THE PORT OF ROMAN LONDON

Gustav Milne

B.T. Batsford Ltd London

First published 1985
Reprinted 1993

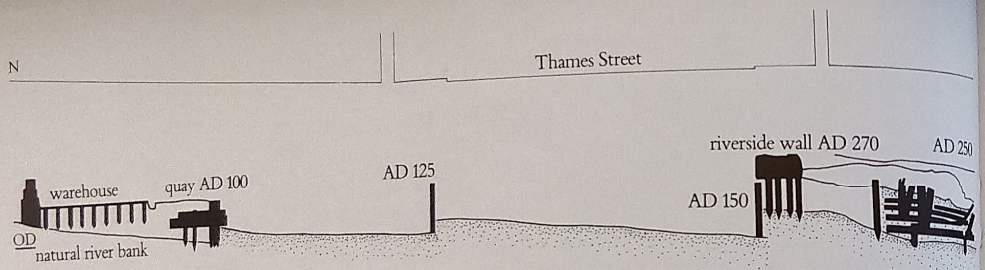
Typeset by Servis Filmsetting Ltd, Manchester
and printed in Great Britain by
Butler & Tanner, Frome

for the publishers
B.T. Batsford Ltd
4 Fitzhardinge Street
London W1H 0AH

British Library Cataloguing in Publication Data
Milne, Gustav
The Roman port of London.
1. London (England)—Harbour—History
2. Rome—History—Empire, 30 B.C.–476 A.D.
I. Title
387.1'09362'1 HE558.L8

ISBN 0 7134 4365 0 (limp)

CONTENTS



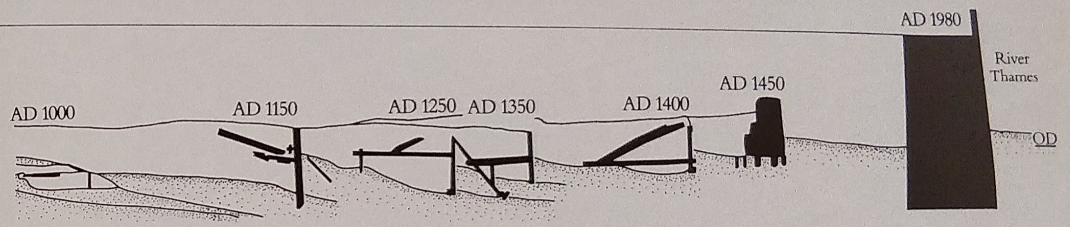
7 How London's waterfront advanced from the first century AD *to the present day: a simplified north-south section across a 100m stratigraphic sequence, with approximate dates.*

of an archaeological rescue unit in London, with waterfront excavation a major priority (Biddle *et al* 1973, 4.14). From 1973 to 1983 knowledge of the Roman harbour was revolutionised when modern excavation techniques were finally brought to bear upon the waterfront. A full-time team of excavators – often with volunteer support – examined twelve major sites in this important decade.

As a result of all this work, it is now known that reclamation or extension on the north bank of the Thames from the first to the fifteenth centuries advanced the line of the waterfront up to 100m southwards, so that most of the Roman harbour lies not below the buildings on the present-day waterfront, but partially beneath Thames Street, and

represented on the site. Such a record is more detailed and more reliable – and therefore ultimately more valuable – than the incomplete drawings of sections cut at arbitrary points through that sequence, which was all too often the best that could be achieved working with earlier methodologies. Ideally, therefore, to excavate the London waterfront, a long line of excavators should be lined up on the present-day quayside and work should progress downwards and northwards until the natural riverbank was reached.

