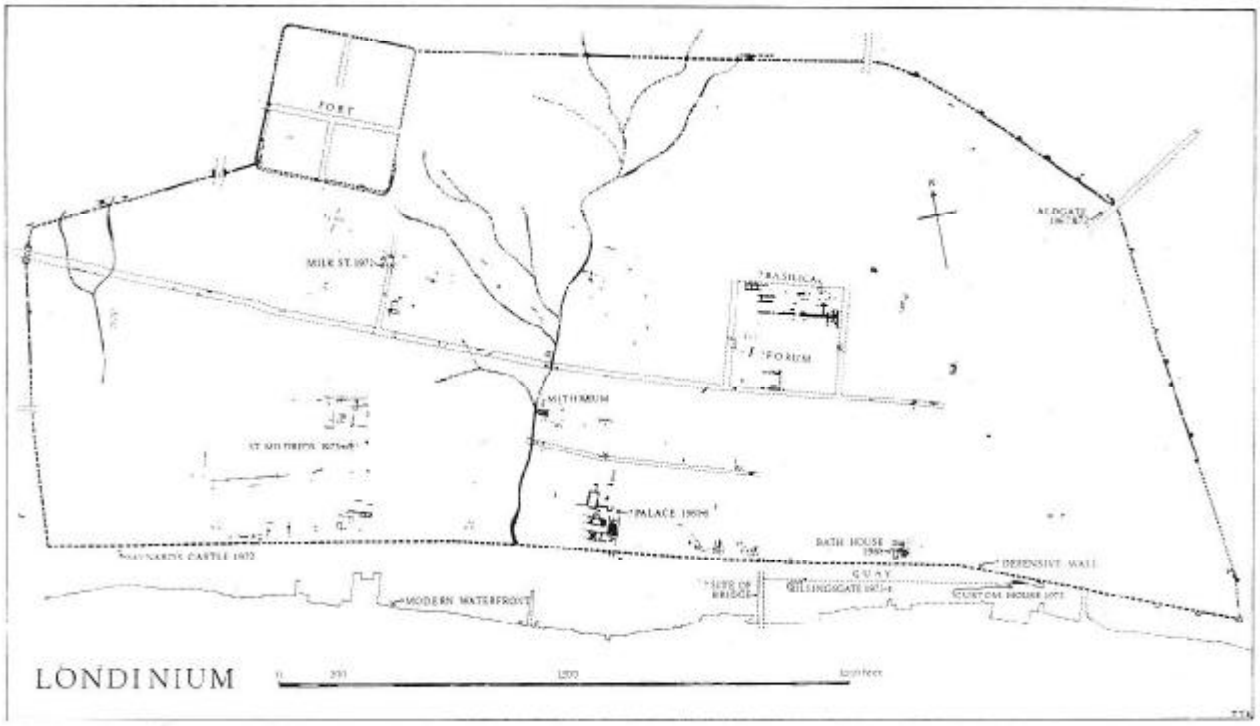

Fig. 1. Plan of Roman London showing its main features and the probable line of its riverside defensive wall and Roman timber quay.

Rescue Excavations on the Old Custom House Site Part 2:—Roman

TIM TATTON-BROWN*

FOUR MONTHS of excavation during the summer and autumn of 1973 on the Old Custom House site succeeded for the first time in producing evidence for the nature of the Roman waterfront in the City. A large section of a Roman timber quay of the late 2nd century A.D. was excavated. (Altogether over 52 metres of the quay was traced across the site). Previously several sites in the Thames Street area had produced Roman timbers but nowhere had the actual waterfront been found. The most important of these earlier excavations, which were mainly salvage excavations done before rebuilding, were carried out in 1920-1 on either side of Miles Lane[1] and in 1929 at Regis House. The latter site was the most important and the main stratigraphy was recorded by Dr. G. C. Dunning; it is still unpublished except for brief notes[2]. There was also a brief summary in a privately published booklet on the history of the site of Regis House by Q. Waddington.

