to deposits and small features datable to the period after 1830. These comprised small postholes with no particular pattern, and worn areas in the courtyard, demonstrating that activity was still taking place but that little effort was put into maintenance.

**Project Phase 10: 1850-1900: Demolition of the Oracle and other 19th- and 20th-century activity**

This phase represents activity on site 29 after the demolition of the Oracle workhouse around 1850, and the subsequent episodes of redevelopment of the area up to 1998.



*Plate 3.17 Site 29 the Oracle: view looking NW of herringbone brick floor 3812 (Project Phase 10)*



*The map evidence*

A new centrally positioned crossroads divided the area of the former workhouse into quarters. The Board of Health map of 1853 shows the amount of construction that had taken place since the Oracle's demolition in 1850 (Plate 1.6). The map suggests that certain elements of the west and south ranges were retained. Significant lengths of the Holy Brook and the Minster Mill Stream ran under the newly raised ground within brick-built culverts. The Minster Street frontage was developed into ground floor shops called St Mary's Parade. The south-western quarter was developed by 1853, and subsequently underwent remodelling and additions. The south-eastern quarter was partially developed by 1853 with further development later extending southwards. All these structures were later demolished, those in the south-western quarter in the 1960s, those in the south-eastern quarter immediately prior to excavation, and St Mary's Parade immediately after excavation.

*The archaeological evidence*

No archaeological record was made of St Mary's Parade and its later additions, although the outline of the buildings as they were immediately prior to demolition in 1998 can be seen on Figure 3.1. Excavation to the south revealed the remains of a concrete underground bunker, with access provided centrally from the north. This probably dated to World War Two and provided shelter for people who worked in St Mary's Parade and the other properties nearby.

The foundations and west wall of the west range of the Oracle were retained (probably only up to the level of the lane that ran on its western side). This element was reused to form the retaining wall for

the new basement for buildings that ran down the west side of the site in the south-west quadrant. Construction of this basement removed all the floor levels associated with the use of the west range of the workhouse, except in the location of its extreme northern end (see above). The new building, with additional rooms to the east of its northern end, one of which had a basement, was L-shaped and extended into the area of the former workhouse courtyard. At a later date, probably in the 20th century, further buildings were added extending the area covered by basements southwards, that is, adjacent to the original basement. A stepped access was built into the basements at the southern end of these additions. The new structures were built in brick with the walls on concrete foundations; an element of reused undiagnostic architectural stone was also present, which may have come from the Oracle Gateway. The two northernmost basement rooms retained their brick-built fireplaces (Plate 3.16).

The far western corner of the south range of the Oracle was also maintained and it is likely that the latest brick herringbone flooring (3812; Plate 3.17) inside this part of the building served as the floor until it was demolished in the mid 20th century. The brick culverts covering the Holy Brook and Minster Mill Stream were recorded. The south-east quadrant did not have basements in the initial or later redevelopment, although foundations for the structures built there comprised large and deep square concrete bases, which removed the archaeology from all the previous phases. The culvert enabled the building north of the Holy Brook to be extended southwards over the watercourse to meet the building in the south-west corner. To the west of this, the bridge that had been constructed in 1628 was retained to provide access over the stream.

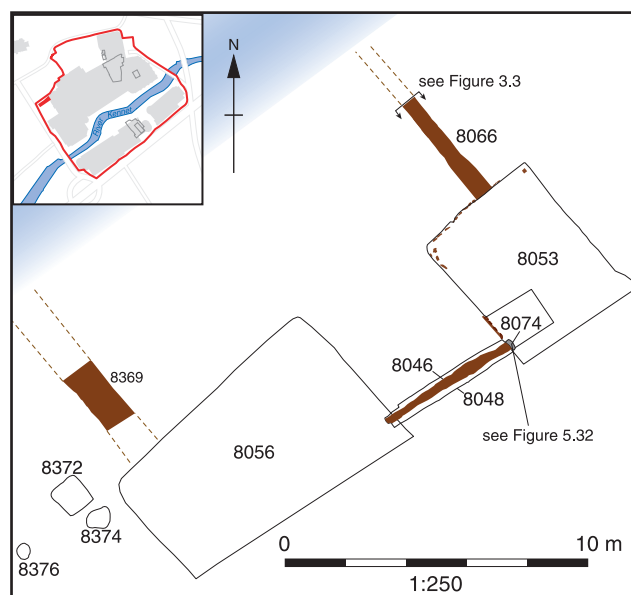


Fig. 3.2 Site 28 Test Pit 78: plan of features related to the dyehouse (Project Phase 7)



## A 17TH-CENTURY DYEHOUSE: TEST PIT 78

### Project Phase 7: 1600-1680 (Figs 3.2-3.3) (site sub-phase 7802a)

During the general Watching Brief on construction works (site code site 28), significant archaeological remains were identified in an area at the west edge of the project area, on the Bridge Street frontage, and just north of the building known as Seven Bridges House. A small area excavation was undertaken to expose the remains of a post-medieval dyehouse dated by dendrochronology to 1611-1612; this was allocated the site number Test Pit 78. Dils' map of Reading in 1540-1640 (1980, 30-31), produced with the aid of deed information, indicates this site was a 'former dye house' but the archaeological evidence suggests that it was in use throughout the 17th century.

The remains (Fig. 3.2) consisted of two roughly square pits positioned 4.5 m apart and cut into a series of alluvial deposits below. The western pit (8056) was of unrecorded depth and the eastern pit (8053) was at least 1.5 m deep; its sides were vertical for the first 0.55 m from the top and then sloped inwards at an angle of about 50°. The pits were linked by a channel (8048) containing a hollowed-out oak timber 0.3-0.45 m wide (8046). This channel sloped slightly from pit 8056 into pit 8053, being 0.08 m lower at the eastern end which was covered with a sheet of perforated lead (8074, Fig. 5.32 No. 5) suggesting that liquid was filtered on its way into pit 8053. Timber channel 8046 and beam 8288 were

dendrochronologically dated to late summer 1611 and found to have been felled from the same tree as w301 (12580) from structures at St Giles Mill suggesting an organised supply of timber to the town, if not a direct link and possible common ownership between the two properties (see Miles, Chapter 11, below).

The eastern pit (8053) was lined with a timber revetment (8052) comprising vertical planks measuring 0.15 m wide x 0.04 m thick x 1.1 m long (Plate 3.18). They were positioned flush with the vertical section of the pit but went through the lower angled part and into the underlying deposits so that the lower part of the pit was not lined. It is likely that the pit would have held a large vessel to contain the liquid and that only the upper part of the pit needed to be protected and lined. Two silty clay fills were deliberately packed around the timbers to keep them in place (8076, 8078) and in each of the two visible corners was a pair of more substantial posts. The function of these posts is not clear but they are most likely to have supported the vessel in the pit. The structure of the pit at Reading is highly reminiscent of Structure 791 at Beverley where a wooden vat was set into a pit in the ground and fed by a wooden pipe. Around the top part of the square pit at Beverley was wooden shuttering, similar to that identified here, and posts to support the vat (Evans and Tomlinson 1992, 29-30). This pit may have been used for cooling liquid, with the coolness of the surrounding earth helping to bring the temperature down (Evans and Tomlinson 1992, 284).



Plate 3.18 Site 78: view looking SE showing the construction detail of the eastern dyeing vat pit 8053 (Project Phase 7)



The liquid from pit 8054 appeared to have drained out through a north-south orientated linear channel adjoining the northern side of pit 8053 (8066). This was lined with thin planks (Fig. 3.3) and at the junction between the channel and the pit, the timber planks of 8053 had gaps between them suggesting that this may have been some kind of sluice gate controlling the outflow of liquid. This channel could have fed back into the Minster Mill Stream which was positioned approximately 5-10 m to the north (the precise location at this time is unknown).

Three pits located just to the north-west of pit 8056 were not excavated because they were below impact levels and were therefore not directly dated but they were cut into the same main deposit as the other features on site 78 (8045) and may have been associated with them.

A second north-south linear feature was recorded during a strip and record operation but not excavated (8369). It could not be traced as far south as pit 8056 but may, from its position, have functioned either as an inflow or outflow channel between the pit and the Minster Mill Stream.

It is not clear precisely when the dyehouse went out of use because the pits were backfilled with dumped material including leather such as Tudor shoe SF 3025, a dagger (Fig. 5.36 Iron 004), oyster shell and pottery, while the timber channel accumulated residual 15th- and 16th-century pottery. The uppermost fill of pit 8053 (8051), however, contained post-medieval pottery of 1700+ suggesting that the pit probably was finally infilled by the early 18th century at the latest.

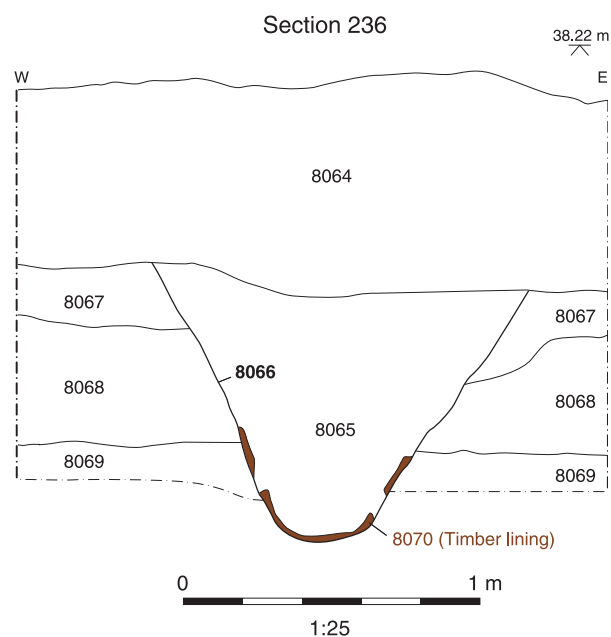


Fig. 3.3 Site 28 Test Pit 78: SE facing section 236, showing timber-lined drainage channel 8066

## SITE 150: THE MINSTER MILL

### Project Phase 7: 1600-1680

#### *Millstream revetments* (Figs 3.4) (site sub-phase 15006a)

During the very late 16th and early 17th century, there is evidence that the Minster Mill stream was recut and revetted on an alignment approximately 1 m south of the 15th-century revetted channel edge 8278 (Project Phase 5). This was identified in a number of Test Pits including (from west to east) 11, 168, 119, and 135 (Fig. 3.4). In TP 11, located just to the south of site 29, evidence for a recut of the Minster Mill Stream was found (404). No revetment timbers were associated with this cut because they would have been below the excavated levels (timbers visible at the base of the cut in TP 119 were at 36.3 m OD and below the base of TP 11). Within this cut and possibly functioning as a deliberate backfill behind the revetment (which was not excavated) were two deposits of horn cores and bones which were dumped into the edge of the channel and which date to the later 16th century or very early 17th century. This refuse may have related to possible tanning activity on site 29 (see Chapter 2 Project Phase 6, above) and if this were the case it indicates that the waste from the tannery was being dumped immediately to its south.

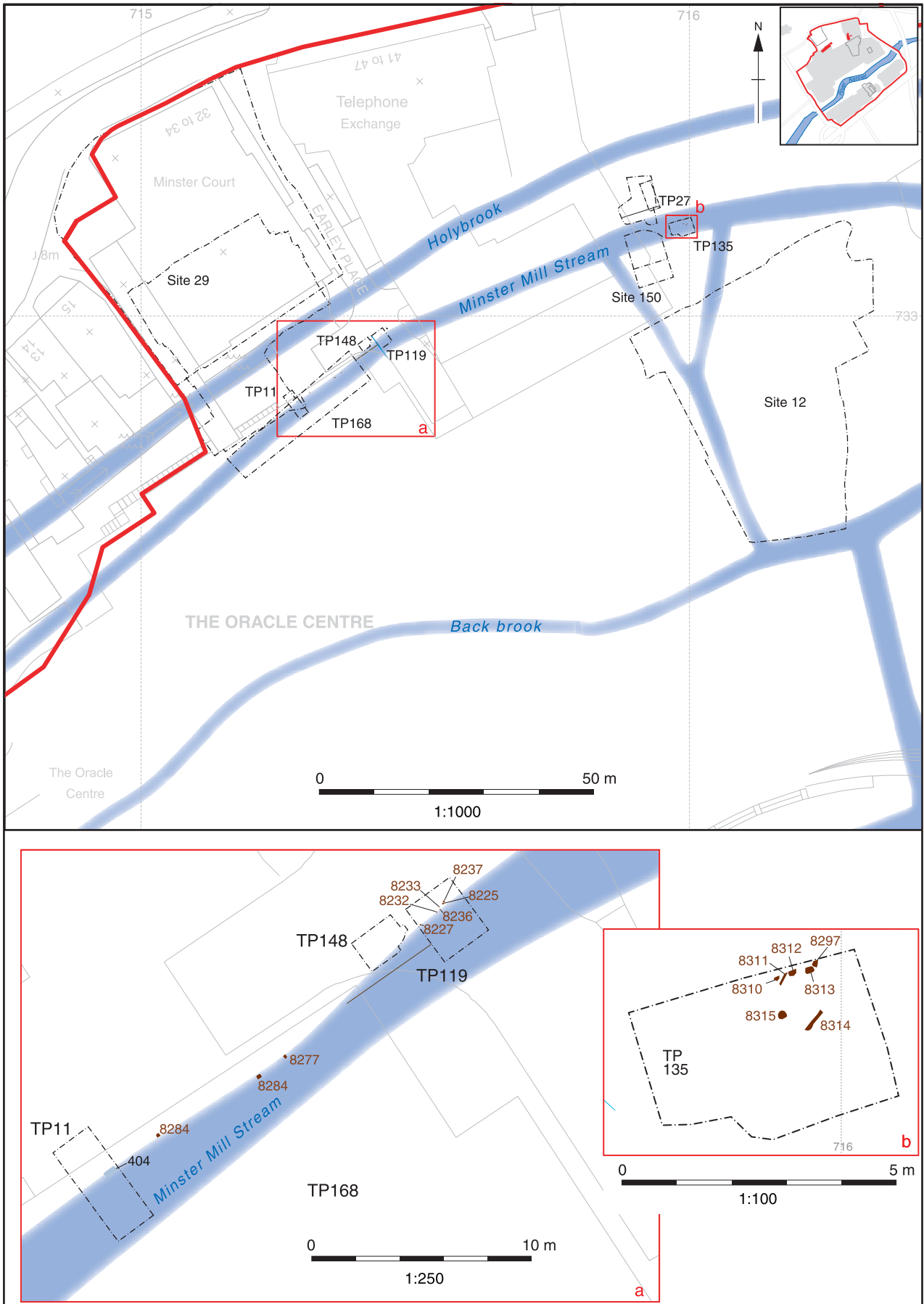
Evidence for a revetment of similar date to the recut was found in TP 135, just to the east of site 150 (section 135). This consisted of four vertical posts (8310, 8312-8313, 8315) and two planks (8311, 8314) which were not *in situ* but which were probably associated. The timbers were packed into place with gravel, broken brick and tile and subsequently with packing of clay and rammed chalk; the latest of these contained a jetton of 1586 (or earlier)-1603 suggesting a construction date around the turn of the 17th century. Further revetment structures were also identified in TPs 119 and 168, south of the line of the 15th-century revetment 8278. The 16th- to 17th-century revetment seen in TPs 119 and 168 was not closely dated, but was associated with a deposit of rammed chalk comprising large blocks and crushed material forming a solid bank at the edge of the channel (8248, 8249), which was strongly reminiscent of the chalk packing seen in TP 135.

