

Building material

by Ian Betts

A large quantity of both ceramic and stone building material was recovered from the eastern cemetery. Very little of this could be directly associated with either burials or burial structures. It is the stone and ceramic tile which can be linked with burials that is the focus of this report, together with stone and tile which is believed to have formed part of funerary structures.

This report is in main two sections, the first dealing with ceramic brick and tile and the second with stone building material; a short section follows on other types of building material found associated with burials. This report looks in detail at the types of stone and tiles used, their origin, and considers the different burial practices which resulted in the incorporation of these materials.

Ceramic brick and tile

Fabric type

Analysis of fabric type gives an indication as to the origin of the tiles used in the cemetery. The actual number of different fabrics present is actually fairly limited. Listed below are the ceramic tile and brick fabric types found on each site. A full description of each type is contained in an appendix to this report.

| Fabric Type | Site | | | | | | | | |
|-------------|------|-----|-----|-----|-----|-----|-----|-----|---|
| | ETN | HOO | MSL | MST | PRE | SCS | TTL | WTE | |
| 2815* | x | | x | x | x | | x | x | x |
| 2454 | x | | x | x | | | x | | x |
| 3016 | | | | x | x | | | x | |
| 3018 | | | | | | | | | x |
| 3022 | | | | | | | | | x |
| 3023 | x | | | | | | | | |
| 3029 | | | | x | | | | | |
| 3060 | | | | | | | | x | |

* = fabric group incorporating individual fabric types 2452, 2459A/B, 3004, 3006.

Table 7D.1 Fabric types found, by site

(1) Early Fabric Group 2815 (1st–mid 2nd century)

This group incorporates individual fabric types 2452, 2459A, 3004 and 3006, although very few tiles fall into the very sandy 3004 category. Most of the tiles are fired to various shades of either red or orange.

A number of tile kilns producing some, or all of these individual fabric types are situated to the north of London, principally bordering the main Roman road between St Albans and London. Other kilns producing tiles in the same rather non-diagnostic fabrics are located to the south-west of London (Betts 1987). It is not possible at present to say exactly which tiles came from which kilns.

(2) Later Fabric 2815 (120/140–late 2nd/3rd century)

These predominantly red tiles are in the same fine sandy fabric as type 2459A, but are characterised by fine moulding sand (type 2459B). Many are also later in date. Kilns producing tiles in fine sandy fabrics are mainly located to the north-west of London. This may explain the presence of tiles in fabric 2459B from Wickford villa and Chelmsford, Essex.

(3) Fabric Types 2454 and 3022 (50–75/80)

These distinctive, early cream and yellow coloured tiles are believed to come from a tiliary situated in the Eccles area of north-west Kent. Fabric 3022 is an unusually sandy variant of more normal fabric type 2454.

(4) Fabric 3016 (250/300–400)

A very rare fabric type in London which, somewhat unexpectedly, is found on three cemetery sites, MST87, MSL and TTL85. The location of the kiln producing these tiles, which at the cemetery are all tegulae, is not currently known.

(5) Fabric 3018 (100–120)

The only tile in this fabric was a small brick from WTE. This fabric type is found on a number of sites in London, but always in very small quantities. This would suggest that it is an import

from outside the London area. The fabric has certain similarities with tiles made at Hartfield in East Sussex. Whilst the WTE brick may not necessarily have come from Hartfield, it does suggest an origin somewhere in the eastern part of Sussex.

(6) Fabrics 3023 and 3060 (50/70–120)

There is only one small abraded fragment of tile in fabric type 3023. This came from a quarry pit at ETN and may have originally formed part of a burial structure (Structure 1 or 2). Tiles in these two fabrics were probably manufactured at a tilery located at Radlett, Hertfordshire.

(7) Fabric 3029 (mid/late 2nd–3rd centuries)

The only example of a tile in fabric type 3029 came from MSL where an almost complete imbrex was used as grave packing. The size of the imbrex (discussed in more detail below) and the presence of numerous fragments of calcium carbonate (crushed shell?) in the clay matrix suggests that it belongs to a calcareous group of late Roman tile. This group has a widespread distribution in southern England ranging from London in the east to Exeter in the west (Betts 1994). The tilery producing these distinctive calcareous tiles has still not been located.