These earlier excavations all produced massive Roman oak timber beams with sophisticated joints and the timbers appeared to have been used to terrace the steep gravel bank running down to the riverside. The timbers on the Miles Lane and Regis House sites may have formed part of an earlier quay than the late 2nd century quay found on the Custom House site, and as in more recent times, successive quays appear to have moved gradually southwards into the river. However, we

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1. F. Lambert *Archaeologia* **71** 62-72 and *R.C.H.M.* 3 (Roman London) 132-4.

2. *J. Roman Stud* **19** (1929) 200 and fig. 10 and *Antiq J* **25** (1945) 45-77 where it is mentioned in Dr. Dunning "Two fires of Roman London"; in an appendix he published some of the Samian.

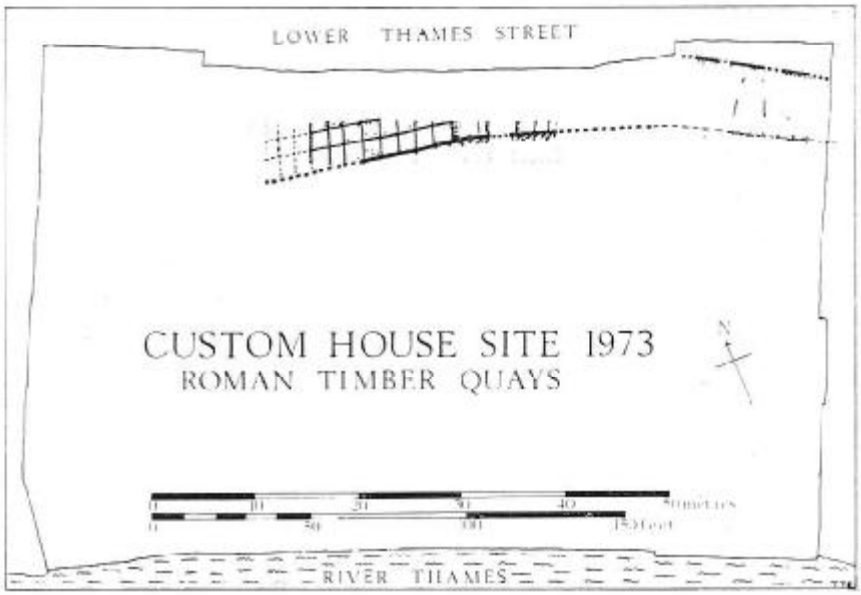

Fig. 2. Site plan showing Roman features.

now know that this forward movement occurred twice with a rapid reversal in between. This was caused by a rise in the sea level which took place between the late Roman period and the 13th century and consequently the Saxon and earliest post-Norman conquest waterfronts are further inland than both the Roman and later medieval/post-medieval quays.

Marine Transgression

Definite evidence for this rise in sea-level was found on the Custom House site; the Roman timbers had a heavily eroded top which occurred at about –0.2 metres O.D. Above this were several layers of gravel on which was built the 13th century quay. The rise in sea level may have reached its maximum by the 12th century and Fitzstephen's account of "that most excellent river the Thames, which . . . has in a long space in time washed down, undermined, and subverted the walls on the south side of the City"[3] is good documentary evidence for this. The present writer is convinced that a Roman defensive wall did exist on the south side of the city, even if only east of London Bridge. This wall has always been elusive but for two very good reasons; first, because for most of its course it lies under Thames Street, and secondly, because as Fitzstephen tells us, it was destroyed by the 12th century and all that could have survived to the present day are the foundations. Three sections of massive east-west Roman walls have been found in Thames Street and these are perhaps part of this riverside wall (fig. 2)[4]; the present writer cannot subscribe to Peter Marsden's view.[5]

The Miles Lane and Regis House timbers, which are almost certainly part of a continuous structure, did not have any definite "front" on the south side but the presence of vertical posts and camp-sheathing suggests that the front may have been robbed as it was in one part of the Custom House site. This earlier timber structure perhaps dates from the early 2nd century as it was covered at the Regis House site by burnt material and debris from the Hadrianic fire (now dated to c. A.D. 125-30).[6] In this huge burnt layer there was a mass of pottery, particularly Samian which may have been stored in warehouses just north of the quay. Evidence for the unloading of Central Gaulish wares on the later quay in this area has recently come to light on the New Fresh Wharf site which is only about 200 feet south-east of Regis House. At the Custom House site, an earlier Roman timber quay was found in the north-east corner of the site (fig. 3). Unfortunately we were not able to excavate this in detail and thus to get a good dating evidence, due to the close proximity of the Lower Thames Street frontage which was about 20 feet

