

MONTAGUE CLOSE EXCAVATIONS 1969-73: Part 1—A general survey

by G. J. DAWSON

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INTRODUCTION

Montague Close is a general name for the whole area lying between Southwark Cathedral and the River Thames which, although it has roads through it, has from the Middle Ages been closed off from the rest of Southwark for at least some of the year. Since the 19th century it has been entirely occupied by wharves, warehouses and roads but, due to the decline of riverside commerce in London, it was realized in 1968 that they were likely to become redundant in the near future and it was therefore decided to undertake an excavation in one of the roadways in 1969 before the warehouses actually closed down, to test the possibilities of the site and the feasibility of digging in roadways between high buildings. This season lasted for six weeks and an area 20 ft x 6 ft (6.1 m x 1.8 m), later called Trench 1, was excavated and proved so productive that excavation was continued in 1970 with the aim of excavating as much of the roadways as possible before redevelopment took place. Excavations took place for five weeks and a few weekends in 1970, and for 6 weeks in 1971 followed by contin-

uous weekend excavation which lasted without a break from September 1971 to September 1973. During this period a strip about 100 ft x 15 ft (30 m x 4.6 m) (inclusive of Trench 1) was excavated in the south road of the Close (T1-7, and 9-10) plus a small isolated trench further east in the same road (T11) and a trench (T8) about 30 ft x 12 ft (9 m x 3.7 m) in the north road of the Close. During the excavation one of the wharves between the north road and the river (New Hibernia Wharf) was redeveloped and excavation took place there (SAEC 1973) and subsequently, when the easternmost warehouse between the two roads was demolished together with the building to its east and the latter redeveloped, some excavation was done there also (Graham 1974).

SUMMARY OF RESULTS

The principal results can be summarized as follows:
Roman A substantial and hitherto unsuspected road leading to the bridge was found with a complex

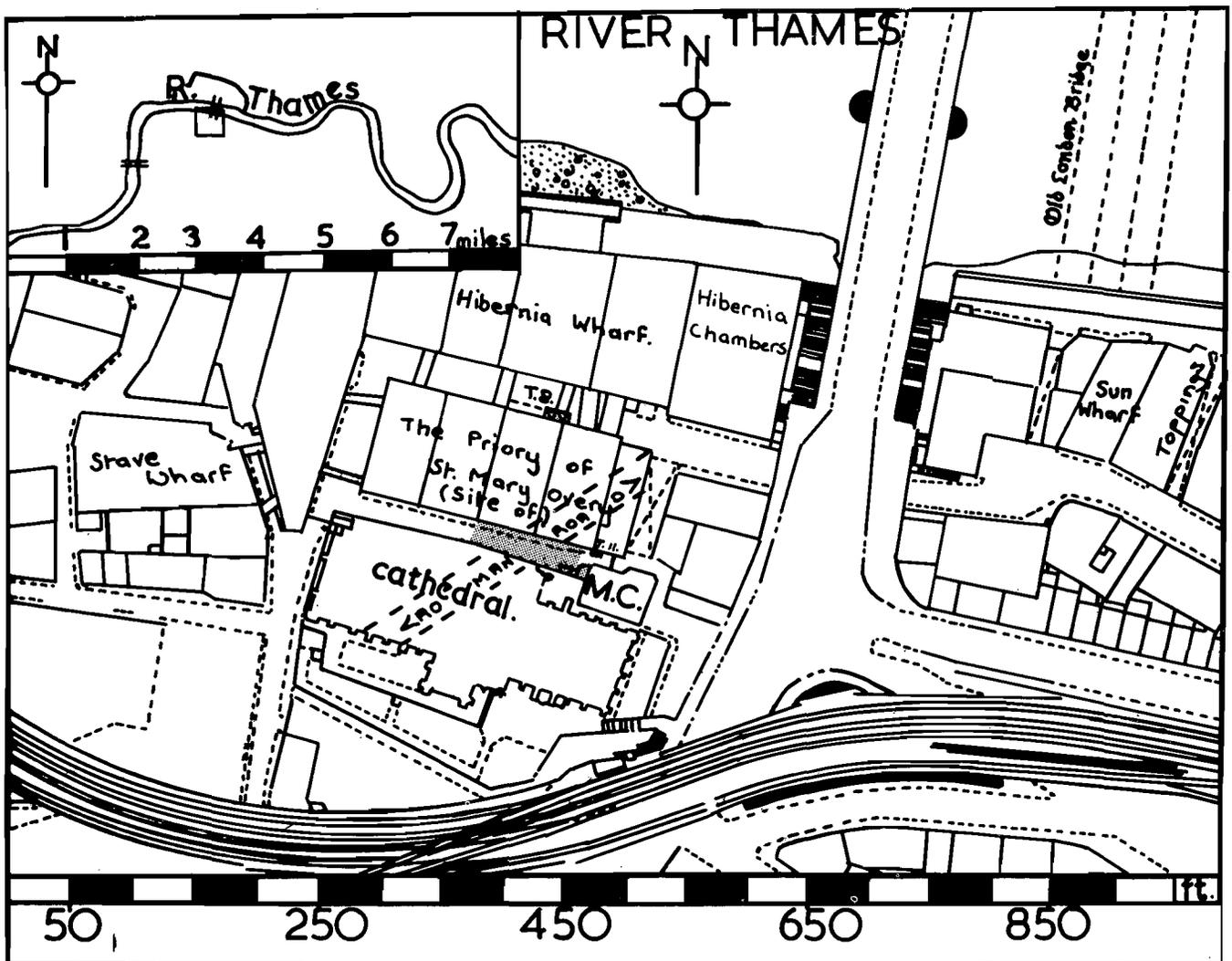


Fig. 1. Location Map. Shaded portions indicate area excavated.

sequence of structures on either side, all built of timber or clay, no stone buildings being found at all.

Early Saxon Thick black layer, probably river deposited and with no features in it.

Late Saxon A series of very substantial pits were found, probably belonging to this period plus a slot and possibly a later stone phase. Possibly connected with Saxon Minster.

Medieval A number of graves from an intra-mural cemetery, structural evidence for the development of the Priory of St. Mary Overie, and evidence for a very destructive flood at the end of the 13th century.

Post-Medieval Substantial parts of three 17th-18th century delftware kilns with numerous re-builds and vast quantities of associated waste material.

METHOD

The site was dug by methods to which the rather misleading term 'open area' excavation is usually given. This often seems to be equated with digging a large area rather than small trenches which is to a certain extent irrelevant. The crucial point is that the site is dug horizontally, stripping each layer off entirely before proceeding to the one below it, rather than excavating in such a way as to produce sections. The only sections dug were to economise on time and labour where complete excavation would have produced little more evidence, such as across the road. Most of the sections drawn were levelled and not dug. This was found to be reasonably satisfactory except for small features where often the staff was too large to register accurately the base levels. In fact for pressing logistical reasons it was impossible to do this properly at Montague Close. To begin with, it was not possible to excavate the whole area at the same time since access would then have been impossible and the excavation moved east and west from Trench 1 in stages. Secondly, the road concealed an inordinate quantity of services and at one point there were no less than twenty pipes running in parallel along the road. Fortunately a number of these could be removed but some had to remain because they were still live, notably the district electric cable and hydraulic mains. Those removed included the surface drains (which meant that the surface water drained into the trenches) but this was not possible until 1971 and it was only then that T4, opened the previous year, could be dug. With T5, it was only possible to dig it from the side (T9) since the pipes were so close together that it was impossible to dig down from the top. Because the remaining pipes had to be supported, some baulks had to be left, for example across the middle of T9/5, though these were often later eroded by various causes so that eventually a larger area was excavated than was at first thought possible. This particularly applied to the east of the road in T7 where the area of Roman stratigraphy eventually excavated was four or five times the area first attempted, but this meant in fact that the upper layers were not removed in one operation but in patches. This and the necessary baulks made correlation of the layers and interpretation of the features very difficult, especially as, even at the end, comparatively small, and archaeologically and practically-often very inconvenient, areas were available.

Further, since the southern edge of the area excavated was a mere 6 ins (15 cm) from the north transept of Southwark Cathedral (in fact its foundations impinged a little on the area excavated), it was considered unsafe to dig too deep over too large an area in the central section, while there was insufficient time to excavate the whole of the area to natural in 1973. Nevertheless, most of the area was excavated to a depth of 12 ft (3.7 m) below ground level and up to 14 ft (4.3 m) in places, all the soil being removed entirely by hand. The other major problem was lack of light in these deep holes in a narrow gap between two very high buildings (this also tended to impede drying out of the earth). This not only made photography difficult (also complicated by the plethora of pipes and shoring struts) but, more important, the perception of colour differences in the layers.

PROCESSING

Ever since 1969, processing of the finds recovered from the excavation has continued on one or two evenings per week throughout the year. But despite 30,000 items having been wholly or partly dealt with in the five years, this is only one fifth of the estimated total produced by the excavation. Since final publication might therefore take till 1995, it was decided to publish the excavation in parts. To enable readers to relate these to the general picture, Part 1 is a general survey of the excavation.

ACKNOWLEDGEMENTS

The excavation was carried out by Southwark Archaeological Excavation Committee and Southwark and Lambeth Archaeological Society and was directed by the writer. All the work was done by volunteers, only two of whom ever received any expenses. It may be invidious to mention specifically any of this large group by name, but special mention must be made of Mrs. Elizabeth Saunders, Miss Pip Sanders and Miss Sue Leatherland, John Collins, Roy Edwards, Richard Buchanan, Ron Clarke and David Lewis, who came regularly over very long periods, John Cresswell, who drew the plans for much of the excavation and Brian Bloice, John Collins and Ron Clarke who took the slides and photographs. The processing has also been done entirely by volunteers (except for a small amount of paid help since October 1973). Again it is invidious to mention names but Brian Bloice has supervised most of the processing, and Roy Edwards has drawn the pottery. Besides those mentioned above, who have also regularly taken part in the processing, Mrs. Lynne Holloway, Charles Ellis, Dick Sheppard and Len Groves and many others have come regularly to process the material. The illustrations for this report have been drawn by Mrs. Sandra Hooper and John Cresswell. Thanks are also due to the bodies which gave financial support, principally the Department of the Environment and Southwark Borough Council (who also gave the director time off from his work at the Cuming Museum to direct the excavations in 1969-71) and particularly to the land-owners, the proprietors of Hays Wharf, who not only gave permission, but also assistance in kind and put up with this very long and rather messy operation for five years.

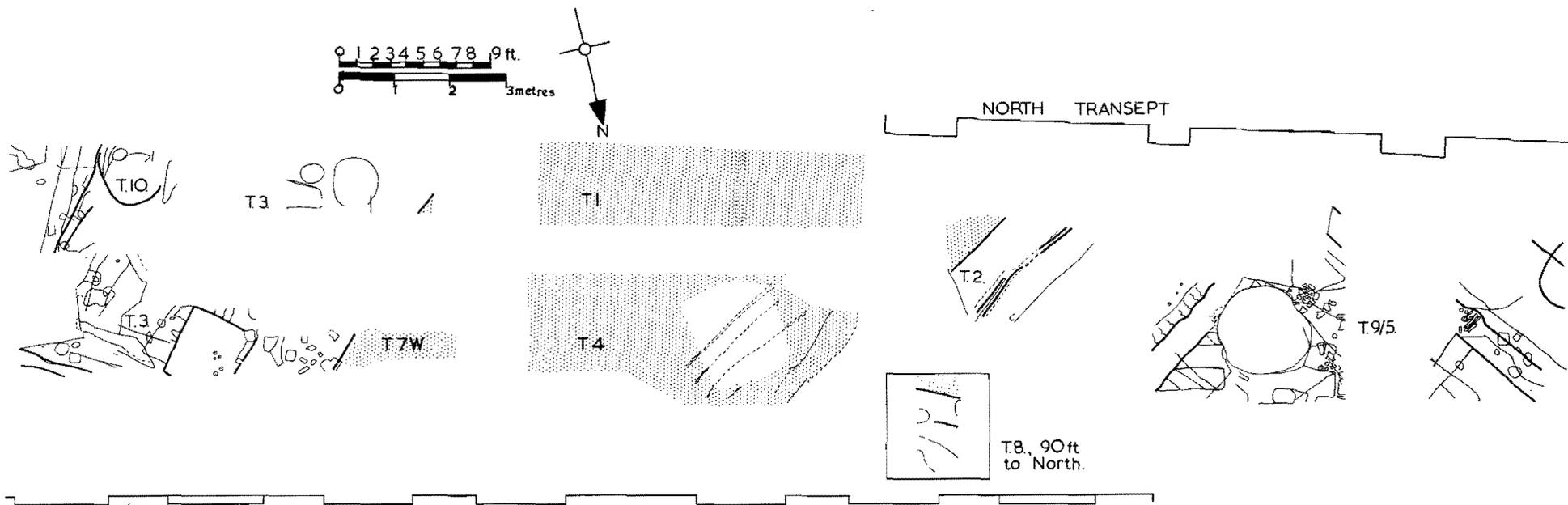


Fig. 2. General Layout of features of Roman period. Stippling represents areas of road gravel excavated.

THE ROMAN PERIOD (Fig. 2)

The natural substratum at Montague Close comprised a layer of stiff, brown clay, about 1 ft 6 ins (0.46 m) deep overlying gravels of the Lower Floodplain Terrace. Where not reduced by later events, the latter's top was at just above 3 ft (0.9 m) OD while the clay had a very level surface at just over 4.5ft (1.4 m) OD. It occurred at this level not only in Trenches 1 and 4 in the south roadway but also in Trench 8 in the north roadway (and much the same further east between Duke Street Hill and Tooley Street on the London Bridge 1969 site). This clay was laid down by a prehistoric transgression of the river but by the middle of the first century AD it must have been dry land again, and the clay at Montague Close (and London Bridge 1969) was completely sterile.