Comparison with other London sites

The overall tile assemblage found associated with burials on the eastern cemetery compares closely with that found on most sites located within the Roman city. Both are characterised by the predominance of tiles in fabric group 2815, much smaller amounts of lighter coloured Eccles area tile and only occasional tiles in other fabric types. The only slight anomaly, is the presence of more tiles in fabric type 3016 than would normally be expected, the reason for which is unclear.

Types of tile found associated with burials

The vast majority of ceramic tile found associated with burials in the cemetery is either roofing tile (tegulae and imbrices) or brick. There is also a small quantity of tegula mammata, box-flue tile and tessera. These are listed below by site:

| type | ETN | HOO | MSL | MST | PRE | SCS | TTL | WTE |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| Tegula | x | | x | x | x | x | x | x |

| | | | | | | | |
|----------------|---|---|---|---|---|---|---|
| Imbrex | x | x | x | | x | x | x |
| Brick | x | x | x | x | x | x | x |
| Tegula mammata | | x | x | | | | |
| Box-flue | | x | | | | | x |
| Tessera | | | | | | | x |

Table 7D.2 Types of tile found, by site

The cemetery material is important as it provides valuable information on the sizes of certain classes of tile. In particular, the size of tegula roofing tile, which rarely survives intact elsewhere in London.

(1) Tegula roofing tile

Of the eighteen tegulae from the cemetery with surviving length or breadth measurements sixteen come from a tile-lined burial at MST (B197). All the tegulae from B197 are listed below, together with partly complete examples from HOO (B752) and MSL (B368):

| Site | Fabric* | Length | Breadth | Thickness (mm) |
|------|---------|---------|---------|----------------|
| HOO | 2459B | 410 | - | 24 |
| MSL | 3016 | - | 286 | 15 |
| MST | 3006 | 412 | 308-310 | 20-22 |
| “ | 3006 | 413 | 301-310 | 20-27 |
| “ | 3006 | 416-417 | 291-294 | 17-19 |
| " | 2459A | 416-420 | 295-322 | 17-22 |
| “ | 3006 | 418-420 | 299-306 | 20 |
| " | 3006 | 421-424 | 309-332 | 16-22 |
| " | 3006 | 423 | 318 | 21-25 |
| " | 2459A | 425-429 | 312-334 | 22-25 |
| " | 3016 | 446 | 309-313 | 19-20 |
| " | 3050? | 447 | 309-326 | 13-23 |
| " | 3006 | 447 | 301-321 | 19-25 |
| " | 3006 | 450 | 310-325 | 18 |
| “ | 3006 | 456 | 311 | 10-14 |
| " | 3006 | - | 303-306 | 15-25 |
| “ | 3006 | - | 315-322 | 18-21 |

* fabrics 2459A/B and 3006 are part of fabric group 2815

Table 7D.3 Tegulae from B197

Based on length two size groupings in early fabric group 2815 can be distinguished, a small group with a length of 412-427mm and a larger group measuring 447-456mm. The examples in later fabric 2815 measuring 410mm in length may belong to the smaller group whilst the tiles in the two rarer fabric types (3016 and possibly a variant of 3050 from the same tiliary) clearly belong to the larger group.

Most tegulae taper outwards very slightly towards the top, but are otherwise fairly straight sides. The lower breadth varies between 291-312mm and the upper breadth between 310-334mm. No particular groupings are apparent, although one tile in fabric 3016 from MSL is significantly smaller in breadth (286mm).

A number of tegulae have faint finger marks on their top surface located near the base of the tile. Such marks are believed to represent the signature of the tilemaker who made the tile. Two types of mark, both on tegulae in fabric type 3006, are of particular interest. One mark type is of a previously unpublished type (Fig. 0), whilst the other is the clearest example yet found in London of existing signature mark type 39 (Fig. 0). Both were found on the smaller length tegulae. Of the other tegulae in this group, one had a two finger groove semi-circular mark, a common type on tiles in Roman Britain, whilst the other was devoid of any kind of marking. One of the larger length tegula also lacked any kind of mark. The rest all had a single groove semi-circular mark, another common signature mark found on tiles in London and elsewhere.

