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England's fortified medieval bridges and bridge chapels: a new survey

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Introduction

Today, bridges are seen as a quick, easy way of crossing obstacles, but from the 11th until the 17th century bridges served many other functions, forming part of civic defences, providing sites for chapels, fisheries, housing, shops and water-powered mills (Boyer 1976, 159–69). Bridges were also places were tolls and taxes were collected as they naturally channelled road traffic to a convenient nodal point. Although once common the chapels, fortified gateways, shops, houses and other structures associated with medieval bridges are now rare survivals. There are several reasons why many of these superstructures have been replaced. Chapels were formally closed following Edward VI's Act of Dissolution of the Charities (1547:1 Edward VI, c.14.4 S. R 2). Many were subsequently demolished although some were adopted for secular uses, such as warehouses or lock-ups. Secondly, medieval bridges often possessed narrow carriageways that simply could not cope with the ever increasing volume of traffic as a result of a growing population and the Industrial Revolution. In 1722 the 'keep left' rule was introduced on London Bridge in an attempt to relieve traffic congestion on its narrow roadway (Watson *et al.* 2001, 158). This is the first recorded observance of the left-hand rule in England. Efforts to improve traffic flow also included the demolition of fortified gates and other functionally redundant structures on bridges throughout the 18th and early 19th centuries. Major estuarine medieval bridges, such as those at London and Bristol which were most likely to support commercial buildings, were generally founded on 'starlings'. Although durable, starlings required considerable maintenance – much more than bridges built using coffer dams and with deep foundations seated on solid geology (Watson *et al.* 2001, 87–89). By the 19th century steam engines and sheet piles meant that even in London bridges could be founded in this way (Harrison 2004, 148). Natural disasters took their toll and indeed the Tyne Bridge at Newcastle was washed away by flood in 1771, which removed all but one of the bridges over the river (Harrison, 2004 77–8). The expansion of the economy provided impetus for change and renewal affecting both rural and urban bridges and from the late 18th century civic authorities were routinely demolishing narrow medieval bridges, which appeared ramshackle and inadequate to many contemporaries, as at York where the bridge was replaced despite the protests of antiquarians. New designs were inspired by Palladio, classical models and subsequently by new civil engineering principles associated with Perronet who has been described as the father of modern bridge building (Harrison 2004, 147–49). The European tradition of 'inhabited bridges' it has been said came to an end during the 18th century for 'economic, aesthetic and philosophical reasons' (Dethier 1996, 29).

The scope of our research

Thus the surviving examples of major English medieval bridges and their associated buildings are a tiny remnant of a much larger group. Interest in, and concern about, historic bridges led to The Society for the Protection of Ancient Buildings to commission a regional survey of historic bridges in response to the threat posed by road-widening schemes in 1926 (Jervoise 1936 v). This work, with complementary research in Devon and Cornwall, established an invaluable baseline survey of English bridges (Hendersen and Coates 1928; Hendersen and Jervoise 1938; Jervoise 1930). These publications have been supplemented by a variety of sources which include the Victoria County Histories, the Royal Commission on the Historical Monuments (England) county inventories, occasional county surveys (e.g. Simco and McKeague 1997) and studies on individual bridges. Accordingly, the available data on medieval bridges is patchy.

The questions we are asking are:

1. How many medieval bridges possessed chapels, fortifications or other buildings?
2. How many examples survive, or are known from survey or excavation?

A wide range of sources are being consulted from a variety of publications and archaeological investigations, antiquarian literature, early maps and other documents. Online sources of information include the English Heritage Pastscape website (http://www.pastscape.org.uk), local authority Historic Environment Records (via http://www.heritagegateway.org.uk/) and British History Online (http://www.british-history.ac.uk/). This research is ongoing and we expect to update the information presented here.

Bridge Chapels

During the 12th century, when we have increasing evidence that bridges were built as acts of piety, chapels such as St Thomas's (of Canterbury) at London Bridge were evidently regarded as an appropriate means of ensuring divine protection and also as emblems of Christian charity (Duffy 1992, 367; Harrison 2004, 199–202; Watson *et al.* 2001, 109–113). There were three

[1] *Houses of Parliament*
[2] *Royal Commission on the Ancient and Historical Monuments of Scotland*
[3] *Museum of London Archaeology*

main methods of funding medieval bridge construction and maintenance: charity, obligations and pontage. As the collection of charitable donations was normally organised by churchmen this activity was often linked with the construction of bridge chapels (Harrison 2004, 184; Cooper 2006, 81–127).