#### *The 17th-century Minster Mill (site sub-phase 15006b, c)* (Fig. 3.5)

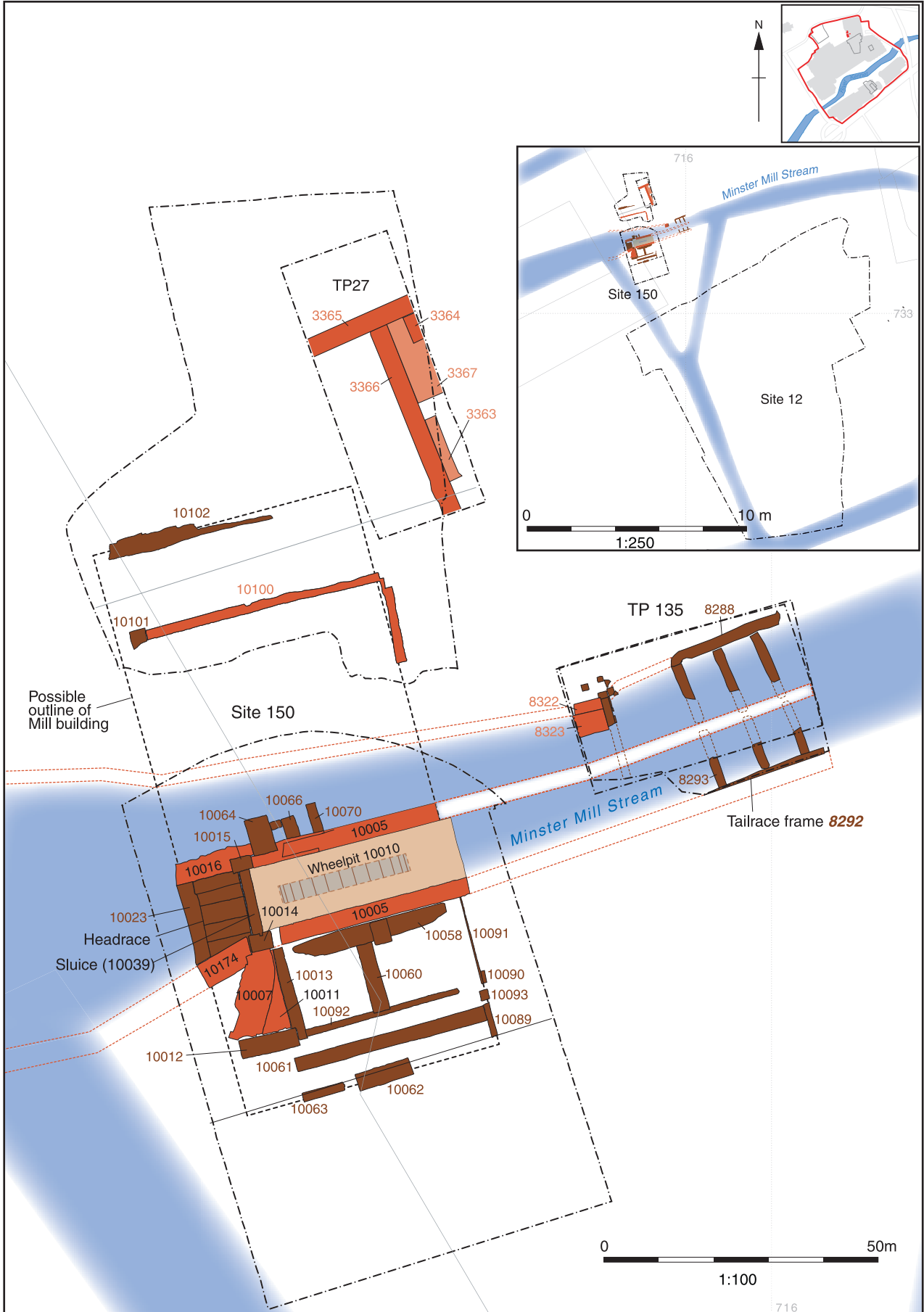
This phase produced the earliest excavated structural evidence of the Minster Mill. The evidence from TP 135 (Fig. 3.5) suggests that shortly after the phase of re-cutting and revetment of the Minster Mill stream described above, a more elaborate structure was put in place to formalise the mill tailrace channel. The excavated structures comprised a horizontal wooden foundation frame (8292) (Plate

Fig. 3.4 (opposite) Site 150: 17th-century revetment of the Minster Mill Stream (Project Phase 7)











3.19) measuring 3.25 m wide, observed for 3 m of its length. It had been constructed upon a series of deposits that had been dumped into and around the edges of the channel in order to raise and stabilise the ground surface prior to construction. The frame comprised 8 horizontal timbers of which four were north of, and four south of, a modern sewer that bisected them. Two longitudinal timbers formed the external limits of the structure, within which the transverse timbers were jointed to form a rectilinear lattice work (as at St Giles Mill, see Site 300 Fig. 3.11, below). The timbers were all rectangular in section and joined together with nails through mortise and tenon joints, the tenon on the transverse timber and the mortise on the longitudinal timber.

Dendrochronological dates were provided by two timbers within the structure: post-1595 (timber 8293), and late summer 1611 (timber 8288). These, in combination with the late 16th-century date of the underlying deposit 8300 (site sub-phase 15006a), suggest an early 17th-century date for the construction of the frame. From the form and position of this structure it is possible that it supported a planked deck to form a tailrace, or alternatively that it was put in place to limit damage from erosion within the tailrace channel immediately downstream of the mill.

Roughly 2 m to the west within TP 135 was a structure comprising a brick-floored channel (8323) with a brick wall (8322) on its north side. Only part of the brick floor of the channel had survived later

truncation, and comprised a double course of bricks laid face up. Its eastern limit was defined by a horizontal beam and a number of associated posts. None of these timbers yielded a dendrochronological date, and this structural use of brick for a channel floor is unparalleled elsewhere within the project area. The only indication of date comes from the use of thin bricks suggestive of a pre-18th-century date (see Smith, Chapter 8, below), and its possible association with the dated frame to the east. Whether these two were contemporary constructions is unknown, as the physical link between them had been removed by modern intrusion. If contemporary, these two structures would have created a water channel with water flowing from the higher level of the brick surface over a drop of approximately 0.43 m onto the timber deck that would originally have been supported by the excavated timber frame. This drop was from 36.07 m OD on the brick-floored channel to 35.64 m OD on one of the main timbers at the lower level. The position of the waterwheel itself was not identified in this phase, but if this drop was to enable water to drain away rapidly after passing through the waterwheel, and to reduce the effect of erosion on the downstream side of the mill itself, it can be assumed that the waterwheel was located to the west of TP 135. If this interpretation is correct, then frame 8292 would have sat outside the footprint of the mill, a position that needs some further expla-



Plate 3.19 Site 150 Minster Mill: view looking NE of the wooden platform in Test Pit 135 (Project Phase 7)

Fig. 3.5 (opposite) Site 150: the archaeological evidence for the Minster Mill, 17th to 19th centuries (Project Phases 7-9)



nation, as no such structure was seen to be required at St Giles Mill. It is possible that this was a result of the siting of Minster Mill, which was located on the sloping northern edge of the valley floor, above the recently reclaimed area of the floodplain (see site 12, Project Phase 6, Chapter 2 above). The course of the Minster Mill stream tailrace flowing above this area would have presented a flood risk, and the platform may have been required to strengthen the channel and minimise the risk of it bursting its banks. It is worth noting that channel 8634 (see Fig. 2.19) is suggested to have flowed from the Minster Mill stream immediately to the east of this platform.

However, the evidence of Speed's map of 1611 (Plate 1.3) suggests an alternative explanation. Speed shows two adjacent buildings, each of which is represented with a waterwheel symbol, and this raises the possibility that there were two adjacent mills on the Minster Mill stream. The evidence from TP 135 may represent the headrace and wheelpit of the easternmost of these buildings.

#### **Project Phase 8: 1680-1750**

##### ***Construction of the 18th century Minster Mill*** (site sub-phases 15007a-c) (15007a and b)

Project Phase 8 revealed a series of significant structures on site 150 that were part of the early 18th-century Minster Mill (Fig. 3.5). The excavated remains comprised a headrace and sluice leading into the wheelpit of the mill (Plates 3.20 and 3.21).

These were contained within a major cut at least 1 m deep (10054), and built upon a substantial clay foundation deposit that contained pottery providing an earliest construction date of 1680. To the north and south of these clearly defined mill features were other longitudinal and transverse timbers which were parallel and/or at right-angles to these remains, and therefore probably belonged to the foundation of the mill building. However, they were too fragmentary for their function to be confidently identified. Some of these timbers contained large empty mortises attesting to the former presence of a substantial superstructure.

The Board of Health Map of 1853 (Plate 1.6) clearly shows the stream flowing through the centre of the building and narrowing from approximately 5.75 m to 4.10 m as it approached the mill.

The mill was based on a large timber foundation frame, comprising three timber beams joined together to form a rectangle open to the south (10013, 10059 beneath wall 10005 and 10091 seen only in section). Timber 10013 was felled in the winter of 1700-1701, agreeing with the very early 18th-century construction date suggested by the pottery. Beam 10091 formed the base for a coursed brick wall built up against post 10090 (10094). Associated with the frame, although not jointed to it, were three further timbers (10058, 10060, 10092); timber 10058 was at the base of the brick wall and may have been inserted to strengthen it in Project Phase 9 (see below).

Immediately adjacent to the north side of the timber frame and measuring 1.14 m wide lay the



*Plate 3.20 Site 150 Minster Mill: a general view looking N of the 18th-century remains (Project Phase 8)*



wheelpit (10010). This ran east towards the brick and wooden floors identified in TP 135 (see above), which were probably still in use during this phase. The channel consisted of a slightly concave brick surface covered with a thick layer of mortar (10068) and substantial brick walls remaining up to 1 m in height on either side (10005). The bricks used were narrow (50 mm thick) suggesting that they were pre 18th-century in date.

Immediately to the west of the wheelpit lay the headrace and sluice gate which controlled the flow of water into it. This consisted of two upright posts (10014 and 10015) and a layer of five horizontal E-W planks (10024-10028) laid directly on the clay foundations 10036. The posts were angled and contained central recesses in their inner faces (for boards not present), and are most likely to have been the guides for the sluice gate itself. Behind the sluice gate lay the planked headrace floor measuring 1.5 m long and tapering in width to 1 m wide at the sluice gate; this was covered at its eastern end by a long beam (10039) connected to the sluice gate posts via mortise and tenon joints. This form of water delivery to the wheelpit is known as a penstock and sluice.

The water in the penstock was contained by brick walls, the northern of which (10016) was aligned exactly with the northern wall of the wheelpit while the southern (10174) was offset slightly so that it was angled in towards the sluice gate. This narrowing of the water channel just before the waterwheel was common practice. Associated with the southern penstock wall 10174

and post 10014 (see above) was a single course brick floor (10011) which directly overlay the mill frame beam 10013.

Immediately adjacent to the north side of channel 10010 was a substantial wooden structure comprising three large posts (10064, 10066 and 10070) of unknown function.

To either side of the wheelpit and other structural evidence described above was fragmentary evidence indicating the larger superstructure of the mill building. Brick wall 10100 to the north was the same distance from the central brick wall 10005 as two reused horizontal beams 10062 and 10063 to the south, which probably formed the foundations for an equally aligned brick structure and were therefore probably contemporary. Other timbers, such as horizontal beam 10061 with its three vacant mortise holes, suggest that the mill superstructure had elements of timber framing as well as brick wall within it.

#### Project Phase 9: 1750-1850

##### *Structural alterations to the Minster Mill* (site sub-phases 15008a/b, 15009a/b)

The 18th-century Minster Mill suffered from subsidence and during Project Phase 9 it was necessary for repair work to be carried out to some parts of the building (Fig. 3.5). Although this structural work was not directly dated, the brick sizes recorded on site were of slightly larger dimensions and may have belonged to the period 1784-1850, when a



Plate 3.21 Site 150 Minster Mill: view looking E showing detail of the 18th-century penstock (Project Phase 8)



brick tax was introduced and before it was repealed; this suggests the alterations may have happened in the latter half of Project Phase 9.

During this phase several walls were replaced due to the subsidence which affected the building. The original southern wall of the wheelpit was removed and replaced with 10056 built directly on the wooden beam 10059. Timber beam 10058 and post 10086 may have been inserted at this stage in order to buttress the wall (phase 15009a). The walls of the head race were also altered, with wall 10174 replaced by 10007 which curved to the south-west and which was also supported, on the southern side, by a large timber beam (10012), which was joined to frame beam 10013. This timber, like others used in the mill structure, was re-used; it contained a series of tenon joints often associated with roof frames and not part of its function here. This rebuild was mirrored on the northern side of the concrete ducting, by a wall of the same build and using the same size bricks (10099) which also truncated earlier structures. This curved away from the place where a spillway channel would have been and its position supports the interpretation of the central section of the mill as a spillway.

Further evidence of probable mill structures was present in adjacent TP 27 (site sub-phase 15009b) where a building measuring greater than 2 m x 3.6 m was found. This consisted of an E-W orientated wall (3365) greater than 2 m long (extending under both baulks) and a N-S wall (3366). These walls were associated with two floor surfaces of mortar and brick (3367, 3363) separated by a probable internal wall (no number). The dating of these structures is unclear, but their general position and orientation suggests they were later than the main 18th-century mill phase. A wall (3364) was subsequently constructed on top of brick floor surface 3367. It may have been the remains of a chimney breast as it was positioned very close to wall 3365.

#### **Project Phase 10: 1850-1900**

##### ***19th- and 20th-century disuse and demolition of Minster Mill***

(site sub-phases 150010, 150011a/b)

The 19th and 20th century saw continued maintenance and changes to the Minster Mill. During the 19th century the mill race (10005) was repaired (10006), suggesting that the mill channel continued in use until this time. This rebuild/extension may be associated with cut 10022 (not seen in plan) and a floor surface made of sandy silt mortar (10018). Both features indicate a further stage of activity on the site of the mill and may be contemporary.

In Test Pit 135 there were episodes of dumping from 1850 onwards after which wall 8299 was constructed. Where the brick sluice structure (8323)

had been built, a small brick culvert (8320: TP 135; 8245, 8244: TP 119) was constructed, probably during the 19th century, followed by an arch and bridge (8319, 8317) over the stream.

A series of deposits accumulated on site 150 against the mill footings and indicate that the mill went out of use (15011a). They contained no datable material but may correspond to the late 19th-century features seen in Test Pit 135. The Goad Insurance map of 1895 (Plate 1.8) shows that the mill had been decommissioned, and was in use as a dry goods warehouse. The old mill buildings were demolished, probably during the early 20th century, and new buildings (10004, 10002) were constructed (15011b). This constitutes the final phase of the Minster Mill, which was eventually demolished in the 1940s.

