

**Channel Tunnel Rail Link
London and Continental Railways
Oxford Wessex Archaeology Joint Venture**

**Building material from Parsonage Farm, Westwell,
Kent (ARC PFM98)**

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TABLE OF CONTENTS

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 3 |
| 2 | CERAMIC BUILDING MATERIAL | 3 |
| 2.1 | Floor Tile | 3 |
| 2.2 | Roofing Tile | 4 |
| 2.3 | Discussion..... | 8 |
| 3 | Bricks | 9 |
| 3.1 | Group 1 | 9 |
| 3.2 | Group 2..... | 10 |
| 4 | BIBLIOGRAPHY..... | 11 |

1 INTRODUCTION

The Museum of London Archaeology Service (MoLAS) was commissioned by Union Railways (South) Limited (subsequently London and Continental Railways) to undertake a detailed excavation to the west of Station Road near Westwell, Kent. Excavation in advance of the construction of the Channel Tunnel Rail Link (CTRL) at Parsonage Farm (NGR TQ 598050 146050), uncovered evidence for a medieval farm or manor. A brushwood platform of late pre-Roman Iron Age or early Roman date was also partially uncovered on the bank of a nearby stream.

The building material was originally recorded and assessed by Susan Pringle, with notes on the worked stone by Mark Samuel. The present authors have made use of these records in compiling this report, although the material itself has also been examined. The assemblage comprises 239.59 kg of ceramic building material. Some 33.45 kg of stone, 0.96 kg of daub, and 0.61 kg of plaster were examined as part of the same programme of work. These are reported on elsewhere. Fabric types were established by microscopic examination (x10). They have been given fabric numbers PFM1 to PFM11; these correspond closely to MoL fabrics, although they are almost certainly local, Kent, varieties of these, the products using essentially similar raw materials.

2 CERAMIC BUILDING MATERIAL

Peg tiles account for the vast bulk of the ceramic building material in the assemblage, although other roofing tile types, bricks, and a single floor tile are also present. The huge preponderance of roofing tile types in the assemblage may reflect the difficulty of salvaging them in a complete form for reuse elsewhere, as appears to have happened to most of the building materials on abandonment of the site.

2.1 Floor Tile

Fabric type: PFM1 (see roofing tile section)

The only floor tile from the site was a single fragment from demolition debris 480 (subgroup 481). It is in roofing tile fabric PFM1 and has a plain light brown glaze. Its one preserved edge is bevelled. No dimensions are preserved, even the base being missing, although it was not less than 22 mm thick. Sufficient remains, however, to show five stab marks, each approximately 5 x 2 mm, casually placed in the base with a narrow-bladed knife (Fig. 1). They may have been added to aid uniform firing – though unsuccessfully since the core of the tile is partly reduced – rather than as a mortar key, for which these slight impressions would not have been very effective.

The tile is fairly crudely made with the glaze covering an uneven top surface, suggesting that it is the product of local roof tile-makers rather than craftsmen with more experience in the manufacture of floor tiles. This may also explain why it is in the same fabric as certain ceramic roofing tile. Both roofing tile and plain glazed floor tile seem to have been made together at the Naccolt kiln at Wye (per comm John Cotter).

The Parsonage Farm tile presumably dates from the occupation of the moated site in the 13th century and may come from the hall itself or from one of its appendages, such as a solar. It is slightly odd that only one floor tile was recovered, but floor tiles were a valuable commodity which would have been stripped out for reuse, providing they were not too badly worn, when the manor was abandoned.

2.2 Roofing Tile

Fabrics

Examples of each of the fabrics referred to below are in a Fabric Reference Collection held at the Museum of London. Since the initial recording work there have been minor adjustments to the roofing tile fabric classification. Fabric types PFM3 and PFM4 have been grouped together as these are sufficiently similar to indicate they are from the same production source. Similarly PFM5 and PFM8 have been grouped together for the same reason.

Certain fabric types have shared characteristics, such as the presence of glaze and the used of what are believed to be verge tiles in fabrics PFM1, PFM2 and PFM9. These too, particularly PFM1 and PFM9, may share a common production source.

PFM1

Orange to red colour. Moderate amounts of medium to coarse quartz and occasional dark orange iron-rich inclusions. The clay is poorly mixed, and some streaks and lumps lack quartz sand inclusions. Similar to London tiles in fabric 2586, but probably from a Kent production site.

