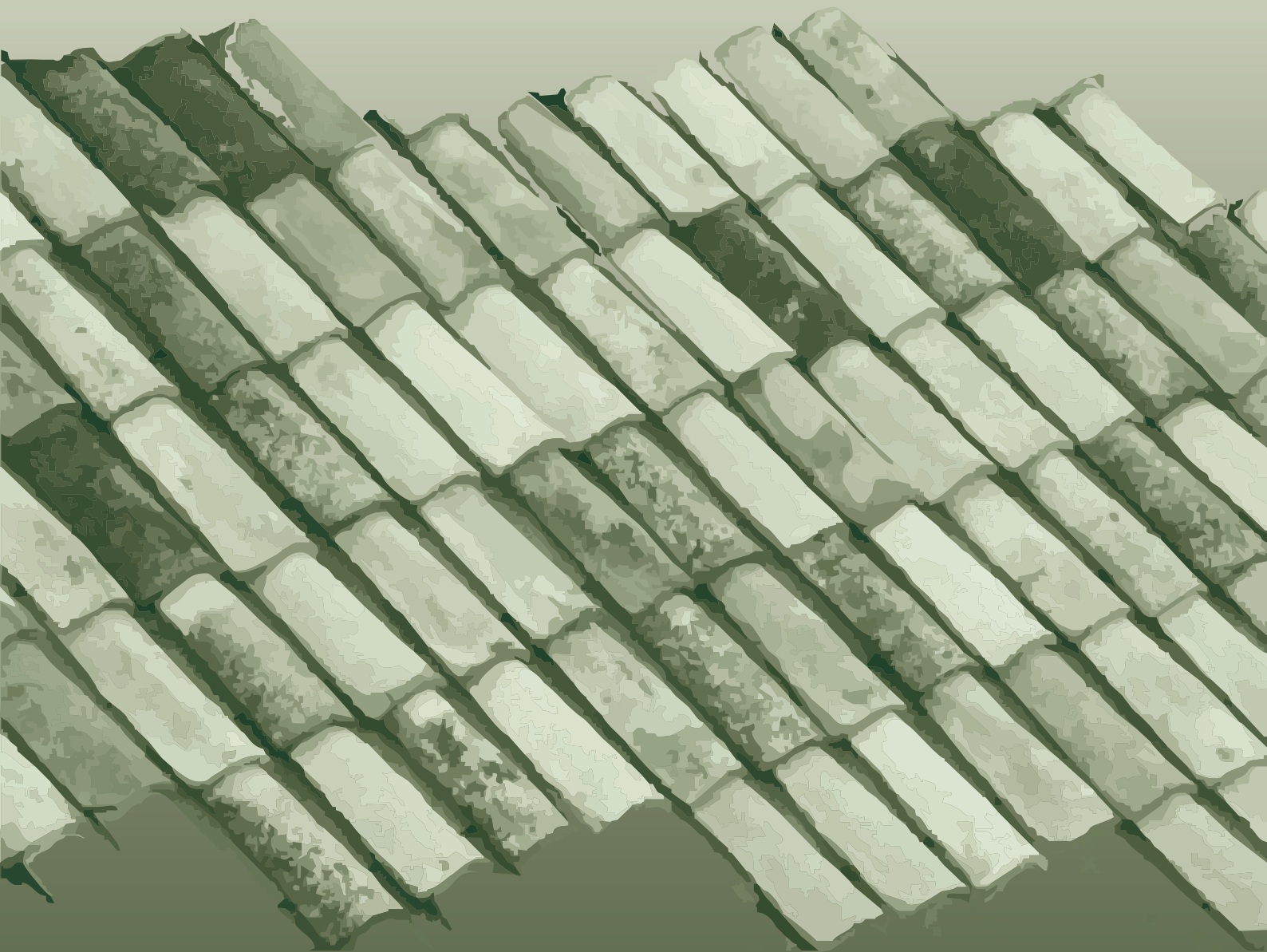


CHAPTER 20

Ceramic building material



by Grace Perpetua Jones

20 Ceramic Building Material

Grace Perpetua Jones

A total of 1,255 fragments of ceramic building material, weighing 155,408 g was recovered during evaluations and excavations at Stansted Airport. The material originated from five sites (Table 20.1): LTCP (BAACP99, BAACP00, BAACP01); MTCP (BAAMP99, BAAMP00); FLB (BAAFL00); M11 (BAALR00) and SG (BAAGS04). A proportion of the assemblage was discarded at the assessment stage, accounting for 27% of the overall count and 55% of the weight. The vast majority of this discarded material (99.1% by weight) originated from the LTCP site and is commented on below.