#### **SITE 12: THE YIELD HALL**

##### **Project Phase 7: 1600-1680** (site sub-phase 1209a-e)

##### ***Building 7410*** (Fig. 3.6)

During the early 17th century the layout of Building 7410 remained unchanged but alterations took place to the room or walled area to the east (Building 7411; Fig. 3.6). These were not closely dated but the stratigraphy suggests they probably occurred during the early 17th century. In its new form, Building 7411 consisted of two coursed tile and large flint nodule walls with a tile course on top that would have supported a timber framed structure above. The dimensions of this building were not fully determined because it was truncated to the north and east by modern foundations. The main north-south wall (8967) was built along the eastern side of wall 8711/9382 (phase 1208b) while the southern wall (9393) was built on top of the remains of wall 9482. This butted the southern end of 8967, extending eastwards for at least 3.58 m. Inside Building 7411 was a feature of 17th-century date which appeared to be contemporary with the walls. This comprised two small rectangular postholes (8949, 8947) and a shallow rectangular feature (8951) measuring 1.5 x 0.5 m. The fill of one posthole contained a sherd of 17th-century or later pottery suggesting a possible 17th-century date for the structure. These may have combined to form a small processing structure with a wooden frame suspended over the shallow pit below.

##### ***Other features (not illustrated)***

In the central part of site 12 between Building 7410 and the Yield Hall, in an area of land apparently otherwise undeveloped, a series of pits were cut and filled with refuse. These pits were not drawn on site and most were unexcavated, but one which was investigated (8513) contained a densely packed deposit of horn cores (8515; Plate 3.22)



indicating the probable de-horning of raw animal hides by a tanner for the initial stages of leather production. This provides an indication that the leather processing of earlier phases continued in the general area. The pottery from this pit represents one of the most coherent groups of early post-medieval pottery from the site, and included Surrey border ware, brown-glazed redware and plain white tinglazed ware, suggesting a date after *c* 1630 (see Brown and Thomson, Chapter 7, below). General refuse including bone, tile and oyster shells was found in other pits in the same area.

**Extension of the Yield Hall (Fig. 3.6)**  
(site sub-phase 1209b)

During this phase, the Yield Hall was extended into an L-shaped building with the addition of a fifth room along the northern side of Room 4 (Fig. 3.6; Plate 3.23). The walls (517, 705 and 774) were built upon the dumped deposits (see above) and were constructed entirely using coursed brick (Plate 3.24) with the exception of a single piece of architectural stone of 12th-century date salvaged from Reading Abbey (Preston, Chapter 8). Although the bricks were laid in an inconsistent pattern, the use of brick

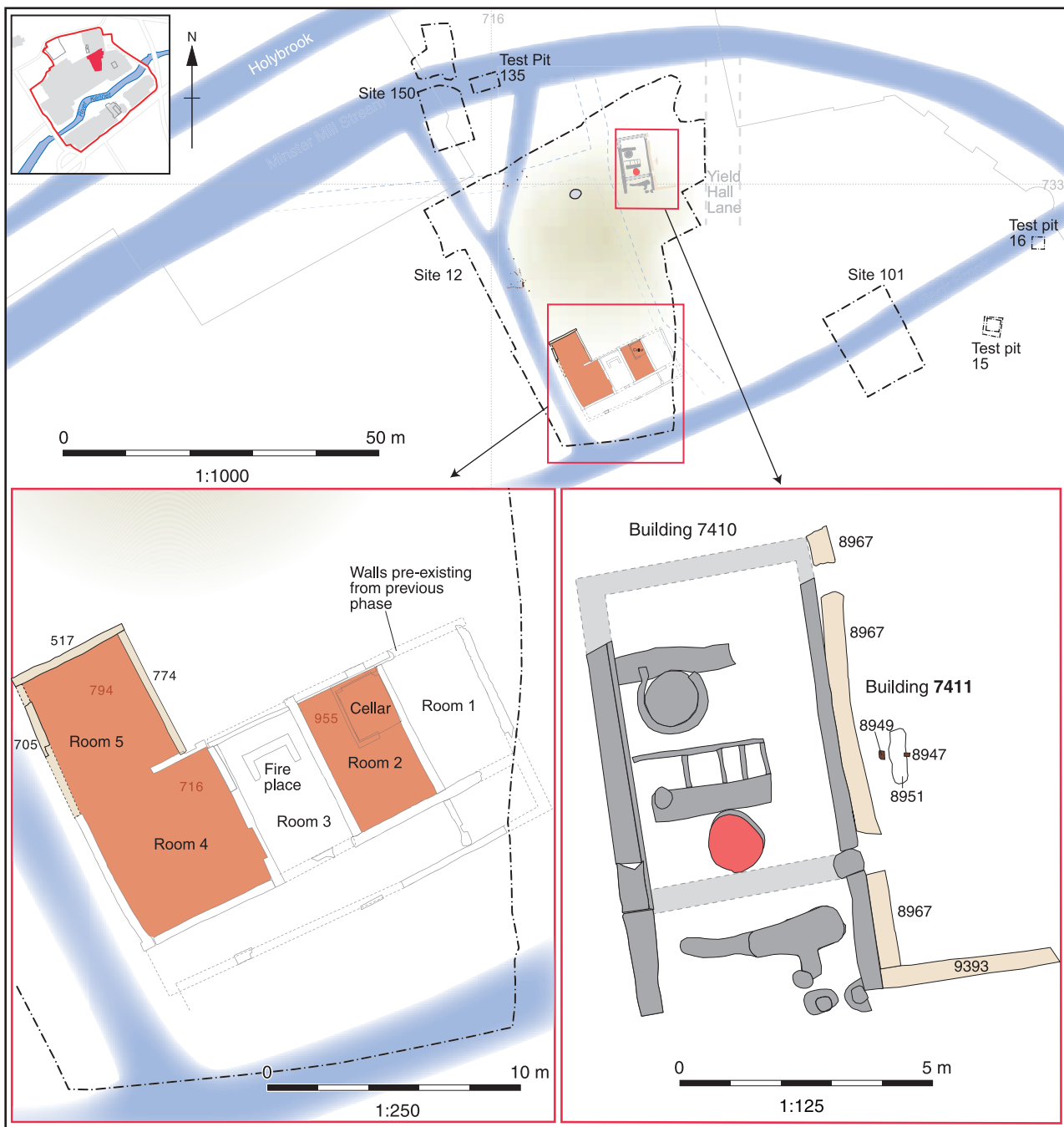


Fig. 3.6 Site 12: extension of the Yield Hall and Buildings 7410/7411, 1600-1680 (Project Phase 7)





*Plate 3.22 Site 12 the Yield Hall: view looking E showing a deposit of horncores (Project Phase 7)*

*Plate 3.23 Site 12: the Yield Hall, view looking SE showing the addition of Room 5 (Project Phase 7)*







Plate 3.24 Site 12: the Yield Hall view looking NE of brick wall 705 forming west wall of Room 5 (Project Phase 7)



Plate 3.25 Site 12: the Yield Hall, view looking NW showing mortar bedding layer with the impressions of ceramic tiles or bricks for floor 716 in Room 4 (Project Phase 7)





Plate 3.26 Site 12: the Yield Hall (above) view looking NE showing cellar 967 with a later brick reflooring, and (below) with original flooring of reused ceramic rooftiles (Project Phase 7)





for all the walls demonstrates a marked difference from the construction of the earlier rooms, which had used a combination of materials. This may correspond to the beginning of the brick industry in Reading; bricks are known to have been made from the 17th century in Katesgrove, part of St Giles parish, just to the south of the floodplain (Smith, Chapter 8).

An entrance into the Yield Hall was possibly provided by a doorway at the western end of the northern wall of Room 5 (see Plate 3.23). This may have coincided with blocking of doorway 2812 (with 2811) at the western end of the corridor which was not directly dated but must have occurred before the wing was demolished and rebuilt in the early 18th century (phase 1210 below).

Inside Room 5, the floor was surfaced with tile or brick (the mortar bedding 794 survived) probably at the same time as a similar floor was laid in Room 4 to the south of wall 715 before the insertion of a fireplace and subsequent floors (Plate 3.25). Interestingly, not all the rooms were given tiled floors at this time; a brick floor surface (955) was laid in Room 2 in the early part of the 17th century

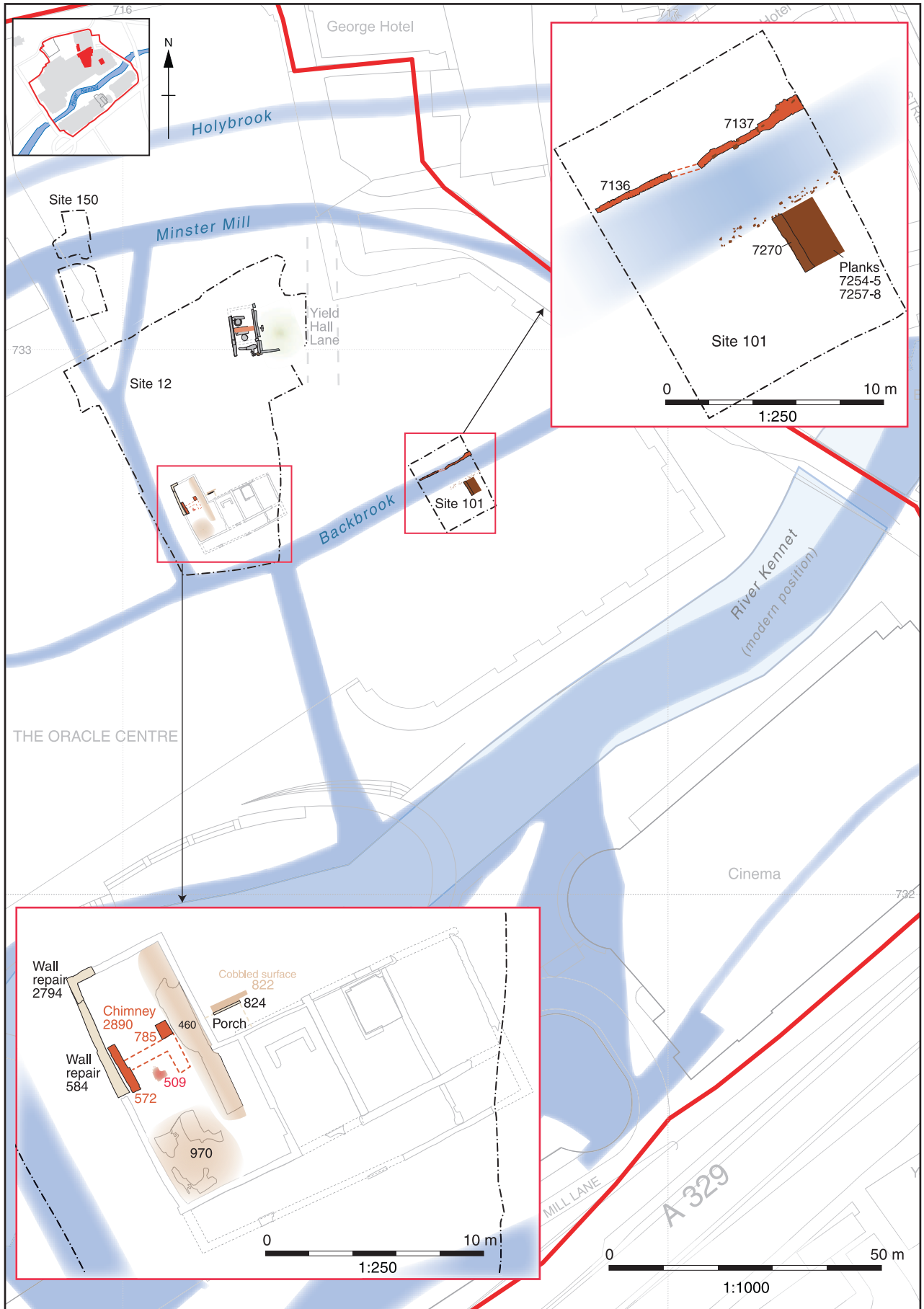
(1610+) but there is no evidence that the floor surfaces in Rooms 1 and 3 were changed. At the same time as the brick floor was laid in Room 2, a half cellar (967) was installed in the north-eastern corner of the room. This cut through the foundation deposit 709, forming a cellar 0.7 m deep, with a floor constructed from roof tiles laid in a random pattern. Plate 3.26(i) shows the cellar with a later floor; Plate 3.26(ii) is a detail of the original cellar floor, revealed at a later stage of excavation. In the south-east corner of the cellar and embedded in the floor up to rim height was a complete ceramic vessel measuring 0.32 m diameter x 0.51 m deep. It had been broken and stapled together before being deposited with a weight inside it and capped with brick fragments. A large number of early wine bottles were found in this cellar (see GL 19-35, Chapter 9; for illustrated examples see Chapter 5 and Plate 3.27). These date to the late 17th or early 18th century, and both the type of bottle and the period during which the cellar was used predate the general practice of the ageing of wine (Willmott, Chapter 9) making it unlikely that wine was stored for long periods of time in the cellar.



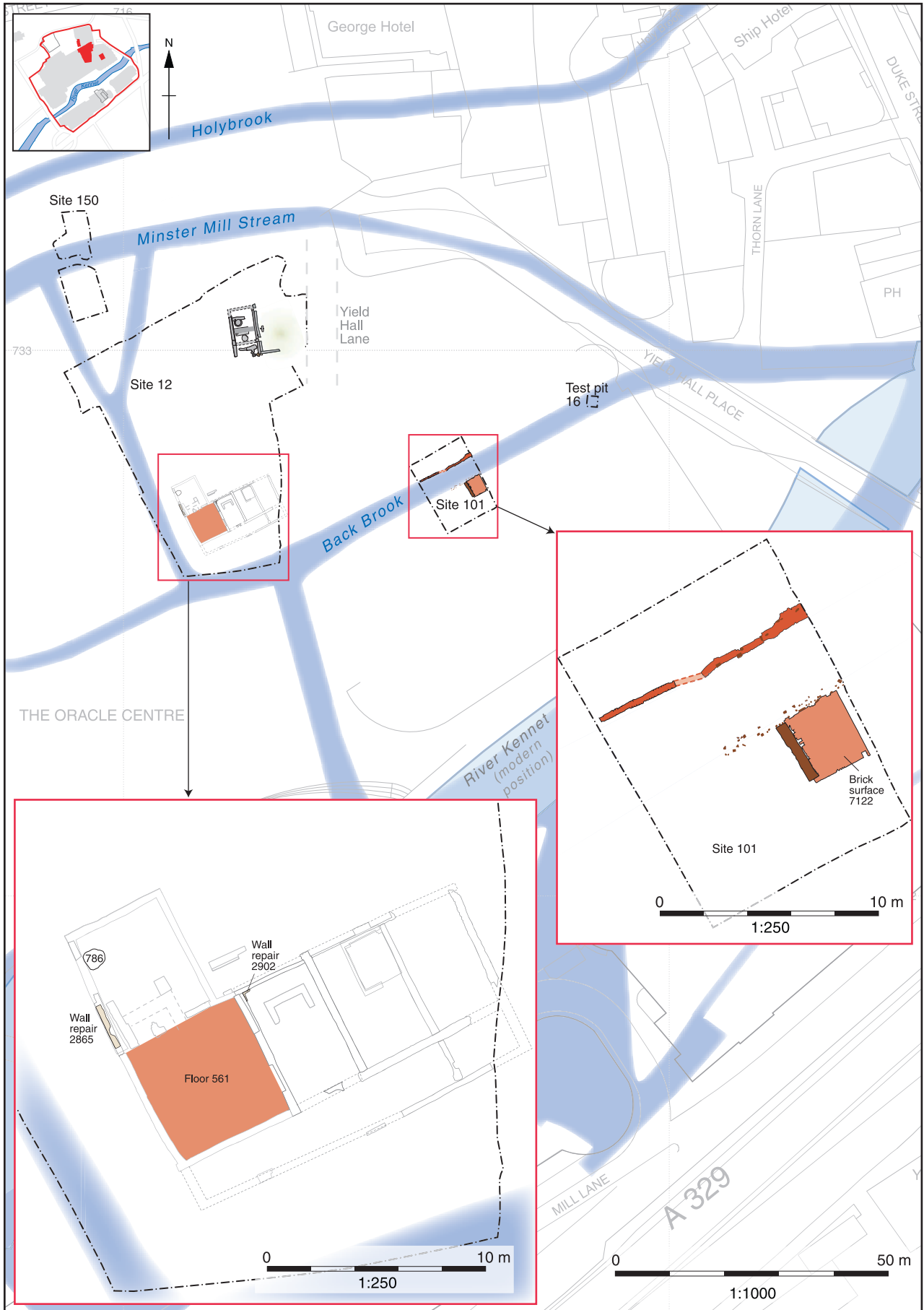
Plate 3.27 Site 12: the Yield Hall, some of the bottles from cellar 967 (Project Phase 7)

Fig. 3.7 (overleaf) Site 12: alterations to the Yield Hall during the second half of the 17th century; Site 101, 17th century brick infill reinforcement of the 16th-century timber revetment on the north bank of the Back Brook, with wooden platform 7270 on the south bank (Project Phase 7)











**Alterations and repairs to the Yield Hall**  
(Figs 3.7-3.8)

During the mid 17th century alteration and repair work was carried out to the structure and floors of the Yield Hall including the addition of a chimney between Rooms 4 and 5 and repair work to the walls and floors of this western 'wing' of the building (Fig. 3.7). The additions contained pottery dating them and the subsequent floors in the western wing to the second half of the 17th century.