Resting on this clay in the middle of the southern trenches was a road of gravel, 5 ft (1.5 m) thick and about 20 ft (6 m) wide, running obliquely across the trenches in an approximately north-east/south-west direction. This was well preserved only in the eastern halves of Trenches 1 and 4 where it stood to its full height. It was composed of sandy gravel in layers (see Fig.3) which in T1 dipped towards the east from the centre as though cambered. Within and between these layers were surfaces caused by compaction of the gravel and in two or three of these an iron pan had formed on them making them very hard.

The upper three layers had thin black layers containing occupation material between them and the uppermost layer also had occupation material included within it while the layer below this included black earth as well as gravel. Apart from below the road, little of the natural clay survived for it had been removed, as had some of the gravel below it, by large pits. These pits, which seem to have been cut down to about zero OD in the places where the bottom was

reached, seem to occupy the whole width of T2 and T9/5 and continue beyond them to the west and also much of T10 and T7 extending beyond them to the east. A southern edge occurred in both T10 and T9/5 where the natural clay was preserved to its full height but no eastern, western or northern edges were found. The purpose of these pits must have been to provide gravel for the road, borrow pits in modern parlance, since they are dug alongside but not beneath it. The clay was clearly not of any use and much of it was backfilled into the resulting holes though these remained open long enough for sticky black peaty clay to accumulate in the bottoms. A certain amount of loose gravel was also used in backfilling the holes but their fill was predominantly clay.

Similar disturbance of the natural, refilled with re-deposited natural clay with runs of gravel, was found at the east end of T8 (where only the top of it was excavated) and in the eastern part of New Hibernia Wharf when that was excavated. Though the section published (SAEC 1973, Fig. 2) is too short to demonstrate this fully, on site it could be seen that the natural clay (layer 2 and the unnumbered layer above it) was preserved to more or less its full height to the west but from the point where this was cut by a pit (Layer 5) the natural clay was not found in its true position though further east a thick band was found below 3 ft (0.9 m) OD and likewise in T3 a similar layer of clay was found well below 3 ft (0.9 m) OD (unlettered layer). In the light of the evidence of the Montague Close excavations, these layers of clay must be redeposited backfill of borrow pits alongside the road. In fact, if the point where the natural clay ends in the south section of Hibernia Wharf is joined to the end of T8, that line runs north-east/south-west on an alignment which is very close to that of the road.

This would mean that the borrow pits extended from the southern edge of Montague Close for at least 200 ft

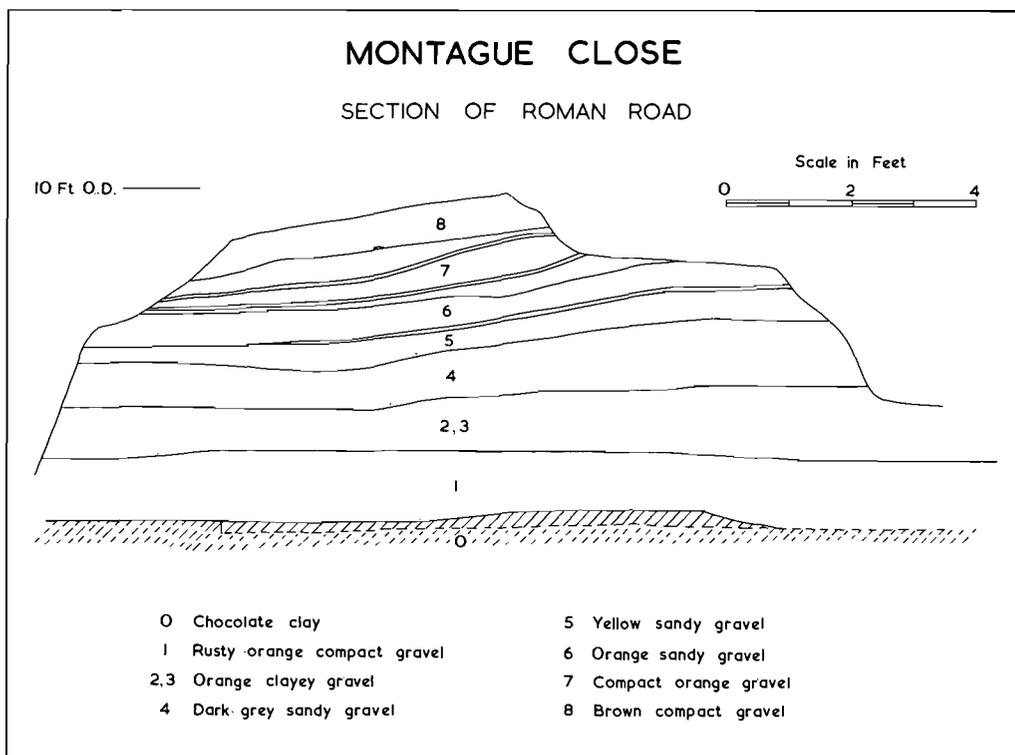


Fig.3. Section of Roman Road in Trench 1.

(60 m) alongside the road and for up to about 50 ft (15 m) from the road on the west side at least. This enormous area, if all dug to zero OD, would produce enough gravel for a seven foot high road and even allowing for some loss of gravel to the backfill, it is still far too high, especially when the quota from the east side is added. This would suggest that rather than one enormous pit, all dug down to the same depth, what actually occurs is a series of small pits with baulks of undug natural between. If that is the case, the southern edges in T9/5 and T10 may not be the edge of all the borrow pits but merely the baulks between two of them. Excavations in the cellar of the warehouse at the east end of Montague Close would support this, for discontinuous borrow pits were found there (Graham 1974).

Nevertheless, even making allowances for this, the quantity of gravel extracted must have been quite considerable and far more than would be required for laying down the first layer of gravel at the base of the road. Are the surfaces therefore necessarily road surfaces or are they constructional surfaces where a layer of gravel has been tamped down before the next layer was laid on top of it? This would be supported by the absence of occupation material between the layers of gravel except for the upper three and the cleanliness of the gravel itself. This may indicate that the road was built from the beginning 4 ft 4 ins (1.32 m) high and that its surface was between the second and third layers with the two uppermost layers representing resurfacings. Study of the finds from the gravel layers may throw further light on this question.

This raising of the road well above ground level, if such did occur from the beginning, certainly existed later, for the uppermost surface of the road was about 10 ft (3 m) OD, while the highest surviving layer of Roman occupation material was at about 7.5 ft (2.3 m) so that the road stood 2.5 ft (0.75 m) above ground level when Roman occupation of the site ceased. There was an indication that the top of the road was rising towards the north for in T1 the upper surface, at a point in what was probably the middle of the road, was at 9.79 ft (3 m) OD while to the north, in T4, in a similar position, the top lay at 10.15 ft (3.1 m) OD. Too much cannot be made of this point since the distance is short and it may be accidental, but taken together, the features described all indicate that the road was embanked and rising towards the river and the only reasonable explanation of this is that it is approaching a river crossing by bridge. (Dymond 1961). This evidence is, in fact, the first directly to indicate that the Thames was bridged in Roman times, though it has nearly always been assumed that the Romans would have built a bridge at such an important crossing rather than rely on fords or ferries.

The most surprising feature of the road is its alignment, the significance of which will be discussed in a forthcoming paper (Dawson 1976). Although the evidence for the line is not as clear cut as it could be, since the edges of the road were much cut about by the kilns, which also prevented excavation of long stretches of the road edge, there can be absolutely no doubt about its general line. For not only do all the road features (see Fig. 2) have the same alignment but the buildings on both sides of the road do too, though those on the east side are aligned more nearly NE-SW than either the road or the buildings on the west. Further, the road was found again behind the wall in

the NE corner of the east warehouse in Montague Close (Graham 1974) and the buildings found under the east end of the Cathedral in the 19th century were also said to run NE-SW (Roach Smith 1842, 148), as Merrifield pointed out (1970).

Thus it can be seen that the road ran in this general direction for at least 300 ft (90 m). It is when it comes to working out the more precise alignment that the problems begin, for the lengths involved are very short and it is therefore unsafe to extend their alignment too far. However, although this is so, the alignments, apart from the buildings east of the road which seem to have a quite distinct alignment of their own, are consistent with each other and it is this alignment which is shown in Fig. 1. This would also connect up with the fragment of road found in the eastern warehouse. Can any suggestions be made as to where the road goes at either end of this 300 ft (90 m) stretch? To the south west, the only possible place that it could be heading for is a crossing point of the river in the Lambeth/Westminster area, on which the two sections of Watling Street appear to be aligned. To the north it has been suggested that it continues in the same direction to the (modern) river bank where it was argued the Roman Bridge crossed the river, 'close to the position of medieval London Bridge' (SAEC 1973). While possible, this in fact seems unlikely. The river bank is, of course, a creation of the mid-19th century and unfortunately the position of the Roman river bank was destroyed by the late 13th century flood (see below p. 49). In fact, if projected, the alignment suggested by the Montague Close evidence would not meet medieval London Bridge's west side till 90 ft (27 m) to 150 ft (45 m) beyond the modern river bank and a certain distance beyond that must be allowed for the abutments, which must be in line with the bridge itself. It seems very unlikely that the Roman river bank was that far out and even then, the road would have to travel still further eastwards in order to cross the river downstream of the Regis House site (Merrifield 1965, 204, No. 308) where timbers of a probable Roman wharf were found actually under the western edge of Fish Street Hill (the northern approach road to medieval London Bridge).

Since the road is approaching the river at such an acute angle, it seems *a priori* likely that it changes direction close to the river to a line nearer to right angles to the river. There is some evidence for this in T8 at Montague Close, where, at the east end, a fragment of an east-west road or 'lane' bounded on the north by a building was found. The alignment of these features was not at right angles to the alignment of the road in the southern trenches but to a line more or less at right angles to the river. Further, the buildings at Toppings Wharf (Sheldon 1976) are aligned at a similar angle and at about 45° to the alignment of the road, which would be very surprising if the road ran right across to the medieval bridge immediately west of that site.

What is certain, is that the road did not turn before the north-east corner of the central block of warehouses in Montague Close. On the other hand, if the building in T8 is aligned on its altered direction, the change must take place only a little to the north of that point. It seems likely therefore that, if such a change of alignment does take place, it does so under the roadway south of Hibernia Chambers or beneath the southern edge of that building. A bridge across the river from this point, parallel with modern Lon-

don Bridge, would join at the north end with the fragmentation of road metalling found beneath Crooked Lane (Merrifield 1965, 282, No. 299) and the line would run between two sites where timbers have been found which do not seem to connect with each other (Merrifield 1965, 283, nos. 304, 306).

That a thick layer of peaty clay was able to accumulate in the bottoms of the borrow pits shows that they were left open for some time. At an early date within the Roman period they were partly backfilled with the clay and gravel which had come out of them, which must mean that these had been left in heaps along the edges of, or within, the borrow pits. Only study of the finds will show whether this was contemporary on both sides of the road or done piecemeal. This demonstrates quite clearly the primary nature of the road on the site and if, as will be suggested in a forthcoming paper, the road was built by the military during the Conquest, the unconcern displayed for landscaping and development potential is quite understandable.

Within the partly filled in pits, buildings were laid out served by at least two roads or lanes. These buildings were often rebuilt and the occupation layers built up quickly during the early Roman period. The date when occupation ceased will not be clear till the finds have been processed, though one feature certainly contained fourth century material, but the later centuries did not add much to the build up. This was probably not because occupation was less intense but because of a change in building style. In the early period, buildings were constructed of clay, sometimes apparently faced with wooden planks. Later, however, wattle and daub seems to have been used, perhaps within timber framing. This greatly reduces the amount of clay used and hence the amount of clay spread around when the building is demolished. The sequence of rebuildings is complex and has not yet been fully worked out, as the configuration of the site meant that the structures had to be dug in small segments. However, it does appear that property boundaries are fairly static and rebuilding takes place close to the lines of the preceding building.

THE SAXON PERIOD

The Black Silt Layer

Immediately overlying the Roman sequence at Montague Close, except where removed by later disturbance, was a layer of black silt-like material. This has been found on most sites excavated in the Borough High Street area of Southwark: 207 and 78/80 Borough High Street, Toppings Wharf, Kings Head Yard, Ingledeu & Davenport's, Newcomen Street, and Mermaid Court (Kenyon 1959) and has always presented problems in interpretation. The two main problems are its date and the method of formation. The layer has hitherto always contained much Roman pottery and objects including fourth century material but also, in places, medieval objects. These usually occur in the upper parts of the layer but that cannot usually be distinguished from those parts with only Roman material. Various suggestions have been put forward as to its mode of formation (Plouviez 1973, 109). The most popular has been deposition by the river in flood conditions.

The evidence from Montague Close is quite clear on the point of date. As far as can be seen at the moment, before the material is processed, the black

layer produced only Roman material and no medieval objects at all. But, more importantly, it was cut by what are probably late Saxon pits and, if these are indeed late Saxon, the layer must have accumulated before some point in the late Saxon period. Again, it must be later than the Roman layers below it which go down at least to the third century and there is one feature which produced late third-fourth century pottery, but in this area the black layer had been removed by later features. Further, the material gives every appearance of being redeposited since it appears to be cumulative throughout the Roman period and not of one period within it, and therefore the fourth century material in it, which is the latest at Montague Close, gives a *terminus post quem*, and is not its date. It is therefore likely that the layer was laid down sometime between the fourth century and the late Saxon period. The presence of medieval material in it on some sites can be explained either as a reworking of the surface of the layer in the middle ages or due to the presence of undetected medieval intrusions. Experience at Montague Close has shown how difficult these are to pick up. The sole difference between the black layer and the fill of the late Saxon pits was that the latter were stonier and it was only when the Roman layers were reached that the difference was easily visible.

