A TEAM for the Institute of Archaeology at University College London identified and recorded the remains of the Tudor landing stage on the foreshore next to the Royal Naval College at Greenwich (Fig. 1) during the Thames Archaeological Survey's first major season of activity in the inter-tidal zone in 1996. This report summaries that discovery, which is presented here as an example of both the value of and the need for such work.

The Thames Archaeological Survey was officially established in 1996, following a successful pilot study in 1995 which demonstrated that archaeological deposits survive in situ on the Thames foreshore. That study showed that significant archaeological remains and associated deposits range in date from 10,000 BP to the post-medieval period. The material remains recorded so far include peats which formed in prehistoric riverside marshes, fragments of submerged forests, early medieval fish traps, a 17th-century landing stage in the City of London, the abutment of the 18th-century bridge at Putney, a shipyard at Bermondsey and several boat and barge hulks. However, even though this material is subjected to the daily scour of the tidal Thames and also by the threat of numerous redevelopments and encroachments, it has never been systematically surveyed. To rectify this grave omission, a three-year programme has now been set up, co-ordinated by the Thames Survey Officer, Mike Webber. This post is based at the Museum of London, and is supported by the Environment Agency and by English Heritage. Much of the survey work is conducted by trained teams drawn from local societies or from the Institute of Archaeology. In all, it is hoped that over ninety 500-m-long Survey Zones will have been recorded by the end of the three years, during the course of this community-based project.

Greenwich Palace (Figs. 2 & 3)
The Thames-side site now occupied by Greenwich park, the National Maritime Museum, the Royal Observatory and the Royal Naval College is an area of considerable archaeological significance since, in addition to the buildings already mentioned, a Romano-British temple, a Saxon barrow cemetery and the riverfront range of the Tudor Palace have all been examined in the grounds. The palace was known as Placentia, after its pleasing location, and was the birthplace not only of Henry VIII in 1491, but also of his two daughters, Mary (1516) and Elizabeth I (1533). Although the riverside palace complex had its own private watergate, there was a

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Gustav Milne

2. The Richmond Archaeological Society has been especially active, as has the City of London Archaeological Society, for example.
6. E. Walford Old and New London vol 6 (1897) 165-76.
major public landing stage just to the west, as is shown in a panorama drawn up by Hollar. The whole area was subsequently subjected to substantial redevelopment between 1660s and the 1690s. The old palace was demolished and a major encroachment northwards into the Thames provided scope for the construction of what is now the Royal Naval College, a building which was formerly used as a hospital for aged or infirm seamen. Studies of the documentary evidence relating to the development and use of the site from the 15th to the 18th century have been published in that admirable series, the History of the King’s Works. Construction or repairs to landing stages are referred to in 1519, 1567, 1592 and 1631, but some of these references may relate to works associated with the watergate which led directly into the palace, rather than to the larger jetty on its western side, which was also demolished and displaced by the late 17th-century redevelopment.

Remains of a landing stage (Fig. 4)
Although nothing of the famous Tudor palace survives above ground, piles interpreted as representing the contemporary landing stage to the west were identified by the UCL team during a five-day survey period in July 1996 (Site code: FGWO4). The use of roundwood piles, some halved and some quartered, and many still with sapwood or bark surviving, is evidence that the associated structures are of some antiquity, since the majority of the more recent waterfront structures use squared timbers with little evidence of bark or sapwood. A total of some thirty timbers were recorded in situ within an area of the foreshore 25m E-W by 10m N-S, just north-west of the western range of the Royal Naval College, broadly in the area where the northern end of the Tudor landing stage was thought to have lain. The extent of the distribution and the general trend of the alignments suggests that more than one phase of development had been revealed.

As with most sites within the inter-tidal zone, there was a markedly different degree of exposure over the area, for whilst the Thames is a powerful excavation agent, it is notoriously unstratigraphic in its approach. On the southern (landward) part of the site, the landing stage foundations remain sealed

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within undisturbed sandy foreshore deposits. However some 3m north of the present day river wall, horizontally-laid baseplates were fully exposed, and beyond that, the area was clearly being actively eroded. Examination of a group of pot sherds found in this area of scour next to one of the piles proved instructive. Many of the sherds had sharp breaks and five of them joined up to form a substantial proportion of a single green glazed Tudor pipkin, still with a sooty deposit adhering to the outer face. This shows that the deposits had only recently been exposed, since the sherds had suffered no abrasion and little disturbance: they had not been rolled over the foreshore for any appreciable length of time. Again, this supports the observation that the area is actively undergoing erosion by the river, exposing fresh deposits as the overlying layers are stripped away.

The timbers thought to represent the landing stage comprised vertically-set roundwood piles some still with sapwood in evidence and thick boards set on edge aligned north-south and retained by piles as well as baseplates also aligned north-south. One of the baseplates had a through-mortise cut into its upper face with a wedge securely driven into the northern end. This suggests that it once articulated with a brace extending southwards. The plate itself was clearly a reused timber, since the principal mortise had been cut through the remains of two earlier pegged mortises set in the eastern and western edges.

Lower down the foreshore a second baseplate was partially exposed. Its southern end was sealed within the sandy foreshore deposits, but its broken northern end was exposed and stood proud of the sloping, eroding foreshore to the north. The rest of this plate had clearly been broken off, but the alignment of this feature was represented by a line of piles which turned sharply westwards (Fig. 5). This is considered to be especially significant, since it presumably marks the northern (riverward) end of the landing stage, and therefore should provide an indication of the general level of mean low water at the time the landing stage was constructed. Significantly, this point lay over m above the level of mean low water today, as marked on the Port of London Authority chart for this zone. This provides further evidence of a change in the level and the regime of the Thames since the landing stage was constructed. To the north of this point, a displaced pile was recorded, presumably once associated with a modest revetment, since it had closely-set nails driven into one face which may have once supported a planked facing.