The western wall of Room 5 started to suffer from subsidence during the mid 17th century and was repaired with the addition of rough flint nodules at the base (584) and above with mainly broken bricks and further knapped flints. Shortly afterwards, a brick chimney comprising two fireplaces was inserted in Room 5 (2890) butting against the repair work 584. The hearth in the southern fireplace was represented by a roughly circular area of burnt bricks (509). The north-west corner of Room 5 was subject to further subsidence and was rebuilt with large ashlar blocks (2794) closing off the possible doorway in the northern wall 705. One of these blocks was a piece of jamb from a large aperture, presumably a portal. This is of 12th-century design and probably originated in the abbey. At the same time, problems of subsidence led to the replacement of the tiled floors in Rooms 4 and 5.

Outside the building in the corner between walls 748 and 663, a wooden porch was constructed in the latter half of the 17th century and survived as an insubstantial wall formed by a single line of bricks (824). A cobbled surface (822) outside the building was associated with this porch. The porch and building were entered from the eastern side through wall 748 to face the chimney 2890, and because of this the eastern wall of the chimney 2890 was more carefully finished than other faces.

Despite the repair work already carried out to the western wing of the Yield Hall, the subsidence continued and the very late 17th century saw further repair work to the floors and walls (site sub-phase 1209e; Fig. 3.8). In Room 4 the floor was levelled once again with the addition of a rubble deposit which was used as the base for a brick floor surface (561 comprising 887-890 and 951). The chimney in Room 5 was reinforced on its western side (2865) but the floor in Room 5 did not appear to have been repaired or replaced at this time. Instead a pit was cut into it (786) and filled with rubble of brick and tile (possibly from the damaged floors); this may have been an exploratory hole to investigate the severity of the subsidence.

The internal corner of walls 650 and 2898 (Room 3) also demonstrated signs of damage and was repaired with brick work (2902); this was not directly dated

but must have occurred before the structure was substantially altered in the next phase (1210).

**Project Phase 8: 1680-1750**

**Buildings 7410/7411** (Fig. 3.9)  
(site sub-phases 1209f, 1210b)

Some of the industrial features of Building 7410 went out of use in the late 17th century suggesting a change in function of the building. The timber base went out of use (after 1680) and was covered by a compact chalk floor surface (8843) which was laid inside the building up against the existing walls. Meanwhile, the circular hearth to the north and the furnace to the south were still present. No changes seem to have been made to Building 7411 in the late 17th century

During the early 18th century only minor changes occurred in buildings 7410 and 7411 (site sub-phase 1210b). A second compacted chalk floor surface was laid inside Building 7410 (8761) and a short wall of uncertain function (8958) was built on top. Wall 8958 was a flint stub wall and butted against the eastern wall of Building 7410 (8967). A group of three Hans Krauwinckel Nuremberg jettons of the period 1586-1635 were found in make up layer 8760, associated with these repairs.

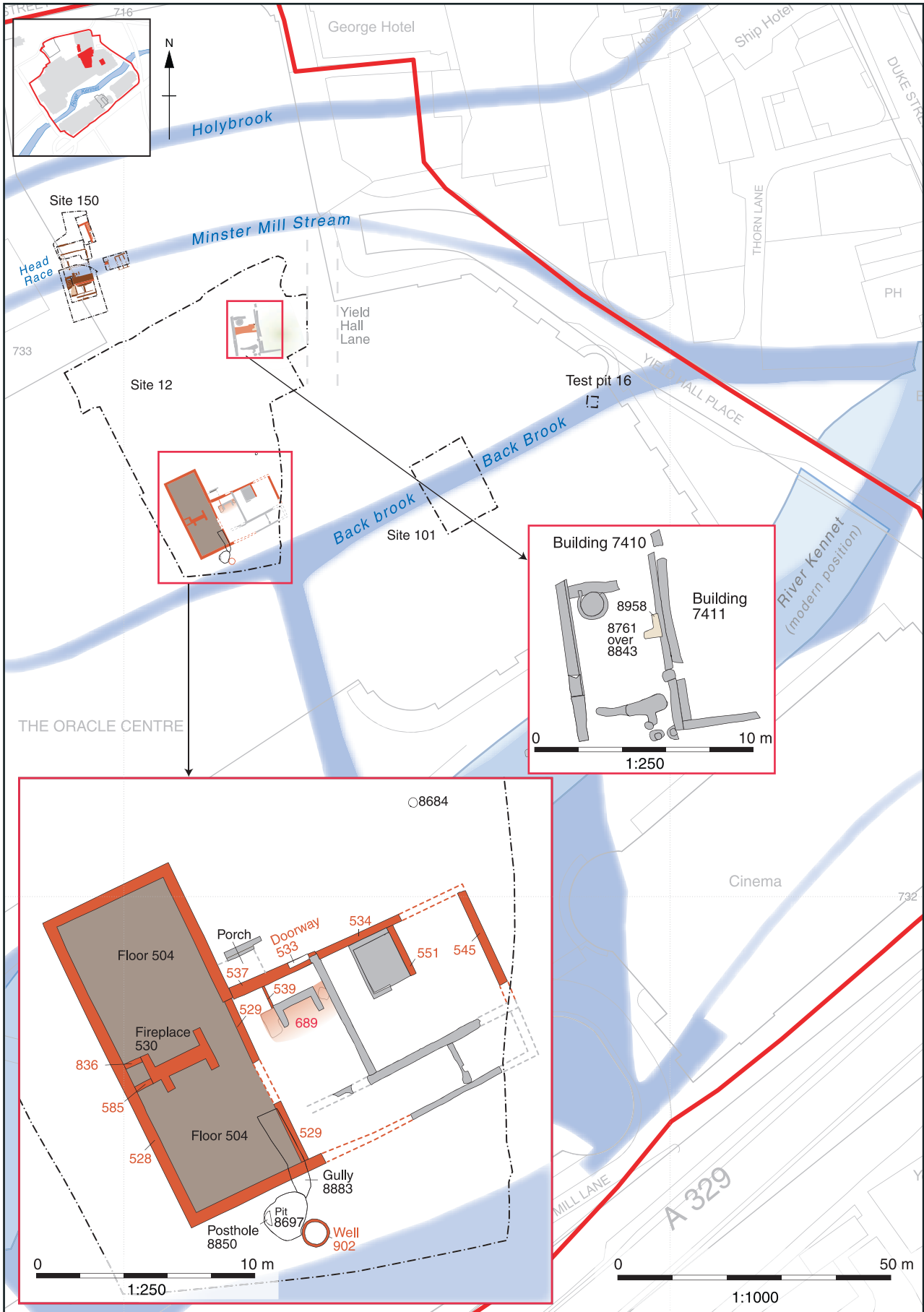
**Major rebuilding of the Yield Hall** (Fig. 3.9)  
(site sub-phase 1210a)

During the early 18th century, the subsidence that had necessitated repair work to the Yield Hall throughout the 17th century finally led to the demolition and rebuilding of the western 'wing' of the building. During the same phase, the eastern wing of the building, which had not suffered as extensively from subsidence, underwent some modification and repair (Fig. 3.9). Plate 3.28 shows the substantial brick walls of the rebuild encasing the slighter 16th- and 17th-century foundations. Unfortunately the rebuilding did not solve the problems of subsidence, and Plate 3.29 shows the effects on walls of both builds. The 16th-century water channel just to the west of the Yield Hall disappears from historic maps during this period (compare Speed, 1611, Plate 1.3 with Roque, 1761, Plate 1.4) and it is possible that the rebuilding of the Yield Hall and the infilling of the channel may have been associated events.

Prior to this phase of rebuilding, material was deposited across large parts of the area (8700, 8676) to stabilise the ground for the foundations of the new building. These deposits contained pottery of 1700 or later indicating an early 18th-century date

Fig. 3.8 (previous page) Site 12: late 17th-century repairs to the Yield Hall; Site 101, brick surface 7122 on the south bank of the Back Brook (Project Phase 7)

Fig. 3.9 (opposite) Site 12: rebuilding of the Yield Hall during the early 18th century (Project Phase 8)







*Plate 3.28 Site 12: the Yield Hall, general view looking W (Project Phase 8)*



*Plate 3.29 Site 12: the Yield Hall: view looking NW showing the problems of subsidence affecting two phases of walls (Project Phase 8)*



for the rebuild. A shallow N-S gully (8883) which probably functioned as a drainage channel for this building was cut into this deposit.

In the west wing, a new chimney was built 2 m south of its 17th-century predecessor, and with fireplaces in each of the two rooms (530). The fill of the construction cut for this fireplace contained a piece of architectural stone from Reading Abbey, a voussoir with plain chamfer dated to the 12th to 13th century (Preston, Chapter 8). A mortar floor (504) was laid down shortly after the fireplace was built and contained pottery providing an earliest construction date of 1690. The entire western wing was rebuilt with a single continuous wall (528), extending to form the southern wall of Room 3. This wall was constructed in a rough Flemish bond with half bricks breaking the pattern in a random fashion, and it probably continued to the east as far as wall 911, although the relationship between these walls was destroyed by later activity. The external wall 528 was joined to the chimney 530 with two small internal walls (585, 836) positioned 0.9 m apart and creating the southern and northern limits to the two rooms west of the fireplace. A further wall (529) created an internal wall between the newly built west wing and the partially rebuilt east wing (529). There was no clear archaeological evidence for the removal of the internal wall of the former corridor. However, as this had clearly been removed from Rooms 1 and 3 by 1807 (see Plate 3.30, below), it seems reasonable to suggest that it could have been undertaken during this phase of major alterations.

At the same time the east wing underwent more minor changes including the installation of a brick floor surface (689) in Room 3 around the fireplace (2821, site subphase 1208a) at the start of the 18th century (1700+). Probably at around the same time, the old north wall (663) was rebuilt in two stages. First, the east end was rebuilt as a coursed brick wall (534). Subsequently, more material was added to the foundations of the west end of the wall, and it was rebuilt as a more substantial, wider structure (537). A doorway, in the form of a low step in the wall, was constructed here. A small internal lobby was formed by a short N-S stretch of narrow wall (539) butting the southern face of wall 537.

The east end of the building was rebuilt (wall 545), and the internal partition wall between Rooms 1 and 2 was also replaced (wall 551) on the original foundations. These alterations were probably of the same phase of activity as the events described above. A posthole (8684) located 4.4 m to the north of, and directly in line with, wall 545 suggests a fence or structure positioned in line with the eastern end of the building.

Just to the south of the building, a large pit 0.56 m deep was cut into levelling deposit 8676/8700 (8697); there was a small posthole in the corner of this pit (8850). The pit contained deposits of almost pure ash containing extremely burnt bone, which could have been cooking waste or manufacturing

debris (8696, 8698, 8699). A well (902, 8667) was also cut into the levelling deposit immediately adjacent to the pit. The internal diameter of the well was approximately 1 m. Both the pit and the well were post-dated by late 18th-century structures (phase 1211).

### Project Phase 9: 1750-1850

#### *Industrialisation*

(site subphases 1211 and 1212a)

A comparison between Roque's map of 1761 (Plate 1.4) and Tomkins' map of 1802 (Plate 1.5) shows that the area was subject to a considerable degree of development during the later 18th century. Tomkins shows a new rectangular building north of the Yield Hall, and a large new complex laid out just to the east. A detailed survey of the area, which was still in the ownership of the Corporation, was made for the Reading Corporation Terrier of 1807 (Plate 3.30). The Yield Hall, with its contemporary internal arrangements, is clearly shown in the south-west corner of the site, adjacent to a loop in the Back Brook (here labelled 'Back Ditch'). (Confusingly, the Minster Mill stream, which formed the northern boundary of the site, is labelled 'Back Brook', as on the contemporary Terrier plan of the Oracle, Plate 3.1). Building 7410/7411 seems to have been incorporated into the north-west corner of the large complex to the east of the Yield Hall. The three small rooms labelled '9', with a trapezoidal outshot to the north and a large open room to the east, must be our first contemporary pictorial representation of these structures. When the Terrier was drawn up, the Yield Hall site was also known as Hill Hall. The site was leased to various tenants (see Dils, Chapter 4, below). James Hayes, floorcloth manufacturer, had six houses with warehouses or workshops bordering the 'Back Brook'. Charles Benwell, cabinet maker and upholsterer, had four workshops, a warehouse and a sawpit. Two other tenements and a coach house in the centre of the site were also let, as was a large dwelling house, workshops, offices and stables. On the north side, next to a passage through the estate, was part of Talfourd's brewhouse.

The Yield Hall itself looks like the only probable candidate for the dwelling house on this plan, with fireplaces clearly shown in three rooms, and a number of internal staircases. The location of the principal doorway is not at all apparent. A bay window appears to have been incorporated into the west wall of the former Room 4, overlooking a garden, and the fireplace has been relocated to the south wall. The evidence of the Terrier shows that the eastern part of Room 4, and an adjoining small area in the north-west corner of Room 3, were occupied by stairs. This was not apparent in the archaeological record.

The archaeological evidence for alterations to the Yield Hall during Project Phase 9 (1750-1850)





Plate 3.30 Plan of The Yield Hall in a Reading Corporation Terrier of 1807

can be compared with this survey. At some point after 1770, the wine cellar in Room 2 was filled in with rubble and decayed timbers from its structure (see Plate 3.26), and a new floor (707) was laid throughout the room. A staircase is shown on the Terrier in the area where the cellar had previously been. The evidence of the Terrier suggests that the original wall between Rooms 2 and 3 was partially dismantled, and a new wall installed, to form a long, narrow room across the north side of the building. The new wall can be equated with a partition wall (542) identified in the excavations in the north part of the former Room 2. There was a distinct step up of 0.17 m at this point. A division in brick floor surface 707 indicates that a partition may have existed in the southern half of the room along the same alignment at some point, although apparently not when the Terrier survey was undertaken.