As has been said, the most usual explanation of the formation of this layer has been that it was laid down by the river. It has been objected to this that the layer contains both silty material and larger objects and that rivers only deposit one grade of material at a time. That is, when the river is flowing so slowly that it is depositing silt, it would be unable to move objects of a larger grade. However, this does not really rule it out, since both conditions could occur in sequence repeatedly during the time the layer was deposited, the river depositing silt when it was flowing slowly and larger grade material when it was flowing faster. Certainly, in the layers deposited by the river in T8 at Montague Close, this combination of silt, there rather more clayey, and larger grade material occurs throughout.

Unlike the later deposit in T8, however, it appears to lack any internal stratigraphy to suggest a seasonal regime (see below, p. 45). In the absence of any scientific analysis of the deposit, it is difficult to suggest the exact conditions in which it was laid down but the fact that it is not particularly clayey and very black may imply that it was laid down intermittently and that vegetation was able to grow in it between times. The other feature of this layer which has appeared at Montague Close is that it probably had a fairly level surface. It is difficult to be absolutely certain about this because of later disturbance and in fact the layer only survived at all in one area east of the Roman road (T7) and over the road itself in T1. In both areas the surface may have been disturbed but it is unlikely to have been much higher. Over the road it survived to about 10.2 ft (3.1 m) OD but at the point where the road itself was highest, this was only 2 to 3 ins (50 to 76 mm) thick. In T7 where Roman occupation layers survived up to 7.37 ft (2.24 m), the black layer occurred as high as 9.77 ft (2.97 m) in one place, making it about 2.5 ft (0.76 m) thick. Thus the surface was more or less level (and may have been more so originally) and blankets completely the irregularities of the latest Roman surface. River deposition would again best fit this characteristic. However, the highest surviving level of this black layer is much lower on some other sites. In fact in

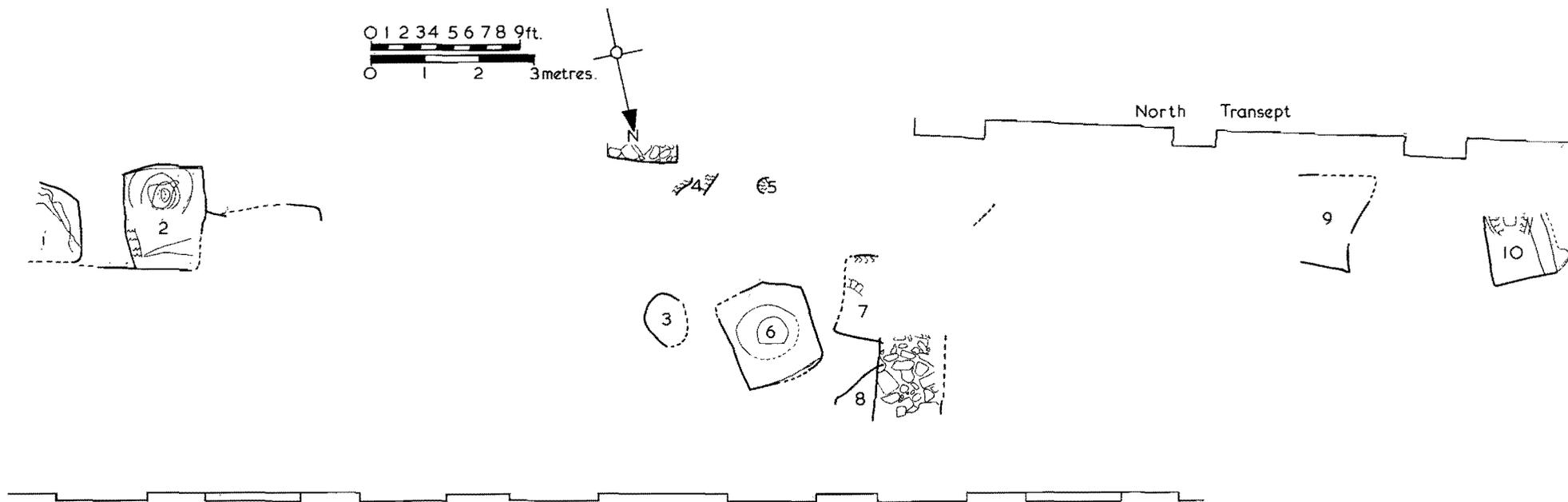


Fig. 4. Features probably of Saxon date. For chalk walls see also Fig. 5.

all three sites where Kenyon gives the height of the top of the black, it is below the top of the Roman occupation layers found at Montague Close (6.5 ft (2 m) at King's Head Yard, 5.7 ft (1.73 m) at Newcomen Street and 7.22 ft? (2.2 m) at Mermaid Court). If these are really the levels for the top of the layer and not a result of truncation by the cellars which occurred on all three sites, they are a little difficult to explain, as also is the apparent absence of the black silt from sites away from the Borough High Street area. Apparently at 207 Borough High Street the black silt survived almost to the Montague Close level. (Information from H. Sheldon).

Nevertheless, the theory of a river origin does seem to fit best the evidence that is at present available and moreover fits a general pattern which is emerging of a late Roman or post-Roman marine transgression in such places as the Fens area (Hallam 1954, 3) and Flanders (De Vries 1968) as well as the evidence for a rising water table in the Walbrook valley (Merrifield 1965, 46-7). Moreover, none of the alternative suggestions carry any conviction at all. If it is not river laid only human agency could be invoked for such a deposition and this seems a most unlikely event in the early or middle Saxon period over such a wide area. It could be suggested that material was dumped to make the area habitable in a period of rising river levels, rather like a *terp*, but if so, there should surely be some signs of habitation on this 'terp' whereas there is in fact none (unless one were to suppose that the layer was late Saxon).

The Late Saxon Pits (Fig. 4)

It has long been known from documentary evidence that Southwark was occupied in the Late Saxon period since it occurs in the 10th century Burghal Hidage and is the site of a mint in the early 11th century, besides the retrospective evidence of Domesday Book. This must mean that the river level had receded somewhat if the argument above is valid and evidence for such has been found elsewhere. (Hallam 1954, and Green 1961). But previously there was no archaeological evidence to give substance to this shadow. A series of features have been found at Montague Close which can probably be attributed to the Late Saxon period but it is not possible to say that all have produced Saxon pottery before the material from them is processed. However, one has produced a definite piece of Saxon pot (Early Medieval) and two probable Saxon sherds and the group of features share certain characteristics which suggests they are all of the same period. The most important of these features are seven very large pits. These appear to have certain characteristics in common but because of later destruction and only partial excavation, not all of them can be demonstrated in each case. They are all approximately square or rectangular (as opposed to round). In the two cases where total excavation was possible, they were rectangular and this could also be demonstrated for a third and suggests that all were. In the three cases, the longer axis (c. 6 ft 3 ins (1.9 m) in two and 4 ft 3 ins (1.3 m) + in the other) was north-south and probably in a fourth (since at its greatest its surviving dimension (which is north-south) is about 6 ft (1.8 m)). The widths of the three vary from 4ft to 5ft (1.2 m to 1.5 m) and the surviving dimension of two others falls within this range (perhaps implying, since these are north-south, that their longer axis was east-west). They are thus much the same size and very large. They are also very deep, four having bases at about the

same depth (2.3 ft-3.2 ft (0.7 m-1m) OD) while two were deeper than this by an unknown amount since it was not possible to bottom them. Where the evidence survived (that is in four cases) they were cut down from above 10 ft (3 m) OD and in two instances through the entire depth of the black silt.

There was clear evidence in F13b (2 on Fig. 4) for concentric, nearly vertical layers filling at least the lower half of it and in F15 (10 on Fig. 4.) there were indications of a post-hole or shadow in the centre of the upper fill of the pit, perhaps a re-cut post-hole. F15 also had a layer of burnt timbers as its lowest layer, which had not been burnt in situ. F24 (6 on Fig. 4) had a thin layer of decayed wood all over its sides and overlying a layer of fill in its base and indications of a similar feature occurred in F5c (9 on Fig. 4). This could be the remains of a wattle lining.

Besides these very large rectilinear pits, there was one medium sized round one, F25 (3 on Fig. 4—diameter 2 ft 10 ins (0.86 m) a shallow round one (5 on Fig. 4—diameter 11 ins (28 cm)) and possible shallow slots or trenches running north-south to the east of the latter two. There was evidence that the southern edge of F13c (1 on Fig. 4) was cut down from a lower level than the top of the black silt (the evidence on this point for F13b (2) had been destroyed) indicating perhaps that the two pits were at the edge of a sunken area. The area between F13b and F13c(1), outside the area destroyed by the later kiln, was also lowered and a wide slot at about the same level ran westwards from F13b for 6 ft 10 ins (2.08 m) before ending or turning northwards. If it did the latter, it did not extend as far north as T7W (see Fig. 2) unless it became shallower. (There was another possible slot in this area within the black silt, but one could not be certain about it since it did not contrast with the material it was cut through, but even if it existed, it seems to have been 'V' shaped, so it is unlikely to be associated with the foregoing features). This slot may pre-date F13b because its fill is cut by the fill of F13b; so there may be two phases of the structure.

The significance of these features is hard to assess. They can hardly be rubbish pits since there is so little contemporary rubbish in them. All but a few sherds are Roman in date and it seems reasonable therefore to believe that most of the bone, shell, etc. is also of Roman date. Only F13c (1) and F5c(9) could be wells (if they go deep enough) though some might be latrines (F5c(9) and F24(6) with their evidence for wattle lining) or even pits for some sort of industrial process. However, they seem rather deep for this purpose (F24(6) for example is 7 ft 6 in (2.28 m) deep and is cut through 5 ft (1.5 m) of gravel, 18 ins (0.46 m) of clay and 1 ft (0.3 m) into the natural gravel below). Nor would this explain the evidence for posts in F15(10) and F24(6), even if these are secondary. The concentric layers of F13b(2) are also probably best interpreted as re-cut post holes. It seems likely, therefore, that they are structural (though this does not explain the wattle lining or the layer of burnt timber in F15(10)), though this merely moves the problem one step along, for what sort of structure could they belong to? The larger pits are similar enough to suggest that they belong to the same or similar structures. Their large size and great depth can only mean that they supported large and tall posts so that the structure was obviously a high one. It is possible that the F5c(9)/F15(10) line was continued eastwards by other pits and returned in F29/24/28(6-8), for the area where these would be

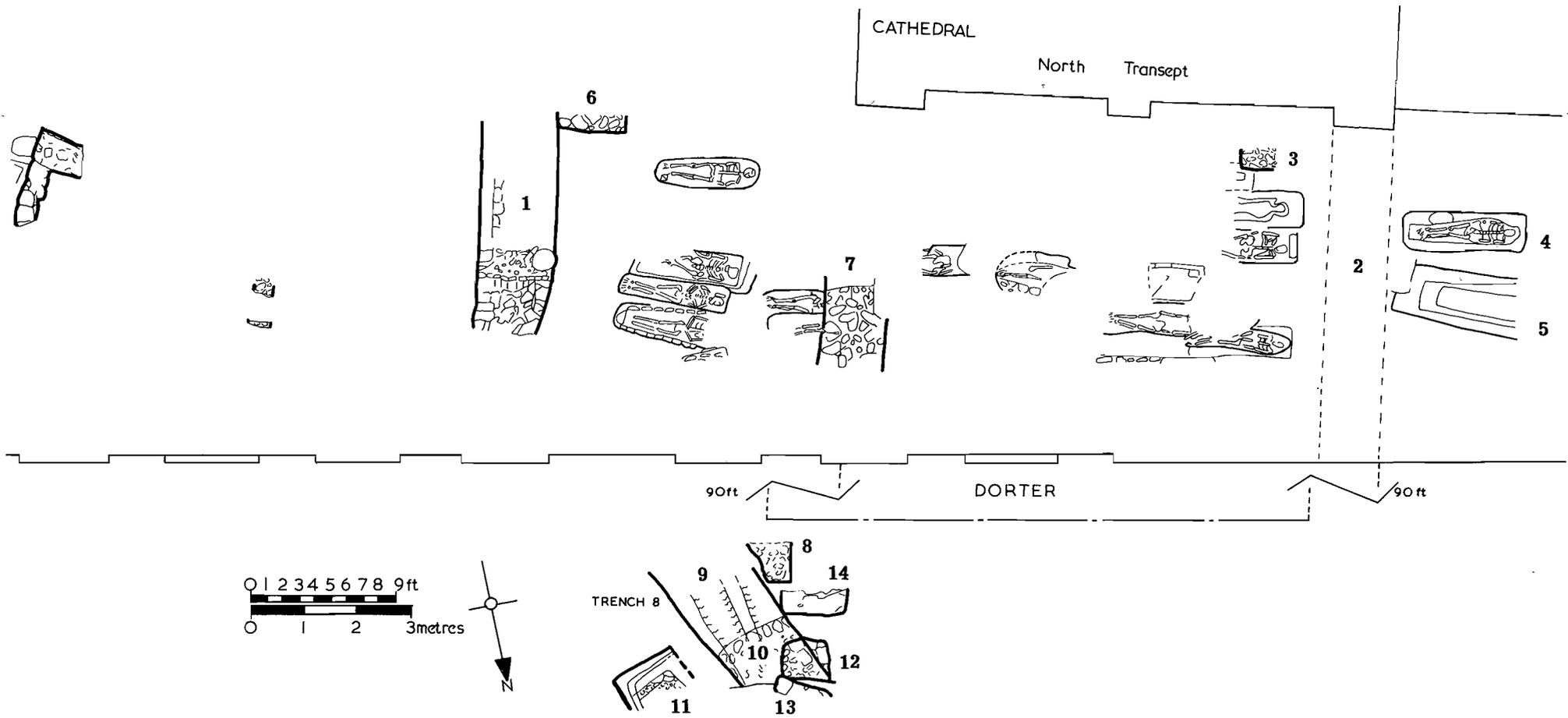


Fig. 5 Medieval features.

was not excavated to this depth. Likewise F13b/c(1-2) could have returned northwards to the west of F13b(2) without this being picked up, since only a narrow trench, T7W, was dug in the area where they would occur. Though very speculative, it might therefore be suggested that what we have is the remains of a large wooden church, perhaps the 'monasterium' mentioned in Domesday Book, for this would certainly explain the need for tall posts. The return northwards might be a porticus or transept and the possible lowered area south of F13b/c(1-2) a crypt at the east end of the church. The question of the ecclesiastical history of the site will be discussed in the next section.