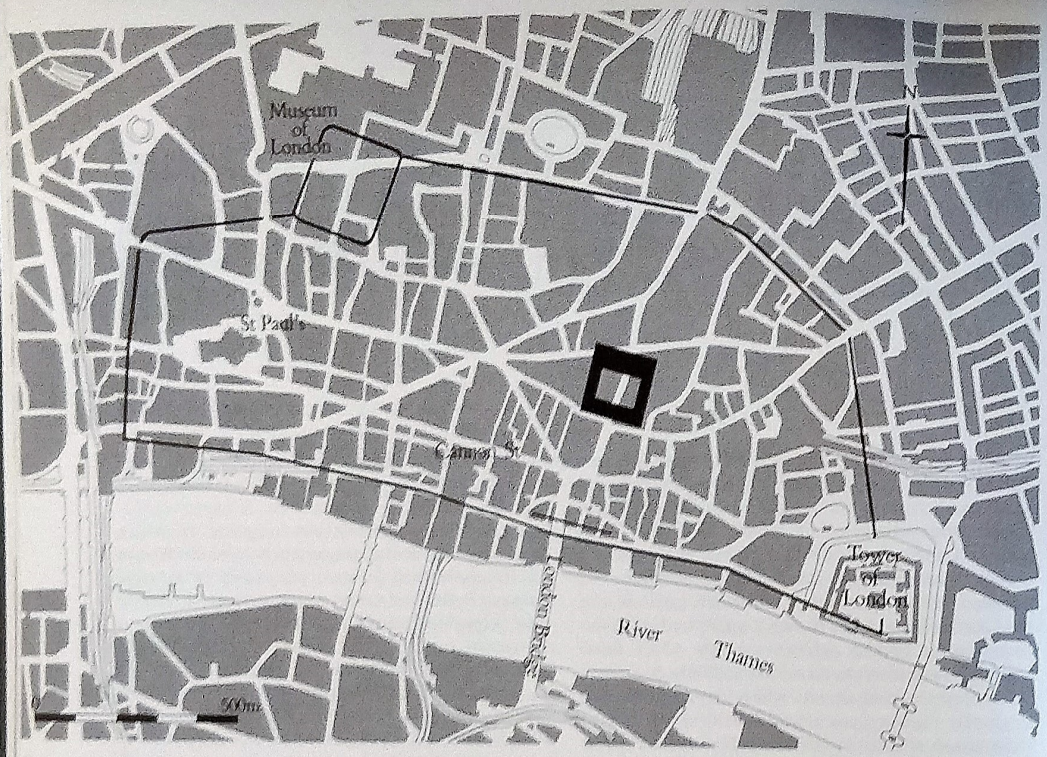
The procedure adopted in practice diverged considerably from the ideal, since the excavation programme was forced to keep pace with an unprecedented rate of redevelopment. It was urban renewal rather than academic desirability which dictated where, when and what might be excavated. Within these severe constraints and



work on the main sites considered in this book was not, therefore, confined to the warm, dry summer months, but was designed to fit in with the demanding schedules of the development as a whole. All the time available on site was spent in carefully recording as much data as possible, the detailed evaluation of which was left until all the evidence collected was brought together during the compilation of the archive reports. Over 6000 features were identified and individually described on context-record sheets. Many were drawn at a scale of 1 : 20 on plans related to the site grid, and their absolute level in relation to Ordnance Datum (see p. 79) was measured. Sections and elevations were also drawn up, usually at a scale of 1 : 10 and an extensive photographic record in both black and white and colour was made. Thousands of potsherds and other artefacts were recovered and processed, together with over 300 environmental

recorded on controlled excavations, then a wide area can be covered at a fraction of the cost required to mount the initial investigation. A happy combination of these approaches is found on the Miles Lane site. The archaeological potential of the area was demonstrated in 1920 when part of a major Roman timber structure and a masonry building were observed during foundation preparation (Lambert 1921). Fifty years later a controlled archaeological excavation on the site established the level, position and date of these features, while the subsequent watching brief traced the Roman waterfront structure for a breathtaking 60m westwards (Fig. 5).

The Museum's commitment to extensive waterfront excavation has sampled the evidence of life in several parts of the Roman, Saxon, and medieval harbour from sites that would otherwise have been destroyed forever without record. The principal