Alterations also occurred in Room 3 to the west, presumably as part of the same phase of works. Doorway 533 (Fig. 3.9) was blocked. A gap shown in the wall at the foot of the stairs in the former Room 2 may be a replacement door, or possibly a window. The floor and fireplace of Room 3 were removed, and a new brick floor surface (678) was laid. From the evidence of the Terrier, a narrow beamslot (693)

identified in this area should probably be interpreted as a continuation of partition wall 542 (see above).

The Yield Hall was also extended southwards with the addition of a two-roomed extension. This addition predated 1802, when it appears on Tomkins' map (Plate 1.5), and survived until the whole building was finally demolished in 1935. The Terrier survey shows that this area has direct access to the main part of the house via a door and steps, and there is a fireplace in the north-east corner. A further enclosed area to the south, probably a yard or garden, runs down to the Back Brook ('Back Ditch'). It seems very likely that this was a kitchen. The Board of Health map of 1853 (Plate 1.6) shows the garden or yard as still open in the middle of the century.

#### Project Phase 10: 1850-1900

##### *The foundry* (site subphase 1212b)

New floors were laid within the main building around 1850. Prior to the laying of the new floors, a number of pits had been cut through the late 18th- or early 19th-century floor 678 (pits 863, 865, 868),



apparently to dispose of building rubble, as the pits each contained a single rubble fill comprising a sandy silt with frequent tile, brick, charcoal and mortar fragments. Floor 646 was subsequently laid in Room 3 (Plate 3.31), floors 765 and 789 to the south and east in Rooms 2 and 3, and floor 2705 in Rooms 1 and 2. A large number of pins were associated with floor 646. These probably fell between the cracks in the brick floor in the early stages of its use. A cut had also been made into the floor 646 into which a bowl (dated 1800+) had been inserted. The southern outshot of the building was rebuilt after the original part of the building was altered. In the east room, a large chimney (625) straddled the southern wall of the main building creating fireplaces in both the original building and in the outshot. This chimney incorporated a large corbel consisting of two simple human heads, which is of 12th-century date and probably originated in Reading Abbey (Preston, Chapter 8). In the western room of the extension, the fireplace and chimney (767) that were inserted at this time butted the southern edge of wall 528. The fireplace measured just over 3 m in length and comprised a central hearth with a small recess to either side, and was probably a cooking range. Brick floors were laid in both rooms, floor 587 in the west room, and floor 672 in the east. A water bottle (8668), measuring approximately 1.2 m in diameter, was cut into the surface of the eastern room. This was positioned 1 m east of the earlier well. A brick and cobbled yard surface (788) was recorded in the angle between the extension and Rooms 1 and 2. Historic map

evidence suggests that a further extension was built over the area of the garden or yard between 1853 and 1879.

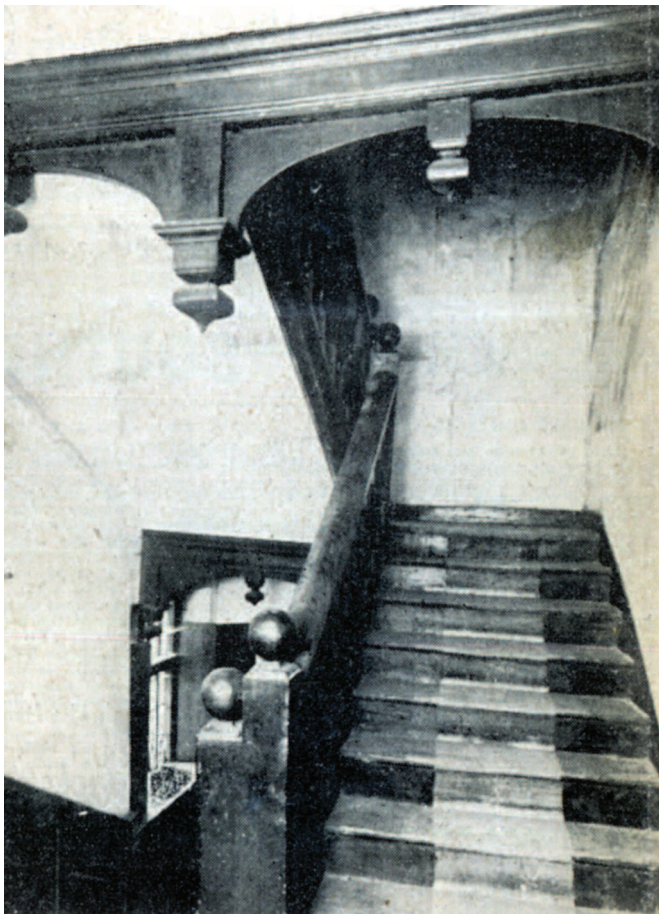
James Wilder, an iron founder, is recorded occupying property at Hill Hall (the Yield Hall site) in 1821. His business prospered, and eventually covered much of the area (see Plates 1.6-1.9). By 1867, James and his son John had expanded their product range and were described as engineers, brass and iron founders, smiths and agricultural implement makers. The firm was still in existence on the site in 1932, but had transferred to other premises on the Caversham Road by 1938. Other businesses also at Hill Hall in the late 19th century were carpenters, a coal merchant and an ironmonger's workshop (see Chapter 4, below). During the excavations, ironworking remains were found in the south-east corner of Room 2. A deposit of slag was found together with further features (854) containing waste of an industrial nature such as slag and hammerscale. Although this is not securely dated, it provides compelling evidence for the replacement of domestic occupation by industrial use at this site at some point during the later 19th century.

The Yield Hall building was substantially altered during the later 19th century, and at some point between 1879 (1st edn. Ordnance Survey plan) and 1895 (the Goad Insurance map, Plate 1.8) Rooms 1 and 2 were demolished, leaving only the former Rooms 4 and 5 (now apparently a single large space), Room 3 to the east, and the southern extension. It survived in this form until its final demoli-



Plate 3.31 Site 12: the Yield Hall, view looking NW showing a ceramic vessel set into surface 646 (Project Phase 10)





*Plate 3.32 Site 12: the Yield Hall (above) the southern and eastern elevations of the Yield Hall, shortly before demolition in 1935 and (left) a view of the internal staircase*



tion in 1935, for the creation of the car park that was on the site when the excavations began. Plates 3.32(i) and (ii) are photographs of the Yield Hall taken shortly before demolition.

## SITE 101: THE BACK BROOK

### Project Phase 7: 1600-1680

#### *Post-medieval consolidation of revetments and activity on the banks of the Back Brook* (Fig. 3.10) (site subphases 10105c, 10106, 10107a)

Coursed brick walls were placed within the mid 16th-century timber revetments on the northern side of the Back Brook in order to strengthen them (7136 and 7137 Figs 3.7 and 3.10). The fill of the wall construction trench 7137/7009 (7007) contained a mixture of silty clay with broken tile, flint and quartz pebbles and pottery of mid 16th-century or later date, but this was dumped material and likely to be residual. It is therefore difficult to date this phase precisely but a 17th-century date seems reasonably likely given the activity which was occurring on the opposite bank at this time.

The south side of the channel continued to be retained by revetment 7115 (see Fig. 2.19, Project Phase 6, above). A wooden platform was constructed immediately adjacent to the Back Brook (site subphase 10106; Fig 3.7). This consisted of a series of wooden planks laid directly on top of

dumped deposit 7316, which dated it to the early 17th century. The first four planks (7254, 7255, 7257, 7258) were laid alongside one another and the fifth was laid across their western ends. The four lower planks measured approximately 2 m long by 0.3–0.55 m wide and formed a wooden surface measuring approximately 2 m x 2.75 m. Plank 7270 which lay on top was 2.75 m long and had a bevelled outer edge suggesting access to this floor was from the west.

During the late 17th century (site subphase 10107a), this wooden floor surface was replaced by one of brick (7122: Fig. 3.8 and Plate 3.33). This was laid directly on top of the series of wooden planks of phase 10106 and against the revetment, with some evidence for plaster/pitch waterproofing against the revetment. It contained no dating material but may have been late 17th-century on the basis of the style of bricks used. No metallised external surface was associated with the floor but plank 7270 remained *in situ* along the western side of the floor suggesting access was still from this direction. Neither Speed nor Roque shows any structures on the south bank of the Back Brook during the 17th and 18th centuries, and the purpose of this platform remains unclear.

In other Test Pits along the banks of the Back Brook, there was evidence for some deliberate raising of the ground level during Project Phase 7 (10107b). This was particularly evident in TP 114 some 28 m to the east, where a deposit comprising



Plate 3.33 Site 101: the Back Brook, view looking NW showing the well-built brick surface 7122 constructed on the southern bank of the Back Brook (Project Phase 7); the Back Brook and its substantial revetment can be seen in the background



Section 305

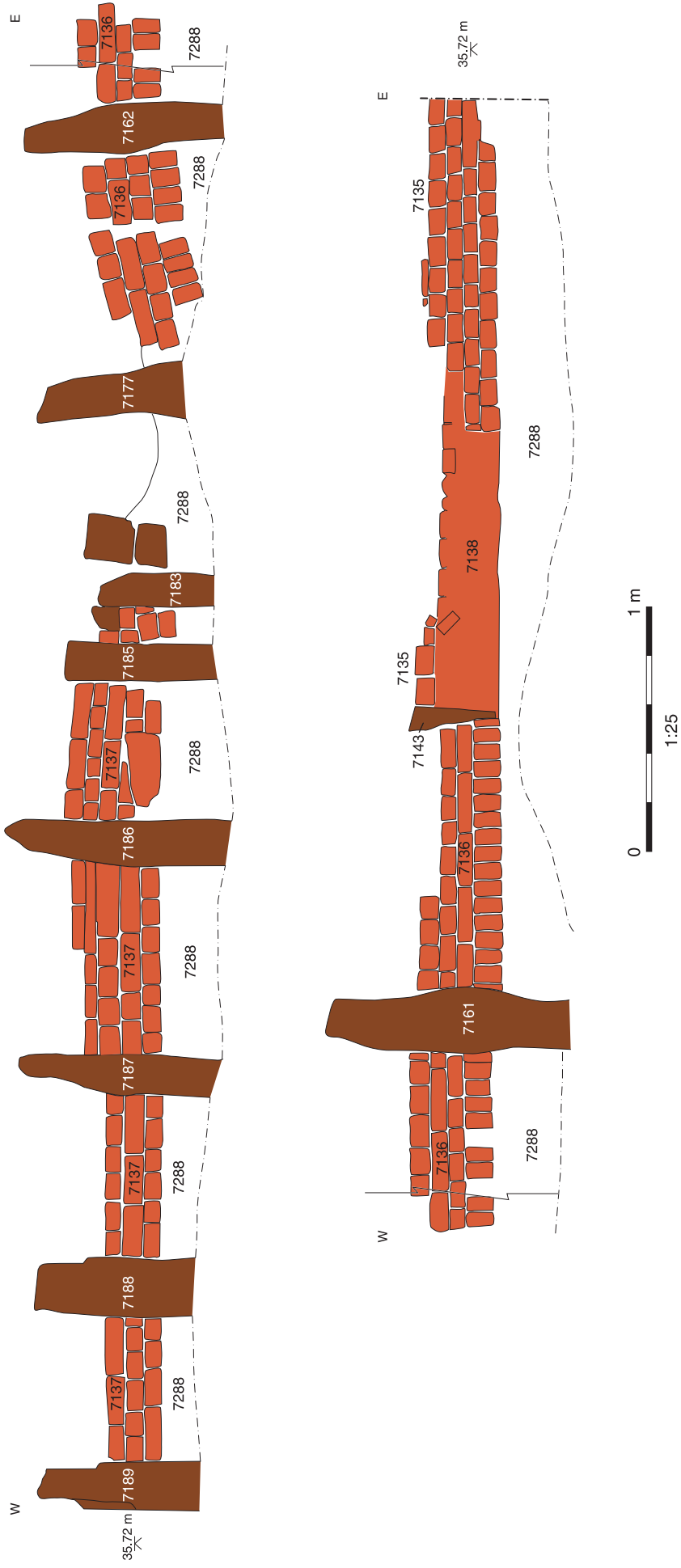


Fig. 3.10 Site 101: Section 305 along the north bank of the Back Brook showing the ongoing brick reinforcement of the timber revetment (Project Phases 7 and 8)

layers of clayey silts divided by thin layers of mortar and containing a mixture of brick and tile fragments and mortar chunks was laid down (1009). Clay pipe dated this deposit to the mid 17th century or later.

### **Project Phase 8: 1680-1750**

#### *Late 17th- and 18th-century revetments* (10108a,b)

A revetment (1247; not illustrated) identified in TP 16 was probably of late 17th-century date, being surrounded by silts of early 18th-century date. It was made up of 14 mainly roundwood or boxed heart posts measuring between 0.04 and 0.15 m across and up to 1.1 m in length constructed on deposit 1254. Some horizontal planking was also found *in situ* (1232, 1235, 1237, 1239, 1248, 1251, 1252, 1255-1258). Revetment 1247 was located 0.7 m to the north of the 16th-century revetment 1238 (Fig. 2.19), further into the channel. This suggests either that the Back Brook channel was being deliberately narrowed by this stage, or that the remains in TP 16 represent alteration to a particular section of the banks. A fine clay silt accumulated against revetment 1247 (10108b) and contained pottery dating to 1700 or later. A timber structure (1260, not illustrated) was constructed at the water's edge, consisting of a series of horizontal timber beams and planks laid perpendicular to the channel, and spanning the superseded revetment 1238. This provided a surface along which to transport material to the edge of the channel for the purposes of dumping it between the two revetments 1238 and 1247 to strengthen the banks.

The brick revetment (7137) of Project Phase 7 (see above) was rebuilt as wall 7135 (site subphase 10108c). Wall 7135 was of header bond with some tile, one course wide and surviving to a height of 0.86 m where it extended into the eastern baulk. It was constructed around two roundwood posts approximately 0.1 m in diameter. Wall 7135 was in turn supported by the addition of a crude wall of large chalk pieces and flint nodules measuring 0.15 x 0.25 m (7139, not illustrated: site subphase 10108d). There was no independent dating evidence for the construction of these walls. No evidence for activity during this phase was identified south of the Back Brook in the excavation of site 101 or any of the Test Pits.

### **Project Phase 9: 1750-1850**

#### *19th-century flooding and reclamation and consolidation of revetments* (site subphases 10109a,b)

During this phase the revetments identified in TP 16 went out of use. They were sealed by waterlogged clay silt dated to 1830+ and subsequently by dump

deposits comprising silty clay with gravel and brick fragments used to level the ground where the channel had been. These may correspond to similar silty gravels deposited above the 'Back Brook' structures on site 101.

On the southern side of the Back Brook on site 101 there was evidence for extensive overbank flooding where a sequence of alluvial silts covered the brick floor 7122 (Project Phase 7, see above). These were not dated but they predated the addition of a brick wall to the southern revetment (phase 10110a).

Following the overbank flooding of phase 10109, the revetment on the southern side of the Back Brook was strengthened with the addition of a brick wall (7294, section 310, project subphase 10110). This predated deposits of mid 19th-century date but was otherwise undated. It was a coursed brick wall built directly on top of the wooden revetment 7115 and running the entire length of the channel visible in the excavated area. Unfortunately none of the deposits later than 7122 contained any dating evidence, but the southern revetment wall was also identified in TP 88 (not allocated a context number) where it was post-dated by sediments of mid 19th-century or later date.

