

site no 56.

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SUMMARY

The remains of old Exe Bridge are of great interest and importance because they constitute one of the best preserved examples of a major stone bridge built in England in the period covering the 12th and 13th centuries when many leading boroughs sited at river crossings replaced earlier timber bridges, ferries or fords with magnificent new stone structures. The ruins have been consolidated and are now displayed within a small landscaped park.

An archaeological investigation of the remains of the medieval stone bridge and surrounding area showed that 8½ arches survive from the bridge built c.1200 (which contained 17, or possibly 18 arches); also that St Edmund's Church, which formerly stood above the second and third river arches from the Exeter end, formed part of the original construction. Later, the bridge became crowded with houses and other buildings. Development of the adjacent river bank for housing began soon after the bridge was built. The number and size of the tenements grew as land was reclaimed from the river.

The excavations and recording work took place between the years 1975 and 1979, and were carried out by Exeter Museums Archaeological Field Unit on behalf of Exeter City Council and the Archaeological Section of the DoE (now English Heritage).

1. INTRODUCTION

The river crossing before the stone bridge

The river crossing at Exeter has long been the principal focus of the road system in South-West England. Its origins date from the time of the Roman conquest of Britain, when the Second Legion of the Roman army built a fortress (*Isca Dumnoniorum* = Exeter) at the head of the Exe estuary c. 50-55 AD, and established a military road between Exeter and Lincoln (the Fosse Way), as well as roads linking Exeter to forts in other parts of Devon and Cornwall (for recent discussions of Roman Exeter and its region see: Bidwell 1979, 1980; Todd 1987; Henderson 1988, 1991; Holbrook & Bidwell 1991). The Roman military engineers who laid out and constructed the roads no doubt also built bridges, probably of timber, including one across the River Exe leading westwards from their headquarters at Exeter.

A bridge was probably maintained following the departure of the legion c.75 AD and throughout the Roman period, during which time Exeter served as the regional centre for Roman administration of the surrounding area, and grew into a thriving provincial town. No evidence has so far come to light to indicate the position of a Roman bridge, but timber remains might easily have been lost or covered over in the years following the collapse of Roman control in the late 4th and early 5th centuries, when towns were virtually abandoned.

Urban life resumed and grew within Exeter's walls in late Saxon and Norman times. In this period, before the stone bridge was built, there was probably some sort of provision made for crossing the river. Later writers disagree as to precisely what this was. One source tells us that there was a flimsy wooden footbridge which was usually carried away each year with the winter floods, whilst an earlier writer says that there was only a perilous ferryboat. Whatever means provided for foot passengers, horses crossed the river by a ford, and probably had done so for centuries. Excavations have shown that numerous fragments of iron horseshoes and nails are embedded in the river gravels beneath the bridge (see The early river bed and ford).

The stone bridge (Fig. 1)

The precise date when the building of the stone

bridge was begun is not recorded, but work was almost certainly in progress by 1196 when Gregory, 'chaplain of Exe Bridge', appears as witness to a charter (Round 1899, 321). Construction is likely to have been complete by c.1214 when the two chapels of St Edmund and St Thomas, which stood one at each end of the bridge, first appear in the documentary record (Rose-Troup 1923, vi; and see Fig. 1.1). According to John Hooker, Exeter's first historian, (Harte *et al.* 1919), the two men primarily responsible were Nicholas Gervase and his son Walter. Nicholas was a prominent citizen of Exeter whose name appears frequently in the city records from c.1190 until 1228. He is known to have been appointed to the office of 'seneschal', or steward (of Exeter's merchant guild) in some years. He is said to have taken charge of the building operations whilst Walter travelled widely to collect money to pay for the construction and also to purchase property with which to endow a trust for the future upkeep of the bridge. Walter was mayor of Exeter from 1236 to 1238. By his will dated 1257, Walter bequeathed to the bridge certain of his lands and properties including mills and a great weaving shed (*ibid.*, 601). The building of the bridge clearly owes a great deal to these two individuals, but they were doubtless acting on behalf of the borough corporation as a whole, to whom the responsibility for its upkeep passed upon completion.

Wardens of the bridge were appointed annually at the Mayor's Court. They administered the funds and property of the Exe Bridge Trust and were responsible for the day-to-day maintenance of the bridge structure. The wardens kept detailed annual accounts which survive with few omissions from the years 1343 to 1711. The original seal of Exe Bridge is still in existence and is presently kept in the Devon Record Office at Exeter. Its matrix is made of lead and bears the inscription *S[igillum] Pontis Exe : Civitatis Exonie* (Seal of Exe Bridge: of the City of Exeter). The earliest surviving impression of the seal dates from 1260 or 1264; it sealed a charter of Mayor Philip Tinctor and the Bridge Wardens granting land at the west end of the bridge.

Throughout the history of the bridge there were many instances of damage caused by floods. The western end of the bridge was most at risk since here the arches spanned the deepest and most swiftly flowing part of the river. In his

'History of the City of Exeter' Jenkins (1841, 49) refers to parts of the bridge having been carried away in 1286. The wardens' accounts record major repairs in 1351 when each quarter of the city raised funds to pay for the work. A disastrous flood in the late 14th century (possibly in 1384, another date mentioned by Jenkins) destroyed a number of the western arches, which from 1386-7 were made up again in timber, as recorded in the Warden's account roll for that year. In the 15th century a petition for the relief of Exebridge was raised by Mayor Shillingford (holder of the office in 1428 and 1444) who described the sections of the bridge repaired with timber as falling down again and estimated the cost of repairs at £2,000 (*ibid.*, 73-4).

According to Hooker, one of the middle arches of the bridge collapsed in 1539 and was rebuilt with stone from the then recently dissolved Priory of St Nicholas in Exeter. This may account for the presence in the bridge masonry of part of a late Saxon stone cross which was discovered during the demolition of the western arches in 1778. This was at first set up as a rubbing post on the corner of High Street and Gandy Street and now has been moved to the garden of St Nicholas' Priory.

Illustrations and maps made in the 17th and 18th centuries (see Fig. 2b) show that there were then seventeen arches, together spanning a distance between abutments of close to 180m (591ft). The raised causeways, which existed at either end of the bridge, brought the overall length to around 240m (787ft).

The predominant building stone used in the bridge, and the contemporary chapel of St Edmund, is a dull purple-coloured volcanic rock known as Exeter Trap, which came from quarries in the Exeter area. Lesser amounts of yellow and white Triassic sandstone also occur, particularly in the lower courses and foundations. This stone was probably obtained from a quarry somewhere on the Exe estuary. A few stones (probably a single load) of fine-grained white limestone from Caen in northern France were used for decorative effect in the second arch. In addition there is a very small amount of a coarse limestone from Salcombe in East Devon.

Repairs to the bridge may readily be distinguished from the original work because they usually include a red breccia or conglomerate sandstone from Wonford, known

locally as 'Heavitree Stone', which was not quarried for building until the 14th century.