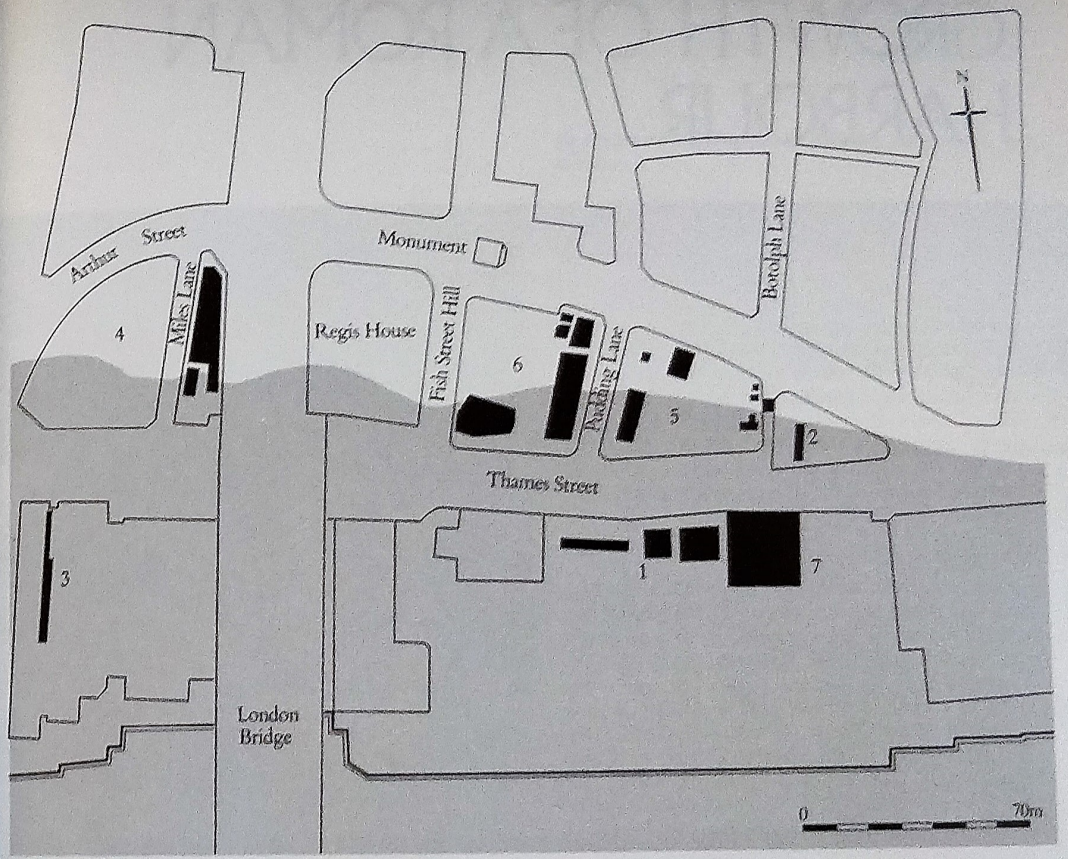
8 Modern streets and bridges in London shown in relation to the Roman forum and City wall. The harbour excavations were close to London Bridge; see Fig. 9.

The study area

The pattern of waterfront development presented here not only contributes substantially to the early history of London, but also provides one of the most detailed studies of a provincial Roman harbour complex yet compiled. Like most major urban archaeological studies, it is not the result of just one prestigious excavation, but the bringing together of information from several sites examined in a variety of ways over many years. The study area discussed in this book measures 270m east-west and over 150m north-south, centred on the present-day abutment of London Bridge, and extending both north and south of Thames Street (Fig. 8). It is principally concerned with the work on the Miles Lane, Pudding Lane and Peninsular House sites recorded between 1979 and 1982, although the results of sites investigated from 1973–8 at St Magnus House, Billingsgate Buildings and Seal House are also considered, as are more recent excavations such as those at Billingsgate Lorry Park.

The piecemeal chronology of archaeological investigation is shown on Fig. 9 where the sites are numbered in the order in which controlled excavation began. Although this particular area accounts for only 15 per cent of the City waterfront, it merits intensive study since it can be shown to lie at the heart of the ancient harbour.