PFM2

Light brown, often with grey core. Abundant fine quartz, sparse white calcareous inclusions (up to *c* 3 mm) and dark red iron-rich inclusions. Sparse, very coarse, white mica flakes are visible on surface of some tiles. Similar to London fabric type 3228 but lacks the scatter of small shell fragments found in the London tiles. It is probably therefore from a Kent production site. The fabric is similar to Ashford/Wealden sandy ware pottery fabric (CAT fabric M40B) broadly dated to 1175–1400 (pers comm John Cotter).

PFM3/PFM4

Orange, pink, maroon, some with a grey core. The surface often has a cream to light brown colour. Generally fine fabric with distinctive calcareous mottle and streaking. Inclusions, medium to coarse quartz, sometimes in lenses. In PFM3 moulding sand is medium to coarse and the fabric can be well-fired and splintery. The tiles in PFM4 have fine to medium moulding sand, but usually have a distinctive chaffy appearance. They are closely similar to PFM3, but softer and less splintery. Roofing tiles in these fabrics are occasionally found in London where they are given Museum of London fabric number 3201. Both resembles the products of the Naccolt kiln, Wye, north-east of Ashford, which was owned by Battle Abbey (pers comm John Cotter), but there is evidence that tiles in PFM3/PFM4 may have been made close to Parsonage Farm manor.

PFM5/PFM8

Green to yellow, off-white to light orange. Tiles in PFM5 have very fine quartz with sparse very coarse grains and some tiles have iron-rich clay and very coarse rounded calcareous inclusions. Those in PFM8 have a fine red mottled clay matrix. The moulding sand on PFM5 is fine, but poorly sorted and on PFM8 is medium sized and pale pink in colour. Despite the differences both probably originate from the same production source. The same kiln source may have supplied small numbers of roofing tiles in Museum of London fabric type 2278 to London.

PFM6

Red. Highly fired with calcareous inclusions; sometimes with grey core; sparse quartz; fairly fine moulding sand. Probably a less calcareous version of PFM3/PFM4.

PFM7

Orange. Common dark orange clay inclusions (most 1–1.5 mm, but some up to 5 mm) with scatter of cream coloured silty lenses and inclusions, plus fine to medium sized quartz.

PFM9

Orange-red to red. Common to frequent, medium to coarse, quartz sand and sparse white shell. The matrix often has a ‘corky’ appearance and there are some iron-rich inclusions.

Peg tile

Fabric types: PFM1, PFM2, PFM3/4, PFM5/8, PFM6, PFM7, PFM9

The main peg tile characteristics can be summarised as follows:

1. A small but distinct tapering of the breadth from the base of the tile to the top (fabrics PFM1, PFM2, PFM9).
2. Exceptionally narrow tiles, some with a single nail hole (fabric PFM1). These are likely to be purpose-made verge tiles, for use on the gable edge of a roof (Fig. 2). None are complete, but the surviving fragments ([266], [456]) have a breadth of 113–115 mm at the top edge widening to at least 125 mm towards the base.
3. Yellow and green glaze is present on peg tiles in fabrics PFM1, PFM2 and PFM9. This is normally in the form of a splash glaze or occasional glaze spots. A more uniform glaze coating (covered glaze) was noted on the bottom end of tiles in fabrics PFM2 ([279], [382]) and PFM9 ([456]).

With the exception of what may be verge tiles, all the peg tiles are of two nail hole type (Fig. 3), allowing either iron nails or wooden pegs to be inserted in order to hang the tiles onto the roof. The nail holes can be either round, polygonal or a slightly rounded square shape. The later are of diamond type having been deliberately inserted at the 45° angle to the tile sides. Round holes are present in tiles in fabrics PFM1, PFM2, PFM3/4, PFM6, PFM7, PFM8 and PFM9, diamond holes in fabrics PFM1, PFM3/4, PFM6, PFM8 and PFM9 and polygonal holes in fabrics PFM3/4 and PFM9.

There is no evidence that the difference nail holes types represent chronological changes. Instead, it would appear that different nail hole punches were in use around the same time. Perhaps, each tilemaker had his own punch shape to differentiate the tiles he made from those of his colleagues. This would have been important if each tilemaker was paid in relation to his output.