Later bridges

By the second half of the 18th century the volume of traffic crossing the bridge had increased manyfold and required that the narrow roadway be either widened or replaced. A proposal to widen the bridge was rejected in favour of erecting a new bridge on a different site a little upstream. After an initial number of engineering problems, the new bridge was opened in 1778 (Fig. 1.3). It was designed by John Goodwin and contained three stone arches with a parapet of balustrading. It was 11m (36ft) wide. A raised causeway (New Bridge Street) was constructed across Exe Island to connect the bridge to Fore Street, and the City wall was breached to make way for the new approach road. In the same year, the western half of the old bridge was demolished in order to clear the waterway from obstruction. The eastern nine arches and the buildings which stood over them were retained and became known as Edmund Street.

In 1905 the Georgian bridge was replaced by a single-span structure 15.2m (50ft) wide. This bridge was designed by Sir John Wolfe Barry, and was notable for its parabolic steel arch, hinged in three places. It was in turn replaced by the modern twin Exe Bridges, built of reinforced concrete and pre-stressed steel beams, one of which (north) was opened in 1969, the other (south) in 1972 (Fig. 1.4)

St Edmund's Church

St Edmund's Church formed an integral part of the bridge construction and was supported above the river to the north-west of the second and third arches from the Exeter abutment. As mentioned previously, the earliest direct reference to the church occurs c.1214, but almost certainly it was to St Edmund's that Gregory, the first known bridge chaplain, recorded in 1196, was appointed. It was the original, and always the principal, chapel of Exe Bridge. Its patrons were the Mayor and Commonalty of Exeter. Moreover, it was the only building known to have been standing on the bridge itself until the mid 13th century (see below for St Thomas and Chantry chapels).

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to all those who would contribute to the construction of a new bell tower (*novi campanalis*) and rebuilding of the fabric and lights (Dunstan 1968). In 1658 building land was acquired for the enlargement of the church on its north-east side (DRO, St Edmund's PB1). This was in fact an addition made to a side-aisle which had been built onto the church in the previous century (Phases 3 and 4; see below).

The tower and church walls above bridge level were demolished in 1832 and a new enlarged building was erected the following year (DRO, St Edmund's PB2). An account of the interior written before rebuilding was published in 1835 (*Gent. Mag.*) and an accompanying illustration of the church exterior shows windows in the Perpendicular style and a crenellated tower standing at its south-west angle. Another illustration made whilst demolition was in progress shows the division between nave and chancel, which comprised two two-centred arches springing from fluted pillars. The same illustration also shows plain octagonal pillars supporting the arcade which separated the nave from the side-aisle.

Regular services ceased at St Edmund's in the mid 1950s and the greater part of the structure has since been taken down. The lower part of the 19th-century tower and the foundations surviving from earlier periods have been preserved and consolidated, and presently form part of the Exe Bridge scenic ruins.

Exe Island and Frog Street

Exe Island was the name given to the low-lying land between the town walls and the river. It is mentioned by name (*Insula Exe*) in a charter of the Honour of Okehampton dating from c.1160 by which one Thomas was granted all Ailward's land in Exe Island outside the West Gate of Exeter for him to build on. The island was formed when the Higher Leat was cut, probably in the late Saxon period. The leat still exists today, extending for almost half a mile from Head Weir next to Bonhay Road to Exeter Quay (Figs 1.4; 2). The Higher Leat was the first of a series of leats to cross the area. Their purpose was to convey water to power mills. Some time between 1180 and 1194 Robert de Courtenay granted to Nicholas Gervase the right to build a mill on ... all his water which Thomas the Fuller holds of him outside the West gate of Exeter which is between his corn mills and

Crickenpette' (Hoskins 1960, 25). Before long other mills were built and Exe island became the chief industrial suburb of the medieval city.

Throughout the medieval period the ownership of the Manor of Exe island was in dispute. The Earls of Devon claimed it as their land. The City of Exeter denied this, and engaged in a protracted but unsuccessful legal action in which it maintained that the island of Exe was common, and served the City, lying within the town's jurisdictions. Certainly some of the inhabitants claimed Exeter citizenship and on occasion defied the authority of the Courtenays (for a discussion see Jackson 1972, 67-8). The matter was not resolved until after Henry Courtenay was executed in 1538 for alleged conspiracy against King Henry VIII, and his lands were confiscated. Twelve years later, in 1550, Edward VI gave Exe island to the city in recognition of its support against the Catholic uprising generally known as the Prayerbook Rebellion which took place the previous year.

Frog Street, on Exe Island, was not known by that name until the early 17th century. Before that it was most often referred to simply as 'the way to the water of Exe', since it led from the end of the stone bridge to the river bank.

Two old timber-framed houses stood on Frog Street until 1961 when they were cleared away to make room for a new road scheme. One of the houses was lifted onto wheeled transport and moved some 50m to its present position at the corner of West Street opposite St Mary Steps Church. The building became famous as the 'House that moved'.

Frog Street was finally swallowed up by the modern road system associated with the new Exe Bridge and the Inner Bypass.

The archaeological programme

Following the completion of the modern twin bridges, Exeter City Council decided to landscape the area surrounding the remains of the medieval stone bridge, and to expose and consolidate its surviving arches. Mechanical diggers cleared away 20th-century concrete floors and rubble associated with the former City Brewery, revealing far more of the old bridge than was previously thought to survive. In addition, the clearance started to uncover remains from old houses alongside the bridge. After consultations,

it was decided that Exeter Museums Archaeological Field Unit should supervise further clearance and conduct an archaeological programme including making a record of the standing structure, and excavation of surrounding areas. This was done in conjunction with conservation work carried out by Dart and Francis Ltd., Building Contractors, under the supervision of Gundry Dyer Greenway, Architects. Excavations took place in 1975 and 1976 (E.B.I), and again in 1977 and 1979 (E.B.II).

2. EXCAVATIONS AND STANDING STRUCTURE

The early river bed and ford (Figs 3; 29, sections 8-9, 56)

The earliest deposits examined were exposed in a trench excavated from the ancient river bed during the summer drought of 1976. These river sediments were overlain by the bridge piers (1056, 1073) and their rubble foundations (1104). Under normal conditions these levels are waterlogged, so organic material is fairly well preserved. The deposits ranged from coarse gravel with cobbles and stones to fine sand containing water-borne twigs and branches, some still bearing leaves and fruit. The pattern of deposition exposed in section 56 shows an undulating river bed made up of shifting sand shoals and shallow channels. Preserved at the bottom of a series of sand layers was part of a wattle hurdle (Fig. 3) which was lying on its side and clearly had broken away from some sort of fence, or possibly a weir upstream. The latest deposit in this series was a layer of yellow gravel, pebbles and cobbles (1105) which infilled at least one channel to form a fairly level surface. This layer was markedly more compacted than the river deposits below it, and appears to have consolidated and stabilized, perhaps lasting for a considerable period. Embedded in the uppermost 5cms of this layer were horseshoe fragments and numerous iron nails, showing that before the bridge a ford crossed the Exe at this point.