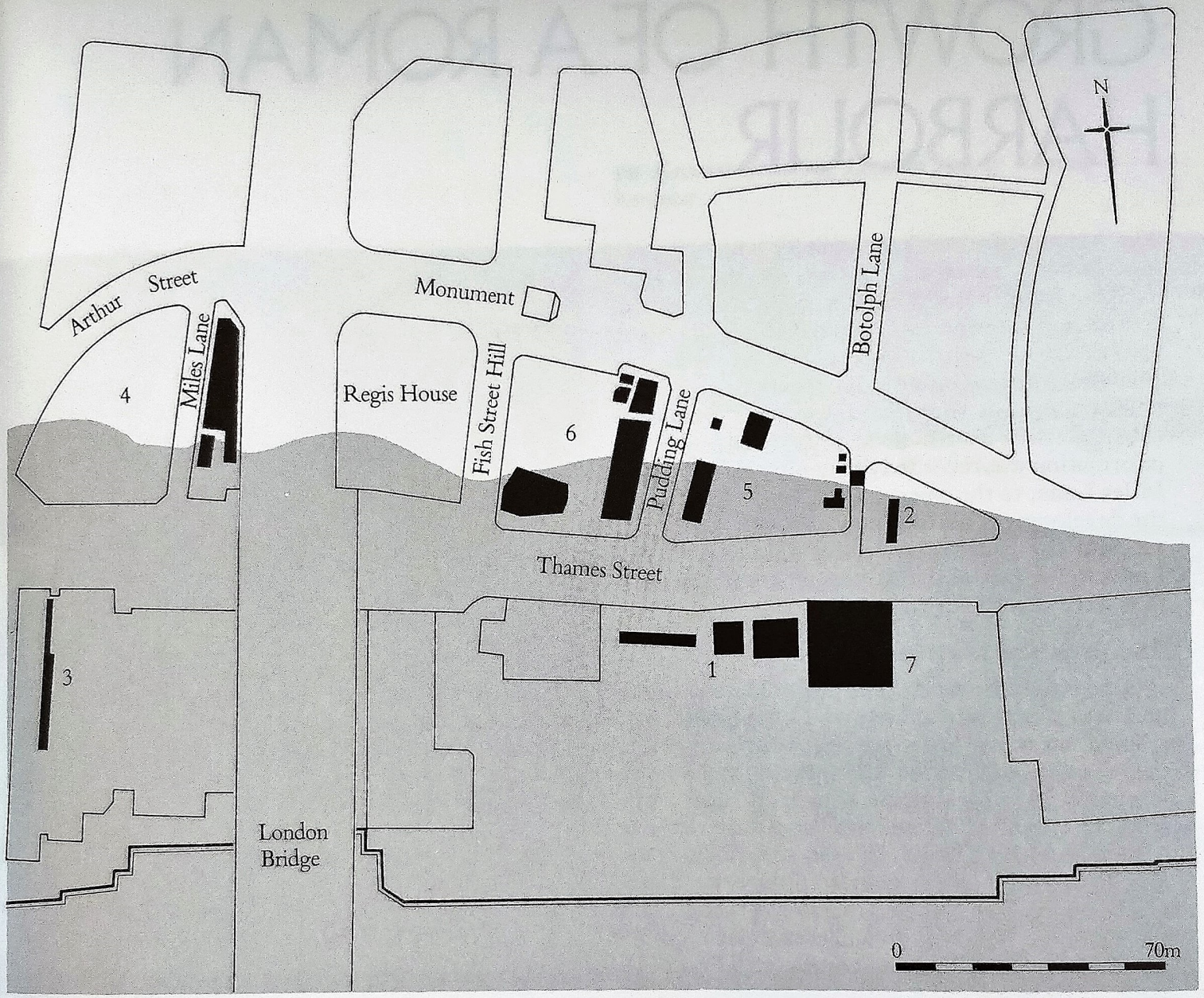
In Chapter 2, an interpretation of the Roman activity represented on the waterfront is summarised. It is suggested that the development spans the period from the first to the fifth century AD, and evidence for this dating is discussed in Chapter 3. Later chapters examine aspects of the



9 Recent archaeological excavations in the study area of London's Roman harbour numbered in the order in which work commenced, reflecting the haphazard progress of redevelopment.
1 St Magnus House 2 Billingsgate Buildings 3 Seal House 4 Miles Lane 5 Peninsular House 6 Pudding Lane 7 Billingsgate Lorry Park. Tone shows northern extent of mid-first-century river at high tide. The natural river bank and the earliest harbour works were discovered 100m north of the present-day Thames.

structural, environmental and finds analysis in greater detail, while implications for the study of London as a whole are considered in the final chapter.