In fact, there were several types of religious buildings associated with bridges:

- Bridge chapels; most of these were actually built as chantries (where Masses were said for the benefit of benefactors to reduce their time in Purgatory). Many chantries were endowed by rich patrons for their personal salvation. For instance at Rochester a bridge chapel was completed in *c.* 1393 by Sir John de Cobham. In 1395, Sir John obtained a royal licence to found a chantry at his chapel which he initially funded (Britnell 1994, 49–50).
- Hermitages or buildings associated with hermits (people with a religious vocation, but whose calling did not fit with any of the monastic orders or the priesthood). In 1423, when the new hermit of Maidenhead Bridge was appointed, the local bishop provided him with a comprehensive list of spiritual obligations and also temporal duties concerning bridge repair and local road maintenance (Cox 1907, 20). Hermits were also associated with bridge chapels. During the 15th century the chapel on St Mary's Bridge, Derby was home to several hermits who acted as Sacristans (Kerry 1892, 54–58). At the southern end of Clopton Bridge, Stratford-upon-Avon, there was both a chapel and a hermitage by 1444 (Styles 1945, 224).
- Hospitals were associated with some bridges. For instance, St Nicholas's Hospital, Salisbury also maintained Harnham Bridge and its chapel. An Ordinance of 1245 explained that two of the hospital's priests were to sleep at the inn (*hospicium)* on the bridge (Edwards 1956, 344). Harnham bridge chapel survives as a house. During the 14th century on Ock Bridge, Abingdon there was a hospital chapel dedicated to St Mary Magdalene (Cox 1907, 93).
- Guilds or fraternities sometimes were formed to maintain bridges. For instance, in 1451 a chantry chaplain in Bray, Berkshire, obtained a royal licence to form a guild to maintain both his chantry and the nearby bridge over the Thames (Hollings 1923, 97). During the 15th century the Abingdon Guild of the Holy Cross maintained and repaired Thames bridges in Abingdon and Culham and the highway between them as well as running a hospital or almshouses. In 1442, the guild was incorporated by royal charter. This guild met in a room above the north porch of St Helen's parish church, Abingdon (Cox 1907, 92). Guilds which possessed strong links with their own parish church may have been discouraged from constructing a bridge chapel.

A number of surviving English medieval bridges still possess chapels, including examples at St Mary's Bridge at Derby (Currey 1931), St Ives, Cambridgeshire (Savill and Craven 1999), Rotherham, South Yorkshire and Wakefield, West Yorkshire. One enigmatic structure on Town Bridge, Bradford-on-Avon is believed to have been a medieval chapel originally, which was largely rebuilt during the 17th century and latterly used as a lockup. The Elvet Bridge at Durham formerly had two chapels, only one of which partly survives (Roberts 2003, 94). The Exe Bridge at Exeter originally possessed two chantry chapels, one of which survives as the ruin of St Edmund's church (it was gutted by fire in 1969; Brown 1991). Chapels were situated either on the edge of bridge piers on cutwaters, as in the case of most of the surviving examples, or at the bridge end as at Cromford in Derbyshire. At Rochester, in *c* 1393 a chantry chapel was not built on, but close to the new bridge it served (Britnell 1994, 49–50). Indeed, some remnants of bridge chapels may have gone unrecognised because of modern perceptions of location in relation to a bridge crossing. Rising ground surfaces may disguise causeways connecting chapel sites with bridges whilst advancing waterfronts have buried and hidden dry arches. The precise number of English medieval bridge chapels is uncertain and Harrison identified 100 with at least ten in Devon, but our subsequent research to date has identified 115 examples (fig. 1) and we expect there will be more (Harrison 2004, 199). The present study includes documentary references to chapels, hospitals or hermitages on or by the bridge but excludes guilds, such as the Guild of the Holy Cross at Abingdon which gathered elsewhere to perform their responsibilities.