THE MEDIEVAL PERIOD (Numbers in brackets refer to Fig 5)

The Priory Building

With the medieval period we reach somewhat firmer ground for it is known that the site contained the claustral buildings of the Augustinian Priory of St. Mary Overie for at least most of the Middle Ages. The Cathedral church of St. Saviours was the church of the Priory, and, apart from the nave, much of the fabric is of medieval date though often heavily restored. Analysis of the fabric (RCHM 1930, 58 et seq.) shows that there were two main building periods in the church, in the early 12th century, when the church was originally built, and a rebuilding after the fire of 1212 which seems to have lasted throughout the 13th century and into the early 14th century. Since the surviving parts of the 12th century nave, the two processional doors to the cloister, are mid 12th century, it seems likely that the east end was built first, as is often the case; though it is frequently stated that

William Giffard, Bishop of Winchester, built the nave in 1107, no source is ever given for this statement (VCH 2, 107).

Some minor alterations were made in the late 12th century, particularly the squaring off of the apsidal chapel on the North Transept, while in the 15th century, the upper two stages of the Tower were built and St. Mary Magdalen's Chapel rebuilt.

Unfortunately, very little of the Priory claustral buildings survive even at foundation level, largely because of the deep cellars of the 19th century warehouses but also because of other post-medieval destruction. Fortunately some of the medieval fabric was recorded before its destruction in the 19th century (Dollman 1881) and from these various sources a reconstruction of part of the Priory can be suggested (see Fig 6). The building which survived best was the Dormer, whose sub-vault was not destroyed till 1837. This was in line with the North Transept and with its north and south ends in the same position as the north and south walls of the modern warehouse. The area between this and the North Transept is the area almost invariably occupied by the Chapter House and the east wall of the Chapter House has long been known since part of it survived till 1837 and because the stub of it is still visible in the north wall of the Harvard Chapel. The foundation of this wall (1) was found running northwards till it was cut by the foundation trench of the warehouse. What has always been taken to be the west wall of the Chapter House was, however, shown to be post-medieval, though no actual west wall was found. The distribution of the graves clearly shows there is only one position (2) for this wall, namely as a continuation of the west wall of the North Transept. No wall in fact survived here but it could well

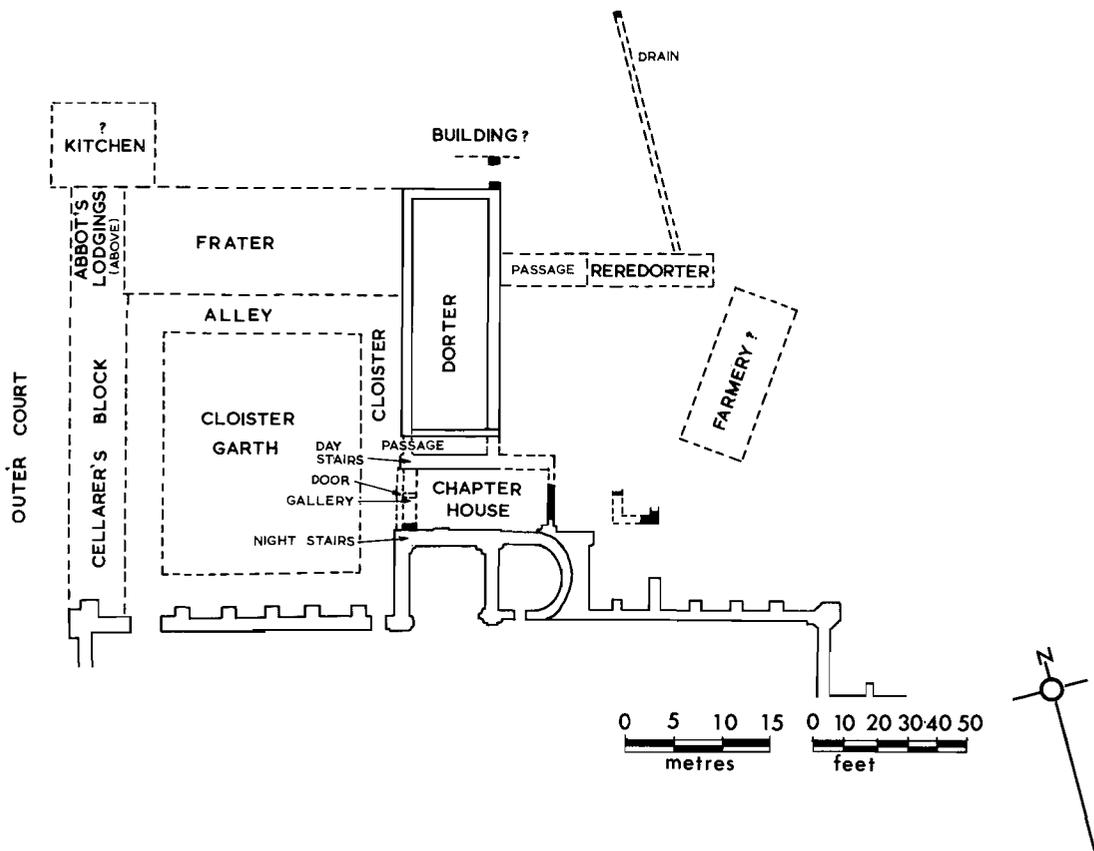


Fig. 6. Reconstructed layout of Priory Buildings in Middle Ages. Solid black indicates excavated walls. Continuous outline indicates features recorded when standing. Dotted line indicates hypothetical reconstruction based on documentary evidence.

have been destroyed by a post-medieval cellar whose base was as low as 6.26 ft (1.9 m) OD (compared with the base of the east wall at 6.07 ft (1.85 m), suggesting that the west wall was a little shallower. Only a section could be cut across this line and this right at the end of the excavation since it lay under the baulk. As a result of this re-location of the west wall, it can now be seen that there was no lobby between the Chapter House and Cloister and the night stairs must have been approached from the Dorter at first floor level in a 'gallery' over the west end of the Chapter House. In the external face of the North Transept, there is, some way up, a blocked round-headed doorway of 12th century date which is believed to be the door to the night stairs. Below this was found the north-east corner of a foundation, F5b(3) built in the angle of the transept and the west wall of the Chapter House. This foundation was very deep, its base being at 2 ft (0.6 m) OD, and it survived up to 5.05 ft (1.54 m) OD above which it had been destroyed by the foundation of the 1830 pilaster buttress. This foundation cannot be part of the night stairs themselves, which must lie to the south of the doorway (or to what else does the door lead?). Its great depth implies that it either supported a tall structure or a heavy weight. Since the former is unlikely in the context, the most likely explanation is that it supported one end of the gallery leading from the Dorter to the Night Stairs. A pillar segment was found re-used in a later wall a little to the west and clearly derives from the west end of the Chapter House, being too substantial to come from the Cloister. A possible position for it would be midway between the Dorter and the Night Stairs supporting the gallery. Assuming the west wall was the same width as the east wall, F5b(3) would suggest that this 'gallery' was 4 ft 6 ins (1.37 m) wide. There was also found in this area a large number of newel stones from a spiral staircase, re-used in later structures. It is difficult to see how these could have derived from the Night Stairs, so there may have been another, spiral, stair somewhere in this area, perhaps the Day Stairs, the usual position for which was between the Chapter House and the Dorter (Beer 1958, 28). Also found re-used in later work in this area were a number of mouldings of 12th and 13th century date and two large pieces of figural relief sculpture. These clearly imply that the Chapter House was first built in the 12th century and that this 12th century form lasted in part right through the Middle Ages (or otherwise they would not have been available to be included in walls in the 17th century) but that some alterations were made in the 13th century (perhaps the insertion of a new imposing door from the Chapter House to the Cloister, decorated with the reliefs) and perhaps at other times too. Many of the stones show signs of burning on them which may be a relic of one of the fires the Priory suffered (1212 and late 14th century). It is just possible that this happened later for they mainly come from kiln walls but not usually in areas affected by the heat.

The Cemetery

Within the Chapter House was a series of burials. Few complete skeletons could be recovered either because the whole area of the grave was not available for excavation or because part had been destroyed, mainly by the kilns but also by other later disturbances. Sixteen certain (and one fairly certain) graves were found within the Chapter House and two (4 and 5) immediately west of it in the Cloister. Sixteen of these nineteen produced skeletal material, though in

three cases very little. The graves seem to be roughly in rows of which there were perhaps six within the Chapter House. The two most complete rows had five and four graves in them, and if this applied to the other rows, the total number within the Chapter House would be between 24 and 30, but more skeletons are represented than graves because several graves produced bones from a second skeleton. It was customary for the heads of monastic houses to be buried within the Chapter House, and the names of 33 priors of St. Mary Overie's are known (VCH, 2, 111). This does suggest that if they were all buried in the Chapter House, it would have got rather full by the early 16th century and this may explain the two graves (4 and 5) in the Cloister. Their orientation across the cloister would support this for, if they were elements in a larger group buried in the cloister, they would surely be along the cloister. There is a grave in a similar position across the cloister at Waltham Abbey (Huggins, 1970, 17). Therefore the two graves within the Cloister would be the latest and what evidence there is would suggest that the burials started at the east end and progressed towards the west. Despite the probability that all the graves are those of Priors, there was considerable variation in the mode of burial. The commonest type (9 graves) were simple earth graves with rarely any surviving evidence even for a coffin. Nearly as common were six where the grave had been lined with mortared stonework, once including re-used mouldings and once apparently without any dressed stone at all in it. Comparatively rare were stone coffins (2) and lead coffins (2). It is hoped that a study of the conditions of the bones may throw light on the results of the specialized diet of the Priors.

Building History

Since the east wall of the Chapter House (1) is bonded into the late 12th century squaring off of the apsidal chapel on the east side of the North Transept, it must be late 12th century too. Thus the Chapter House was built in the late 12th century and must have remained substantially the same throughout its life though probably with alterations to its doorway (and windows?) and to the 'gallery' (if the pillar is associated, since this is late 13th or early 14th century). Of a similar date must be the Dorter though Dollman's drawing of its sub-vault suggests that this is somewhat later (Pl. 41). But was this Chapter House and Dorter the first stone built version and did the Canons rely on temporary wooden ones before this (of which all trace would have been destroyed by later disturbances), or was it preceded by an earlier stone version? It can be seen that the house was not wealthy enough to have rapid building operations, for the rebuilding of the church after the 1212 fire took a century and it would therefore be in keeping with this pattern if, having built the east end of the church in the early 12th century and the nave in the middle, they turned their attention to erecting stone claustral buildings in the latter part of the century, combining this with alterations to the east end to bring it up to date. However, there are two fragments of chalk wall bonded with yellow mortar which pre-date the late 12th century Chapter House. These comprise a short stretch of east-west wall, 4 ft 1 ins (1.24 m) long and over 1 ft (0.3 m) wide (6), running west from, and cut by the south end of the Chapter House's east wall. Its base lay at 9.25 ft (2.82 m) OD and it survived to 10.12 ft (3.08 m) OD. Much deeper was the other one (7) which ran north-south. Five feet (1.5 m) of its

length was exposed and it was 4 ft 11 ins (1.5 m) wide. Its base lay at 2.75 ft (0.84 m) OD and it survived to 6 ft (1.8 m) OD. It continued to north and south but could not be excavated elsewhere. The other wall certainly did not continue to the west, but to the east it would have been destroyed by later features until east of Kiln 2 (see below, p. 55). There was a scrap of chalk wall in this area (T10 F9) but, since its base lay at 10.29 ft (3.14 m), it can hardly be the same wall. The absence of any continuation of the east-west wall in this area, where it would have survived, must mean that it did not continue that far.

These two pieces of wall are very difficult to fit into any sequence of Priory development. F23(7) has no corresponding north-south wall for 40 feet on either side of it. This implies that F23 is the end wall of a building orientated east-west and over 40 feet long. It must post date two of the probably late Saxon pits which it cuts and predates one of the burials within the Chapter House (and therefore probably the Chapter House itself) which overlies it. Being of chalk, it does not fit very easily with the early 12th century phase of the Church which is built of rag-stone and it is difficult to see it as part of an early 12th century Chapter House which would have to be entirely east of the Transept. This must mean that F23(7), and probably the other chalk wall (6), predates 1106.