The relatively modest size of the warehouses and of the quayside commercial zone itself, the nature of the traffic handled in the harbour, the type of craft it could have accommodated and the pattern of waterfront development are all evaluated, necessitating a critical reappraisal of the role of this Roman port.



9 *Recent archaeological excavations in the study area of London's Roman harbour numbered in the order in which work commenced, reflecting the haphazard progress of redevelopment.*
1 *St Magnus House* **2** *Billingsgate Buildings* **3** *Seal House* **4** *Miles Lane* **5** *Peninsular House* **6** *Pudding Lane* **7** *Billingsgate Lorry Park. Tone shows northern extent of mid-first-century river at high tide. The natural river bank and the earliest harbour works were discovered 100m north of the present-day Thames.*

structural, environmental and finds analysis in greater detail, while implications for the study of London as a whole are considered in the final chapter.

The relatively modest size of the warehouses and of the quayside commercial zone itself, the nature of the traffic handled in the harbour, the type of craft it could have accommodated and the pattern of waterfront development are all evaluated, necessitating a critical reappraisal of the role of this Roman port.

which integrated the construction of contemporary quays, terraces and buildings.

The unbraced timbers of the west wall were traced for at least 4m northwards and apparently extended as far as the 1.5m contour. The west wall incorporated two courses of massive timbers up to 660 × 400mm in cross section, laid one upon the other face to face, and superimposed directly upon the lowest two tiers of the landing stage. A much decayed timber was all that survived of the uppermost fifth tier.

The south wall comprised at least five courses of oak baulks horizontally laid face to face, stacked one upon the other. The roughly squared timbers were from 2.5 to 6.7m long and varied considerably in cross-section from 280 × 450mm to 460 × 630mm. The wall was founded on the remnants of the landing-stage in the west, on squared piles in the middle and on substantial horizontally-laid timber wedges in the east of the excavations. It was braced at irregular intervals of between 2–4m by stacks of two or three tie-backs aligned north-south. Twelve sets of braces were recorded on the sites to the west of Pudding Lane, and some of the fourteen observed to the east must also have been associated with this quay. The braces articulated with the upper courses of the south wall by means of lap joints (Fig. 40b). Their southern ends protruded into the Roman river and their northern ends were secured by pile-retained cross-pieces. Many of the braces were obviously reused timbers.

An aperture cut into the south wall accommodated a second-century drain when excavated (Pl. 1), but that drain seems to have replaced a first-century feature which had occupied a similar position. The aperture itself is thought to be an integral part of the original construction of the quay face.

A mistake in the setting-out of the structure was recorded in the south-west corner. Here the line of the quay's south wall diverged sufficiently from that of the landing stage to necessitate cutting back the end of the east wall of the conjectured bridge pier (Fig. 25). This proves, incidentally, that the pier was unequivocally in position in the open river before the late first-century quay was erected. The unsightly use of wedges to complete the build of this corner (Fig. 39), demonstrates that construction must have terminated here, and therefore must have proceeded from east to west, as was also the case with the western quay of AD 70.