A wide range of sources provide information about bridge chapels. There are published accounts of medieval English bridges which possessed chapels, including Exe (Juddery 1991); London (Harding and Wright 1995); Rochester (Becker 1930; Britnell 1994, 60–106) and York (Ouse Bridge; fig. 2) (Stell 2003). There are also inventories for bridge chapels at London (1350) (Watson *et al.* 2001, 109); St Mary's, Derby (1488) (Kerry 1892, 59–62); and Rochester (1548) (Britnell 1994, 111). Another important source of information is John Leland's *Itinerary* (*c.* 1535–43), as he recorded the existence of many chantry chapels shortly before their closure in 1547 (Chandler 1993).

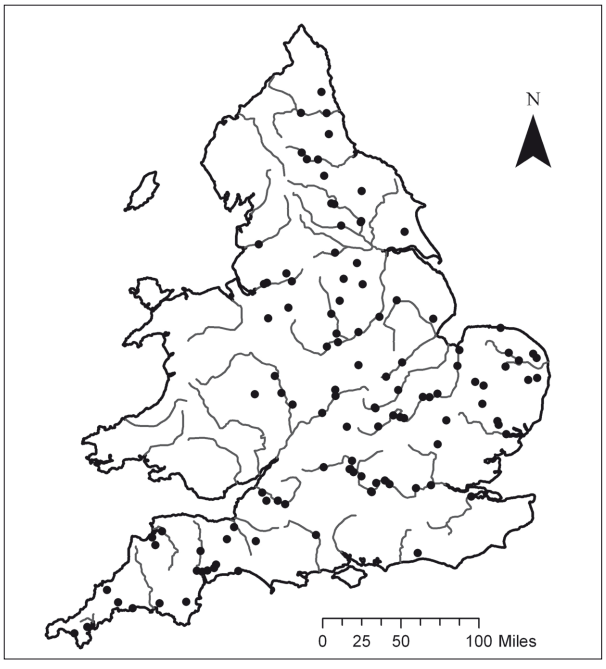

Figure 1 Distribution map of medieval bridge chapels.

Figure 2 View of the upstream elevation of Ouse Bridge and St William's Chapel, York by Joseph Halfpenny, 1807. The chapel rests on greatly extended cutwaters on the north side of the bridge with a further arch to the west.

After the Reformation chapels were generally demolished or acquired secular functions, unless they became parish churches or chapels attached to parish churches. For instance, St Mary's chapel, Derby, was variously used after the Dissolution as a house and a shop. From 1873 it was used as a Sunday school and Mission church and in 1930 it was restored as a place of worship (Currey 1931, 61–66). In 1848 Wakefield chapel was also restored for divine service (Taylor, 1998). At Droitwich Bridge, Worcestershire, by the early 17th century the medieval chapel was still in use for worship. This bridge chapel apparently possessed a very unusual design consisting of two separate portions. One portion served as the nave and the other as the chancel, and they were situated on opposite sides of the bridge roadway (Houghton 1919, 62). Paintings, drawings and engravings of some demolished chapels survive; one of the best illustrated examples is St William's chapel on Ouse Bridge, York, which was demolished in 1810 (Wilson and Mee 2002).

All medieval bridge chapels would have possessed a dedication to either a saint or a particular religious festival, and some examples possessed multiple dedications. Our present data concerning dedications is incomplete as some examples appear to be undocumented. It is already evident from ongoing research that the Blessed Virgin Mary or 'Our Lady' was the most popular chapel dedication although there are also frequent dedications to St Thomas the Martyr. One unusual dedication was Bridgnorth chapel, Shropshire, which was dedicated to St Zita of Lucca (died 1278). Her protection was 'invoked by housewives and domestic servants especially when they lost their keys or were in danger from rivers or crossing bridges' (Farmer 1992, 513–14).