The stone bridge (Fig.4)

The eight and a half arches which are exposed today all belong to the original construction of c.1200 (see construction, below). Together they span a distance of 81m (266ft) measuring from the Exeter abutment, somewhat less than half the

original length (c.180m) of the full 17 river arches.

The bridge was built with both segmental (almost semi-circular) arches and pointed (two-centred) ones. The first four arches from the Exeter side are segmental, then, from arch 5, pointed arches alternate with segmented. All the arches are of ribbed construction. The segmental arches each have three rectangular-sectioned ribs, 1m wide, whilst the pointed ones have either four or five narrow, chamfered ribs 0.6m wide. All but the first arch are strengthened with one, or sometimes two more 'arch rings' above the first set of voussoirs (arch stones). The second ring projects over the first, and is commonly chamfered along its lower edge.

The overall width of the bridge is on average 5m. It carried a roadway some 4.2m wide, if allowance is made for parapets c.0.4m thick. The road surface was paved with flagstones. A small area of possibly medieval paving survives above the seventh arch (the rest of the present surface is a modern reconstruction). The height of the roadway rose from c.3m at the Exeter abutment to over 6m above the ninth arch. On the west side of the fifth arch is one of the original drain spouts which served the roadside gutter. The principal dimensions and features are shown in Table 1 (p. 5).

The bridge piers are faced with volcanic trap and sandstone ashlar (dressed, squared stones) bonded with a hard white lime mortar containing gravel aggregate. Below parts of the facework is a chamfered plinth. This was commonly provided through the arches, and sometimes extends as far as the pier cutwaters (points). The core of the piers is built up with an initial layer of either rubble and clay, or river gravels, and then raised in layers of mortared rubble. This upper core work is identical to that forming the vaults over the ribs of the arches.

Construction

The ashlar facework of the bridge has been recorded in detail (Figs 5; 6). These elevations show that the masonry courses were not everywhere evenly and continuously built up. At places there are awkward, stepped junctions between different sections of coursed masonry, which must represent either minor breaks in the progress of construction, or the meeting of work

Table 1: Dimensions and features of surviving arches.

Arch	Form	Span(m)	Ht(m)	No. of ribs	No. of arch rings
1	segmental	3.55	2.1	3	1
2	segmental	4.50	3.0	3	2
3	segmental	4.54	3.0	3	2
4	segmental	5.05	3.3	3	2
5	two-centred	5.4	3.7	5	3
6	segmental	5.55	3.2	3	2
7	two-centred	5.3	4.0	4	3
8	segmental	5.66	3.55	3	2
9	two-centred	unknown	5.4	unknown	2

by different gangs. Probably these discontinuities in the coursing resulted from a combination of these two factors, as we can easily imagine if we consider how difficult and intermittent the building operations must have been in the process of crossing a major river with seasonal, and probably tidal variations in water level.

The stepped nature of these junctions allows us to determine which section of masonry is the earlier, and which was added later. It is therefore possible to deduce localised sequences of construction, which in turn add up to a more general pattern common to all the arches and piers. For example, Fig. 5, pier 7, elevation A shows a stepped break in coursing in which the masonry of the downstream cutwater (on the extreme left) clearly overlies courses which continue into elevation B, where they form part of the construction of arch 7. From this we can say that arch 7 was standing, at least in part, before the downstream cutwater. In addition, we can also deduce that the cutwater had been raised by six courses before the construction of arch 8 was begun, since these courses continue beneath the springing of the arch ribs (elevs. G and F). A similar, stepped break is shown in Fig. 6, pier 6, elev. C where the courses which continue beneath arch 6 (elev. B) are overlapped by courses extending towards the upstream cutwater of pier 6 (elev. C and D).

In fact, all the visible discontinuities in coursing suggest, or are at least consistent with

progressive construction of the bridge outward from the Exeter side of the river (a full analysis is held in the Archive). Some discontinuities also hint at intermittent progress, such as that shown in Fig. 6, pier 5, elevs. D and E, where the upstream cutwater point evidently existed four courses high before the flank walls to either side were built up. This probably happened when it was found necessary to adjust the siting of the foundations for pier 5.

The flank walls of the arches show no sign of sockets for wooden centring (neither open nor filled), so it would seem likely that temporary timber supports for the building of the arches were raised upon structures moved about as required on the river bed below.

The ribs of the arches helped reduce the quantity of timberwork required since once they were in place, the ribs had wooden planks run between them onto which the bridge builders laid the mortared rubble masonry which formed the bulk of the arch vaults. There are still narrow slots visible above some of the ribs, marking the ends of individual planks, long since rotted away.

The foundations (Figs 7; 8)

The foundations of the piers were made up with layers of loose volcanic rubble and river gravel. Those laid in shallow water, close to the river bank, simply raised the level of the river bed and

infilled any existing hollows. By the time the bridge had progressed as far as the site of St Edmund's Church (piers 1-3), the builders began to contain the foundations within rows of oak stakes driven into the river bed around them.

In deeper water progressively more elaborate methods of construction were used. Around piers 4 and 5, the builders used more closely-packed stakes in greater numbers, and the foundations were raised to the required level with successive tiers of rubble and gravel, each contained within its own border of stakes (Fig. 7). Pier 6 was built upon three such tiers (Fig. 8), each of which raised the level by 0.4m-0.5m. At the construction of pier 7 the builders introduced three new strengthening features which may well have been adopted for the foundations of other deep-water piers. These were:

- (1) deeper rubble making up the foundation raft. This was more than 0.3m deep and infilled a hollow specially excavated from the river bed to receive it.
- (2) rows of oak piles forming a rectangular grid which consolidated the rubble raft and held it firmly in position. The remains of six rows of large, roughly squared piles (on average 0.15m square) extend 4m upstream from the cutwater point (see Fig. 8). The easternmost line of piles was beneath the north-east side of pier 7 showing that the piling was laid out with precision, on exactly the correct site. Three tiers of rubble were then built up upon this base, each enclosed by smaller stakes as found around pier 6.
- (3) the stakes around pier 7, however, had wattles woven between them, creating a kind of wickerwork retaining wall. The best preserved wattling was found beneath a small sandbank, and survived for a length of 1.7m to the north of pier 7 (Fig. 8). It was clear from the quantity of broken twigs nearby that the wattling formerly extended in both directions.

Probably at a later date, bundles of brushwood, as well as quite long wooden poles (up to 2.2m in length), were wedged between upright stakes around both piers 6 and 7. These had for the most part broken away and drifted downstream. It is known from the Bridge Warden's Accounts that from at least the 14th century structures known as 'Defeynes' were erected around the bridge piers in order to protect them from driftwood and iceflows.