The early history of this site has been surrounded with a number of legends. The best authenticated of these is that derived from the last Prior and therefore presumably the tradition of the House itself (Stowe 1971, 1, 21). This states that it was founded as a nunnery, then converted into a college of priests which itself was converted into a Priory of Augustinian Canons in 1106. The nunnery, with its associations with ferries and bridge building, is rather doubtful but the existence of a college of priests serving a minster would be normal in the 11th century (Stenton, 1947, 660). The existence of a minster in Southwark in the late 11th century is vouched for by Domesday Book (VCH, 1, 305). A conversion of this college of secular canons into a priory of Canons Regular would be a normal development in the 12th century. However, 1106 is rather early for this to happen for the first house of Augustinian canons, at St. Botolph's Colchester, was only established in 1104 (Dickinson, 1950, 108). If St. Mary Overie had been founded in 1106, one might have expected it to share the fame of such other early foundations as Merton (founded 1114) and Aldgate (founded 1107) and Dickinson suggests that what happened in 1106 (the date is well authenticated) was the establishment of a secular community (which is supported by one manuscript) (Dickinson 1950, 120, n. 1) and that it was converted into a house of Augustinian canons some years later, perhaps by Bishop Giffard who is often said to be the founder of the house (which he could not have been in 1106 since he was in exile). But if what happened in 1106 was the foundation of a community of secular canons, there could hardly have been one there already as the tradition which Stowe recites maintains. However, the conversion of secular colleges into houses of Augustinian canons was very common in the early 12th century (e.g. Plympton c1121, St. Frideswide at Oxford 1122, Hexham 1113, etc.) and perhaps it does not figure prominently in the annals of the Order if it was founded primarily as a hospital rather than a religious community, the two functions only being separated in 1215 (VCH, 2, 107).

If a college of priests serving a minster did exist on this site, the possibility that the large pits of the late Saxon period are the foundations of a church is strengthened and it would then seem likely that the deeper chalk foundation (F23(7) in T4) is also part of a church which replaced the timber building. Like the pits, it is very deeply founded (in fact its base is much the same as most of the pits) which implies it carried a high wall which most easily fits a church and certainly fits it rather better than a chapter house. It should be stressed, however, that this interpretation is very tentative and, particularly for the stone phase, is not built on a great deal of evidence. It seems more likely that, if it is a church, it is the west end rather than the east end, which would have to be east of the area excavated. The north wall could not therefore lie far to the north of the area excavated because in 1974, when the warehouse north of T11 was demolished, no east-west chalk wall was observed. It may be significant therefore that one version of the foundation legend states that the nunnery lay under the choir of the Cathedral (Dollman 1881, 2, n. 29). More work is needed to take any further this very important point.

The Great Flood

Trench 8 lay at the other (north) end of the Dorter and the earliest medieval feature there was an isolated square or rectangle of masonry (8) near the north-east corner of the Dorter. In such a position its most likely function is to support the buttress at the corner of the Dorter. This masonry block had very deep foundations since its base lay at 3.16 ft (0.96 m) OD and it survived to 5.93 ft (1.8 m) OD above which it had been robbed by a trench dug down from 7.34 ft (2.23 m) OD. This robbing occurred at the end of the 13th century and probably merely completed the destructive work of a flood which affected T8. This flood swept away all layers above the natural clay over the whole of the trench except at the east end and also removed some of the clay itself. At the east end a fairly steep bank, up to 2 ft 6 ins (0.8 m) high, running obliquely NE-SW across the trench occurred, which preserved some early Roman layers beyond it but all above this bank had also been removed by the erosion. The hole left by this erosion was then filled up by a series of stratified layers (see Fig. 7) comprising silt topped by hard, thin layers of gravel. Immediately over the beach profile cut by the erosion was also a layer of compacted gravel. These layers appear to be river deposited from their composition and they include large quantities of occupation debris presumably deriving from the material eroded by the river. The consistent pattern of alternating gravel and silt layers may indicate a seasonal regime of deposition and the obvious correlation is between the gravel and winter, when the river, with more landwater in it, flows faster and therefore deposits gravel, and between silt and summer, when it is more sluggish and deposits silt. On this assumption, the earliest layer would date to the winter after the flood and there would then be about twelve years deposition before it ceased, having restored the ground level to c 10 ft (3 m) OD, more or less where it was before. (This also means that the river level was back at its pre-Late Saxon level by c1300). However, man was certainly interfering at the end, for, in the last two layers chalky mortar had been deposited to make a dry surface.

The dating of these layers is difficult because they contain principally, or perhaps entirely, residual

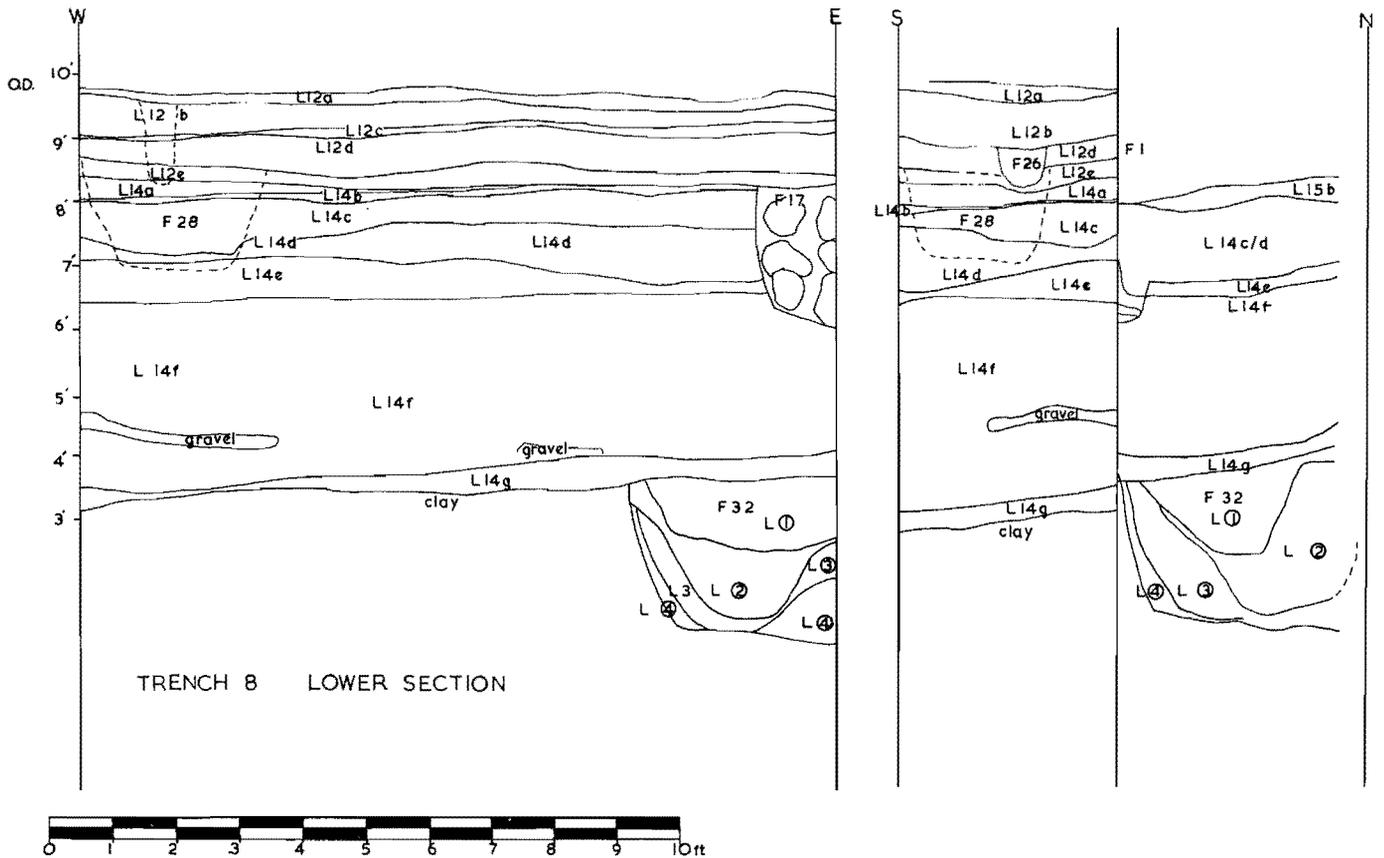


Fig. 7. Section of Trench 8 showing number of deposition layers after 'Great Flood'.

material, but since it seems that the whole process of deposition took place very rapidly, the latest objects in them should not be significantly earlier than the date of the erosion. In fact the latest objects noticed in excavation were one or two sherds of Surrey Ware whose date of introduction is usually believed to be *c.* 1300. Since there is so little Surrey Ware, it seems unlikely that the erosion happened very much after the initial date for Surrey Ware since this soon became very common. There can be little doubt, therefore, that the flood in question is the one recorded as occurring in 1294 (Bermondsey Abbey 1866, 3, 93) when 'a torrent of water from the Thames transcended its usual limits' and flooded Bermondsey and Westminster (and, no doubt, other places along the river). Not only does this fit well with the archaeological evidence but a marginal note in the Bermondsey Annals states that it occurred on 18 October. This fits neatly with the first post-erosion layer being deposited in the winter as already suggested, which would therefore be the winter of 1294/5. The whole sequence of layers above should then date 1295-1307, with perhaps a year or two not represented in the sequence by a gravel layer. (It seems likely that occasional winters would not produce a gravel layer especially as one such layer only occurred in patches and not over the whole trench). This short period is supported by the fact that the layers and features above this belong to the first half of the fourteenth century. Conversely, the initial date for Surrey Ware must be before 1294 but since there is so little of it, not long before, so a date of *c.* 1290 is probably not far removed from its actual beginning.

The bank referred to at the east end consists of a layer of solid brown, largely sterile, clay which was

cut through the Roman layers. This clay too seems to be river deposited and it may derive from an earlier and slightly severer, flood perhaps the one recorded in the Bermondsey Annal for 1208 (but perhaps more correctly 1213). There were possible traces of the same layer in the SW corner of the trench. Within the sandy gravel overlying the beach cut by the erosion was a bed of cockles which, from their size distribution, concentration in one area and lack elsewhere, must clearly have been a living bed. Rib number counts indicate that the salinity of the water was about 20-25 parts per thousand when the cockle bed was alive compared with 0-5 parts per thousand at the present time. Does this indicate that the erosion was caused by a tidal surge rather than by an excess of landwater? Further, the cockle bed was short-lived, only two to five years, which fits neatly with the rapid silting postulated above, which would have quickly buried the cockles' siphons and prevented their feeding. (I would like to thank Dr. C. Boyden for identifying and discussing the cockles with me). The only other occurrence of cockles in any number in the entire sequence is a thin layer of pounded cockle shell at the top of the second layer (i.e. *c.* 1297, if the above dating is correct). Since all the pieces are so small, the cockles have clearly been pounded by a storm and probably derive from further down the beach, since the cockle bed in T8 seems undisturbed. What is probably an extension of the same layer was apparently found on the New Hibernia Wharf site, (SAEC 1973, 102). This bed was probably therefore, very extensive unless the pounded shell derives from another bed which perhaps established itself lower down the beach at a slightly later date when deposition had killed off the T8 bed. The storm could well have destroyed such a bed completely.

Other Features in T8

During the period of deposition, a series of construction phases occurred. In (?) 1299, a deep, straight-sided trench (9) 4 ft 10 ins (1.47 m) wide was dug in an approximately NW-SE direction. This trench had two parallel 'grooves' along its length, varying from 1 ft 6 ins (0.45 m) to 2 ft (0.6 m) wide which suggests that some sort of wooden construction was erected within it. A few years later, the southern half was filled with earth while the northern part was filled with alternating layers of unmortared chalk and gravel (10). Probably contemporary with the digging of this trench was a pit (11) to the north-east orientated in the same direction as the trench. This pit had a clay lining on its south and east edges (its northern edge was not available) and within this a wooden lining on all three sides and its base. Like the trench, it had a wall of unmortared chalk built over it (probably only a small square feature). Later still, but before c. 1310, the wall over the trench was demolished (or at least replaced) and a layer of clay put over it and a large chalk-packed post-hole (12) constructed. This may have survived throughout the Middle Ages but to its north, and cutting through some of the chalk packing, was the end of a stone wall (13) running northwards. This was built of stone slabs set in yellow mortar, the conventional construction of the Priory buildings, and, probably at the same time, a wall (14) running south was built, almost certainly the replacement buttress for the corner of the Dorter. The different construction methods used in the earlier phases suggest that they may not be parts of buildings but perhaps some attempt at river defences, though without more excavation it is difficult to make any specific suggestions as to how these might work. The fact that the trench was dug immediately after the layer of cockle shell produced by a storm strongly suggests this. The later wall is probably a but-

tress to a services building which would be expected here, near the east end of the Frater.

THE POST-MEDIEVAL PERIOD

Kiln 1/3

Period 1 (Fig. 8)

There are very few features which can be certainly dated to the period between the dissolution of the Priory and the delftware kilns. This is partly because there is almost no stratified 16th century pottery from the site but also because the Priory buildings continued in use. There were two pits which had disturbed graves and were sealed (and largely destroyed) by Kiln 1 but since they contained no contemporary pottery, they could belong within the period of delftware production or to the preceding period. The one place where 16th century layers were preserved was at the west end of T9/5. Here there were two or perhaps three plaster floors separated by earth or clay layers and on top a floor of red tiles set on a mortar bed. These layers contained only 16th century pottery and filled a cellar or basement of some sort since their base was at 7.79 ft (2.37 m) which is well below medieval ground level (which must have been above 10 ft (3 m) OD).