Fortified Bridges

A number of English medieval bridges possessed fortifications including examples at Bath (Avon Bridge), Bedford, Bristol (Avon Bridge), Chester (Dee Bridge), Durham (Elvet Bridge), Gloucester (Westgate Bridge), Hereford (Wye Bridge), London Bridge, Newcastle-upon-Tyne (Tyne Bridge), Norwich (Bishop Bridge), Oxford (Grandpont), Shrewsbury (the English and Welsh Bridges, Ward 1935) and York (Layerthorpe Bridge over the river Foss) (fig. 3). The fortifications of London Bridge (completed in 1209) are believed to have been an integral part of its original design (Watson *et al.* 2001, 83, 105–07). There were also several fortified bridges in Scotland including the Old Tweed Bridge at Bridgend by Galashiels (Stell 1988, 34). Fortified bridges often possessed a single gatehouse, consisting of twin bastions situated on either side of the roadway

at one end of the bridge. Less frequently the gatehouse would be positioned mid channel as at Bedford and at Monnow Bridge. Sometimes a gatehouse or postern gate as at Layerthorpe Bridge would be situated just beyond the end of bridge. A number of examples including London Bridge and the two bridges at Shrewsbury possessed both gatehouses or barbicans and drawbridge towers which provided defence in depth against surprise attacks. St Mary's Bridge, Derby is sometimes described as the site of the city's 'Stonegate', which apparently just consisted of a pair of wooden gates (Williamson 1931, 78). The defences on medieval London Bridge were vital to the city's security as its southern side (the Thames waterfront) was otherwise undefended. The bridge was the scene of various conflicts as possession of the bridge was seen as synonymous with control of London (Watson 1999). Whether bridges were fortified or not depended on the location of the river in relation to the town. Thus the Ouse in York runs through the middle of the city and so Ouse Bridge was not fortified. In contrast, London lay to the north of the Thames with suburbs to the south and the bridge was consequently heavily fortified. A number of English castles possessed fortified bridges spanning moats; we have not included these structures in this survey, but we expect them to provide interesting insights and comparisons.

Research to date on English and Welsh bridges had revealed 39 medieval bridges that possessed fortifications of some form. There are several more possible examples that require future research and we also need to consider the status of those bridges over watercourses and town ditches beyond fortified gates in town walls. At Bath, the late 12th or early 13th century Avon Bridge possessed both a gatehouse and a chapel, even though it was separated from the walled town by a stretch of river meadow (Davenport 2002, 134).

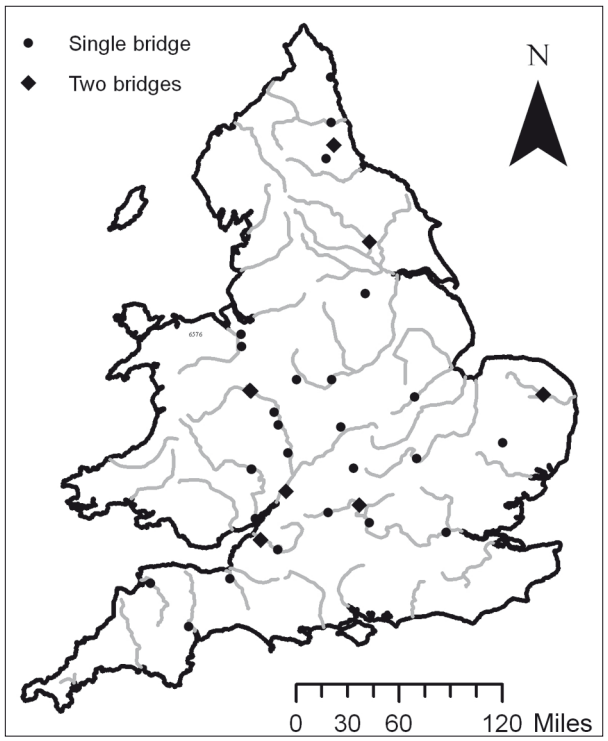

Figure 3 Distribution map of medieval fortified bridges.