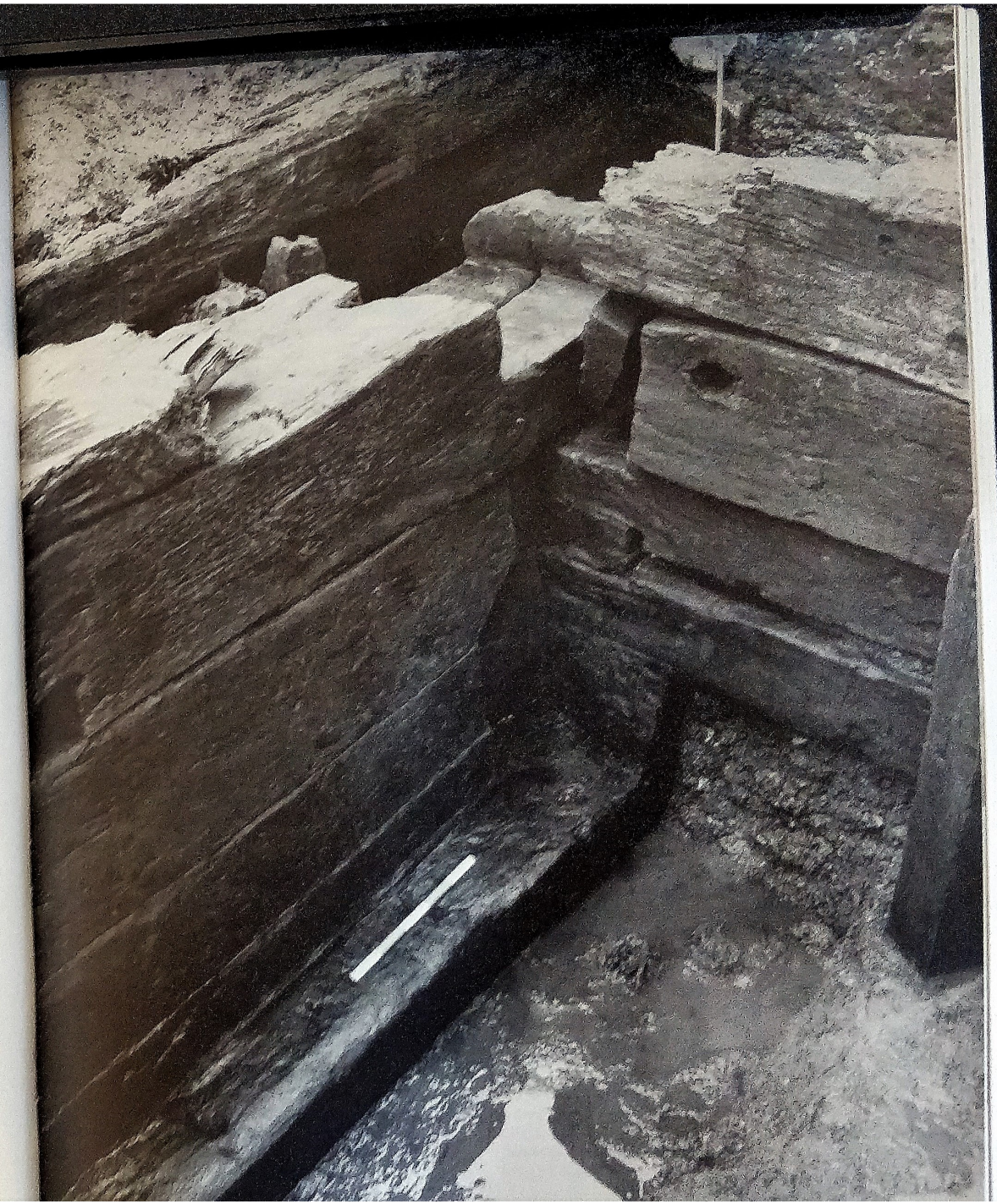
The inside of the timber framework was infilled with a variety of dumped deposits which sealed the contemporary tie-backs as well as the truncated members of the earlier landing-stage. The quay was levelled off with a surface of brickearth and gravel at *c* + 2m OD.