3. Everyman's edition of Stow's *Survey of London.*
4. Gazeteer of Ralph Merrifield *Roman City of London* —Nos. 279 (south of the "palace"), 311 (under the frontage of 125 Lower Thames Street) and 354 (south of the Billingsgate bath house).
5. "The River-Side Defensive Wall of Roman London," *Trans London Middlesex Archaeol Soc* **21** (1967) 149-56.
6. See also G. C. Dunning, *op. cit.*

Fig. 3. Excavation in progress on the box structure of the Roman quay. (Photo: T. Tatton-Brown)

above these timbers. However they are probably of roughly the same date as the Regis House ones, i.e. early 2nd century.

Late 2nd Century Quay

In the second half of the 2nd century a new large timber quay was built on the site c. 20 feet further south. The western part of this quay was made as a rigid box structure (fig. 1 and 4) with large numbers of pre-fabricated timbers, all of standard size. The main vertical posts and cross-members were either c.20cm. square or 20 x 15cm. (i.e. roughly $\frac{2}{3}$ x $\frac{1}{2}$ of a Roman foot). The timber beams of the front of the quay were larger still with the biggest at the bottom and then becoming progressively smaller towards the top. The largest beam was c.45 x 30cm. (i.e. about $1\frac{1}{2}$ x 1 Roman foot). All the wood was joined together and held in place by the force of gravity; no nails were used. Large saws, planes and chisels were clearly used by the carpenters, and the whole job of constructing this waterfront must have been done officially. There were three main joints (fig. 5): (a) half-laps, which were used where beams crossed at right angles; (b) barefaced-dovetails, for joining the north-south beams into the huge front beams; and (c) false-tenons, for joining these beams vertically. Here small blocks of wood c. 5cm. wide by 13cm. long and 13cm. high fitted into mortice holes in the beams above and below it. The main east-west beams appear to have been joined longitudinally by simple butting, though one example of a simple halved scarf was found. The false-tenons occurred at regular intervals of c. 1.68 metres along the waterfront, as did the dovetails. The box-structures themselves were c. 1.7 metres square (roughly 6 Roman feet) and there were at least three boxes north-south and eleven east-west.

The whole structure was left open and presumably the top was planked over. In front of the quay ran a line of posts with camp-sheathing, (not shown on the axonometric drawing, fig. 4, because these posts had been pushed forward) while inside several of the boxes were vertical posts. However, these vertical posts were not in any way connected to the horizontal beams, and this leads one to suggest that the whole box-structure may initially have floated up and down with the tide. If the Romans had meant the structure to be immobile, they would surely have filled up the boxes with rubble and have joined the vertical and horizontal posts as was the case in the eastern part of the quay described below. During excavation it was found that these boxes have only gradually filled up with fine silt over a long period of time. There was no pottery or rubbish in the fill, only organic material with many seeds of marsh plants and mosses (including large quantities