The remainder of the assemblage was recorded by context group, divided by fabric and form, counted and weighed. The thickness of each brick or tile was recorded, and any complete width or length measurements were taken. The presence of any surface markings such as signature marks, combing or animal prints was also noted. The material ranged in date from the Romano-British to the post-medieval and modern periods. The Roman fragments were mostly quite abraded, particularly those with silty fabrics, however the post-medieval and modern material was better preserved.

Fabrics

Twelve fabric types were identified amongst the assemblage retained for full analysis (921 fragments, 69,533 g). These are described further below. Five fabrics (types 4, 5, 7, 8 and 9) were Romano-British in date. Two of these were grog-tempered: fabric 4 is soapy in texture and contains a common amount (20-25%) of coarse grog fragments up to 4 mm in size; fabric 7 is much siltier, with finer grog temper. Fabric 8 is characterised by a clean-looking sandy matrix, whilst fabric 5 is distinctly silty in texture. Fabric 9 is more mixed, with inclusions of sand, iron, flint and chalk visible.

The medieval and post-medieval fabrics (types 1, 2, 3, 10 and 11) were differentiated according to the grain size of quartz present in the fabrics. All were hard fired; two fabric types could not be defined on the basis of the inclusions alone, without recourse to petrological analysis, and have therefore been characterised using firing traits. In the case of fabric 2 the inclusions were no longer visible due to a high firing temperature creating a nearly vitrified appearance. Fabric 10 was used for the manufacture of late post-medieval bricks, again fired to a very high temperature, creating a vesicular fabric. Fabric 1 demonstrated a fairly clean, sandy clay matrix with a sparse amount of argillaceous inclusions, fabric 3 was siltier with fine to medium-grained black iron oxides. Fabric 11 also contained fine-grained black iron inclusions; however larger red iron oxides, up to 10 mm in size, were also seen. Fabrics 6 and 12 represent modern pipe and brick fabrics and have not been recorded in detail.

Forms

A large range of brick and tile types were identified in the assemblage. The Roman types include *tegula*; *imbrex*; box flue-tile; plain, flat tile and brick. The *tegulae* were manufactured using four fabric types, and in a variety of sizes. The *tegulae* faces ranged in thickness from 15-35 mm, with a peak at 18 mm. The flanges measured from 36 mm to 58 mm, although most were within a range of 45-54 mm, comparable to the average depth of 50 mm recorded during Brodribb's study of Beauport Park (Brodribb 1987, 13). Cut-aways were visible on only three fragments, one of which also displayed a paw print and another a single signature ring. Two further tiles were also marked by single signature rings.

Imbrices and box flue-tiles were represented by 66 and 42 fragments respectively. Combing was present on many of the box-tile pieces, however the fragments were too small to enable any patterns of keying to be recognised. A wide range of tile thickness was recorded, from 11 mm to 30 mm, with the majority falling between 13 mm and 20 mm. The *imbrices* represented a slightly tighter range, 11 mm to 22 mm, with a peak between 12 mm and 16 mm. Fragments of plain tile (< 40 mm thickness) occur widely in this period, brick (>40 mm) is less common. The plain tiles range from 10 mm to 38 mm in thickness, with the greatest peak between 14 mm and 20 mm, and it is likely that most originate from *tegulae* or possibly *tubulus* rather than floor tiles. There appears to be no correlation between the tile type and fabric during the Roman period.

During the medieval and post-medieval period the roofing material includes peg tiles, hip tiles, a single nib tile and several fragments of curved tiles. Most of the peg tiles demonstrated one pre-firing perforation, usually circular in shape, although squared examples also occur. These holes ranged in diameter from 12 mm to 17 mm. The most complete example of a peg tile was 150 mm wide and 11 mm thick, with two 15 mm diameter perforations, 30 mm apart, 15 mm from the top edge, 40 mm and 45 mm from each side edge. The thickness of the peg tiles as a group ranged from 11 mm to 20 mm, peaking at 12 mm and 13 mm. Flat tiles displaying no distinguishing features were recorded as plain tiles, they were between 10 mm and 35 mm thick, however a peak again at 12 mm and 13 mm suggests that many of these fragments originate from peg tiles. The small quantities of hip and nib tiles are reported on below. The width of two bricks could be measured at 100 mm and 102 mm, the thickness of all medieval and post-medieval bricks varies from 41 mm to 60 mm.