One larger sized tegula in fabric 3006 from MST has two parallel knife cut lines on the top of the flange at right angles to the tile edge. This is almost certainly some sort of tally mark. This particular mark (type 5) has been found on other Roman tiles in London.

Another feature of certain tegulae from MST is the presence of nail holes. These allowed certain tiles to be more firmly attached to the roof by the use of iron nails. The tegula in what may be a variant of fabric type 3050 has a circular hole 9mm in diameter located mid-way between the flanges, 32mm from the top edge. This hole was added prior to firing. Four other tegulae (fabric types 3006 and 2459A) from the same burial, however, have nail holes added after firing. Three of these holes, which measure around 6-7mm, are located in a similar position to that described above. The fourth, which measures 11mm diameter, is more unusual

laying midway down the tile offset slightly towards the left-hand flange. This tile may also have had a second, 9mm diameter nail hole, midway between the flanges located 86mm from the upper edge.

(2) Imbrex roofing tile

Four imbrices have surviving length or breadth measurements and these are listed below:

| Site | Fabric* | Length | Breadth | Thickness (mm) |
|------|---------|---------|-----------|----------------|
| HOO | 2452 | - | 134 | 20 |
| " | 2452 | - | 180 | 20 |
| MSL | 3029 | 299-301 | 140-c.150 | 18-21 |
| WTE | 3006 | - | 163-166+ | 15-18 |

Table 7D.4 Size of imbrices (* Fabrics 2452 and 3006 are part of fabric group 2815; + bottom third)

The imbrex in calcareous fabric type 3029 is significantly smaller in breadth than one of the imbrices in early fabric group 2815. It is, however, very similar in size to other imbrices in calcareous fabrics found in London and at Brading villa on the Isle of Wight (Betts 1994, 23).

(3) Brick

Where length and breadth measurements survive it is possible to state which type of brick is represented. Two types can be identified from the eastern cemetery, lydion bricks which are roughly one Roman foot by one and a half Roman foot and pedalis bricks which are approximately one Roman foot square (one Roman foot = 296mm).

Listed below are all the complete and substantially complete bricks found. All but one are in early fabric group 2815, the other, which is larger, is from the Eccles area.

| Site | Fabric* | Length | Breadth | Thickness (mm) |
|------|---------|--------|---------|----------------|
| HOO | 2452 | 400 | 300 | 35 |
| MSL | 3006 | 290 | 287 | 42-44 |
| " | 3006 | 390 | 298-299 | 42-44 |
| " | 2454 | 476 | 315-317 | 34-41 |
| " | 2459A | - | 284 | 34-35 |

| | | | | |
|-----|------|---|---------|-------|
| " | 2452 | - | 297 | 38 |
| PRE | 2452 | - | 284 | 39 |
| WTE | 3006 | - | 286-288 | 38-39 |

Table 7D.5 Complete bricks (* fabrics 2452, 2459A and 3006 are part of fabric group 2815)

(4) Tegula mammata

These bricks are characterised by nibs of clay attached to the top surface prior to firing. Both cemetery examples have a single circular nib of clay attached to the top centre. Tegula mammata bricks found in London are almost all of Lydion size, and the same is almost certainly true of the two fragmentary examples from the cemetery. What is still unclear is why nibs were added to only a small percentage of lydion-sized bricks used in London.

Tegula mammata were principally used as bonding courses in walls, where the nibs may have prevented mortar being squeezed out between tile courses. Almost all the examples found in London are dated to either the 1st or early 2nd century. The cemetery examples are both in early fabric group 2815, but one (see list below) is significantly smaller in width.

| Site | Fabric* | Length | Breadth | Thickness (mm) |
|------|---------|--------|---------|----------------|
| HOO | 2459A | - | 310 | 38 |
| MSL | 2452 | - | 273-280 | 36-37 |

Table 7D.6 Examples of tegula mammata (* fabrics 2452 and 2459A are part of fabric group 2815)

Burials incorporating ceramic tile

This section examines ceramic building material that was deliberately incorporated into burials. Tile which was added accidentally, for example when the grave was backfill, is not discussed. Ceramic tile was used as lids for cremation vessels, as a base for all or part of the body to be laid on and as packing with both cremations and inhumations. The most extensive use of tiles occurs in tile lined burials, although only one incorporated a substantial number of tiles.