At least two peg tiles have had additional nail holes added after firing. One, which came from a pit fill ([266], subgroup 212), has part of an additional hole set around 52 mm from the tile side. The other, also from a pit fill ([771], subgroup 360), has a round shaped hole 9 mm in diameter located 135 mm down from the top and 33 mm from the right-hand edge (Fig. 4). Presumably these were located where additional nails or pegs were required for more secure attachment, perhaps at the roof end.

There is evidence in the London area that certain tileworks marked each batch of tiles awaiting firing. These ‘batch’ marks are often in the form of a faint finger mark in the top left or right corner of peg tiles. No such marks were noted on the Parsonage Farm assemblage although three scored lines on the upper surface of a peg tile found in a pit fill ([177], subgroup 201) may be such a mark (Fig. 5). The only other marking of note occurs on a peg

tile from the tile drain lining ([456], subgroup 270). This has a deep paw print, presumably the result of an animal walking over the tile when it was laid out on the ground to dry prior to firing.

Only five peg tiles survive with complete dimensions, but many others survive with their full breadth. The surviving complete and partially complete tiles (excluding verge tiles) are listed in Table 2. There is no significant difference in size between tiles in the various fabric groups suggesting there was a degree of size standardisation. Some minor differences are discernible: there are a number of peg tiles of small breadth and thickness in fabric PFM4 all from the same pit fill ([883], subgroup 387), whilst some of the tiles in associated fabrics PFM3 and PFM4 have a larger breadth than other peg tiles.

Ridge tile

Fabric types: PFM1, PFM4, PFM9

Running along the crest of each area of each tiled roof would have been a line of curved ridge tiles (Fig. 6). As far fewer such tiles were needed in comparison to peg tiles not surprisingly the number found during excavation was considerably smaller (17 fragments in total). These ridge tiles, none of which are complete, are around 11–15 mm thick and splash glaze is present on the upper sides and along the top of the examples in fabric PFM9 ([280], 461], [697]). No ridge tiles show any signs of decoration.

Hip tile

Fabric types: PFM1, PFM2, PFM4, PFM9

There are 21 roof tiles which can be identified as hip tiles. A further 60 curved fragments could be either hip or ridge tiles, although one fragment is unusually thick (21 mm). It is possible that this tile ([206], subgroup 12), which was used in a hearth, may be a Roman imbrex roofing tile.

Hip tiles are curved roofing tiles which are tapered in shape with a nail hole located near the top edge. The holes are most commonly round in shape, as they are on the surviving Parsonage Farm examples. These tiles were used to cover the junction where two different areas of sloping roof. They seem to have been used on Building 2, but not Building 1, suggesting that the former had a more complex roof structure. A partially complete hip tile (fabric PFM2) was found in the moat fill ([313], subgroup 165). It measures 235 mm in length by 10 mm thickness and has a brown glazed band running along the bottom edge (Fig. 6). This tile is very unusual in having the top edge coming to a point. All the other hip tiles found at Parsonage Farm are of more normal hip tile shape with the top edge above the nail hole parallel to the bottom edge (Fig. 7).

2.3 Discussion

The earliest peg tiles are found in the fill of a robber cut in Phase 1 ([1048], subgroup 492) suggesting they were used early in the medieval occupation of the site. Numerous peg tiles were found associated with the first and second periods of Parsonage Farm moated manor (Buildings 1 and 2). It is not certain which parts of Building 1 were roofed in tile. In the initial period it is possible that ceramic tiles covered only Room 1, with perhaps other types of roofing, such as wooden shingles, used elsewhere. There is documentary evidence that wooden shingles were used in this part of Kent before the widespread adoption of ceramic tiled roofs (Adams 1996, 36).

The presence of ridge tile, but no hip tile, associated with Building 1 suggests a simple gabled tiled roof. It seems likely that more extensive use was made of ceramic roofing tile on Building 2. The presence of hip tiles would indicate a more complex tiled roof structure.

The roofing tiles used to cover the manor buildings are in an unusually wide variety of fabric types, even taking into account that some may be from the same kiln source. Certain fabric types, particularly PFM6 and PFM7, are present in such small amounts (see Table 1) they presumably represent roofing supplies brought in for minor repair work.

Possible tile production

A feature of the site is the presence of tiles which show signs of overfiring. Some of these could still have been used as roofing but there are a small number, such as those found in part of the moat fill ([312], subgroup 165), which are so overfired that it seems very unlikely they were even placed on a roof. These tiles are so highly fired it is no longer possible to determine their fabric type.