LTCP

A rigorous sampling strategy was applied to the LTCP site as a result of the large quantities of ceramic building material encountered during the excavation of the post-medieval hunting lodge. This resulted in only a small proportion of the material being retained for quantification, totalling 476 fragments, 107,670 g, and recovered from 135 contexts. Of this material, 259 pieces (85,102 g) were recorded at the assessment stage and then discarded. Many of these were unstratified (mostly recovered from the topsoil), or were modern in date. The most diagnostic medieval and post-medieval pieces were retained for full analysis, as well as a quantity of Roman material.

The Roman material was recovered from 38 contexts across the site (90 fragments, 6125 g), with diagnostic pieces recorded from six contexts. *Tegula* fragments were recovered from contexts 129017 and 140024, both in late Roman ditches. A further piece was intrusive in Late Iron Age ring ditch 129062 (context 139043). Box-tile was identified in Late Iron Age/early Roman ditch 109215 (context 138012) in association with *imbrex* fragments, and also in context 114041, in Late Roman ditch 143007. The quantity of diagnostic material was low, however, most fragments were plain and flat.

The medieval and post-medieval assemblage was much better preserved, as might be expected as these were specifically selected for retention. It is dominated by roofing material, predominantly peg tiles, recovered from context 450023 (demolition rubble), context 913904 (ditch 913903), context 915403 (ditch 915402), context 915604 (ditch 915603) and cobbled driveway 915606. Single hip tiles were recovered from cobbled surface 458025, layer 460019 above a cobbled surface and context 459009 (pit 459005). The hip tiles were wedge-shaped with square or circular nail holes, 9-10 mm diameter. The clay had not been completely pushed through the perforation of the tile from layer 460019, and had not been subsequently knocked through with a nail. This would suggest that this tile was never actually used. The narrow end of two of the tiles had been finished in an arc shape, presumably to facilitate a close fit with the timbers. The edges of the tile from context 458025 were very smooth and were probably cut with a wire. The hip tiles were of a similar thickness to the peg tiles, 13-15 mm. Two curved tiles were present in contexts 459008 (fill of pit 459005) and 461001 (from robber cut 461014), the example from the latter was vitrified. The bricks were probably stock moulded, a single plinth brick was also recovered from context 466025 (ditch 466020). This brick was chamfered on one face, measured 195 mm in length, 53 mm in height, 101 mm in width across the base and 53 mm across the reduced upper area. The retained brick fragments were mostly vitrified, and ranged in thickness from 46 mm to 66 mm.

Few fragments of plain, flat tiles were recovered from the LTCP site. Those that were include a complete floor tile, measuring 160 mm x 160 mm x 35 mm, with mortar adhering to all four sides and the base. A second partial floor tile was also recovered, measuring 153 mm x 32 mm, traces of mortar were again present. Only one decorated floor tile was present in the assemblage, originating from post-medieval occupation layer 472004. This tile was stamped and slipped, and displayed a geometric pattern. No trace of the glaze survived.

MTCP

The MTCP site produced the largest assemblage of ceramic building material, recovered from 205 contexts. It was predominantly Roman in date (91% by count, 92% by weight) and provided evidence for roofing and cavity walling. The roofing material consists of 66 fragments of *tegula* and an almost equal number of *imbrex* pieces (63 fragments). Much of the plain, flat tile recovered from the site may have broken from *tegula* faces. Box flue-tile fragments numbered 37 and suggest the presence of a substantial building near to the site. Evidence for ceramic roofing material in the medieval period is limited to a single nib tile from context 354054, the fill of windmill ditch 354053. This tile is 16 mm thick, the nib projects from one side of the tile, and would have been used to attach the tile to the roof. A small number of bricks were recovered of Roman, medieval and post-medieval, and modern date.

FLB

The assemblage recorded from the FLB site was mostly undiagnostic, consisting predominantly of plain, flat tile fragments and miscellaneous pieces with only one surface remaining. The Roman material was represented by a single box-tile from layer 402019 (surface 402021) and a small number of plain fragments. The remainder of the assemblage was medieval and post-medieval in date, and included two flat fragments with remnants of a brown glaze on one side (from layers 401013 and 405082 – fills of pit 405083). They were relatively thin (15 mm and 16 mm respectively) and as such may have been used as wall tiles rather than floor tiles. Ten peg tile fragments were present, and it is likely that most of the pieces recorded as plain tiles did in fact originate from roof tiles.

The M11 and SG sites

The M11 site produced ceramic building material from seven contexts, with features ranging in date from the Bronze Age to the modern day. With the exception of a complete modern brick, the assemblage is small, abraded and undiagnostic, and represents only a background spread of material. The fragments in the prehistoric features are, of course, intrusive. The SG site also produced a very small, undiagnostic assemblage from seven contexts.