There are only around twenty burials incorporating deliberately added Roman tile. This is a very small number in comparison with the number of burials. Undoubtedly, other burials

incorporated tile which has since been removed, but these were probably not great in number.

(1) Tile lids

There are a total of at least eight burials containing vessels with ceramic tiled lids, one from the west of the cemetery (HOO), the remainder from near the centre (MSL, MST, WTE). The majority of lids comprise broken fragments of either tegula or brick, the latter is normally of lydion size. One fragment of tegula mammata and a small piece of imbrex were also used.

Listed below are the pottery cremation burials with tiled lids:

| Site | Burial No. | Tile Type | Fabric | Date |
|------|------------|-------------------|----------|--------|
| HOO | B752 | Tegula | 2815+ | TO ADD |
| MSL | B325 | -(Tegula mammata | 2815*)- | TO ADD |
| | | (Brick | ") | |
| | | (" | 2454) | |
| " | B333 | -(Tegula | 2815*)- | TO ADD |
| | | (Imbrex | ") | |
| " | B368 | Tegula | 3016 | TO ADD |
| MST | B179 | Tegula | ? | TO ADD |
| " | B180 | Brick | 2815* | TO ADD |
| WTE | B839 | Brick | 2815* | TO ADD |
| " | B840 | Tegula | 2815* | TO ADD |

Possible lids:

| | | | | |
|-----|------|--------|-------|--------|
| MSL | B349 | Tegula | 2815* | TO ADD |
| " | B417 | Tegula | 2815# | TO ADD |

Table 7D.7 Tile lids (* early fabric group: types 2452, 2459A, 3006 ; + later fabric: type 2459B; # fabric 2459 but lacks moulding sand, date uncertain ; ? currently missing, fabric type not examined)

The majority of ceramic tile used as lids are probably of 1st-mid 2nd century date, whilst most of the vessels over which they lie are dated late 2nd-4th century. This would suggest that the ceramic tile was reused from elsewhere. This would explain the mortar still attached to certain examples. The two tiles in later fabric types (2459B and 3016) used in burials B752 and B368 could also have been reused. Alternatively, they may have been broken tiles which were sold off for reuse upon their arrival in London.

The tegula from MSL B417 was found inside an amphora along with a mass of crushed bone and fragments of cremation vessel. It would seem likely that this tile was used as a lid on either the cremation vessel or the amphora. The same may also be true of the tile from disturbed MSL B349, although there is more chance that this particular tile could be intrusive.

(2) Packing of cremations and inhumations

Ceramic tile was used as packing in at least nine burials, the majority from MSL. These are all listed below:

| Site | Burial No. | Tile Type | Fabric | Date |
|--------------|------------|-----------|-----------|--------|
| Inhumations: | | | | |
| HOO | B704 | -(Tegula | 2815*)- | TO ADD |
| | | (Imbrex | 2815*) | |
| MSL | B412 | Imbrex | 3029 | TO ADD |
| " | B591 | Brick | 2815\$ | TO ADD |
| " | B601 | Tegula | 2815# | TO ADD |
| WTE | B380 | -(? | 2454)- | TO ADD |
| | | (Brick | 2815*\$) | |
| | | (Tegula | ") | |
| | | (Brick | 3018) | |
| | | (Daub | -) | |
| Inhumation?: | | | | |
| " | B490 | Tegula | 2815* | TO ADD |
| Cremation: | | | | |
| MSL | B333 | -(Brick | 2815*)- | TO ADD |
| | | (Tegula | ") | |
| | | (Imbrex | ") | |
| WTE | B840 | Imbrex | 2815* | TO ADD |
| Cremation?: | | | | |
| MSL | B508 | -(Brick | 2815*)- | TO ADD |
| | | (" | 2815*) | |

Table 7D.8 Tile used as grave-packing (* early fabric group: types 2452, 2459A, 3006; \$ later fabric: type 2459B; # currently missing, date uncertain)

Flat tegula and brick were also the principal types of tile used in grave packing of both

cremations and inhumations. Imbrices are occasionally present, the most notable example being the almost complete late Roman example from B412 discussed earlier. Other possible later Roman tile came from the packing of B380 and B591. These are in fabric type 2459B of 120/160 to late 2nd-3rd century date. All the other tiles are probably 1st to mid-2nd century.