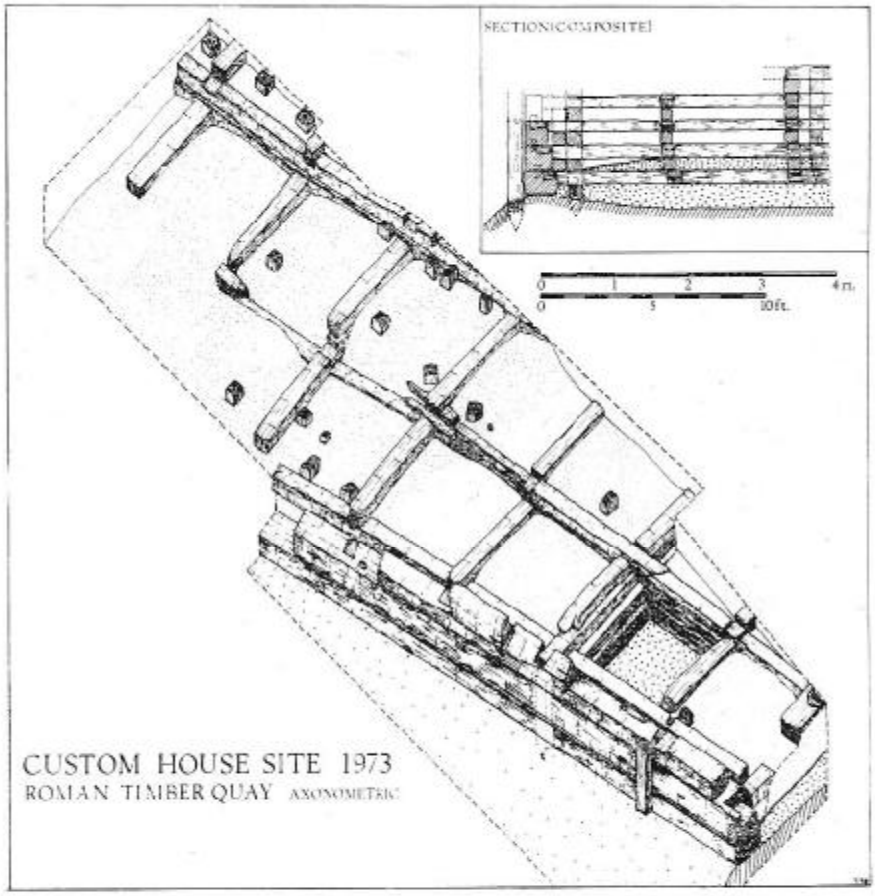

Fig. 4. Axonometric drawing of the quay showing the heavy frontal timbers.

of *Rynochostegiella pumila*, which likes damp, shady non-marine conditions).[7] All the organic material, including plants, bones, molluscs, etc. at present being studied and specialist reports will appear in the main excavation report.

The absence of pottery and occupation material in the silt of the box-structure clearly points to the top of the quay being covered over. The quay was obviously in use for a long period of time and it was presumably the most eastern part of the main quay of the Roman city outside the walled area. A more central section of probably the same quay has very recently (March 1974) been found at New Fresh Wharf near the site of the medieval London Bridge. At this site the same joints are used though the construction of the quay is slightly different and the timbers are much larger. The quay also dates from probably the late 2nd century A.D.

On the Custom House site a further section of the quay was excavated on the east. This part of the quay, although heavily robbed, was of different construction and ran on a different, more south-easterly alignment. This alignment is parallel to the south walls of the Tower of London, while the alignment of the western part of the quay if continued, would join well with the New Fresh Wharf quay. The eastern part of the quay was filled up at the back with rubble, including tiles, painted wallplaster, mortar, stone, etc. and transverse north-south beams joined the main timber front. Some of these north-south beams had mortice holes in them, though in their partially robbed state no tenons were found associated with these.

Other Roman Timber Structures

Few parallels can be found for this Roman timber quay. One was near Dover where a timber-laced mole was found in 1855.[8] The joints used in this structure were also bare-faced dovetails and half-laps, though wooden pegs appear to have been used as well. No evidence for vertical joints was obtained though one suspects false-tenons may have been used. It is interesting also to note that the

7. Kindly identified by Mr. Eddy of the British Museum (Natural History).

8. S. E. Rigold *Archaeol J* **126** (1970) 90-2.

Dover timber structure is at almost exactly the same Ordnance Datum level as the London quay, i.e. the bottom was at about -1.5 metres O.D. and is also covered by peat and gravel of the late/post Roman marine transgression.