Discussion

The ceramic building material was predominantly recovered from the LTCP and MTCP sites. Fragments from 380 contexts were recovered, indicating the general spread of material across the sites. No large dumps or other concentrations of material were noted. The range of fabrics in all periods was fairly small, and was mostly distinguished by the grain size of the quartz inclusions. In the Romano-British and medieval / post-medieval periods both silty and sandy fabrics were used, indicating that the tiles recovered from Stansted were the products of more than one clay source and kiln.

The Romano-British ceramic building material recovered from the Stansted sites was concentrated on the MTCP site, with a lesser amount recovered from the LTCP, and only very small quantities recorded from the FLB and M11 sites. The presence of roofing material, in the form of both *tegula* and *imbrex* fragments, and evidence for cavity-walling, indicates the presence of a substantial masonry building in the vicinity of the sites, although the small quantities recovered suggests that it did not form part of the excavated settlements. This building would have been served by a hypocaust system and was roofed using flanged and curved tiles.

The medieval and post-medieval material was concentrated on the LTCP site, with very little recovered from the other sites. The presence of a large quantity of peg tiles indicates that the roof of the hunting lodge was tiled, three bonnet hip tiles removed from the site creates a more detailed picture of a hipped roof rather than a gabled roof. The early phase of the building was timber built, however by the final phase bricks were used in the construction. Bricks were also used to line a well located to the south of the structure, and to create foundations.

Fabric descriptions for the ceramic building material

1. A hard, sandy fabric, reddish orange in colour, containing a moderate amount (10-15%) of angular, medium to coarse-grained quartz, well sorted; sparse (5-7%) hard, argillaceous inclusions of the same colour as the clay matrix, rounded, ≤ 2 mm, well sorted, were also present. This fabric has a broad date span from the medieval to the post-medieval period.
2. Hard fired, purplish grey colour. The clay has fused and the inclusions are not visible at X20 power using a binocular microscope. This level of firing was mostly seen in medieval and post-medieval contexts, however there was also a single example from a Roman context.
3. A hard, silty-textured fabric, pinkish orange in colour, containing a moderate to common amount (15-20%) of sub-angular, black iron oxides, mostly fine to medium-grained, and a sparse amount (5%) of angular red iron oxides, up to 2 mm in size, poorly sorted. The clay matrix contains an abundance of fine-grained quartz, barely visible at x20 power. The fabric represents the medieval and post-medieval periods.
4. A hard but soapy fabric containing a common amount (20-25%) of sub-angular to angular grog, ≤ 4 mm, poorly sorted, mostly unoxidised pieces. This fabric was utilised during the Roman period.
5. A hard, silty textured fabric of Romano-British date. The clay matrix appears to contain abundant very fine or fine sized quartz, but this is not clearly visible at x20 power, A sparse amount of fine-grained black iron oxides and occasional coarse-grained quartz, is also present.
6. Modern, speckled, iron-rich pipe fabric.
7. A hard, silty-textured, Romano-British fabric, containing a moderate amount (15%) of sub-angular to sub-rounded oxidised grog fragments, ≤ 2 mm, in a fine-grained sandy clay matrix with occasional rounded coarse to very coarse-sized grains.
8. A hard fabric of Romano-British date. The clay matrix is clean-looking and sandy, however the grains are not clearly visible at x20 power. The fabric may contain up to 25% sub-angular coarse-grained quartz, at least a proportion of which was probably deliberately added as temper.
9. A hard, silty fabric containing a moderate amount (10%) of medium to coarse-grained rounded, red iron oxides, and a rare to sparse amount (up to 5%) of angular flint and rounded chalk fragments. The clay matrix contains fine-grained quartz. The fabric is Romano-British.
10. Very hard, sandy fabric, dark reddish brown colour, almost vesicular indicating a very high firing temperature, contains a common amount (20-25%) of medium-grained quartz, sub-rounded, also contains a moderate amount (10-15%) of red iron oxides, up to 20 mm, poorly sorted, visible on the surfaces. Late post-medieval period.
11. A hard, sandy fabric, dark orange in colour, containing a common amount (25%) of medium-grained sub-rounded to sub-angular quartz, well sorted. A moderate amount (10%) of red iron oxides, up to 10 mm, are visible on the surface. The clay matrix contains a background of fine-grained black iron oxides. Late medieval in date.
12. Modern brick fabric.

Table 20.1: Quantification of ceramic building material recovered by site

Site	Count of pieces	Weight of pieces (g)	Average piece weight (g)
LTCP	476	107,670	226
FLB	84	2,751	33
M11	61	1,663	27
MTCP	618	43,222	70
SG	16	102	6
Total	1255	155,408	124



*Framework
Archaeology*

London
BAA Stansted 