### **Project Phase 10: 1850-1900** (site subphases 10111, 10112)

#### *Silting up of the Back Brook and construction on the land*

Eventually the Back Brook silted up and went out of use; the latest fill was a notable silt deposit containing numerous small finds of copper alloy including fine pins, a ring, and dress fastenings together with three coins of the late 17th century or later. The stratigraphy of this deposit suggests it was of 19th-century date and that the material included was residual.

A coursed brick wall, which was the remains of a cellar, was built directly on top of the revetting wall 7008. The backfill of the construction trench contained construction debris from the wall itself and was dated to 1860 or later suggesting that the wall was of mid 19th-century or later date.

The disappearance of this arm of the Back Brook can be followed on the historical maps. It is still clearly present on the Board of Health map of 1853 (Plate 1.6). Here it is bordered on the north side by a line of what are presumably privies at the bottom of the long, narrow yards belonging to a row of terraced houses laid out to the east of Wilder's foundry. This suggests that the privies drained straight into the channel. It is interesting to note that there had been a highly critical report on the state of public health in the Borough shortly before this time, and the Corporation became the Local Board of Health in 1850. One of their duties was ensuring a pure and constant water supply (Dils, Chapter 4, below). If this arm of the Back Brook was func-



tioning as an open sewer, it must have been exactly the kind of public health hazard that the Board was charged with eradicating. By 1895 (Plate 1.8) it has disappeared completely, and Thorn Lane has been extended westwards over its former course. By 1909/10 (Plate 1.9) a small structure is shown built over the former channel course just east of the point where the Back Brook channel turned south towards the Kennet.

### SOUTH OF THE KENNET: SITE 300 (ST GILES MILL)

#### Project Phase 7: 1600-1680

#### *Demolition of the medieval mill and construction of a new mill*

(site subphase 3003a: c1600+)

The evidence suggests that the medieval mill constructed at the start of the 14th century was dismantled. The structural elements described in Chapter 2, Project Phase 4, above, were left *in situ*, and a new mill was constructed upon them, with the new northern races being in the same location as those from the earlier structure.

In TP 303 the partial remains of an elm plank deck were recovered (Plate 3.34), which was joined using metal nails to an oak latticework frame (utilising wedged mortise and tenon joints). Together the deck and frame formed Group 13713, which was

constructed on the previously laid 14th-century chalk rubble foundation deposit (site subphase 3002a). This deck was angled up relatively steeply towards its upstream end. The upstream end of the frame was jointed to transverse ground beam 13706 which in turn was jointed at its northern end to 13705, a 0.4 m-square horizontal longitudinal ground beam, which was orientated east-west and ran out of the eastern site limits towards site 300. The timber deck is considered to represent the head race (its incline raised the height of the water prior to its fall on to the waterwheel), and the ground beams are part of a large Hurst Frame. None of these timbers yielded a tree-ring date.

On site 300 remnants of a latticework frame, Structure 13453, were recovered. It was located within a re-cut (12073) of the original large 14th-century construction cut (site subphase 3002a). It comprised two principal longitudinal foundation ground beams (or baseplates) 12063 and 13806 which had been positioned on the north and south sides of the cut. Jointed square to the south face of the northern ground beam were three transverse ground beams, 13467, 12057, and 13476. These had all been broken off near to their northern end by later rebuilding (Plate 3.35) but originally would have extended to the southern ground beam. No planked decking that would have sat upon this frame survived. The surviving timber elements had been packed around with clay, acting as a water-proofing agent. None of these timbers could be dated by dendrochronology.



Plate 3.34 Site 300 St Giles Mill: view looking SE showing the exposed 17th-century elm plank deck of the head race (13713) (Project Phase 7)





Plate 3.35 Site 300 St Giles Mill: view looking NW showing ground beams 13467, 12057, 13476 overlying the early 14th-century mill timbers (Project Phase 7)



Plate 3.36 Site 300 St Giles Mill: photograph looking SW of the east elevation of the mill taken c 1900; on the left is the 17th-century mill, with the more substantial buildings of the 18th-century rebuild to the right (Project Phase 7)





Plate 3.37 Site 300 St Giles Mill: detail of Speed's map (Plate 1.3) showing the 17th-century St Giles Mill (Project Phase 7)

Elsewhere on site 300 there were indications of other activity belonging to this phase. The medieval mill pond and its approach channel had completely silted up by this time. It is possible that this channel was re-established further to the north. Within an east-west orientated cut 13849 (at the extreme north end of site 300) were two longitudinal timber ground beams: 13151 (tree-ring date after AD 1594), and 13802 which dated to after AD 1605. Immediately to the west of this, in TP 304, were two un-stratified timbers which also tree-ring dated to this period: 12580 (late summer AD 1611), and 12651 (AD 1602-34). In combination the dates yielded from these timbers indicate that structures were probably built in this area *c* AD 1611-12. It is possible these structures were revetting the north side of a bypass channel north of the main mill structure.

*In the surrounding landscape – downstream*

The alignment of timber posts first established during the 13th century (Project Phase 4, site subphase 3001b) and maintained during subsequent phases contained a timber that gave a felling date range of 1604-36, which concurs with the evidence for a new mill. It is therefore probable that

this channel was maintained (repaired) during the present phase of activity. No other timber structures in the surrounding landscape can be assigned to this phase.

Stratigraphically the archaeological evidence for this phase of construction is placed firmly between the 14th-century medieval build of Project Phase 4 and the mid-18th century rebuild of Project Phase 9. There is however a distinct lack of datable finds and a lack of dendrochronological dates from structural timbers, which leaves a wide time period within which this activity could have taken place. Photographic images and historic maps can supplement the archaeological evidence for this phase as it is considered that the mill components first constructed in this phase remained as part of the mill complex until its demolition in 1901.

Early 20th-century photographs of the mill complex immediately prior to demolition show a structure consisting of two principal elements (Plate 3.36) with the larger 18th century mill (see Project Phase 9, below) abutting an older structure to the south (on the left of the plate). The southern element is entirely clad in weather-boarding, some elements of which have fallen away to reveal the timber frame beneath. Architecturally this element

is probably of early 17th-century construction (J Munby pers. comm.), and is likely to be the mill represented on Speed's map of 1611 (Plate 3.37). It is considered that this map and the photograph show the newly constructed mill from this phase.

It is clear that Speed presents a schematic view of the mill as the wheels are positioned on its upstream face; however, it is probably accurate in that the mill is likely to have had at least two water-wheels. The question remains as to where the water-wheels were located. Using a combination of the map and photographic evidence, it is possible to place the footprint of the latest mill complex as shown on the late 19th-century maps (for example the Goad Insurance map of 1895, Plate 1.8), including its 17th-century southern element, over the plan of the excavated remains. This clearly indicates that the northern end of the earlier southern element was located immediately south of the race to which the partial remains of the timber deck described above belonged, therefore strongly suggesting this to be the position of one of the external wheels.

#### Project Phase 8: 1680-1750

The 17th-century rebuild of St Giles Mill remained in operation, and there is no evidence for alteration or modification in this phase. In the surrounding landscape a new water-pumping water mill was constructed to the west of St Giles Mill.

#### Construction of a water-pumping mill (site subphase 3003b: 1694-6)

Two test pits (268 and 293) were located to investigate the water pumping mill constructed at the end of the 17th century. The location of this building can be seen on the Goad Insurance map of 1895 (Plate 1.8), upstream of St Giles Mill in the area labelled Water Works Dept. The building in question is the square one, labelled 'Store'. The archaeological investigations here revealed the remains of a timber structure comprising a plank deck upon a lattice-work horizontal frame of ground beams supported on timber piles. This structure was orientated north-south, at right-angles to Mill Water and leading in the direction of a more northerly braid of the Kennet. Although no timbers yielded tree-ring dates this structure is considered to be the remains of the race for a water pumping mill, constructed according to documentary references in the period AD 1694-6 (Plate 3.38). Photographs taken towards the end of the 19th century show a building orientated north-south in the position of these remains (Plate 3.39). The structure is entirely clad in timber weather-board, an appearance that is very similar to the 17th-century elements of St Giles Mill. A sluice gate opening protected by a grill can be seen, positioned at water level, and central to the gable end that faces Mill Water. This would have taken water through the building, and indicates the entrance to the head race which the excavated timber remains represent.

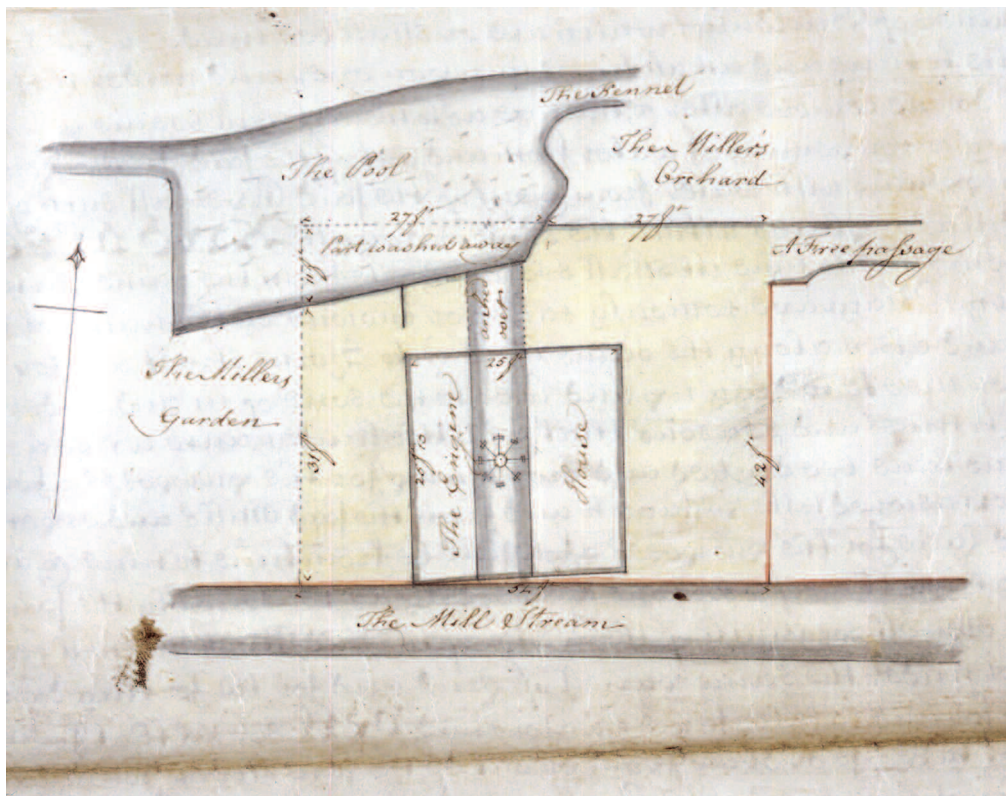


Plate 3.38 Plan of the property and building layout of the water pumping mill shown on a lease of 1697





Plate 3.39 Photograph looking NW along Mill Lane showing the water pumping mill towards the centre of the photograph, immediately behind the tree, view c 1900

The location of this structure indicates that by the late 17th century the northern bank of Mill Water had been established in this position and on this alignment, as shown on later maps.

#### Project Phase 9: 1750-1850

##### *Major expansion of St Giles Mill c AD 1750?* (Fig. 3.11) (site subphase 3004a)

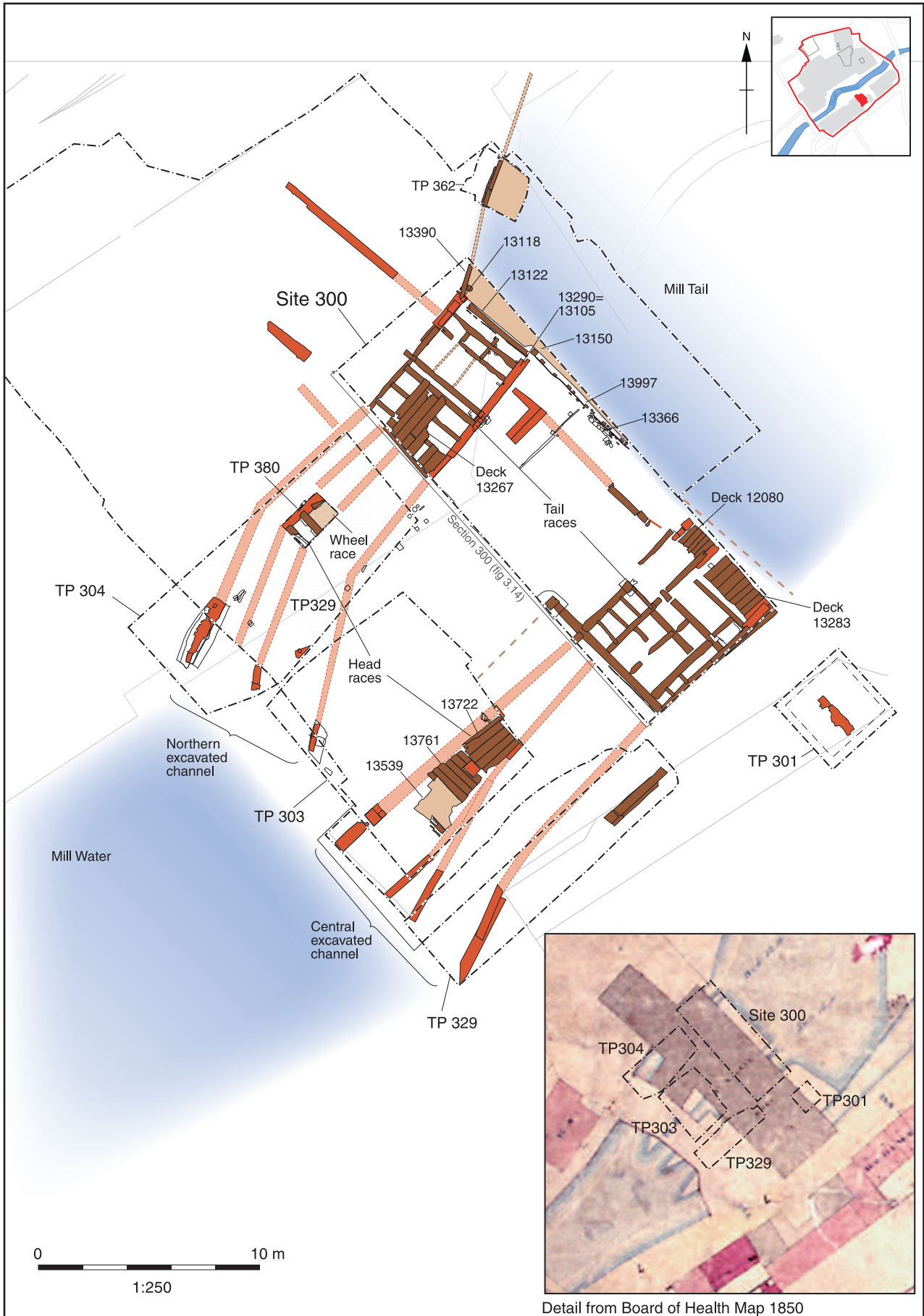
The early post-medieval mill built around 1611 remained standing but underwent a massive expansion programme with the construction of a very large new mill building to house new waterwheels to its north. To enable this development to take place, new mill races were built, which required increasing the size of both Mill Water and Mill Tail. The net effect was to develop and increase the productive capabilities of St Giles Mill.