It seems likely that it extended up to the west wall of the Chapter House and perhaps occupied the width of the cloister alley. Subsequent to this, a new, slightly deeper, cellared structure was built which removed the eastern part of the earlier building and also the eastern wall of the Chapter House and probably the possible day stairs. Of this structure, the east and west walls and part of the south wall was found (see Fig. 8). The west wall (4) was built largely

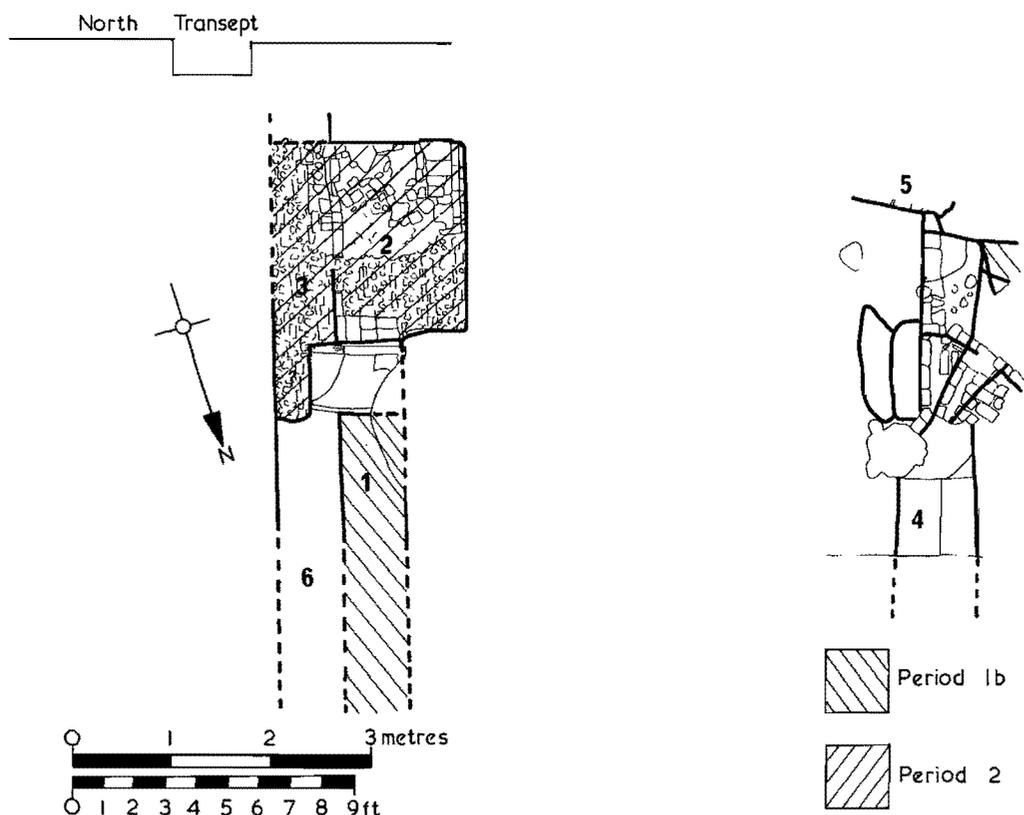


Fig. 8. Delftware Kiln 1/3. Periods 1 and 2

of re-used stone but with some brick included. Through this wall ran a set of steps which turned northwards towards the top round a re-used pillar shaft. Only the face of the west end of the south wall (5) was found and this was entirely of brick. This wall ran either to the NW corner of the North Transept or to the corner of the gallery support (T9/5 F5b). The east wall (6) was also composed of re-used stone set in mortar like the west wall and projecting from its west face was a short buttress-like wall. The east side of this wall and the west side of the west wall were unfaced while the other sides were, as was the northern side of the south wall, showing that they were all cellar walls with the cellar between them. Within this area one fragment of brick floor survived, adjacent to the south face of the 'buttress' on the east wall. South of this the east wall did not survive but the east edge of the brick floor was so straight that there cannot be much doubt that it did once continue southwards. Where the floor did not survive, there were hard tread layers covered by a layer of coal-like material which had evidently been thrown in from the west side where it was thicker and where it overlay the treads of the steps. There were thus two phases to the structure.

Its function in the first phase remains a problem, especially the purpose of the 'buttress'. Its date is also difficult, for the construction of the west wall seems to be associated with a layer which is 16th century in date but below the brick floor and east wall a few sherds of delft biscuit were found, which should mean that they were built after 1613 (Dawson and Edwards 1974, 57) and contemporary with the manufacture of delftware at Montague Close. It is difficult to see how it could function as a kiln and there is no evidence for extensive burning associated with it.

Its association with delftware kilns is stronger in the later phase when the east wall north of the 'buttress' was thickened internally with a wall which contained glazed stones derived from a kiln and was bonded with clay like the kiln walls. This thickening (1 on Fig. 8) occurred after at least some of the coal-like layers were laid down, since a thin layer of it was found stratified beneath it without any brick floor. Perhaps at the same time the south-west corner was demolished and a (?) narrow extension built westwards from the corner. In this phase it was presumably a coal store though the evidence would suggest that the kilns themselves were wood fired.

Then it seems the building above was demolished into the cellar. The dating of this raises a problem because the rubble did, in places, contain material of the early 18th century, but in order to make any sense of the sequence this demolition must have occurred in the mid 17th century. The reason for the presence of the later material is probably that two layers of rubble are involved which are indistinguishable from each other, as is suggested by the fact that the upper part of F1a (2 on Fig. 8) is faced on its west side but the lower part is trench built (with mortar extruded from its joints). It is therefore as difficult to date the end of this period as it is its beginning.

Period 2 (Fig. 8)

In Period 2 (Kiln 1/3) a segment of the east wall stretching 6 ft 6 ins (2 m) south from the corner of the 'buttress' was demolished and a wall (2 on Fig. 8), again of re-used stones, including a glazed one from a kiln, was built immediately behind this gap with its

northern face abutting against the south face of the 'buttress'. This would seem to have produced a niche 6 ft 6 ins (2 m) × 2 ft (0.6 m) in the wall and, since the east side of this new wall was faced and only part of the west side, it clearly relates to a structure to the east of the wall, of which this is the only evidence, for to the east all was destroyed by later features. After this, the area to the west appears to have remained open ground, though some robbing of the west wall did take place.

The 'niche' was filled in by a brick wall (3 on Fig. 8), which was bonded with mortar and faced on its east side, which corresponded with the east edge of the original wall. Although there is a straight joint between these two walls, on the analogy of the later kilns, it is possible that they go together as the end wall of a kiln. There was not much evidence for burning but mortared walls do not show this as well as those bonded in clay.

Period 3 (Fig. 9)

With Period 3 (Fig. 9), we have the first definite kiln but this was only preserved because it was buried and the later kiln built on top of it. In this period the 'standard' kiln appears which comprises a rectangular brick box about 8 ft 9 ins (2.7 m) long and 7 ft (2.1 m) wide spanned by three arches 2 ft (0.6 m) wide separated by narrow vents 7 ins (0.18 m) wide which also separate the arches from the end walls. This is called the firebox and in this period only the springing of the arches survived. The west wall of the firebox had a facing of stone blocks which had a straight joint between it and the wall itself, but the distribution of red and green clay showed that they were built at the same time. This may be to make its replacement easier or perhaps for insulation. In the same manner, and perhaps for the same reason, there was a straight joint between the arches and the side walls. In the east wall of this box was a gap, presumably also arched over, in which the fire burnt and which is called traditionally in archaeology the flue. One or two thin layers of charcoal were found in this flue. Due to the intense heat, the sides of the vents, the undersides of the arches and the sides of the flue had a thick layer of self glazing on them and the easternmost vent became clogged up, at its northern end at least, with this vitrified material. There was a complex sequence of alterations to this end wall and to the mouth of the flue, which has not yet been fully worked out, but three characteristics can be discerned. The end wall was of a number of periods and the alterations tended to make it wider; the end of the flue had a wall built across it blocking it off from the stokehole beyond and in this area a wall ran eastwards from the mouth of the flue, often at an oblique angle. In the stokehole there was a floor and at its eastern edge two or more steps leading up to floor level within the pothouse.

In this period, the kiln was essentially a double firebox kiln for to the north was another firebox (Kiln 3) built at exactly the same time with a common spine wall between them. This was essentially the same as Kiln 1 Period 3, with three arches, four vents, separate lining to the west wall and straight joints between the arches and the side wall, a flue with charcoal and a blocking wall across it, walls at angles running eastwards from the flue, stokehole area beyond and steps leading out of it. It differed, however, in that the flue, at least, had a floor of stone and the stokehole was rather constricted by the walls of the

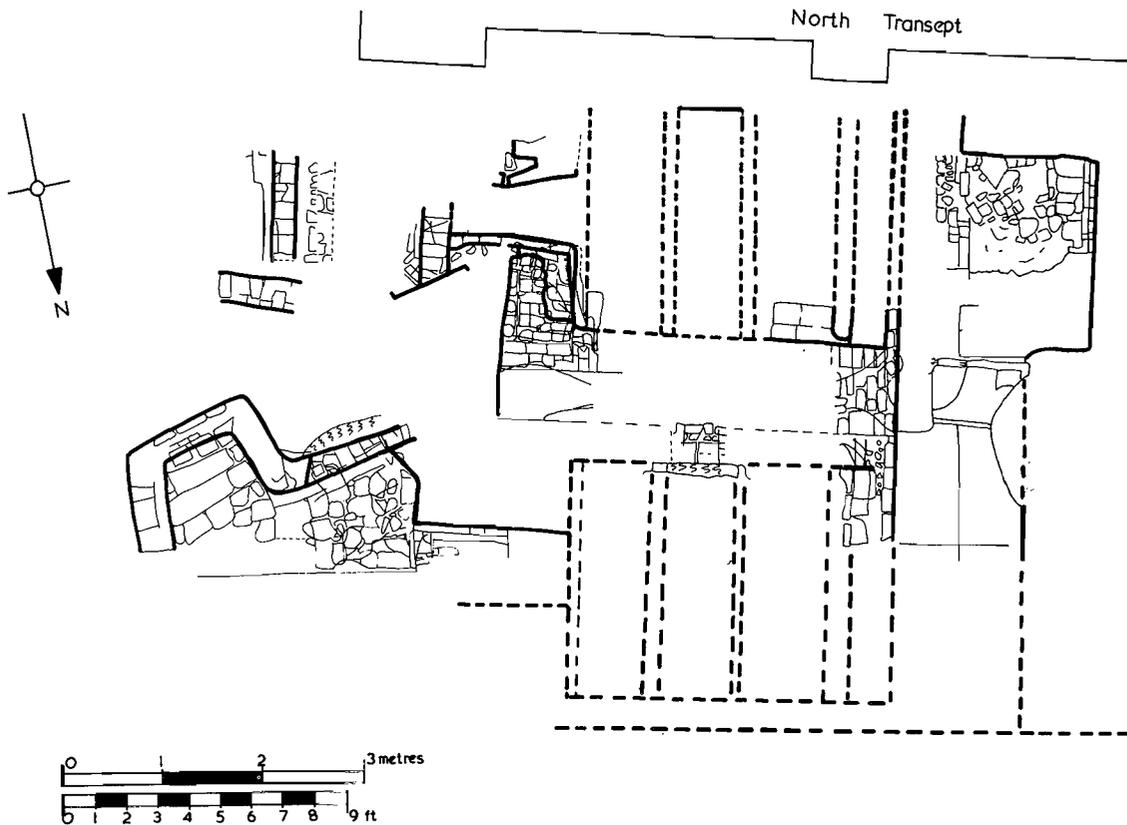


Fig. 9. Delftware Kiln 1/3. Period 3

building it was in so that the steps had to be placed obliquely at the south east corner. The dimensions were slightly different, the arches being 2 ft 3 ins (68.5 cm) and the vents 4-5 ins (10-13 cm) wide.

Although they were built together and effectively formed a double firebox kiln, it is unlikely that they operated as one kiln since they had quite separate stokeholes and their subsequent histories were different. As we have seen, alterations were made to Kiln 1, at least at its east end, but the kiln itself stayed essentially the same. With Kiln 3, there was some indication of alterations at its east end but this was mainly buried under a later wall and could not be investigated. But later the arches and inner faces were demolished to a point about 2 ft (0.6 m) above the firebox floor and then buried and a new interior built above this. This burial preserved the blocking wall of the flue which in Kiln 1 only survived in its foundation course, and, in Kiln 3 at least, this was seen to have a glazed west face which curved backwards towards the top. Little remained of Period 3b Kiln 3 except for the firebox floor which was composed of large stones which were vitrified and glazed at the west end. In the flue at this time there was no blocking wall and the floor was composed of rows of bricks on edge. In the stokehole the floor level was raised but the walls and steps were re-used. The lowest course of the south and west walls of the firebox was found and the latter again had a lining straight jointed against the wall.

Period 4 (Fig. 10)

In Period 4, (Fig. 10) both kilns were demolished and the bases of the firebox and stokeholes filled in, thus preserving them. Above this was built another kiln with only one firebox and stokehole. It was of the 'standard' type though neither side wall survived

high enough to give evidence for the arches. The firebox was similar in size, 10 ft 6 ins (3.2 m) by 9ft (2.7 m) (in Period 4a), it had the separate lining of the end (west) wall, and it had a flue in the east wall and a paved stokehole beyond with steps leading up to the pothouse. As originally built (Period 4a), the north and east walls were comparatively narrow with a 'buttress' on the east face of the east wall from which the oblique side wall of the stokehole ran while from the north wall three narrow walls or buttresses ran northwards (they were cut a little to the north by the warehouse foundation trench). In Period 4b the north, and probably the south, walls were thickened internally, thus reducing the width of the firebox. In Period 4c the faces of the west, south and north walls at least were hacked away and relined relative to a higher floor which survived as a vitrified surface possibly over a floor of bricks which had disintegrated due to the intense heat. To this phase probably belongs the raising of the stokehole floor level and the erection of a blocking wall at the end of the flue, which had a west face curving backwards towards the top. Finally in Period 4d the south wall was re-lined with brick bonded with mortar (whereas all other phases of Period 4 and 3 were bonded with clay) but the bricks of this phase showed no signs of being subjected to heat. During the whole of Period 4 the flue had no floor apart from the sand laid over the Period 3 foundations. In Period 4b there was a row of bricks one deep on the inside face of the thickening of the firebox walls with a straight joint between them and this may have been the lowest course of the arches in this phase, separated from the side wall by a straight joint as occurred in Period 3. Finally the kiln was demolished and its substructure filled in. The stokehole and flue were filled almost entirely with delft waste material but the firebox itself was filled mainly with earth and bricks.