One further feature of the excavated bridge foundations requires comment, and this is the unusual arrangement of stakes and rubble to the north and east sides of pier 5 (Fig. 7). Here, it would seem from the pattern of stake rows that the builders prepared an initial rubble raft which proved to be too far from the previous pier (pier 4), and that an additional rubble platform had to be specially constructed along the north-east side in order to reduce the span. This miscalculation very likely arose because arch 5 is the first pointed arch in the bridge. Pointed arches have lesser spans than semi-circular ones of comparable height, so what we are seeing is probably the result of a necessary adjustment. Indeed, this adjustment in the foundations was echoed in the plan of the masonry pier built above, which differs from all the other piers in the way its north-east face projects from the downstream cutwater.

It is significant that pier 5 also marks a slight change in the alignment of the bridge arches (see Fig. 4). As mentioned earlier, there may have been a temporary halt in the progress of construction at this point. Subsequent work followed a new line, and incorporated more adventurous construction in the form of the pointed arch.

During the excavations, samples were taken from the brushwood, and from amongst the oak stakes. Fifteen of the larger stakes were extracted for tree-ring dating, but unfortunately only one example had more than 50 rings. An equal number were salvaged from nearby landscaping work. The thirty examples ranged in length from 0.6m to 1.7m. All had been pared to a point, to assist with driving them into the river bed, but none had been shod with iron.

Many hundreds of oak stakes still survive *in situ*. These have rotted above a general level, equivalent to that of the chamfered plinth at the base of pier 5, and this is taken to indicate the usual low water mark whilst the bridge was in use.

St Edmund's Church

Phase 1 Construction, c.1200. (Fig. 9)
In its original form the church had a plain rectangular plan measuring internally 18.6m by 5.2m and comprised simply nave and chancel. The end walls rested on specially designed

cutwaters (1 and 3) whilst the north-east wall was carried on a row of four arches connecting the cutwaters with two intermediate free-standing piers (Fig. 10, 1055, 1121). The springing of the most easterly arch is still visible in the south-west face of cutwater 1 and is 0.86m wide, indicating the probable width of the original walls above. The church was entered from bridge level approximately 4.2m above the river bed below.

One side of an original external doorway with a chamfered jamb survives three courses high in the south-west face of cutwater 3 (Fig. 10). This is probably best interpreted as an opening which provided access to the river, probably leading to a flight of wooden steps outside.

Excavation of the river bed below the church uncovered four oak timbers, each having been set firmly in place during the early stages of construction (Fig. 9, 1052-4, 1127). Timber 1053 was a sole-plate which had been fashioned to hold a large central upright braced from either side by a raking shore. It was levelled on a bed of flat stones laid in a trench 0.42m deep and held fast by packing stones and cobbles. Timber 1054 was a squared tree-piece (0.45m by 0.4m) set upright in a pit 0.3m deep and held in position by stakes driven around its outside. It likewise had anchored a post or strut, possibly associated with, or attached to the central post of timber 1053; certainly the lower portions of both had been left to rot *in situ*, as is shown from the hollow casts which were found in the overlying river deposits (Fig. 10, 1124, 1125). Timber 1052 was pierced at either end by a square socket but was too thin (0.03m) to have provided anchorage for upright posts. Moreover, it had been re-used from an earlier context and almost certainly represents a packing piece for another sole-plate which was later removed. It was not possible to identify the purpose of timber 1127 which had largely decayed. Samples taken from timbers 1052 and 1054 have been dated by tree-ring methods to the years AD 941 and 1127 respectively. Even with an additional allowance of 32 ± 9 years for absent sapwood, the dates show that both timbers were almost certainly re-used from earlier contexts. Timber 1053 unfortunately proved unsuitable for tree-ring dating.

The precise function of the upright posts is uncertain. What seems clear, however, is that

they did not form part of a scaffolding arrangement, nor did they belong to an earlier structure, such as post or trestle bridge. The most likely purpose for such large posts held so securely is to have supported hoisting tackle for use during the construction of the church.

The river bed, 13th-15th century (Fig. 10)

Shortly after the completion of the church, large flagstones were laid on the river bed below (1014). The original extent of the stone surface probably covered most, if not all of the area beneath the church, thereby protecting the foundations and preventing erosion through the arches. However, by the beginning of the 14th century most of the paving had been robbed. The river then began to scour shallow channels beside the cutwaters (1122, 1128).

For about the next hundred years water continued to flow beneath all parts of the church, but gradually the easternmost channels filled with sands and gravels (1123). By the early 15th century, the only channel completely free from fine sediment was that passing beneath the west end of the church leading to arch 3 of the bridge.

Phase 2, c.1450 (Fig. 11)

In the mid 15th century, the foundations at the west end of the church were extensively remodelled: the upstream point of cutwater 2 was narrowed (1074); cutwater 3 was almost entirely rebuilt (1071); and the intermediate pier 1121 was replaced by one of larger size, angled to face the current (1072). The south-west face of cutwater 3 still shows a relieving arch which spans the full width of the 15th-century church, and clearly was intended to spread the weight of the bell tower added c.1448-9 (Introduction). The arch is 1m thick and built entirely of local ('Heavitree') breccia sandstone bonded with white mortar. The same stone occurs in small amounts throughout the corework of the contemporary foundations. The lower courses of ashlar facework, however, were built of large, dressed blocks of volcanic trap, some finished with diagonal tooling, a feature not found in the 13th-century masonry.

At the same time the level of the river bed below the church was made up with a series of clay dumps on average 0.2m thick (898, 1026). These contained large quantities of demolition waste, including broken roofing slates and tiles, and were interleaved with thin lenses of river

during times of flood, since large pebbles and river cobbles were found lying alongside each of them, carried to the site by stronger-than-usual currents (section 3, 402; section 4, 465; section 25, 972, 973). By c.1240 the sandbank extended 20m upstream and was raised on average 0.4m above the old river bed.

Throughout this period the sands must have been accessible at times of low water, since numerous, shallow hollows, probably sand quarries, were dug from its surface (n.i.). The majority of these were filled with clean river deposits, showing that flooding was still common. At the same time, household rubbish was tipped onto the area. Deposits of refuse containing ash, charcoal, food remains and a large collection of early 13th-century pottery sherds were found interleaved with river sediments (e.g. section 4, 465; section 3, 402, bottom layer; section 25, 974, 1059).

The earliest signs of habitation on the sandbank were traces of insubstantial timber structures which probably represent temporary, seasonal occupation. Remnants of a cobble and loam wall footing 0.5m wide (Fig. 14, 375) were found, and to its south was a sunken floor which was terraced from the sands to a depth of 0.08m. The hollow was lined with a series of beaten earth and gravel surfaces, each of which was covered with a trampled deposit of charcoal and food remains (section 4, 416, 417, 442, 451, 470; section 3, 416, 417, 451, 470). A small pit had been dug through the earliest floor level (436), and a post-hole (447) was dug late in the sequence. The west side of this sunken area was straight, and ran at right angles away from footing 375. This almost certainly marks a second side of the building, probably the edge of a timber sill beam which was laid directly on the ground.