The main 17th-century mill building was retained and a new 4-storey mill building constructed which abutted its northern gable end. The main walls of the new mill were constructed in brick to the first storey which supported a timber frame clad in weather-

boarding for the remaining three storeys (Plate 3.40). The mill races that had been at the northern end of the former mill were rebuilt to house two new mill races. The new mill building extended northwards over the line of the former mill bypass channel, which was remodelled and became three mill races. The main retaining walls to these races, and the walls dividing them, were constructed in brick, but still as in previous periods these were constructed upon large timber ground beam and post foundations. The mill races ran through and under the mill building, with all the waterwheels housed within the mill structure itself; thus ended the era of the external water wheel at St Giles Mill (Fig. 3.11).

Test pits 303 and 304 were positioned to investigate the point at which the eastern end of Mill Water met the western end of the mill building. These two excavation areas partially revealed the courses of two channels, which approached the mill building from the south-west. To the south a channel ran SW-NE and to the north another ran SSW-NNE. Both these channels were constructed in the same way. A large linear flat-bottomed construction trench with near vertical sides had been dug, and timber ground beams were then laid

Fig. 3.11 (opposite) Site 300, St Giles Mill: excavated remains of the mill as rebuilt c 1750 with the Board of Health map 1853 for comparison (Project Phase 9)







*Plate 3.40 Site 300 St Giles Mill, photograph looking NE of the south-west elevation of the mill taken around 1900; the larger buildings added in the 18th century are on the left, with the smaller 17th-century buildings on the right*

along each side of the trench-base upon a water-proofing deposit of clay (Plate 3.41). These longitudinal beams formed the foundations for the brick revetment walls. The walls were 0.4 m wide and survived to a maximum height of 0.70 m. Gravel deposits formed the channel floors. The two channels led from Mill Water and delivered water to the head races, which commenced below the west-facing elevation of the mill.

*The northern channel and mill races within the Mill*

In TP 380, which was located over the northern mill races, the partial remains of the downstream end of a head race, and significantly the curved floor of a wheel race, were found (Plate 3.42). Timber remains that indicated the position of a probable sluice/control gate separated these two elements. This was the only wheel race to be located and represents the clearest direct evidence for the position of one of the waterwheels within the new mill. It strongly suggests that all the waterwheels were located to the west of the limits of site 300 and to the east of site 303, therefore within the area that was not excavated.

Further east on site 300 the full width of this channel was revealed; it was separated into three adjacent races. The races had been constructed within a construction trench, within which a timber latticework frame was constructed from oak, elm and beech (Plate 3.43). The frame was made from longitudinal beams which were again set into a deliberately laid layer of clay. A series of transverse beams were jointed into these using nailed half-lap joints. These beams were fixed into position by vertical posts to which they had been nailed. The beams were then overlain by two further longitudinal beams, which formed the foundations to the partition walls and divided the channel into three separate races. The spaces between these partition beams were planked over using tangentially split elm boards that were nailed to the underlying beams to form the floors to the three races. Only the partial remains to two of these floors survived, Group 13267. The three races were of different sizes: the northern race was 0.91 m wide, the central race was 0.74 m wide, and the southern race 1.54 m wide. The outermost retaining walls to this channel were





Plate 3.41 Site 300 St Giles Mill: view looking SW showing a section through the central mill channel and retaining wall upstream from the mill (Project Phase 9)



Plate 3.42 Site 300 St Giles Mill: view looking SE showing the curved floor of the wheel race in the northern channel (Project Phase 9)





*Plate 3.43 Site 300 St Giles Mill: view looking SW of the timber lattice framework for the races in the northern channel (Project Phase 9)*



*Plate 3.44 Site 300 St Giles Mill: view looking NW showing the mill tail revetment structure as seen in Test Pit 362 (Project Phase 9)*



constructed in brick; much of the northern wall was gone, and neither of the partition walls survived, although these were probably in brick also. The southern retaining wall 13290=13105 did however stand to a maximum height of 0.70 m. At its eastern end the brickwork was full of cracks and sloped downwards to the east where the race had started to subside. The eastern end of each of the retaining walls butted onto huge squared timber posts 13150 and 13118, which were jointed to a transverse beam 13122 to which was nailed a wall of vertical planks, Group 13264, which extended into the ground.

This 'plank wall' would have formed an anti-erosion device preventing the water that ran into the Mill Tail from eroding the ground from under the end of the tail races. Failure of this structure to work effectively could have caused the subsidence observed in the retaining wall. Where exposed, the plank floor was consistently level at a height of 35.70 m OD; where the planks were absent the beams to which they would have been nailed were also level at a height of 35.66 m OD, thus allowing for the thickness of the planks to make up the remainder of the height. This lack of gradient, together with the other evidence, indicates these are the remains of the tail races, which channelled water away from the waterwheels into the Mill Tail from which it ultimately returned to the main Kennet channel. A short stretch of the timber revetment wall Group 13390 that formed the northern bank of Mill Tail extended further eastwards from post 13118. The continuation of this wall was also

picked up in TP 362; it was constructed from horizontal planks lain on-edge retained by posts and tied into the bank with iron bolts (Plate 3.44).

One of the principal foundation beams, 13092, from the lattice work ground frame gave a tree-ring date of winter AD 1746/7 and therefore suggests that construction of this entire foundation probably occurred at, or shortly after this date.

#### *The southern channel and mill races*

The southern channel was better preserved than its northern neighbour. The channel entered TP 303 from the west; its bed was made up of a layer of gravel and broken ceramic roof tile. At a distance of 2.20 m from the western edge of site 303 the channel floor changed to a layer of well-laid water-worn granite sets, structure 13539, which measured 1.70 m long, and acted as an anti-erosion device immediately prior to the start of the head race (see Plate 3.41). The eastern limit of the granite sets abutted timber floor 13761 which was level at a height of 35.70 m OD. This floor was 1.7 m long and formed from transversely laid oak planks. It led to a further level plank floor 13722 which was set 0.30 m higher. This floor was 2.40 m long and continued beyond the eastern limit of excavation. On this floor the planks were nailed longitudinally onto a series of tangential beams. The lower floor appears to have functioned as a silt-trap allowing solid material carried within the water to fall into the lower area so it did not continue on to the waterwheels (Plate 3.45). When historic maps of the mill



Plate 3.45 Site 300 St Giles Mill: view looking SE showing a section through multiple phases of head-race structure the latest of which formed a silt trap (Project Phase 9 – also see Plate 3.34)



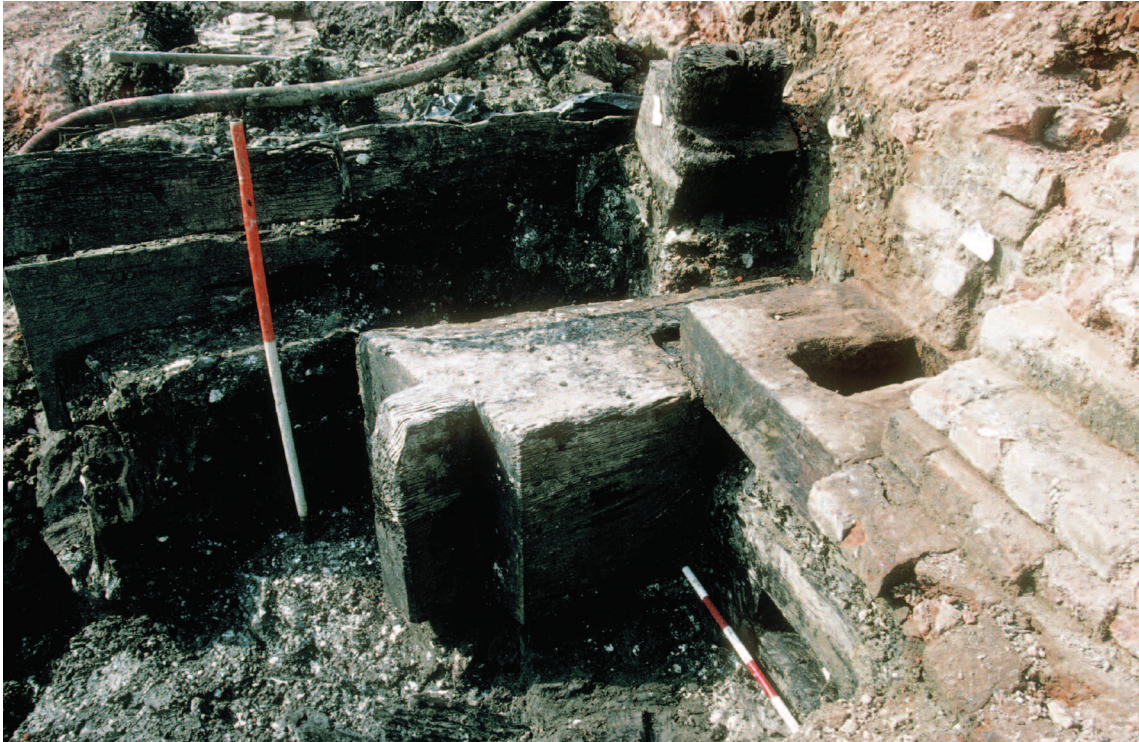


Plate 3.46 Site 300 St Giles Mill: view looking N showing the vacant mortice for one of the posts for the Hurst frame (Project Phase 9)

are scaled and overlain onto drawings of the excavated evidence it shows that the junction between the stone anti-erosion floor and the silt-trap marked the line of the western elevation of the mill building, and therefore the point at which the water ran under the mill.

These timber planked channel floors were laid over a series of deposits including large dumps of clay, silt chalk and gravel, which had been used to infill and raise the level of the head races that had been left *in situ* and dismantled from the early 17th-century mill. The overall effect was to raise the level of the head race by 0.60 m at its eastern end (see Plate 3.45).

A small element of the Hurst Frame was revealed at the eastern end of the site (Plate 3.46). Together with similar elements at the western end of site 300, this suggests that the wheel race for this central channel was located in the unexcavated and heavily truncated area between sites 300 and 303.

On site 300 the timber frame Group 13453, for the 17th-century mill race was almost completely destroyed during the rebuilding of this race (see Plate 3.35). A new timber lattice-work foundation frame was constructed to the east of the Hurst Frame. This structure became the central channel through the new mill and provided two separate mill races which were flanked by brick walls; the northern race measured 1.1 m wide (plank deck 12080), and the southern race 3.6 m wide (plank deck 13283) (Plate 3.47). It is possible that the southern race was also divided into two, although no brick partition wall survived. It is considered

that these remains in site 300 are either the tail races leading from two adjacent wheel races, or a wheel race and a bypass race. It is probable that the narrower race contained a water wheel, and this could have been the origin of the probable water wheel float 12537 found in TP 319 (Fig. 5.55 No. 20).

As noted above the principal dating evidence comes from the tree-ring evidence. The use of beech and elm in this phase of construction, rather than oak, reduced the potential of this dating technique and far fewer dates are available than for the medieval phase (which was constructed entirely from oak). Ground beam 13092 dated to winter 1746/7 and thus gives the earliest date that this frame could have been constructed. This compares favourably to the timber frame in the southern channel which dated to Winter 1742/3, and indeed to a rebuild of the Mill Tail revetment, which yielded a number of tree-ring dates of which the latest was 1755-7 for timber 12492 (w104).

Taken together this evidence suggests two possible interpretations. It is possible that the southern channel was constructed first, with the northern channel occurring a few years later, and finally the mill tail revetment was constructed. Alternatively, there could have been a single construction episode around the date of the last timber date (1755 or after), and some of the timbers used had been stored for up to 14 years. It is worth noting that the re-use of timbers was more common during this phase of construction than previously, which suggests that these dates should be interpreted with some caution.





Plate 3.47 Site 300 St Giles Mill view looking SW showing the southern race (Project Phase 9)

*In the surrounding landscape – upstream*

Evidence for major works to the retaining river/channel walls was retrieved from a number of watching brief test pits (TPs 261, 271, 272, 273, 274, 285, 294 and 317). A timber post (12458) from TP 271 yielded a dendrochronological date of AD 1741-60. This evidence suggests that the river walls to Mill Water were entirely rebuilt, in the same form as observed in sites 300, 303, and 304.

*In the surrounding landscape – downstream*

Watching brief TP 311 revealed a timber structure which yielded a single dendrochronological date of 1755-60. The function of this structure is unclear; however it demonstrates that there were works that seem to relate to separate developments at the eastern end of the site, perhaps relating to London Street properties that were not directly linked to the major works on the mill.

**Early 19th century (1815) maintenance of the mid 18th-century mill**  
(site subphase 3004b)

On site 300 a substantial number of posts, Group 13366, were driven in at the head of the Mill Tail between the northern and central mill channels immediately adjacent to the building. A single post 14058 yielded a dendrochronological date of after 1807. This group acted to reinforce the existing stabilising posts Group 13997 from Project Phase 9, which presumably had started to fail.

*In the surrounding landscape – upstream*

At this time a steam powered water-pumping house was constructed by William Cubitt. It had an engine room, chimney and water tower. It was adjacent to the defunct remains of the earlier water-pumping mill, which by this time was used as a store house (see Plate 1.6, and Chapter 4, below).

**Project Phase 10: 1850-1900**

***Modifications to facilitate the conversion to steam power*** (Fig. 3.12)  
(site subphase 3005)

*The map evidence*

The clearest evidence is gained from the maps dated to the latter half of the 19th century. The 1879 1st edition OS map at 1:500 clearly indicates for the first time the addition of a chimney on land immediately to the north of the mill complex. This chimney lies immediately to the east of other structures that have been added in this location. The chimney can be seen on photographs from c 1900. It was substantial and would have been connected to a steam engine. The 1895 Goad insurance map indicates that Hurley and Son operated the mill solely as a steam-powered flour mill using roller and stone grinding technology (Fig. 3.12). On the map there are two boiler placements indicated by hatched lines. One in the area of site 300 within the footprint of the 1755 mill building is labelled as 'disused'; this probably represents the position of the primary phase of boiler and engine,



the remains of which were found on site 300 and are noted below. On the north bank a new structure was built to incorporate the chimney and a further boiler, which would have been operational. The southern mill building of c 1600 had clearly been decommissioned, and is labelled simply as a warehouse.

There was limited archaeological evidence for the major change that occurred during this phase from water-power to coal-powered steam engines. Much of the remains from this phase had been severely truncated by the semi-cellar below the engine house for the Tramways Depot in 1900. However, remains of a sunken brick-lined rectangular pit with internal brick divisions were recorded between the positions of the two mill races to the north and south of site 300. It is considered these are the remains of the base for a boiler. A large square pit filled with concrete and probably forming a foundation to a large piece of industrial equipment indicates that the southern race was decommissioned.

**Demolition of the mill and the construction of the tram depot, 1901–present** (Fig. 3.13)  
(site subphase 3006)

*Historical background*

From cartographic, photographic and documentary evidence it is clear that the complex known as the Reading Bus Depot/Mill Lane Bus Garage as it stood prior to demolition in 1998 incorporated a number of development phases over its 100-year lifetime. The following summary is not intended to serve as a definitive description of the various phases of change of this complex, but highlights the key changes that took place.