(3) Funerary structures

Ceramic tile has been found associated with what are believed to be the fragmentary remains of funerary structures at three areas near the centre of the cemetery, ETN, MSL and WTE. The tile types present are listed below:

| Site | Group No. | Tile Type | Fabric | Date |
|-------------------------------------|-----------|-----------------|-----------|--------|
| ETN :Structure 1 | | | | |
| | 3.1 | -(Imbrex | 2454)- | TO ADD |
| | 3.2 | (" | ") | |
| | | (Tegula | 2815*) | |
| | | (Brick | ") | |
| ETN :Possibly from Structure 1 or 2 | | | | |
| | 11 | -(Imbrex | 2454)- | TO ADD |
| | | (" | 2815*) | |
| | | (Tegula | ") | |
| | | (Brick | 2815*\$) | |
| | | (Type ? | 3023) | |
| MSL :Structure 5 | | | | |
| | G.78 | (Tegula | 2454)- | TO ADD |
| | | (Imbrex | ") | |
| | | (Tegula | 2815*) | |
| | | (Imbrex | ") | |
| | | (Brick | ") | |
| | G.90 | (Brick | 2815*) | |
| MSL :Probably from Structure 6 | | | | |
| | G.120- | (Tessera | ?)- | TO ADD |
| | | (Box-flue tile | ?) | |
| WTE :Structure ?=ADD NUMBER! | | | | |
| | 10.1-10.4 | -(Brick | 2815*)- | TO ADD |
| | | (Tegula | ") | |
| | | (Tessera | ") | |

(form? 2454)

WTE :Structure ?=ADD NUMBER!

10.5 -(Imbrex 2815*)- TO ADD

(Box-flue tile ")

WTE :Possibly from Structure (10.5) ?=ADD NUMBER

" 8.2 -(Imbrex ?)- TO ADD

(Tegula ?)

" 11.7 (Tegula 2815*\$)

Table 7D.9 Tile in structures (* early fabric group: types 2452, 2459A, 3006; \$ later fabric: type 2459B; ? currently missing, fabric type not examined)

A more diverse range of building material is associated with funerary monuments, in comparison to that used for packing and as lids. However, with the exception of the bricks from MSL (structure 5), there are no complete, or near complete tiles. This would suggest most of this tile was reused. This would explain the presence of fragments of tessera and box-flue tile which would not normally be expected to form part of a burial structure. Both tesserae and box-flue tile were found in the fill of B564 at MSL87, where they are thought to have derived from funerary structure 6 (G.108).

(4) Tile-lined inhumations

A total of sixteen tegulae (fabrics 2459A, 3006, 3016, 3050?) were found in situ lining an inhumation B197 at MST. The body lay on a horizontal bed of eight, mostly complete, tiles laying face down. A further six, mostly inwardly facing tegula, were set vertically to form the walls of the grave around the head area of the body (Fig XX). A downward facing tegula rested on top of the vertical tiles to form a canopy over the top of the body. A further, slightly displaced tegula may also have formed part of this canopy.

Another tile canopy, although of much cruder construction, was used in a burial at HOO (B694). Two bricks, including an almost complete lydion sized example, were placed directly over the head area of the body, whilst another brick was placed directly on the chest (all fabric 2452). The grave fill also contained fragments of tegula, imbrex and part of a box-flue tile (fabrics 2452, 3006).

A burial at PRE (B819) contained part of a brick (fabric 2452), possibly part of a lydion which was found in an upright position adjacent to the left shoulder of the body. This probably

acted as part of the lining of the burial.

(5) 'Pillow'

At HOO a fragment of tegula (fabric 3004) was placed under the head in the manner of a pillow in B726.

(6) Other ceramic building material

Both stone and ceramic building material was found inside a wooden lined pit or box at SCS (1.37-39). The latter comprised brick, one of which was burnt and partly vitrified, imbrex and tegula (all fabric group 2815). There is also a small unidentified tile fragment in Radlett area fabric type 3060. The function of this wooden structure is uncertain.

The mortared tile lining of a cut for a cremation at MSL (B568) may have supported a burial marker or small structure. The mortar lining of B567 may have had a tile lining for the same purpose.