To the west of the building were four pits, or shallow wells (48, 769, 803, 980). These were dug into river gravels, and remained open long enough for slumping to have taken place at their sides. None contained domestic rubbish or cess, hardly surprising considering how close the river was, so very likely they supplied fresh water at times when the river was running low. A pronounced undercut in the side of the deepest pit (769) 0.2m below its rim probably indicates the level of standing water during its period of use. At the very bottom of this pit was a collection of animal horn cores, which suggests

a possible use for retting horn (horns were soaked in water until the outer membrane was sufficiently supple for it to be stripped from the core without damage). A great number of other horn cores were found throughout the dump layers on the sandbank, suggesting that a horner lived very close by, perhaps even in the building described above.

At the extreme western limit of the sandbank was a hollow cast of a wooden beam (Fig. 14, 905, 0.05m deep), which had been laid north to south at the water's edge. The beam was later lifted, and the impression it had made in the sand filled with charcoal and ash. This charcoal layer (882) spread beyond the edges of this feature and also filled seven post-holes nearby (903, 904, 906, 918, 928, 929, 961). There were no signs that the timbers had been burnt *in situ*, so they may have been removed before being burnt as waste. No other traces of human activity were found sealed beneath the charcoal so if the beam and posts were associated with a timber construction, it seems unlikely that this was a building. A possible interpretation is that the beam formed the base of a low timber wall which was secured in position by posts at the edge of the sandbank. Such a wall would provide some measure of protection against erosion by the river, in the manner that groynes check drifting on beaches. If this was indeed the case, then the placing of the timber wall can be viewed as a positive effort made to consolidate what was potential building land newly reclaimed from the river. It is significant that not long after the beam was removed, an enclosure wall with stone footings was built just 0.5m to the west, as part of a permanent colonisation of the sandbank area (Tenement C, Phase 1A). Around 1240, the sandbank was cleared of all standing structures, and divided into plots.

Tenements A and B

Phase 1A, c.1240 (Figs 15; 27.2, A and B; 30, sections 3, 4)

The first stone walls to be built on the site almost certainly defined property boundaries (306, 361, 420). These were free-standing and varied appreciably in width (respectively: 0.8m; 0.92m; 0.7m) suggesting perhaps that each was built by a different property owner. The walls were trench-dug and had volcanic stone footings, packed in clay. The upper courses of wall 420, which was the only one of the three to survive above ground level, were bonded with mortar.

The latest re-surfacing took place whilst the barrel pits were still in use, and comprised compacted clay loam and pebbles incorporating a hard stand of cobbles and stones to the east of the tubs (270). The pits were infilled before the end of Phase 1B and covered over with a clay sand which became trampled on its surface (section 6; 261). Floor levels also accumulated in the passage. A floor of compacted clay (277) was laid over the original surface and became covered in places with a trampled deposit containing ash. Above this was a mortar and gravel floor which was patched with clay and pebbles (section 6; 275).

Phase 2 (including House E), early 14th century (Figs 17; 27.3; 30, section 4)

In the early 14th century Tenements A and B were extended 2.5m southwards, over a strip of land reclaimed from the river. The ground level was made up with a series of dumps in all 1.1m deep (section 4; 287-90, 418, 422-6) and a new river wall was built along the waterfront (45, 128). The new land was partitioned by a wall (308) forming an extension of the existing property boundary. To either side of this wall was a stone-lined drain (121, 310), one within each tenement, both of which emptied through an outlet provided in the new river wall. A third contemporary drain (130) passed between wall 45 and bridge abutment 29, probably conducting surface water from the property to the east of House A. There was no evidence for structural changes to House A, but a new internal clay floor (75) probably belongs to this period.

By contrast, House B underwent major alterations. The northern half of its west wall was completely replaced by mortared stone footings (421) 0.1m wider than the earlier wall (420). This strengthening may have been intended to support a heightening of the wall, and possibly an upper floor. The west side and north end of this wall was revealed by excavation of the adjacent tenement (Tenement C), thus we know the length of House B in this and subsequent phases (14.3m; the overall size of the house remained unchanged for centuries afterward). It is interesting to note the very early use of local Breccia stone at the north end of this wall (i.e. in the facade of the house; Heavitree stone). Inside the house, the passage wall was removed (robber-trench 116) and the living space became partitioned into rooms. The earliest partition divided off a front room from the hall, and had stone and clay footings 0.46m wide

(177). This was associated with a compact cobble and pebble floor (246) which was laid in the front room, and a more uneven cobble and clay surface (254) in the hall. This latter floor became covered by a thin deposit of charcoal and ash which spread outward from a central feature comprising an area of intense burning contained within an arc of stake-holes (237-41). It seems that this feature represents the site of a central hearth, perhaps one formed of clay moulded around a part-circle of stakes (a similar, approximately contemporary part-circle of stake-holes associated with charcoal and ash was found in Tenement C, Phase 2A, 560, below). The hearth went out of use and was covered over by a second cobbled floor (252) before a partition or screen was inserted dividing the hall into compartments. This was another stone and clay footing (221) which had been badly damaged by later disturbances. Its line is probably represented by the southern, straight edge of floor 252, through which the foundation trench for the wall was cut.

Other features belonging to this phase include a stone-lined pit (316) built at the south-west corner of the house. This had a stone-flagged bottom (485) and was open to the river. It was probably a replacement for the earlier garderobe pit 347. The wall forming its east side was continuous with the new river wall 128. A mortared stone wall which was built on the west side of the pit outlet (317) formed a continuation of a river wall constructed to the rear of Tenement C (Phase 3A, 317, 651, 652, 1076 below).

A number of post-holes were found at this level, including a concentration along the west side of the middle room (228-35), which perhaps supported some kind of wall fitting or racking.

Some time before the end of this phase a house was built on the bridge, between the Exeter abutment and St Edmund's Church (House E; in existence by the time of a written record dated 1319). This house was supported above the river channel leading to arch 1 of the bridge by a mortared masonry wall (20) incorporating an arch (26). Wall 20 was cut into, and overlapped, the junction of river wall 128 and wall 45 in such a way as to strengthen this corner without infringing upon the area of the back yard belonging to Tenement A. The wall also incorporated an outlet for drain 130.

Phase 3, mid-late 14th century (Figs 18; 30, sections 4, 6)

This phase saw a complete rebuilding of House A, and a number of contemporary alterations to House B. House A walls were demolished and robbed to below ground level (robber-trench 110). Walls 45 and 308, which surrounded the yard to the south of the house (Phase 2, above) were retained and incorporated in a new structure extending back to the line of the river wall (128). The first of the new walls to be erected was a replacement property wall (12). This was 0.76m wide and built of volcanic rubble, cobbles and some large slates packed in clay loam. There followed two cross-walls of similar construction, one of which (374) was sufficiently wide (0.84m) to have provided structural support whilst the other (51) was only 0.4m wide and almost certainly represents the position of an internal partition. The ground was then levelled up with building demolition waste (78) in preparation for flooring. Unfortunately floors of this and subsequent phases were removed by 19th-century and modern truncation of the area (see City Brewery stores).