In 1901 the Reading Corporation Tramways Depot was opened, heralding a revolution in public transport in the town (Plates 1.9, 3.48). The central Depot housed the power generation, garaging, and maintenance facilities needed for the then state-of-the-art electrically powered trams, with services to

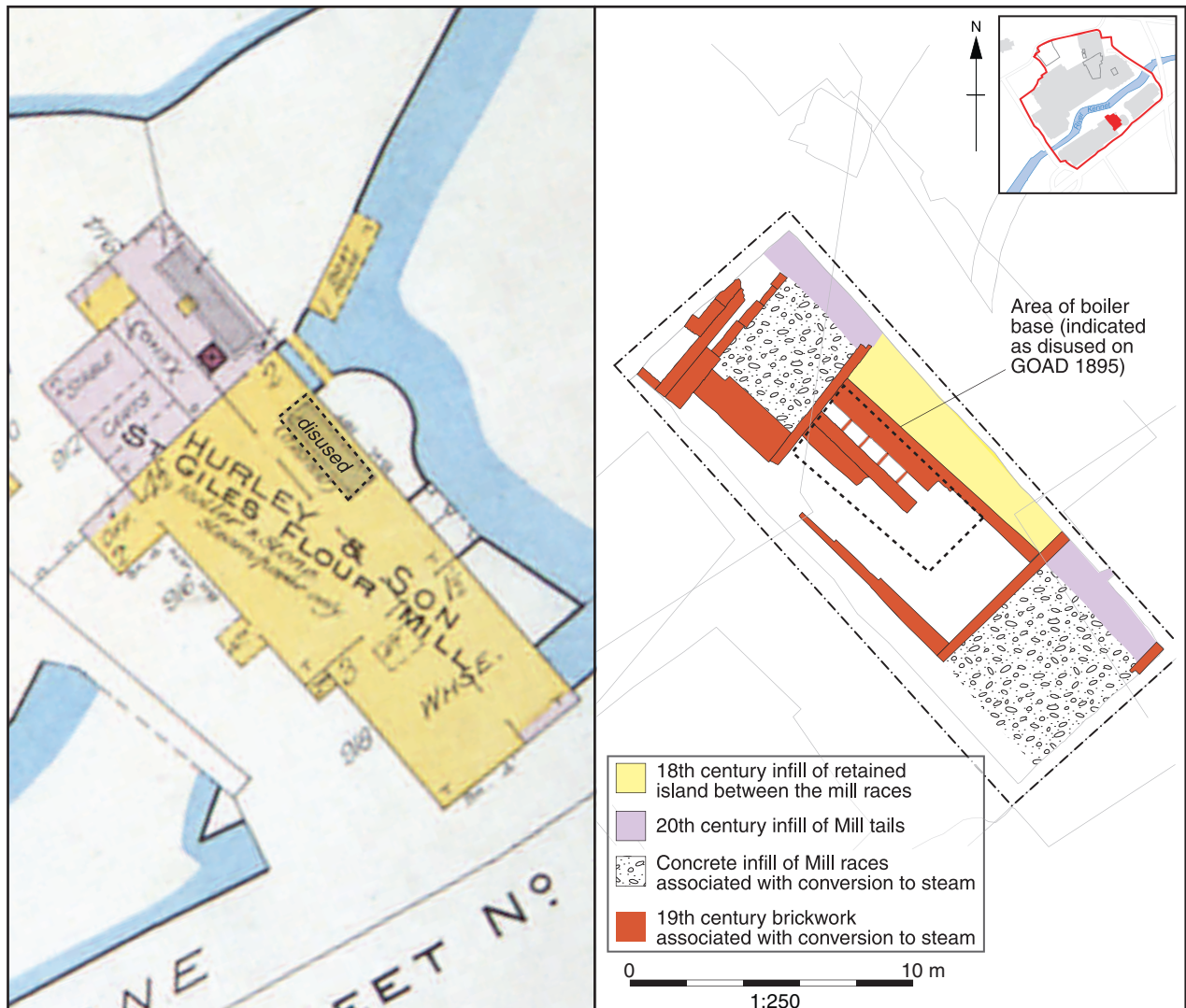


Fig. 3.12 Site 300, St Giles Mill: detail of the steam-powered mill from the Goad Insurance map of 1895 compared with the archaeological evidence (Project Phase 10)





Plate 3.48 View looking W of the opening ceremony of the Tramways Depot in 1901



Plate 3.49 View looking W of Reading Bus Depot immediately prior to demolition

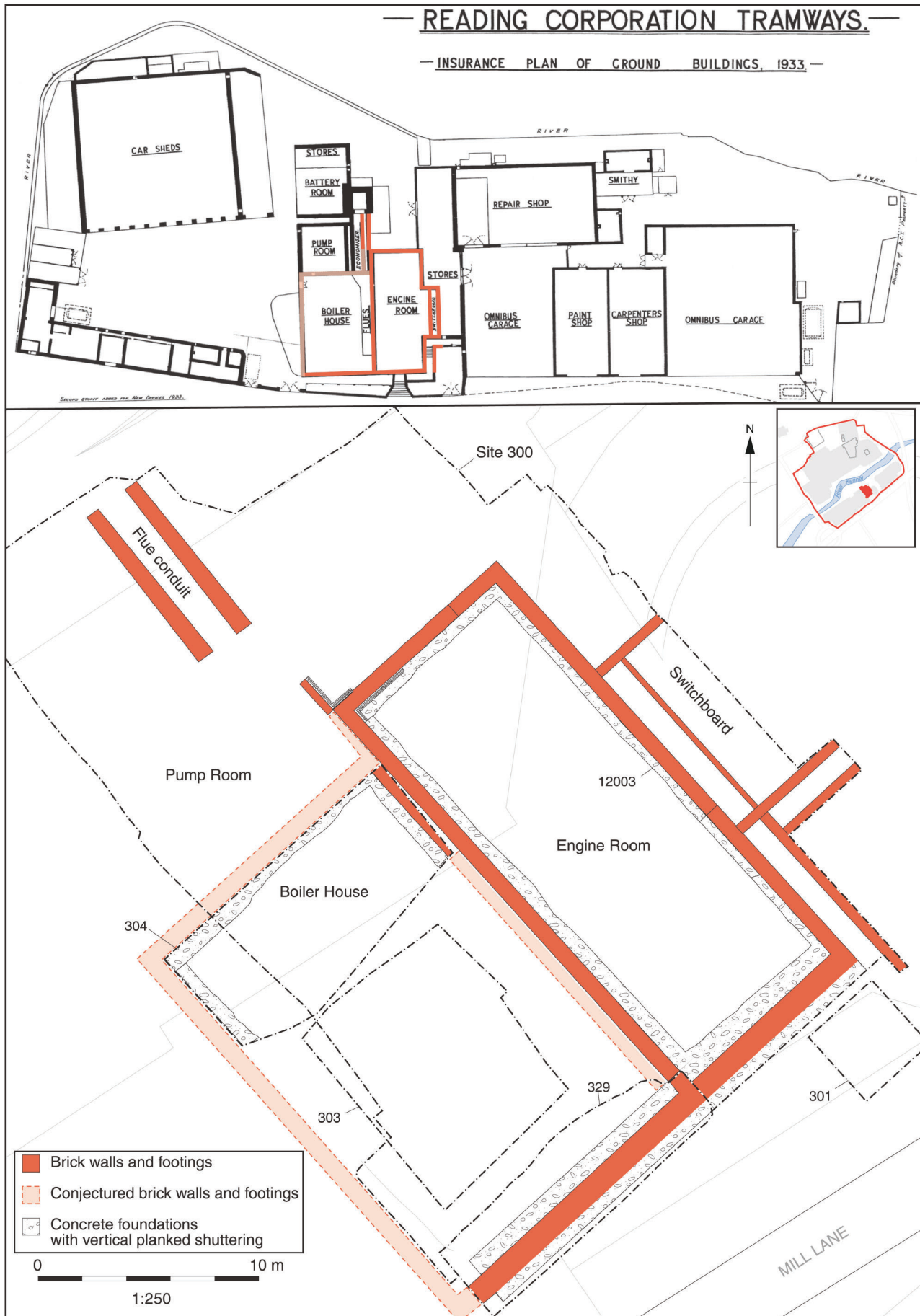




*Plate 3.50 Reading Bus Depot, general internal views (above) and (left)*

*Fig. 3.13 (opposite) Site 300, St Giles Mill: excavated remains of the Reading Corporation Tramways Depot and indicated on plan of the Tramways buildings from 1935 (Project Phase 10)*







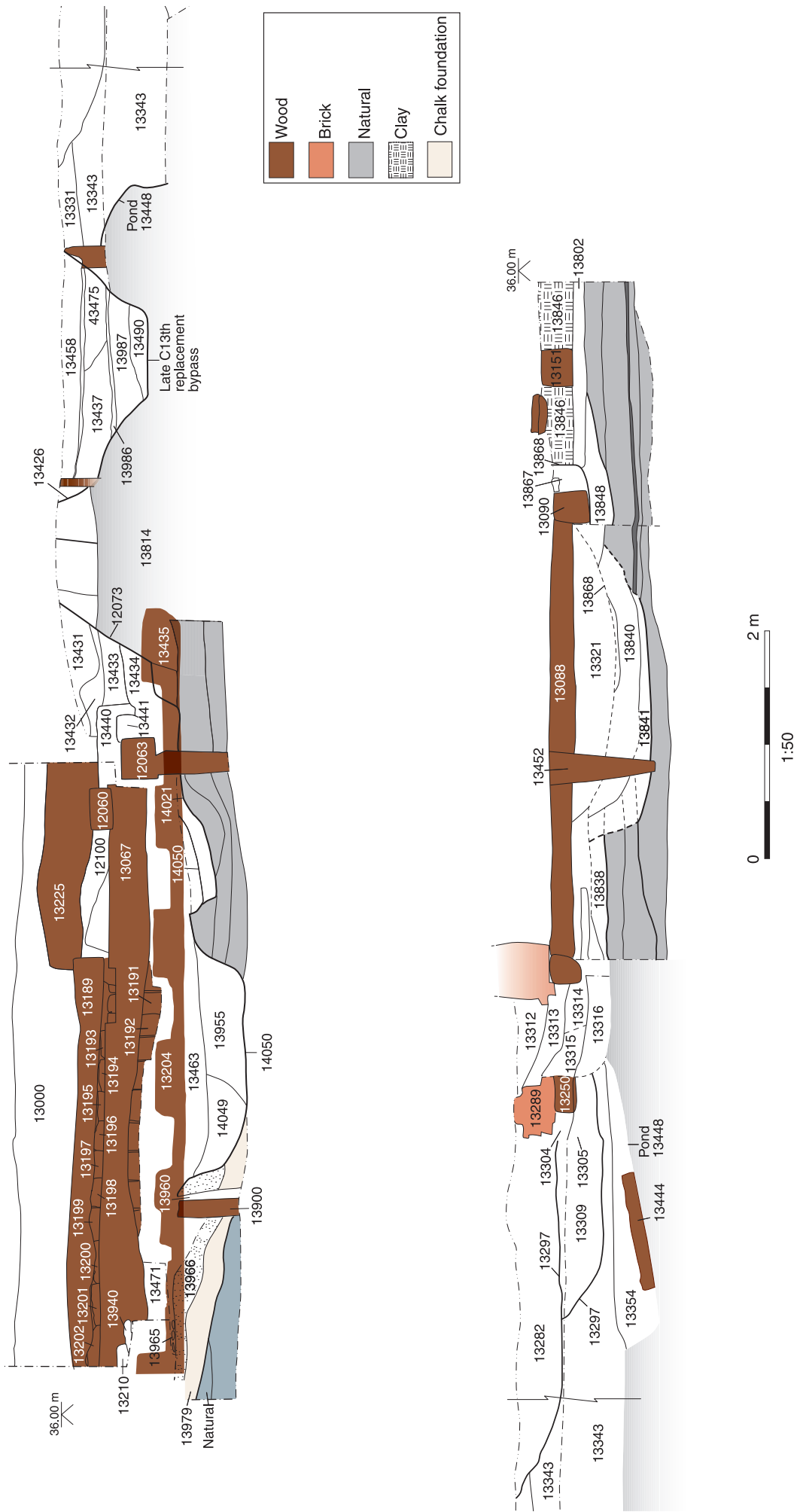


Fig. 3.14 Simplified composite section showing relative levels of medieval and post-medieval mill races and associated channels



all corners of the ever expanding Victorian town. Away from the depot a major programme of infrastructure works was necessary to install the tramlines and overhead electrical cabling. These works represented one of the largest upheavals in the town's road system.

The construction of the depot itself also witnessed the most significant changes to the topography of the site that had steadily evolved with the fortunes of successive phases of St. Giles Mill, and canalisation. Construction involved the demolition of St Giles Mill, the mill owner's house, and the Waterworks Dept. To prepare the land for development the former topography was changed dramatically with the infilling of some waterways (notably Mill Tail) using material from the demolition, and the culverting of others to run as underground channels (compare Plate 1.8 and Plate 1.9). The new Depot consisted of an Engine Room containing the switching gear, an Office, the Boiler Room, and an Economiser and Pump Room, all located on the site of the former footprint of St Giles Mill. To the north of these were the coal shed and chimney. Together these buildings formed the core structural complex of the depot. To the north-east of this core group was the Repair Shop, built over the site of the Mill Tail, and to the west lay the Car Sheds constructed on the former island where the mill owner's house had stood. The Car Sheds were approached by multiple tramlines leading from a gateway accessing Mill Lane, which was situated between the Boiler Room and the Stores and fronted onto

Mill Lane, being constructed over the former course of Mill Water and the site of the Water Tower and Store.

Over the course of the next 40 years the electric trams were decommissioned, and the site became the home of the Reading Bus Depot (Plate 3.49). Many of the buildings from the original Tramways Depot were retained and eventually the bus depot covered the entire area between the canalised river Kennet, Mill Lane, Seven Bridges and London Street. Garaging facilities had been increased, the former Car Sheds had been enlarged as the Main Garage, and other large garages for buses had also been added. Maintenance facilities had also grown with new Paint and Carpenters' Shops. These additions required more power, and to this end a new Boiler House had been constructed. With these changes the complex expanded eastwards.

#### *Building recording*

Mill Lane Bus Garage occupied the entire site until it was demolished to make way for the Oracle development. The Depot was subject to a building recording exercise, which was carried out by OAU in association with the Berkshire Industrial Archaeology Group and other enthusiasts. This exercise amassed a large paper and photographic record of not only the structural details of the buildings but also how the workforce used their workspaces in the last few weeks prior to relocation (Plate 3.50). These records will remain as an integral part of the archive for the project but have not been analysed for this publication.



Plate 3.51 Site 300 view looking N, the remaining unexcavated mill timbers of St Giles Mill are preserved in situ

*Below ground remains in the area of the mill*

Although it was not an objective of the excavation to examine the remains of the 20th century, by default certain construction details were recorded, and there are some interesting points that can be drawn out.

The substantial foundations to the 1901 Engine Room, which defined the area of site 300, were recorded; in addition foundations for the Boiler Room to the west, Economiser and Flue to the north and the Stores and Switchboard Room to the East were drawn (Fig. 3.13). It is interesting to note how these foundations were installed. Initial construction trenches were dug (cut 12003), and where waterlogged timber remains were encoun-

tered from previous phases of activity they were removed. This exercise was achieved not by the wholesale removal of the timbers but by the careful and labour intensive process of sawing off the timbers to the exact dimensions needed for the foundation trench. The trench sides were then lined with vertical timber planking, probably pine, which acted not only to shore up the deep faces of the trench but also as shuttering to receive the poured concrete foundation. It is as a direct consequence of this construction technique for the foundations that so much of the archaeological evidence of the former mill structures remained. It is an object lesson in preservation *in situ* (Plate 3.51).