Origin of ceramic tile used in burials

Most ceramic tiles found in the eastern cemetery which can be related to burials are in fabric types which are believed to date somewhere between the 1st and the mid-2nd century. In certain cases the tile is considerably earlier in date than the burial which would indicate that it was originally used elsewhere. One major source of reused tile, particularly in the late 2nd and 3rd centuries could have been demolished public buildings in the town such as Huggin Hill baths, on the north bank of the River Thames, which is believed to have been dismantled around the late 2nd century [ref?].

Not all ceramic building material seems to have been reused from elsewhere. A number of tegula and brick from MSL are soft and brown in colour due to underfiring. Such tiles would have been unsuitable for major structural work and may have been sold off by local tilemakers as seconds. Certainly, only one example has any kind of mortar attached indicating reuse.

Underfired tile was used as lids (B325 and probably B349) as well as for packing (B508) and as part of a funerary structure (MSL, structure 5). Further poorly fired tegula and brick were found set on edge in a pit cut into a burial (B194) at MST. All these underfired tiles are in fabric types belonging to early fabric group 2815 (individual types 2452, 2459A, 3006).

The presence of underfired tile is of particular interest as there are also examples of pots normally used for cooking or storage purposes which were used in the cemetery as cremation vessels. It appears that these poorly fired vessels were also seconds (Barber et al. 1990, 6).

Stone

The stone found associated with graves in the eastern cemetery falls into two main categories, worked stone and stone rubble.

Worked stone

A number of both British and foreign stone types are believed to have formed part of funeral monuments in various parts of the cemetery. These stone types are described below:

(1) Oolitic limestone

Oolitic limestones are found in a band running across England from Yorkshire, through the Midlands to the West Country. Certain of the oolitic limestones used in London has been identified more specifically as Lincolnshire limestone, probably from quarries at Barnack and Weldon, Northants (Blagg 1990, 40). It is not certain at present whether the oolitic limestone found in the cemetery also came for either of one of these two sources, although this would seem likely.

(2) Purbeck marble

This is not a true marble but a fossiliferous limestone which can be cut and polished in the same way as true marble. Purbeck marble comes from the Upper Purbeck beds on the Isle of Purbeck, Dorset. This is one of the earliest ornamental stone types to be used, arriving in London by AD 55-70 (Betts forthcoming).

(3) Wealden shale

This is a dark grey calcareous shale or limestone with a muddy texture, thought to be from the Weald, in East Sussex and Kent (Pritchard 1986, 175). Wealden Shale was in use in London by the late 1st-early 2nd century.

(4) Green porphyry

This is an igneous rock characterised by a compact felspathic base through which green crystals are disseminated. According to Pritchard (1986, 175), the green porphyry used in London derives from Marathonisi Laconia in southern Greece. All the previous examples of this stone type, although Roman in date, have been found in post-Roman deposits (Pritchard 1986, 186), which would suggest green porphyry is a late Roman import.

(5) Carrara marble

This well known fine grained white marble comes from quarries at Luni, Tuscany in northern Italy. It was in use in London by the first two decades of the 2nd century.

(6) Coarse blue-grey marble

The quarry source of this particular marble type is uncertain, although it is almost certainly of continental origin.

Worked stone: uses

The majority of fragments of worked stone came from the eastern part of the cemetery at HOO. Many of these are not associated with burials, so it is not possible to state with certainty which fragments formed part of funerary monuments. Certain smaller items, such as wall veneers, could have been brought in with general building rubble, although this is unlikely to account for the presence of larger items such as oolitic limestone and Purbeck marble slabs.

(1) Decorated and moulded slabs

Two pieces of oolitic limestone were found at HOO, although only one was found associated with a burial. The latter comprises part of a large facing slab with two rectangular dowel holes in one edge (HOO [1111] <323>, Fig XX). This came from the infill of heavily truncated B805, and probably derives from the dismantling of some sort of funeral structure located elsewhere in the cemetery. The slab is of particular interest as one face has the remains of an upstanding area in relief which has been deliberately chipped away. This would indicate that not only was the block part of some sort of funerary monument, it was originally part of another structure. The reuse of oolitic limestone has been noted elsewhere in London, most

noticeably during the late 3rd or 4th century when reused blocks provided the foundations to a late addition to part of the city wall (Perring 1991, 93).