Civil engineering and Roman joinery

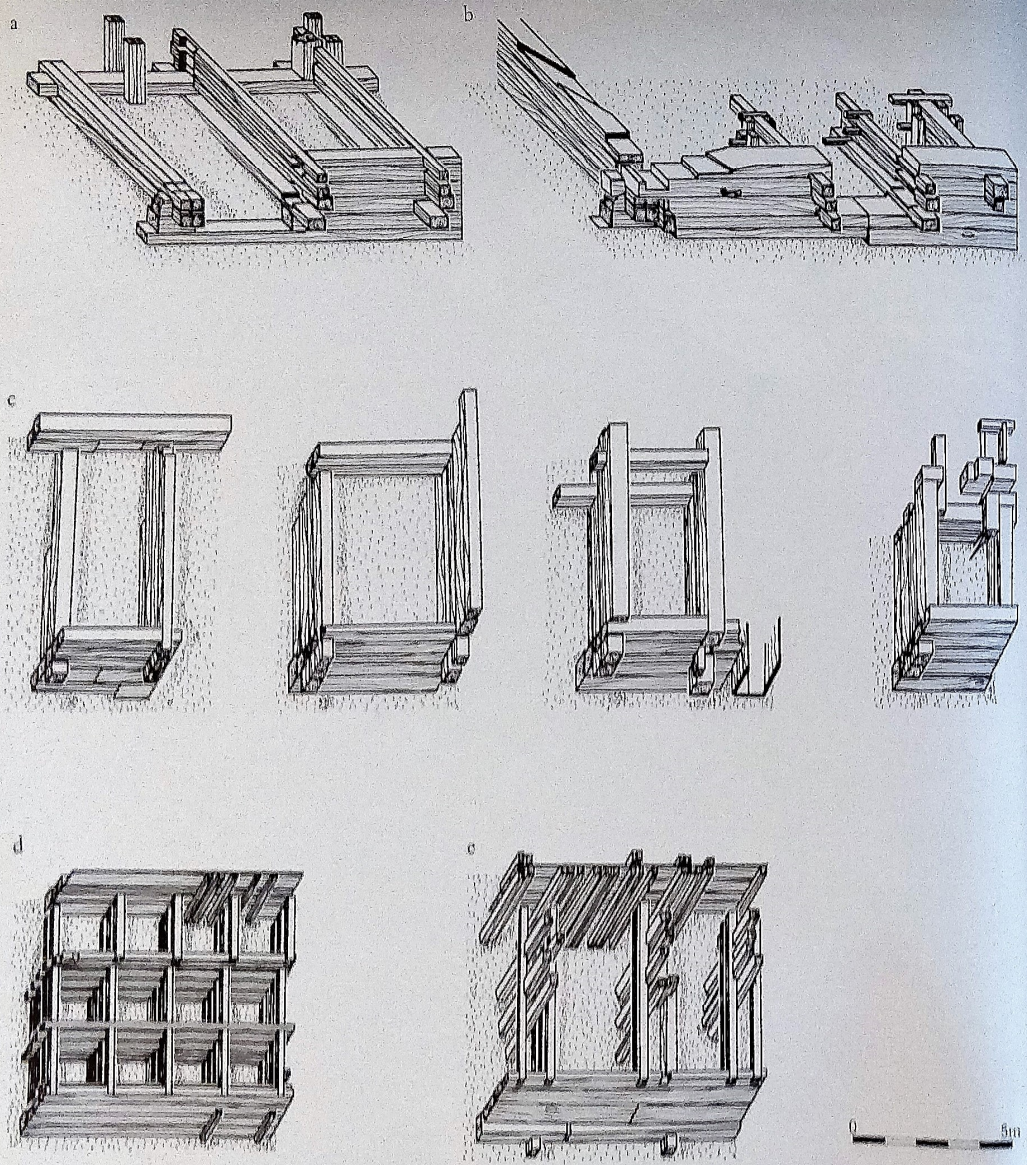
Of these three first-century structures, the landing stage clearly contrasts with the other two in terms of the uniform size of timber used and in the careful, regular spacing of the braces. The little that did survive was sufficient to show that it was a relatively sophisticated structure and that its principal elements were presumably prefabricated, since it had to be erected on an open foreshore between tides.

The other two structures showed marked irregularities in form, most notably in the alignment of the north wall of the western quay, as well as in the sizes of timber used. The spacing and number of braces articulating with each tier also differed, features which reflect the varied lengths of the timbers forming the south wall, each one of which needed to be braced at least at its eastern and western ends. Had standard lengths of timber been used to form the front wall, then all the braces could have been at more regular intervals. The general implication is therefore that, although the timbers must have been brought to the site ready squared, the cutting of most of the joints necessary to erect the structure was done on site as work progressed and as timber became available, rather than by adhering rigidly to a blueprint. Nevertheless, all three structures would have required heavy lifting gear, ropes and piling rams as well as saws, axes and so forth (Liversidge 1976), although only in the setting out of the landing stage would anything other than the simplest surveying equipment have been used.