Although beyond the scope of the present study, acknowledgement must also be made of ad-hoc arrangements to defend crossings during civil strife. In 1387 the Earl of Derby broke down the bridge at Radcot, Oxfordshire thus preventing Robert de Vere, Earl of Oxford joining the royal army of Richard II (Jervoise 1930, 3). In 1264 during the Baronial Wars Henry III ordered his sheriffs to break down all the bridges over the Severn except the bridge at Gloucester which was to be fortified. Fords and ferries were to be obstructed (Harrison 2004, 157). Such measures long continued to be taken. One arch of Clopton Bridge, Stratford-upon-Avon was demolished during the English Civil War by Parliamentary forces and not rebuilt until 1651 (Styles 1945, 224). Several bridges were apparently fortified, or defended, on an ad-hoc basis during the English Civil War in the 1640s (Gloucester-Westgate, St Ives and Wallingford). In 1642 Shrewsbury Corporation was instructed by Charles I to place cannons on the English and Welsh Bridges and in 1644 they were ordered to replace the 'doors' of the gatehouse on the Welsh Bridge (Ward 1935, 132).

The two remaining bridge gatehouses in England and Wales are Warkworth Bridge, Northumberland (Pevsner and Richmond 1992, 613) and the Monnow Bridge at Monmouth, Gwent (Rowlands 1994). Occasionally, excavations have revealed traces of demolished fortifications. The foundations of a gate tower, demolished in the late 18th century, were revealed on removal of the road surface at the bridge (originally of 10 arches) over the River Dee between Farndon (Cheshire) and Holt (Wrexham, formerly Denbighshire) (Ward 1992). Here, the gate tower was positioned mid channel, over the fifth arch.

Archaeology has an important role to play in the study of 'vanished' fortified bridges. During 2006–2007 excavations on the site of the gatehouse of the Old Welsh Bridge (in existence by 1221), Shrewsbury, unexpectedly revealed a complex sequence of masonry defences for which there is very limited documentary evidence (figs 4 and 5). This sequence illustrates how archaeological investigation can make a major contribution to the study of 'vanished' fortified bridges. The earliest phase of defences consisted of a trapezoidal tower straddling the bridge approach road, probably of 12th century date and perhaps associated with an undiscovered timber bridge. During the 12th or 13th century the tower was superseded by a pair of small square bastions built on the northern end of a masonry bridge. Then during the 13th or 14th century the bastions were rebuilt on a much larger scale. This phase of defences, known as the 'Welsh Gate', was described by Leland in *c* 1539–43 as 'a mighty strong tower which prevents enemies from getting on the bridge' (Chandler 1993, 388). These two bastions were apparently shortened in *c* 1608 to permit the construction of a barge quay (Watson in prep.[4]).

Bridges with houses and shops

In contrast to the large numbers of bridge chapels and fortified bridges identified during ongoing research,

[4] It is proposed that the final report on the Old Welsh Bridge investigations will be published by the Shropshire Archaeological and Historical Society as either a volume of their transactions or one of their monographs.

Figure 4 An engraving of a painting by Paul Sandy R.A. (1725–1809) of the Old Welsh Bridge, Shrewsbury. This view looking north, shows the Mardol Gate or tower on the bridge which was demolished c1791, shortly before the rest of the bridge. The Welsh Gate at the far end of the bridge is shown here in the background as a cluster of buildings

only twelve bridges which possessed a variety of secular buildings, normally houses and shops, have been recognised to date. Documented examples of such bridges include: Bristol, Avon Bridge; Exe Bridge, Exeter; Lincoln, High Bridge; London Bridge and Tyne Bridge, Newcastle-upon-Tyne (fig. 6). In 1235 there is reference to a house on Clopton Bridge, Stratford-upon-Avon (Styles 1945, 224). Ouse Bridge, York, possessed besides its houses/shops, a chapel, a council chamber, a prison and an almshouse or hospital (Wilson and Mee 2002, 32–54). The main motive for the construction of commercial buildings on bridges was fiscal as their rents helped finance maintenance (Cooper 2006, 117, 120). Survivals of the tradition of houses on bridges in England are rare and late. Thoroughly restored 16th century buildings line the western side of High Bridge Lincoln, whilst a chapel stood on the eastern side of this bridge until 1762. At Henley (Oxfordshire) the 16th to 17th century Angel Hotel rises from the (now buried) landward arch of the destroyed medieval bridge on the Oxfordshire bank. The Angel hints at continuity and renewal for there are accounts documenting a granary on the bridge in 1354 and a granary with chapel next the bridge (1405) (Burns 1861, 186, 296). During the post-medieval period the Elvet Bridge, Durham and both the English and Welsh Bridges in Shrewsbury, Shropshire, all possessed houses, although we cannot be certain these bridges possessed such buildings before 1500. The Georgian period witnessed a brief revival in the tradition of houses and shops on bridges. However, both Robert Adam's designs for Pulteney Bridge, Bath (1767) and Southbridge, Edinburgh (1785) show classical rather than medieval influences.