The other fragment of oolitic limestone from HOO ([597] <337>), which comprises part of two cut faces at right angles, is much too small to determine its original purpose.

Cut slabs of Purbeck marble were recovered from three areas of the cemetery, HOO, SCS and WTE. The example from WTE is a fragment, 11mm thick, with an inscription of which only four letters survive ([1183] <131>, Fig XX). This is probably part of funerary inscription. It was recovered from a dump layer (8.3), which is believed to contain the remains of a funerary structure (10.5) which lay directly beneath.

The fragment from SCS may also be part of a funerary monument ([208] <125>). It is a corner fragment, around 31mm in thickness, on which this is a decorated border (Fig XX). The stone came from a road deposit of rammed gravel, where it was associated with a coin of 259-268.

The third fragment of Purbeck marble was initially identified as a paving stone ([1329] <923>). However, the presence of both a cut front and back face suggests that this too is probably part of a funerary monument (Fig XX).

There are two fragments of imported marble from HOO. The first comprises a much abraded fragment of Cararra marble ([1360] <555>). This may have formed part of a funerary structure, although it was not associated with any kind of burial. The second piece, of particular importance, is an large slab of blue-grey marble ([533] <75>, Fig XX). This is part of an inscribed funerary monument, the lettering of which is described in detail elsewhere (Chapter 2 [or 3?]). This marble slab was used as grave packing, along with Kentish Rag stone rubble, in a truncated burial (B627). Presumably the inscribed slab originated from an earlier burial somewhere in the eastern cemetery.

(3) Wall veneer

There are only two fragments of wall veneer from the eastern cemetery, both from HOO. Although neither can be linked to any specific burial, it is possible they may be the remains of demolished funerary structures. One is a 12mm thick fragment of Wealden shale, which was probably originally triangular in shaped ([1237] <799>), whilst the other is a small, 11mm thick, piece of green porphyry (unstratified <510>).

Stone rubble

Four main types of stone rubble were used in the cemetery, Kentish rag, hassock, flint and chalk. Kentish rag is a hard limestone which was quarried from the Hythe Beds of the Lower Greensand, probably from the Maidstone area of Kent, whilst hassock is a sandstone which is found interbedded with Kentish rag and thus derives from the same source. The origin of the chalk and flint used in London is not certain but there are extensive Upper Cretaceous chalk deposits in south-east England.

The principal use of chalk was in so-called chalk burials, of which there are 81 in the cemetery. This are discussed in more detail elsewhere (see section **).

(1) Funerary structures

Kentish rag and chalk were found associated with the robbed-out remnants of a probable funerary structure at WTE (10.5), whilst chalk and flint were used to form a structure found at SCS (B7). Also associated with the SCS structure is a fragment of slate, a very rare stone type in London, which is believed to be of late Roman date (see discussion below; for similar roofing see Rhodes 1986, 245). Structure 6 (G108) at MSL comprised a masonry wall. The large quantities of of both Kentish rag and hassock rubble, found associated with B564, are belived to derived from Structure 6.

(2) Grave lining and packing

Kentish rag, flint and chalk were also used as grave lining in a number of burials, for example at SCS where Kentish rag was used to line the grave cut (B1) and at MSL where chalk and flint where used to line an inhumation grave (B592). The latter may have supported a small stone or larger clay and timber superstructure.

(3) Stone lids

A weathered fragment of Kentish rag rubble at WTE was employed as a lid to a amphora cremation (B838) dated [?]. What may be the bottom half of a fine grained, light brown, sandstone roofing tile, found associated with B733 at HOO, may have served the same function. This stone measures 212-235mm in breadth, 8-10mm in thickness and has an incomplete length of 238mm. Elsewhere in London, a single fragment of possible stone roofing

first occurs in a mid or late 3rd century context, but definite stone roofing does not appear until the 4th century (Betts 1994, 32). This would suggest that B733 is unlikely to be earlier than mid or late 3rd century, and more probably 4th century in date. This agrees with the other dating evidence which suggests a date of 270-400.