Another parallel is the Roman timber quay on the Rhine excavated in the 1930's by von Petrikovitz outside the north walls of the Roman colonia at Xanten.[9] Here also there is a series of massive timber baulks one above the other as the quay front with a regular series of lesser beams at right angles to the front running back into the bank. These beams are joined to the main quay wall by dovetails and are supported on vertical posts by tenon-and-mortice joints. Further back is a series of transverse beams and the whole structure is planked over. In front of the quay is a series of closely spaced vertical posts (perhaps rubbing posts for the ships); these are also similar to the London quay. The other interesting thing is that the quay lies outside the Roman city wall and could only be approached by going out of one of the gates and turning sharp right or left. A similar situation exists at many other large cities in the north-west Roman Empire (e.g. Trier). It seems inconceivable that stone was brought into London to build a defensive wall (and later massive bastions) on the north, east and west sides of the city only. This would leave the south side completely undefended and after all it is the river side which would have been the most vulnerable to attack from Saxon raiders in the later Roman Empire. Reculver, one of the earliest of the shore forts, was built on the limit of the Thames estuary, presumably to guard the channel. Its date, incidentally, is very similar to the probable date for the city walls of London (i.e. early 3rd century).

Dendrochronology

Finally mention must be made of one of the most interesting sidelines to the excavation. Several large cross-sections of the Roman and medieval timbers were removed by Dr. John Fletcher of the Research Laboratory for Archaeology and Art at the University of Oxford for dendrochronological measurement. The work of preparation and measurement of the tree rings is nearly finished and it has been most successful for the Roman timbers. (Samples taken from the medieval timbers were less successful because most of the oaks were fast-grown). The largest timbers had over 200 rings and a mean-curve has been prepared by Dr. Fletcher on semi-logarithmic paper (the curve, which is the first mean-curve for Roman oak to be calculated in Britain, will be published in the main excavation report). Then using a computer it was compared with a published Roman curve from Wederath (*Belginum*) near Trier in West Germany[10] and a possible teleconnection has been established. This is still only provisional but it would give a felling date for the timber of between A.D. 175 and 190. This agrees well with the more conventional pottery dating and we shall now have to wait for further material to supplement and tie down the absolute position of the curve. This work has many interesting possibilities in the future, not least that the curve extends back to c. 58 B.C.

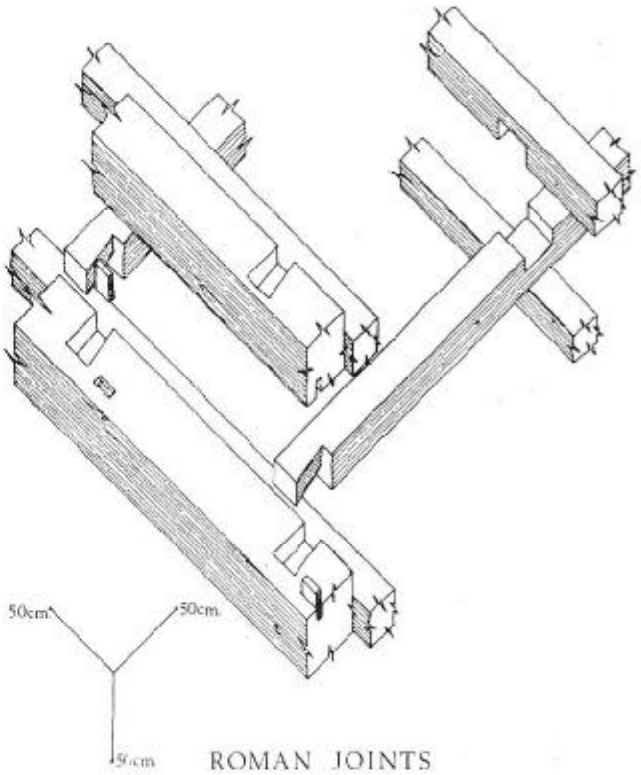

Fig. 5. The main joints used in construction of the quay.

Acknowledgements

May I briefly in this interim report thank the members of the Guildhall Museum staff for all their help, particularly Hugh Chapman, John Clark and Ralph Merrifield for many stimulating verbal discussions over the last few months. Finally a special word of thanks must go to Elizabeth Cook who read this report in the initial stage and helped to correct many points of grammar, spelling, style, etc.

9. *Bonner Jahrbucher* (1952) 41 and figs. 19 and 20.
10. E. Hollstein *Trierer Zeitschrift* (1972) 123-5.