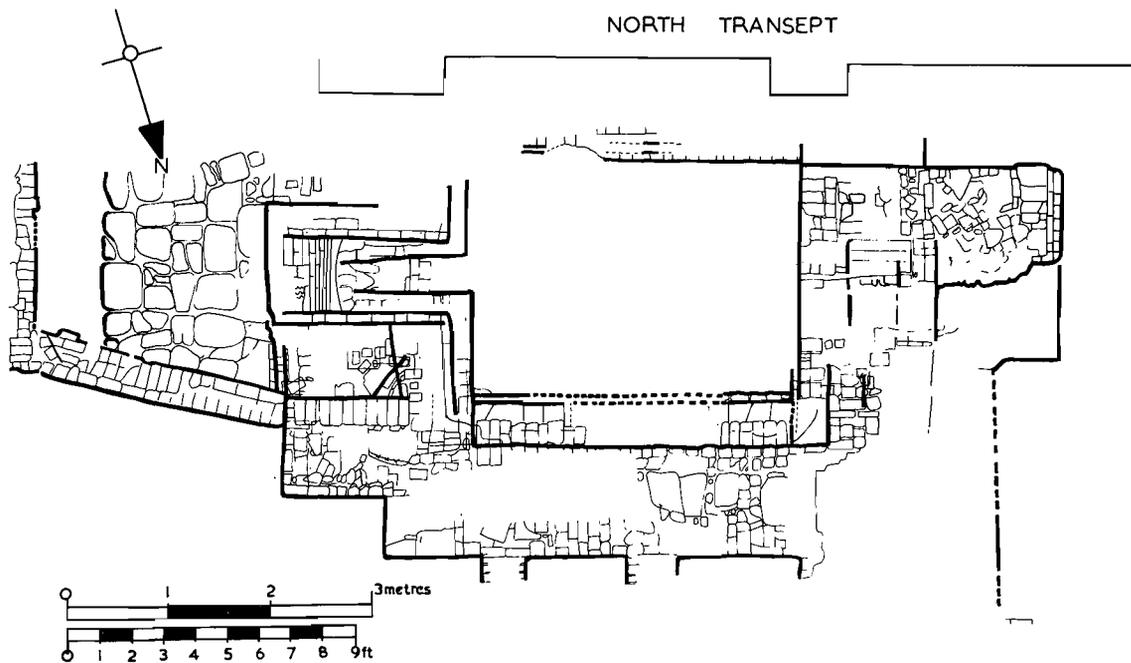


Fig. 10. Delftware Kiln 1/3. Period 4 (composite)

These two kilns occupied the west end of the pothouse, which used the east wall of the Chapter House and its other end wall but had a new north wall, only a trace of which survived as a row of stones; its position can be located on a plan published by Dollman (Pl. 2) and it ran to the south end of the side wall of Kiln 3's stokehole where it returned north to the corner of the Dorter (the stokehole wall in fact was its foundation). Within the eastern part of this room, a floor of large stones occurred associated with Period 4c of Kiln 1/3 (though it may have been built before this). It was delimited on the west by the upper brick step down to the Period 4c firebox (the other steps had collapsed or been destroyed). Below this floor there were a number of layers of building debris and,

actually cut into the wall, a strip of brick floor with a semi-circular end. In the north-east corner of this pothouse there was evidence for a doorway, at least in the last phase of the factory's life, leading into the other pothouse. Running beneath the threshold of this door was a brick drain which ran, slightly obliquely, to the north wall of the pothouse where it debouched into a larger drain which ran northwards through the wall into a yard. This latter drain also ran southwards to the stokehole of Kiln 1 where it was destroyed by its Period 4 side wall. At this end a block of brickwork overlay the drain which was also cut by the side wall on one side and on the other by a modern drain.

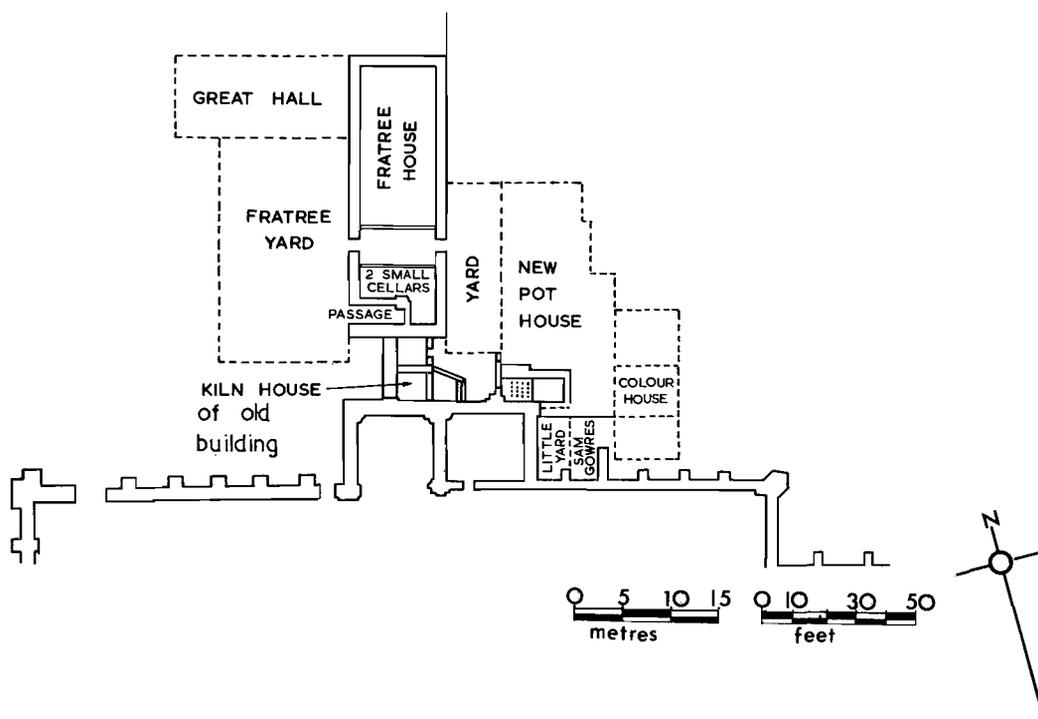


Fig. 11. Reconstructed Layout of delftware factory in 1681

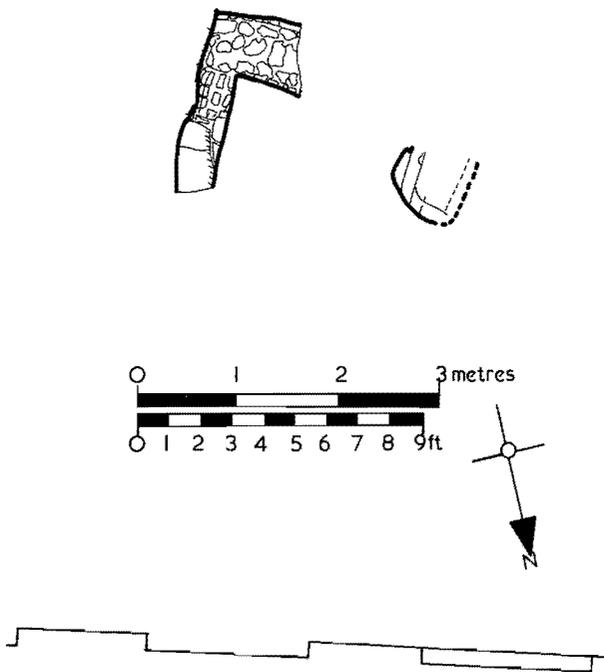


Fig. 12. Delftware Kiln 2. Period 1

Kiln 2

To the east of this pothouse was a second pothouse called the 'new built pothouse' in the 1681 lease (Edwards 1974, 71-2), probably because it was a new building and not re-using part of a medieval building, like the western pothouse (called kilnhouse of old building). None of the walls of this pothouse were found except for the western wall which was the east wall of the other Pothouse (and the Chapter House), but within there was one kiln, no. 2, with a long and complex history. This can be divided into five periods but little of the first four survived. The earliest action (see Fig. 12) seems to have been the digging of a shallow basement (the top of its floor would have been at 10.32 ft (3.14 m) OD had any survived) whose east wall was a medieval flint wall re-used and this may be associated with a narrow

strip of brickwork with a semicircular end like that in the other pothouse. This was succeeded in Period 2 (see Fig. 13) by a slightly deeper basement (floor 9.45 ft (2.88 m) OD) with an extensive brick floor which had an irregular northern edge which suggests that to the north the floor level of the building was somewhat higher (at least 6 ins (15 cm)). Projecting into this area were two features which were continuations of the floor. One was another semicircular-ended strip of brickwork while the other was a rectangular area surrounded by brickwork. In Period 3 (see Fig. 13) these features were overlain by a narrow brick wall which ran from the east wall of the basement for 14 ft (4.3 m) to the west but its west end was not available for excavation. This was constructed of two brick faces, half a brick thick, with the gap between them filled with loose rubble. The lower one foot was not properly coursed but above this the wall had a large amount of red sand adhering to it while the top two rows projected 2½ ins (6.3 cm) beyond the face. Butting up against this wall was the fragment of another wall bonded not in mortar (as was the other wall) but in sandy clay whose discolouration showed that this wall was the corner of a structure, which must have run west (alongside the other wall) and south (in both of which directions it was destroyed by later features). In this structure great heat had been generated.

Period 4 (see Fig. 14) comprised two north-south walls mainly bonded with mortar but in patches with sandy clay. These lay well to the west of the Periods 1-3 structures and no direct relationship between them could be established. The area between them was occupied by a large electric junction box which prevented excavation of this crucial area. It is, therefore, possible that Period 4 is contemporary with, or even earlier than, Periods 1-3. The northern part of the area within the two walls was occupied by two floors separated by a brown sandy clay layer containing large quantities of delft waste material, much in very small fragments clearly indicating that the layer had accumulated *in situ* as a tread layer over the lower, brick floor. The upper floor was of large stone blocks which were friable, heavily

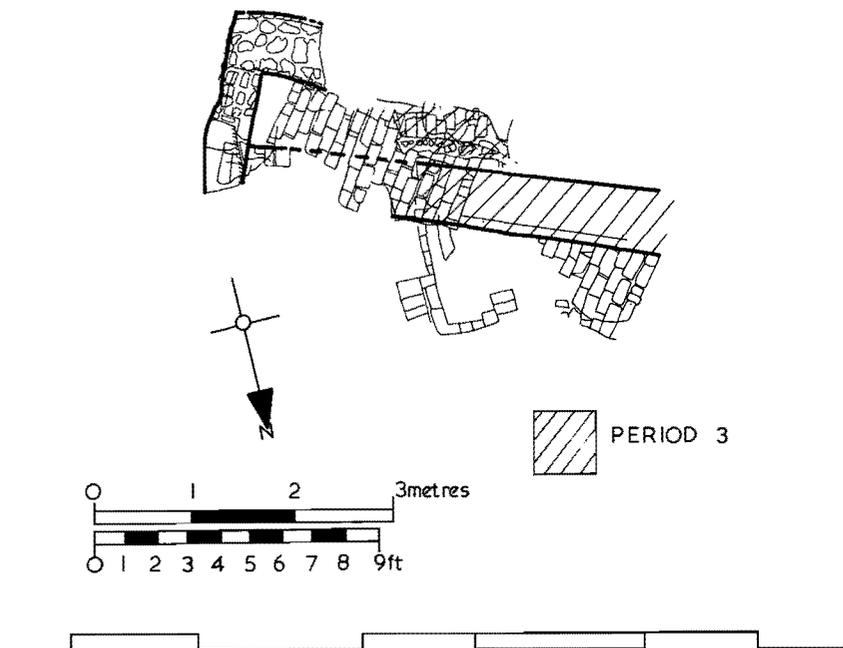


Fig. 13. Delftware Kiln 2. Periods 2 and 3.

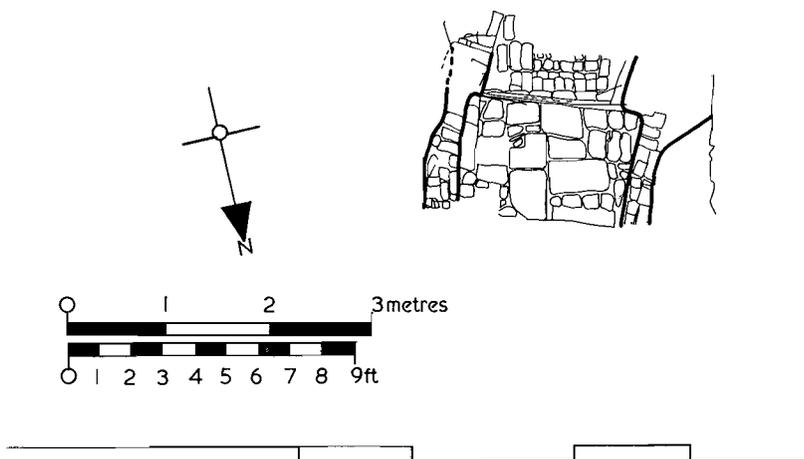


Fig. 14. Delftware Kiln 2. Period 4

burnt and set in buff yellow clay. The lower floor was made entirely of incomplete bricks set in green clay.

To the south of this were two corresponding layers of brickwork but here the central part was burnt dark grey and the bricks had partially disintegrated. Since the edge of this burnt area was so sharp, and a few inches on either side of it the clay bonding the bricks was still green, it is almost certain that the side rows of bricks supported a wall at the time the fire burnt in the centre of the grey area and also that there was a wall separating the northern floored area from the fire, at least in the first phase. The side walls also had two phases to them, the upper part being rebuilt on slightly different alignments to the lower part. Although the base of the upper part was some way above the upper floor, it seems better to assume the two phases in each feature are contemporary than to create a third phase.