(4) Other stone

One unusual occurrence involving stone occurred at WTE where a skeleton was found with a fragment of Niedermendig or Mayen lava stone in the left hand. The burial (B830) contained further fragments of the same stone in the grave fill, along with ceramic tile and daub. These are almost certainly parts of a quern stone, imported into Britain from the Eifel Hills of Germany (Peacock 1980, 49). It is tempting to speculate that the presence of this quern fragments may indicate that the body is that of a miller, but there is no other evidence to confirm this assumption. This burial is dated [?].

Other building material

Two other kinds of building material were associated with burials in the eastern cemetery, opus signinum, which is a type of mortar characterised by the presence of crushed tile and other ceramic inclusions, and wall plaster. Neither can be dated with any precision.

(1) Opus signinum

At HOO a fragment of opus signinum was reused as a lid on a cremation vessel (B759) dated 250-300, whilst at WTE a number of small pieces (Groups 8.2, 8.3) may have derived from the collapse of an underlying, at least partly timber built, funerary structure (10.5).

(2) Wall plaster

A small scrape of wall plaster was found in the robbed-out remnants of a funerary structure (10.3) at WTE, whilst at ETN a fragment of plain red wall plaster was found in a layer abutting the wall of another structure (Structure 1).

At MSL plain red and plain white wall plaster was found in the backfill of an intrusive burial (B564). This may derive from funerary structure 6 (G108). A further fragment of wall plaster ([1975] <697>) from a ditch (F28) on the same site is of particular interest. The top surface is

worn but there are shallow grooves in which red paint is still attached (Fig XX). Grooved lines are very rarely encountered on wall plaster found in London.

It is impossible to say with any certainty whether any burial structures were painted as the amount of wall plaster found is so small. On the other hand, there is little evidence for the movement of wall plaster from outside into the cemetery either.

Appendix: Museum of London fabric types

These fabric numbers refer to a fabric type collection held in the Museum of London Archaeology Service.

Fabric 2452 (part of group 2815)

Colour: red, orange, brown

Fabric: fairly fine fabric with only a small quantity of quartz (up to 0.5mm). Occasional calcium carbonate and iron oxide (up to 2mm).

Fabric 2454

Colour: white, cream, yellow

Fabric: varying amounts of grey or 'rose' (red) quartz (mostly up to 0.5mm), plus a scatter of iron oxide (up to 1mm) and calcium carbonate (up to 2mm).

Fabric 2459 (part of group 2815)

Colour: red, orange, brown

Fabric: fine sandy fabric with frequent quartz (mainly up to 0.2mm). Occasional scatter of calcium carbonate and iron oxide (up to 1mm). There are examples with normal sized moulding (2459A), very fine moulding sand (2459B) and organic impressions with the moulding sand (2459C).

Fabric 3004 (part of group 2815)

Colour: red, orange, brown

Fabric: sandy fabric with common large quartz (up to 0.7mm), with occasional iron oxide and calcium carbonate (up to 0.7mm).

Fabric 3006 (part of group 2815)

Colour: red, orange, brown

Fabric: Varying amounts of quartz (mostly up to 0.5mm), covering the fabric range between types 2452 and 3006. Most tiles have occasional iron oxide and calcium carbonate.

Fabric 3016

Colour: red, pink, brown

Fabric: distinct yellow speckled clay matrix, with scattered of iron oxide (up to 1mm). Little or no quartz.

Fabric 3018

Colour: pale red, pale orange

Fabric: Fine clay matrix with frequent clay and siltstone inclusions (mostly up to 2mm). Varying amounts of scattered quartz (up to 1mm). Numerous silty bands and rounded inclusions in certain examples.

Fabric 3022

Colour: white, cream, yellow

Fabric: a more sandy version of fabric 2454, with more frequent grey or 'rose' (red) quartz (most up to 0.4mm).

Fabrics 3023 and 3060

Colour: red, orange, brown

Fabric: frequent quartz (mostly up to 0.2mm) with common small black iron oxide inclusions (up to 0.1mm), plus scatter of larger red iron oxide (up to 1mm). Fabric 3023 differs from 3060 in having silty inclusions (usually up to 6mm) scattered through the clay matrix.

Fabric 3029

Colour: pink, light orange

Fabric: abundant calcium carbonate (up to 0.5mm) with scatter of quartz (up to 0.3mm) and occasional iron oxide.

[5831 words]