House B was obviously affected by the rebuilding of the property wall on its east, but it would seem that much of its earlier structure remained standing. Its west wall (420, 421) appears to have escaped alteration, as did the footings for internal partition 177, which certainly continued in use as such into this phase. The south wall of the house (river wall 128) was strengthened around this time by adding an extra skin of mortared stonework with a pronounced batter at its bottom (13).

The earliest internal surface to survive from this period was a beaten clay floor (171) which abutted the south side of partition wall 177. Remains of subsequent floors and levelling deposits were fragmentary (139, 170, 222, 224). The most prominent feature was a stone-lined pit 1.2m deep (207) which was dug into the north-east corner of the hall. This showed no sign of cess staining, so may have been intended to collect water from the underlying gravels. It was screened from the rest of the living space by a row of stakes (191, 210-14) leading to a large, central post (203), and by a short partition wall (62) extending from wall 12. It seems to have replaced an earlier, unlined pit in the same area (204).

Farther south, a poorly-preserved stone and clay feature (138) may have been part of the footings for a screen dividing off another compartment in the hall.

Late medieval and post-medieval occupation (n.i.)
Preservation of features and deposits later than Phase 3 was generally very poor and patchy. However, it appears that both Houses A and B continued in occupation well into the post-medieval period. A fireplace containing local bricks (17th- or 18th-century type) was built into the back room of House A, whilst the hall in House B was resurfaced with a mortar-skin floor, which produced pipe stems and pottery dating from the 17th century. The latter floor evidently replaced an extensive tiled surface laid in the 16th century, since numerous broken tiles (imported from Holland) had been discarded into the upper fill of pit 207. Some time in the late 18th or early 19th century, House A and the rear half of House B were demolished. The whole of the area covered by the excavations became a cobbled back yard attached to a reduced-size building in Tenement B (see OS map 1876, Fig. 35).

Infilling of the river channel

Around the turn of the 16th century, reclamation dumps of clay and rubble were tipped into the river channel to the south of both houses (section 1; 59, 73). At the same time a stone-lined drain (60) was laid along the channel bottom. Domestic refuse was then dumped onto the area. Tipping rubbish continued into the mid 17th century (section 1; 58), when the level was made up further with building waste associated with work on St Edmund's Church (St Edmund's Church, Phase 4, above: section 1, 55, 56). In the 18th century cellars were constructed beneath the houses on the bridge (E and F; at the same time that cellars appeared under the church). At the same time a brick soakaway pit was built in the area of the old river channel to drain surface water away.

Tenement C

When Houses A and B were built around 1240, the remaining dry area of the sandbank to the west was enclosed within a walled yard. The yard probably extended for some distance along the north side of the buildings. There was a continuous sequence of activities in the yard lasting for some 50-80 years. Figs 19 and 20

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illustrate the two main horizons within the stratigraphic sequence, together with as many as possible of the archaeological features which could have coexisted with each. Fig. 22 shows a simplified sequence of development beginning with the timber wall or 'groyne' which preceded the yard).

Phase 1A, c.1240 (Figs 19; 32, sections 18, 25)

The yard wall footings (730, 748, 753) were continuous in construction and built up with layers of rubble and clay packed into trenches on average 0.1m deep and 0.5-0.6m wide. These probably carried cob walls (this is suggested by the large volume of clean claysand used to level the site immediately following the demolition of the yard walls 752, 758, 789.

Early quarrying activity (perhaps providing material for the cob walls) resulted in truncation of the underlying sand deposits, in places to a depth of c.0.1m, mostly over the central area. Levelling dumps of gravel metalling (854, 865, 866, 870) were used to infill the hollows. These soon acquired trampled surfaces. Prominent contemporary features include: a fire-pit lined with cobbles and clay baked *in situ* (940); a group of five variously sized post-holes (856, 863) which formed no obvious structural pattern; and two shallow pits up to 0.2m deep (876, 887), both of which were re-cut on at least one occasion and probably represent more sand quarries.

The area to the south of the yard remained undeveloped for about another 50 years and was subject to frequent flooding. Some time in this period the river wall to the rear of Houses A and B extended 4m westward (wall 774) in order to provide protection against erosion and undercutting which might threaten the house foundations.

Four stake-holes found on the brow of the channel to the west of this wall possibly served as mooring posts (1049).

Towards the end of the century, a series of levelling dumps were tipped onto this area raising the level by 0.3m (762, 819, 820, 838, 840). At the same time, the river began to deposit gravel in the channel leading to the first pier of the bridge (1043).

Phase 1B, c.1300 (Figs 20; 32, sections 18, 25)

Around 1300 a small building (4.5m x 3.5m) was

erected to the rear of the yard. It was built against the west wall of House B (420) and incorporated both the river wall foundations 774 and part of the yard south wall. Its west wall had trench-dug stone and clay footings 0.75m wide (755). A contemporary semi-circular projection from the footings (766) was probably the base of a small oven built into the wall above. A stone-lined drain (765) was built along its east side. This carried surface water from the yard to an outlet forced through the river wall. Inside the building, the drain width broadened to 0.9m. Here, the drain bottom was lined with stone flags possibly indicating its use as a latrine.

Preserved at the south end of the building was a fragment of the first gravel floor (770) and a post-hole for an upright of uncertain use. Access was provided by an entrance in the south wall of the yard. A cobble and flagstone path (817) led along the east side of the yard to this entrance. The building seems to have provided covered facilities for those working in the yard, either in the manner of a workers' hut, or possibly for some minor industrial purpose.

Contemporary activities in the yard included the addition of a timber lean-to built against the inside of the south wall. Two linear trenches set at right angles (779, 810) marked the position of sill beams which almost certainly supported a timber superstructure. Two post-holes to the east of the trenches (797, 846) were found at an equivalent level and probably held uprights associated with the structure. The building thus appears to have been open on this side, and accessible from the cobbled pathway. The interior was floored with a deposit of gravel (795) and was heated by a hearth or perhaps a brazier, since the remains of an ash pit were found near its west side (847). None of the surrounding earth had been baked so it seems that the fire was supported above ground level.

To the north of the structure was a thick layer of ash (808) which probably derived from two external fire-sites found at the north-west angle of the yard (741, 805). These were shallow pits containing ash, charcoal and burnt clay.

It seems likely that industrial processing of some sort was taking place. It may be significant that horn cores continued to be deposited on the site in large numbers throughout the period in which the yard was in use.