8. Clive Orton (Institute of Archaeology) kindly commented on this vessel.
Eroding the Archaeological Resource

None of the timbers was excavated or lifted since the object of the Thames Archaeological Survey is simply to record whatever is exposed of the surface of the foreshore. This provides much-needed basic information for the Greater London Sites and Monuments Record. However, should the survey be repeated at a later date, then comparison of the two records would provide data from which the speed of erosion might be more readily assessed. Observations in July 1996 certainly suggest that the area in the immediate vicinity of the landing stage is undergoing accelerated erosion: a common comment made by those who knew that part of the foreshore well was that the timbers recorded by the UCL team had not previously been visible, while others claimed that only late 17th-century surface finds had come up from that area in earlier years. It therefore seems that the 17th-century deposits have now been all but been eroded away in the northern part of the site, revealing earlier material. The scouring process continues, threatening to wash away more of this interesting structure. The site is also threatened by a proposal to build a new tunnelled road along the foreshore, a scheme intended to relieve traffic congestion in the town.

It is worth stressing that the problems and threats encountered on this small section of the foreshore can be replicated over much of the tidal Thames: the need for a systematic survey is now self-evident. Many new sites will be recorded as a result of this long-term survey, and their subsequent fate will be monitored more easily as a consequence.

Conclusions

The inter-tidal zone survey at Greenwich looked at several features, ranging from a possible prehistoric peat exposure, features associated with boat building and repair, a 17th or 18th-century revetment and an inscription on the river wall, in addition to the Tudor jetty. The study reported in this article has shown that archaeological features and major sites do survive on the London foreshore. Indeed, work on other estuaries such as the River Severn, have demonstrated how widespread the phenomenon is: the only surprise is that the Thames has been neglected by most archaeologists for so long. The Greenwich study has also shown that the foreshore is actively eroding, and how the process of erosion can be recorded and monitored. Such work requires detailed planning and the careful study not just of the accurate distribution of artefacts on the foreshore, but also their condition, context and precise location. As for the jetty structure itself, it seems that more will be revealed and more will be lost as time and tide pass by. Further research needs to be undertaken on its history and on its method of construction, its phases of development and on the wood used to build it. As with all similar waterfront structures, it was designed to function with the tidal range which was prevalent


Fig. 4: plan of timber features exposed on the Greenwich foreshore (GRW04) at low tide shown in relation to the modern river wall. The river lies to the north, on the right of the drawing.
C Harrison, London Archaeological Research Facility
at the time, not with today’s values: as such, the level at which its northern end was laid must lie close to the contemporary mean low water mark, a figure which is otherwise unrecorded.

The addition of such information to a wider database helps build a more detailed picture of the way in which the Thames is changing, the speed with which its tidal range is increasing, the dates at which its tidal head has moved, the speed of the upward trend of its highest tides. This information is required to help archaeologists predict the future, by extrapolating tidal trends from the past forward into the next century. An understanding of the changing Thames is crucial to the planning of London’s future, and the foreshore survey can provide useful data for that purpose.

Today, some tourists still arrive or depart from Greenwich by boat, but the jetty used by them is set to the west of its counterpart in Tudor times. River transport was of even greater importance to the Tudor Londoner, for there was but one road bridge over the tidal Thames, the great stone bridge built between 1176 and 1209 which joined the City to the Southwark shore. John Stow records that some 2,000 river taxis (known as wherries) plied for hire in the late 16th-century10, taking passengers across and along the Thames from well marked landing stages. By 1708 there were at least 88 registered landing places used by the Thames watermen and by 1725, the number of vessels carrying passengers was estimated at 15,00011. The Greenwich jetty recorded in 1996 was one such major station in the 16th and 17th century, and would have been used all who needed to land at the public stair there, including in their day Francis Drake, Walter Raleigh and Samuel Pepys. It is thus arguably of interest as much for its historic connections as for its structural attributes. Indeed, it has even been suggested that it was here in 1558 that Sir Walter Raleigh laid his cloak down so that Elizabeth could progress dry shod12; for the UCL team working in the thick mud in 1996, such an action seemed both appropriate and desirable in the age before the invention of wellington boots.

Acknowledgements

The Thames Archaeological Survey if supported by Environment Agency and English Heritage, while the training programme benefitted from grants from the Bridgehouse Estates Trust and from Homelands Trust. The survey work at Greenwich was directed by the author but undertaken in difficult circumstances by a UCL team comprising Elizabeth Bloxham, Eric Blakely, Lorraine Darton, Dylan Edgar, Ron Griffiths, Richard Hill, Hazel Kent, Rebecca Lawrence and Samantha Logan. The photography was by Mike Webber (Thames Archaeological Survey) and the drawings were prepared for publication by Chrissie Harrison (London Archaeological Research Facility). Information was provided by many individuals and agencies, most notably Peter Guillery and Paul Pattison (RCHME) and also Julian Bowsher (MOLAS) and Clive Orton (UCL) while the assistance of Jennifer Jones (MOL) and Carl Smith (UCL) is also gratefully acknowledged. This report was prepared with the support of the City of London Archaeological Trust.

Fig. 5: part of the Tudor landing stage foundations exposed on the eroding foreshore at Greenwich, looking north towards Canary Wharf. Part of the main baseplate for the eastern edge of the jetty is visible, but its riverwards extension has been washed away, revealing a line of foundation piles which terminates at the line of the Tudor low-water mark. Beyond that, a displaced pile is being cleaned prior to recording.

Photo: M Webber, Thames Archaeological Survey

12. See, for example, the Times and the Guardian, 5th July 1996.