Conclusions

While no definitive conclusions concerning the precise numbers and distribution of medieval English bridges which possessed structures can be made at the moment, it is clear more of England's medieval bridges possessed structures than was previously realised. For instance, it has been estimated in *c.* 1540 there were about 135 major bridges spanning the larger English rivers (Harrison 2004, tables 2.1 and 2.2), many (but certainly not all) of which possessed chapels. The present distribution maps all show relatively few examples in south-eastern England with the exception of the Thames valley. This absence may partly reflect research into the subject (and accessibility of resources) in some counties but it is not

Figure 5 Old Welsh Bridge, Shrewsbury in 2006 looking east. Excavations in 2006 revealed the landward 'dry arch' with 19th century brick-paved cellar floor, the remains of the final phase of the western bastion of the Welsh gate and the cobbled road surface of the former bridge. To the rear are a series of 19th century brick-built cellared buildings. Photograph by B. Watson, Museum of London Archaeology

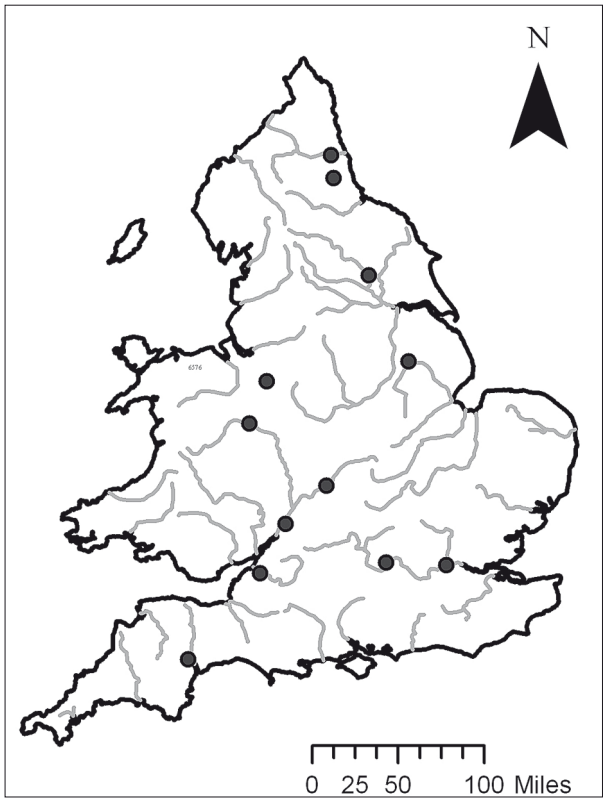

Figure 6 Distribution map of medieval bridges with houses, shops and other secular buildings.

simply connected with the lack of medieval bridges in these counties. For instance, by the early 16th century there were a large number of bridges over the Medway and at least nine bridges over middle reaches of the River Wey in Surrey (Harrison 2004, 14; Renn 1974, 76).

One surprise has been the number of fortified bridges which formerly existed in England; a previous discussion of this topic only listed eight vanished examples (Watson *et al.* 2001, 105). Survivals of this type of monument are more common in France and Germany, which has given rise to the surmise that these types of medieval bridges were actually more common in these countries because their major river crossings traditionally gave strategic access to large territories. In fact fortified medieval bridges appear to have been common in England and more are likely to be identified, especially near the Welsh and Scottish borders.

There is clearly more work to be done, both in providing a comprehensive catalogue of structures on bridges and in analysis of the functions of chapels and fortifications. We plan to hold a conference on the subject in the near future and also to extend the scope of our survey to cover the rest of Britain.

Acknowledgements

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For architectural descriptions of surviving medieval bridge chapels see the *Buildings of England County Series*.

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