Phase 1C, c.1300 (Figs 20; 31, section 30)

A few later developments took place within the yard before the demolition of its walls. The north wall of the back building was rebuilt above widened footings (756), probably at the same time that an adjacent section of the yard south wall was taken down and its footings robbed (robber trench 745) in order to create a gateway opening from the yard onto the river bank. The pathway leading to the entrance of the back building was re-surfaced (cobble 816), and a stone-lined drain was laid to its east, connecting with the earlier drain 765. A large post-pit 0.5m deep (821) possibly held an external door post immediately to the east of the entrance. On the river bank to the south of the yard and to the west of the back building were the poorly-preserved remains of a possible lean-to construction. A linear stone feature, possibly footings for a wall (754), defined the northern edge of a sunken area containing a pebble and clay surface (772). These features could have been associated with a temporary timber structure, possibly a small boat house. Certainly it was close to the river's edge.

Phase 2A, early 14th century (Figs 21; 32, sections 18, 25)

In the early 14th century the area of the yard and associated building was cleared of all standing walls and levelled up with deposits of clean clay sand up to 0.3m thick (752, 758, 789; possibly demolished cob walls, as mentioned above). Soon after, a house was built on the site, allowing enough space for an alleyway along its east side. At places the house footings followed the same line as the foundations of the former yard walls. The north and west walls (672, 650) were built directly upon previous footings.

The house comprised two distinct ends: a northern, or front block (10m x 4.2m) which was divided into compartments or rooms; and a southern, or back block (7m x 4m) which appears to have been an open hall.

The front block interior was first levelled up with a gravel deposit (736), which acquired a trampled surface, then divided into three rooms by partitions resting on stone and clay footings 0.4m wide set in shallow trenches (703, 727). In the front room, a row of three post-holes may have been associated with a further sub-division of the living space. The middle room contained two secondary linear features (725, 728) which were cut into the floor next to the west wall, and

which probably represent some kind of temporary internal fitting or closet.

The front block had a doorway placed centrally in its east wall. The threshold had a cobble and pebble surface which was laid at the same time as the metalling of the side alley (716, below). The main entrance to the back block was placed at its north-east corner and was covered by a porch 2m wide (walls 707, 709). The porch wall footing and those of the east wall of the house (649, 713) were continuous in construction. The latter footings continued across the threshold of the doorway. Here, the stones had become rounded and smoothed by wear. The floor levels in the back block suffered from modern truncation and only patches of a beaten clay floor survived (738). The most prominent feature dating from this period was a three-quarter circle of stake-holes 1.6m in diameter (560) set against the west wall about midway along its length. The stake-holes were void, and ranged in depth from 0.3m-0.6m. It would seem that either the stakes formed some kind of storage bin, perhaps with wattles woven between them, or that such a structure supported a cladding of daub, perhaps forming a hearth or oven. The latter suggestion is not unlikely since charcoal and ash was found in patches inside the feature as well as nearby, and a similar stake feature, also associated with charcoal was excavated in House B (Tenements A and B, Phase 2).

In the south wall of the back block (759) was another doorway. This led to a small yard to the rear of the house and the river bank beyond. A layer of rubble (771) found scattered across the yard probably resulted from the demolition of the small building erected here in Phase 1B.

The side alley extended the full length of the house and ran back to the river wall 774. Its metalled surface (716) was made up mostly of river cobbles and pebbles, but also contained some large flagstones. Interestingly, numerous small pieces of coal were found trampled into this surface (the earliest excavated coal fragment from Exeter). The metalling was well laid as far as the porch entrance to the back block, but petered out farther south. Surface water was carried away by a stone-lined drain on the east of the alley (799). The construction of the drain followed soon after the adjacent property wall had been rebuilt at its north end (Tenements A and B, Phase 2, 421).

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Phase 2B, early-mid 14th century (Figs 22; 32, sections 18, 25)

This phase and subsequent phases 2C, 2D, 2E are known about largely from an upstand of medieval deposits which survived only at the north end of the site. An early alteration made to the interior of the front block was the addition of a central hearth (710) in the middle room. Layers of charcoal, ash and sea-shell fragments spread outward from the hearth (714) to cover the surrounding area, including the footings 727, for the partition wall dividing the middle room from the back room. The partition must have been removed soon after the hearth began to be used.

At about the same time, the rest of the living space in the front block away from the hearth, was re-surfaced with a pebble and gravel floor (709).

Phase 2C, early-mid 14th century (Figs 22; 32, sections 18, 25)

The hearth was not a permanent feature and was soon covered over by a beaten clay floor (704) associated with a stone footing for a new partition wall (702). The latter footing was placed a little farther north than its predecessor (727, Phase 2A) which resulted in the middle room being narrower than it was before.

Phase 2D, mid 14th century (Figs 23; 32, sections 18, 25)

In this phase, the front block received extensive new floors. A beaten clay floor (699) covered most of the northern and western areas, whilst a gravel surface with a straight edge on its west (695) was used next to the main entrance. A partition divided the front room into two (699), and the partition footings 702 were raised and heightened (698) without altering their position.

About this time, the porch leading to the front block entrance was taken down, probably replaced by a post structure (one post-hole found, 717). A stone-lined drain (640) was laid from nearby this post to an outlet forced through the river wall. A cobbled path (654) was laid next to the east wall of the house, and the paving of the alleyway was renewed (701). A drain (681) was dug outside the doorway leading from the back block to the river bank. This probably served simply as a soakaway and could have been bridged by boarding.

This period also saw the development of a property (Tenement D) to the west of Tenement C. Gradually, more land at the river's edge became available for building, as the course of the river was confined within the channels to the south of Tenements A, B and C. A property boundary was established with the building of a mortared stone wall 0.8m wide (800), set in a trench 1.2m wide and 0.4m deep. Next to the wall, and built against its east side, was a contemporary stone-lined drain (742). The drain continued southwards to empty into the river, but the wall ended well to the north, being extended southward only much later (Phase 3B, below). The area to the west of this wall remains unexcavated.

Phase 2E, late 14th century (Figs 22; 32, sections 18, 25)

Towards the end of the 14th century, the arrangements in the front block were altered once more. The sill beams for the front room partitions were lifted and the resulting trenches filled with cobbles and pebbles (696). Then the north-south partition seems to have been reinstated (trench 697). Three large post-holes (643, 668, 687) found in the area of the former middle room may have been associated with new screens supported by posts set into the ground. Several stake-holes found at this level formed no significant pattern. Contemporary surfaces comprised a fresh clay floor (693), which had ash and charcoal trampled into its surface (692), and a gravel and clay floor (691) which spread across the threshold of the entrance on the east.

Phase 3A, early 15th century (Figs 24; 32, sections 18, 25)

In the early 15th century major improvements were made to the property. First, a new mortared-stone river wall was built across the whole width of the tenement. Its line was staggered so as to enclose as much reclaimed land as possible. Then, the house was completely rebuilt. The layout remained much the same but new narrower stone and mortar footings only 0.4m wide were built on top of the previous clay-bonded foundations. This change suggests the use of different, perhaps lighter building materials for the walls above foundation level, perhaps employing more timber-work instead of mass walling.