In Period 5 (see Fig. 15), the southern inner walls were reduced to one course of bricks and filled in with brickwork of the Period 5 kiln while the northern floored area was filled in with rubble and delft waste. The Period 5 kiln is of the 'standard' type and it survived, much altered, to the end of the life of Kiln 2. Its alterations are many and complex, and there may be as many as seven phases of them, but the sequence has not been fully worked out yet. The penultimate phase is the best preserved and has the usual three arches and four vents within the rectangular firebox, flue and stokehole with the latter to the east. Here, however, one of the arches survived right across the firebox and above it the floor of the pot chamber which was of large red tiles. This surviving arch showed that the vent between it and the end wall (and probably therefore all vents) was divided up into six short and two long sections by brick crossings of the vent and there was evidence, in one place, that the tiles actually covered the smaller segments,

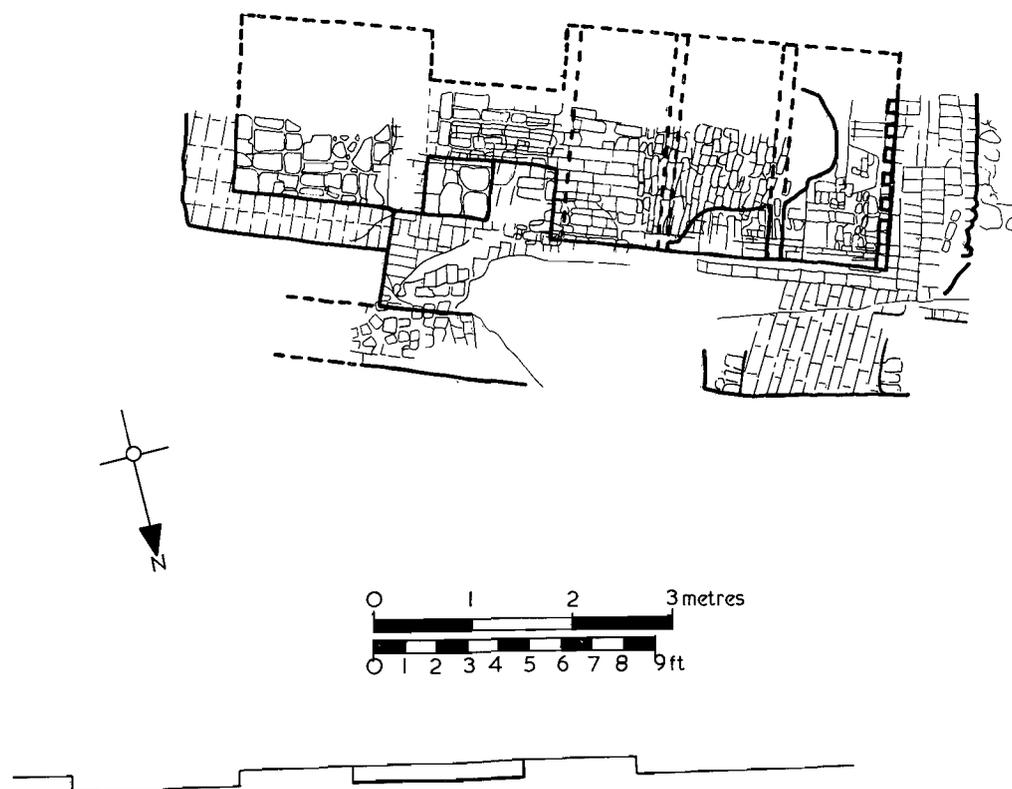


Fig. 15. Delftware Kiln 2. Period 5 (composite)

leaving perhaps only the two outer, longer, segments open. The firebox was 10ft 9 ins (3.27 m) long and 7 ft (2.13 m) wide, with arches of 3 ft 1 in (0.94 m) wide and vents of 3½ ins (8.9 cm). Kiln 2 also had a buttress-like appendage to its east wall, but, unlike Kiln 1 Period 4, this was never filled in, but it butted up against the Period 3 wall on its north side so that the exact configuration of the kiln is uncertain. On its north side where Kiln 1 Period 4 had three little walls, Kiln 2 had the area of brickwork inserted into the Period 4 structure. The stokehole of Kiln 2 Period 5 had three superimposed floor levels and the steps from it to the pothouse level were not found and must be on its south side. Unlike Kiln 1 but like Kiln 3, Kiln 2 had a floor in its flue and also, in some phases at least, in its firebox. Like Kiln 1 Period 4, the width of its firebox was greater in its earlier phases. In its latest phase, its eastern arch was removed and a wall was added thickening the east wall of the firebox internally, while a brick floor was laid in front of it. Since this floor and thickening were bonded with green clay, it seems unlikely that the kiln was fired in this phase and it is possible that its abandonment was caused by the collapse of the middle arch, which was found where it fell.

The kiln was then demolished level with the pot chamber floor, though the east wall was demolished level with the firebox floor, and the firebox, flue and stokehole filled in with huge quantities of delft waste material. Over the whole area which survived high enough within this pothouse, a layer of clay was laid down which seems to have acted as a floor. To the east, a brick wall was built, partly sitting on top of an earlier stone one of uncertain date, and a little west of this a brick drain running from south to north. In the western pothouse too, a drain was laid down over the demolition layer above Kiln 1 and the pothouse floor. This ran down the middle of the pothouse and drained into a cesspit cut through the firebox of Kiln 1. Beyond the pothouse to the west, another cesspit was dug largely through the fill of the Period 1 structure but cutting into its eastern wall (which must have continued to serve as the west wall of the pothouse). The drains and associated cesspit must be connected with the use of the buildings in the late 18th and early 19th centuries as stables and they must have been finally demolished by 1830 when the North Transept was refaced.

Discussion

Delftware kilns were briefly discussed in the report on the Norfolk House kilns (Bloice 1971, 114-7 and 148-50). This discussion was partly based on evidence from the first two seasons at Montague Close. It showed that delft kilns consisted of three parts, pot chamber, firebox and stokehole, the last having the fire in it. In this latter point, the report is wrong for the fire actually burns in the fourth part of the kiln, the flue, situated between the firebox and the stokehole. It was also shown that documentary evidence for Continental tinglaze kilns produced a consistent pattern of single flue rectangular kilns, and that Norfolk House fitted into this pattern. All the kilns at Montague Close do too, but within this general group it is possible to distinguish two types. The best represented has been described as the 'standard type'. The other might be called the 'early type' and is represented by Period 4 and probably Period 3 of Kiln 2. In this type it would seem that the whole kiln is built as a rectangular brick box and the structure of the flue is inserted afterwards within it,

rather than the firebox and stokehole being constructed completely separately with a permanent flue. Since neither firebox survived, the details of this early type of firebox remain unknown. The dating of these two types will probably be difficult though quite large samples of delft waste from the end of Periods 4a and Period 4b of Kiln 2 were recovered.

Documentary evidence (Dawson and Edwards 1974) shows that the Montague Close factory started making tinglazed earthenware (it cannot be called 'delftware' until larger samples are recovered from this period) in 1613 which means that it was the first tinglaze pottery in South London, preceded only by the Norwich/Aldgate pottery in England. Documentary evidence seems to show that the western pothouse was built between 1624 and 1634 and both pothouses were operating by 1681. Since the two 'early type' kilns were found in the pothouse which appears to have been built later, it suggests that all trace of the earlier kilns in the western pothouse has been destroyed in the construction of the Period 3 kilns there. The extensive alterations found in all the kilns suggest prolonged use, even if this is also partly due to the use of non-refractory bricks, and this must especially be so in Kiln 1 Period 3, where so much vitrified material accumulated in the vent. However, it is impossible to quantify 'prolonged use'. cursory examination of the evidence would suggest that Period 4a in Kiln 2 ended at some time before 1680, and Period 3 in Kiln 1 and 3 c 1700. More extensive examination of the material shows that Kiln 2 was abandoned c 1730 and Kiln 1 (and with it probably the factory as a whole) c 1750. Since three periods have to be fitted in before Period 4a, it seems reasonable to suggest, with the appropriate reservations, that the changeover from the 'early type' to the 'standard type' took place c 1660-80. If this were so, the Norfolk House kiln ought to be of the 'standard type', assuming that this change was not specific to Montague Close. In the fragmentary nature of the remains at Norfolk House it is almost impossible to judge, but in so far as Structure B1, which is interpreted as the side wall of the stokehole, is slightly offset from the firebox wall, it is slightly more likely to belong to the 'early type'. It is, of course, possible that both types are peculiar to Montague Close since none of the illustrated Continental examples tally closely with them. But in respect of firebox size most examples are very much in the same range as those of Montague Close and it would therefore seem likely that the measurements given are internal (Bloice 1971, 149-50). Although nothing remains of the kiln structure above the potchamber floor (and that only in one example) it is possible to show that the building within which Kiln 1 was built was no more than 19 ft (5.8 m) high above ground level. Since the floor of its firebox was about 3 ft (0.9 m) below ground level and in Kiln 2 the distance between the firebox floor and the potchamber floor was about 4 ft 6 ins (1.37 m), the kiln is unlikely to have exceeded 17 ft (5.1 m) above the potchamber. It may have been considerably less. What is striking about the 'standard type' of kiln at Montague Close is the traits which consistently recur in it, even to details such as the method of constructing the ends of the vents. Clearly this became the traditional type and even though repairs had to be made to each kiln constantly, because of the inability of the bricks to stand the heat, they changed little, overall, because of these repairs. In fact the only improvements which can be detected during the life of this kiln type is that the flue tended to be

lengthened and the vents narrowed, perhaps to increase the draught.

Brears has stated (1971, 138) that wood-burning kilns need a separate area, which he calls a combustion area, to enable the air coming from the fire to have an even temperature throughout. This is clearly the function of the firebox in the Montague Close kilns. These are, however, the most elaborate known in England and certainly the largest. (Compare for example the 4 ft 9 ins (1.45 m) diameter firebox of the largest kiln at Potterspurty, (Mayes, 1968, fig.23)). It is noticeable that the two illustrations of Dutch kilns show buttresses round the kiln, perhaps to help it withstand the stresses of expansion and contraction. The three little walls on the north side of Kiln 1, Period 4 could be interpreted as buttresses, providing a parallel with the Dutch kilns. However, the exactly similar position in Kiln 2, Period 5, had an area of brickwork and if this served as a buttress, it would have blocked the doorway between the pot-houses and must therefore have been no higher than it was when excavated, thus forming a floor of brick along the north side of the kiln. The obvious function of this was to give access to the loading door into the potchamber which must have been on this side. The only other possible position for it would be over the stokehole and, though all the illustrations of Continental kilns show it in this position, none show how access to it was gained. It is, therefore, likely that the little walls on the north side of Kiln 1 performed a similar function and supported a presumably wooden floor outside the loading door.

REFERENCES

- Beer, G. 1958. *Abbeys*
- Bermondsey Abbey. 1866. *Annals*. Rolls Ser. 36, *Annales Monastici*, 3
- Bloice, B. J. 1971. 'Norfolk House, Lambeth: excavations at a delftware kiln site, 1968.' *Post-Med. Arch.*, 5
- Brears, P. C. D. 1971. *The English country pottery*
- Dawson, G. J. 1970. 'Roman London bridge.' *Lond. Arch.*, 1, 156-60.
- 1971. 'London Bridge: a rejoinder.' *Lond. Arch.*, 1, 224-5
- 1972. 'The Saxon London bridge.' *Lond. Arch.*, 1, 330-2
- Dawson, G. J. and Edwards, R. 1974. 'The Montague Close delftware factory prior to 1969.' *SyAs Res. Vol. 1*, 47-63
- De Vries, D. 1968. 'Early history of Aardenburg.' *Berichten von de Rijksdienst voor het Oudheidkundig Bodemonderzoek*, 18, chap. 7
- Dickinson, J. C. 1950. *Origins of Austin Canons and their introduction into England*.
- Dollman, F. T. 1881. *The Priory of St. Mary Overie, Southwark*
- Dymond, D. P. 1961. 'Roman bridges on Dere Street.' *Arch. J.*, 118
- Edwards, R. 1974. *London potters circa 1570-1710*
- Graham, A. 1974. 'Roman road at Old Hibernia Wharf, Southwark.' *Lond. Arch.*, 2, 176
- Green, C. 1961. 'East Anglian coastline levels since Roman times.' *Antiq.*, 35, 21-8
- Hallam, H. E. 1954. *The new lands of Elloe: a study of early reclamation in Lincolnshire*
- Huggins, P. J. 1970. 'Waltham Abbey, monastic site and prehistoric evidence: 1953-67.' *Essex Arch. Soc. Trans.*, 3rd Ser., 2, 216-66
- Kenyon, K. M. 1959. *Excavations in Southwark*. (Research Papers of SyAS, 5.)
- Mayes, P. 1968. 'A 17th-century kiln site at Potterspurty, Northamptonshire.' *Post.-Med. Arch.*, 2, 55-82
- Merrifield, R. 1965. *Roman city of London*
- 1970. 'Roman London Bridge: further observations on its site.' *Lond. Arch.* 1, 186-7
- Plouviez, J. 1973. 'Roman Southwark.' *Lond. Arch.*, 2, 106-11
- Roach Smith, C. 1842. 'Observations on Roman remains recently found in London.' *Arch.*, 29, 148
- Royal Commission on Historical Monuments. 1930. *London*, 5, (*East London*).
- Sheldon, H. 1974. 'Excavations at Toppings, and Sun Wharves, Southwark, 1970-71.' *Trans. London and Midsx. Arch. Soc.*, 25, 1-116
- Southwark Archaeological Excavations Committee. 1973. 'Excavations at New Hibernia Wharf.' *Lond. Arch.*, 2, 99-103
- Stenton, F. M. 1947. *Anglo-Saxon England*
- Stow, J. 1971. *Survey of London*, ed. C. L. Kingsford VCH Victoria County History of Surrey.

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