The chance survival of an unfinished joint on which the toolmarks had not been removed proved instructive (Fig. 41). It showed that the lap joint was marked out by sawing deep cuts at either end, after which the intervening wood was cleared out with axes. It also demonstrated that Roman engineers were capable of making mistakes, since the joint was clearly in the wrong place.



39 Late first-century ferry building. Irregular wedges were used to complete the south-west corner of this quay, showing that construction must have ended here, having begun in the east. 0.5m scale.



40 *Roman waterfront structures from London. First-century:* a *landing stage and* b *quay near Pudding Lane;* c *sections of the* AD 70 *quay near Miles Lane. Second-century:* d *partial reconstruction of Custom House quay. Third-century:* e *partial reconstruction of quay from St Magnus House site.*

Rather than reflecting a private merchant's individual enterprise, the scale of the harbour works clearly implies an official involvement. In an occupied territory such as Britain was in the first century, the army would presumably have designed and organised the project. Such schemes were very labour intensive, but whether the man power was provided by the military directly, or by civilian labourers or slaves under military supervision is a matter for speculation. Suffice it to say that the handling of massive timbers and the erection of the waterfront structures on a tidal foreshore would have required considerable organisation, even though two of the structures were neither elegantly designed nor expertly erected.

The Roman waterfront structures contrast noticeably with their medieval counterparts. Of some twenty examples of twelfth- to fifteenth-century riverfront revetments recorded in London, all were of much slighter construction, rarely incorporating individual timbers of the prodigious size found in the first-century structures. Nevertheless, the medieval revetments were as effective as the Roman but were more economical in their use of timber, often utilising wood from trees eighty years old or less when felled. The base of the G10 revetment erected in the mid-fourteenth century near Trig Lane was still operative almost a century later, for example (Milne and Milne 1982). In addition, the erection of the medieval revetments could have been accomplished by much smaller teams than would have been required to install the Roman structures.

Superficially, the limited range and poor quality of the Roman joinery exhibited in these constructions seems to say more about the conditions under which they were built than about the general standard of contemporary carpentry. Nevertheless, at least one observation of wider significance for the study of Roman joinery can be made, given that there must have been at least some connection between practices used on the waterfront and those found in contemporary buildings on dry land. All the bruces in the three first-century structures considered in this chapter and in the pier-base described in Chapter 3 were *lap-jointed* to the wall members, with the result that the heads of the braces protruded beyond the main body of the structure. By contrast, the second- and third-century waterfront structures found at the Custom House and St Magnus House sites (Figs. 40d, e) used *dovetail joints* to effect this crucial join, which left a neat vertical face to those quays. Since there are few examples of Roman vernacular carpentry in Britain it is difficult to argue for a major change in techniques in the second century on the evidence of the waterfront installations alone. However, a recent survey of timber-lined wells provides an instructive parallel, for it shows that in the first and second century such structures utilised half-lap joints to form the corners, but by the late second to early third century more sophisticated dovetail and bridled joints became the standard response (Wilmott 1982, 26–30; figs. 19–21). In other words, a second-century change from the use of simple lap-joints to joints such as dovetails which require more careful marking out occurs in two quite distinct classes of timberwork, wells and waterfront structures. This change may therefore be symptomatic of a more general development.

Timber supply: British oaks and the cedars of Lebanon

The Romans are known to have imported timber supplies over large distances (Meiggs 1980), but there is no reason to suspect that the majority of the wood used for the London waterfront development was anything other than British, since it was all oak. Much of it was cut from tall, straight-grained 200–300-year-old trees of the type that would have grown in dense woodland. Nevertheless, there is no evidence of economy or care in the Roman use of timber. Baulks between 4–7m long were common, while some were almost 9m in length and most of the logs had simply been squared. In some instances, only one major structural timber had been cut from each tree, a wasteful practice which contrasts noticeably with later medieval techniques. For example, a study of the thirteenth-century roof of the Blackfriars Priory at Gloucester has shown that four rafters, two collars, four sole pieces and one scissor brace were cut from a single oak (Rackham *et al* 1978, fig. 7).

The wasteful use of timber on the Roman waterfront seems to imply that large areas within relatively easy reach of London were covered with dense woodland. Dr Hanson has calculated that to build a standard Roman fort of four acres internal