Whatever the material, the new external walls of the front block (634, 670, 705) followed exactly the same lines as the earlier ones, as did

the new internal partitions (539, 552, 553) which were also mortar-bonded. Partition 553 was 0.34m wide and divided off a front room from a larger room behind. It was almost as wide as the external walls and may have risen through the height of the building, perhaps marking off an upper room at the front of the house. Partitions 539 and 552 were much narrower (0.18m) and probably supported low screens dividing off a small compartment in the larger ground-floor room. The floor level in the new front block was first made up with a dump of gravel (677) and then surfaced with a layer of beaten clay (671).

The west wall of the building was extended southwards (653) in order to enclose a small yard between the house and the new river wall. A patch of gravel and stone-chip metalling (1078) survived along the yard's west side. Activities in this area are represented by a number of post-holes and a shallow pit with ash on its bottom (1018).

Evidence for the back block of the house was largely removed by later building activities. However, it appears to have remained the same size since a porch with post supports and a slate roof (see slate collapse 665, Phase 3B) was built to cover a doorway in the same position as the entrance in the former south wall. The porch had a beaten clay floor (667) which spread across the threshold of the entrance. It opened onto the back yard.

The alleyway to the east of the house continued in use. Drain 640 was provided with an outlet specially built through the new river wall 774.

In the channel to the south of the river wall, a series of sand, gravel and household rubbish deposits began to accumulate (1032, 1033, 1036, 1041). Dump 1036 produced a silver signet ring.

Phase 3B, mid-late 15th century (Fig. 25)

A number of additions and alterations were made to the house in the course of the 15th century. The front block was given a new clay and gravel floor (632, 633), which soon had food remains trampled into its surface. More domestic rubbish including ash, coal fragments, food bones and shells was tipped into a shallow soakaway gully (633) dug along the outside of the east wall.

A little further south a well (504) was dug 2.0m deep, in the side alley and lined with 'Heavitree' breccia stone. The well was probably accessible from a doorway in the east wall of the back block (it was dug on the site of the Phase 2 porch 707).

The side alley seems not to have continued in use as such at this time, and was soon completely blocked off at its southern end by a bakehouse extension added to the house. This extension was a purpose-built mortared stone structure containing a large oven (628) built into its north wall (636). The south wall of the structure (605) was built in front of the previous river wall, thereby reclaiming a little more land. At the same time, the southern end of drain 799 (built in Phase 2A) was replaced (655). The bakehouse floor was made up in level with a layer of gravel and stone chips (657) and surfaced with beaten clay and pebbles (612). The oven floor was flagged with stone and became covered by a 0.08m thick deposit of ash and charred twigs of gorse and broom. The predominant stone used in the construction of the bakehouse was local, red 'Heavitree' breccia, as it was in the building of well 504 (above). This was a notable departure from the previous, almost general use of local volcanic trap. Access to the bakehouse must have been via a doorway at the south-east corner of the back block. The porch covering the nearby entrance in the south wall of the back block was demolished, resulting in a scatter of broken roofing slates (665). Soon after, a drainage gully (666) was dug along the east side of the yard. This emptied into the river through a crude gap made in the river wall.

At around this time a stone-lined pit (685) was sunk at the north-west angle of the yard, breaking through the yard wall 653. A layer of cess found close to the bottom of the pit suggests a probable association with a nearby garderobe. The pit was built against a stone and mortar wall (801) which was an extension to Tenement D. Use of the pit may possibly have been shared between the two adjacent properties.

The length of wall 801 shows that the 15th century saw extensive reclamation and development of the river bank to the west of the excavated area. The buildings on Tenement D more than doubled their size. The combined length of the property walls 800 and 801 was

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close to 30m, a fact which suggests that this tenement wall probably formed the back wall of a row of houses facing west, which was certainly the case in the 19th centuries (see map Fig. 35).

Land reclamation was also taking place within the former river channel to the south of Tenement C. A series of clay and gravel dumps containing building waste (1030, 1031, 1044) were tipped over the river wall.

Phase 3C, late 15th/early 16th century (n.i.)

In this phase the bakehouse oven and north wall were demolished and replaced by a narrower stone wall on average 0.55m wide (571). At the same time the floor level in the extension was raised 0.4m with a dump of clay, gravel and building demolition debris. This infilled what had previously been a slightly sunken area so that the level matched the floor level of the rest of the back block. A patch of clean clay with a beaten surface (569) may well represent the new raised floor.

It is clear that the bakehouse was converted for some other use. Precisely what purpose is uncertain.

Phase 4, early 16th century (Fig. 26)

Sweeping changes took place in the early 16th century. The Phase 3 house was replaced by a simple rectangular building 13.5m by 7.6m, which was set back 6.8m from the street. The new house had stone and clay footings on average 0.85m wide (592, 642). At the middle of the south wall, the builders used a poor mortar mix where the walling was associated with a fireplace (582). The remains of the fireplace comprised blackened breccia slabs set into a make-up layer of stony gravel (596). To the east was the base of a side oven (580). The rest of the internal features, and levels were removed by later disturbances.

Between the house and the street was a front yard. Along the east side of the yard was a cobbled pathway (609) which led to the east of the house, where there was presumably a door. On the west of the yard was a stone-lined pit (597) which was built against property wall 800, and may well have been associated with the buildings on Tenement D (a later re-arrangement of the property boundary included this area with Tenement D, see The 19th century below). The pit fill contained cess and food remains.

The yard was metalled with a layer of stony gravel (610) and later resurfaced with gravelly clay (589). Domestic rubbish was scattered across the yard well into the 18th century. To the rear of the house, the recently reclaimed land had become sufficiently stable and flood-free for the owner to sink a well (958). This was 1.2m deep, stone-lined, and had an overflow channel with plank bottom (1029). The channel carried away excess water entering the well from the surrounding gravels, and kept the supply fresh. Upcast from digging the well was spread round about (1023, 1024, 1027).

To the east were remnants of a wall footing (1039), possibly part of an outbuilding or perhaps marking a property division.

The 19th century (Fig. 35)

The earliest detailed map of this area (OS 1876, 1:500) shows that the Phase 4 house stood in the late 19th century when it was used as St Edmund's School. The yard in front of the building was largely taken up by one of a row of houses erected some time in the late 18th or early 19th century on the Frog Street frontage in front of Tenements A, B and C.

Tenement D retained its medieval property wall over most of its length (800 and 801) although a small encroachment onto the front yard of Tenement C had taken place. The buildings on Tenement D ('Days Place') are shown as a row of houses facing east, accessible from side alleys, leading to a courtyard. It seems likely that a similar arrangement would have been followed from the construction of wall 801 in the mid-late 15th century.

City Brewery stores (n.i.)

In the early 20th century, the whole area behind the houses fronting onto Frog Street was acquired by the City Brewery. The company levelled all existing buildings in order to construct stores for their business. Concrete floors for the new buildings were sunk into the ground resulting in the truncation of the archaeological deposits.

Fortunately not too much was lost, and the story of the riverside properties was largely recoverable.

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