Roofing tiles with varying degrees of overfiring are present in fabric types PFM1, PFM2, PFM3/4 and PFM9. The vast majority (around 95%) are, however, in fabrics PFM3/4 which suggests that they may represent the production of tiles at Parsonage Farm manor. It may be significant that the fabrics PFM3/4 form the largest group by weight of the total ceramic roof tile assemblage (48%), which is what would be expected if these tiles were being made nearby (Table 1). The small number of overfired tiles in other fabrics could be explained by their use in a kiln structure, hearth area or in some sort of industrial activity such as that present to the north-east of the main building.

Overfired tile is associated with both Buildings 1 and 2 suggesting that tiles could have been made on the site by the 12th or early 13th century. There is no reason why a roofing tile industry should not have been set up by this early date, as ceramic roofing was

being used in London by 1135–36 with peg tile manufacture established by around 1180 (Betts 1990, 221–223).

There is circumstantial evidence that tile production may have been one of the economic activities undertaken at Parsonage Farm. There is documentary evidence that a moated manor, which may well have been Parsonage Farm, relocated around 1290 to a new site at Westwell. Roof tile manufacture at this new site had started by 1291–92 and continued until around 1310 when it moved to another medieval manor at Great Chart (Adams 1996, 43). If the manor at Parsonage Farm did indeed move to Westwell, then there is every likelihood that the manufacture of tile was being undertaken before the move.

Reference has already been made of the similarity of tiles in fabric types PFM3 and PFM4 to the fabric of the tiles made at the Naccolt kiln at Wye. This is not unexpected as Wye is located less than 8 km east of Parsonage Farm, so if the manor was involved with tilemaking similar clay sources may have been exploited. Similar clay deposits were probably used at Great Chart which is located 4 km south of Parsonage Farm.

Some explanation needs to be found for the presence of other fabric types, as these clearly show that roofing tiles were being brought in from a number of different kiln sources during the life of the manor. It is possible that such tiles arrived for urgent minor repair work, such as would be needed after a violent storm. Alternatively, additional supplies may have been needed during major construction projects even if the manor was operating its own tile kiln.

3 BRICKS

A number of brick bats or fragments, but no complete bricks, were recovered, some from the moat fill, others from dumping associated with smithy activities, and some from post hole fills. All are in variants of MoL fabrics 3033 and 3046 (fabrics PFM10 and PFM11 respectively). This does not imply, however, that they are London products: most, possibly all, were probably made at fairly local yards, perhaps within the Weald. On the basis of characteristics and dimensions (though not of fabrics) the bricks may be divided into two groups.

3.1 Group 1

Three bricks in this group preserve breadths of 97 mm, 106 mm, and 112 mm; thicknesses range widely from 47 mm to 66 mm with a median of 54 mm. Brick thicknesses provide only a tentative guide to dating, although the bricks from the moat filling are all thin (47–60 mm: 1¾–2⅜ in), suggesting a relatively early date. It is extremely unlikely, however, that they come from the 13th-century buildings. In Kent, bricks were used in a very minor way at Allington Castle, near Maidstone, *c* 1280, although these are pinkish-yellow in colour. So too are those

of 14th-century date at Horne's Place Chapel, Appledore and in two small buildings of uncertain purpose at Grench Manor, Gillingham. Compared with Essex, Kent was tardy in adopting brick, even in Canterbury (Tatton-Brown 1990, 80), with the first major use of the material in its own right occurring at Wickham Court, West Wickham only in 1469. (For the Kent situation, see Rigold 1973, 188; Smith 1990, 171-4.) The bricks from the moat are more likely to be of Tudor or Stuart date. Those from post hole fill 746 and some from dumping level 709 may be of similar date, although the slightly thicker examples may be somewhat later. They are, however, abraded fragments occurring in later contexts.

The bricks show characteristics of hand-moulded products, notably crease marks from where the raw material was pushed into the mould and strike-marks on the upper bedface where excess clay was removed. One shows a sunken margin, the result of manufacture as 'place bricks', carried in the mould from the moulder's bench to the drying area (the *place*) and laid flat for initial drying. Some have squodge-marks, caused by the material oozing slightly under the lower edges of the mould, which did not rest over a stock-board. One shows small suction-marks in the lower bedface, probably caused when the brick was turned from the flat position on to a stretcher face for secondary drying. (For sunken margins see Betts 1996, 6-10; for place bricks and their manufacture, Smith 2001, 39-40.) Several of the bricks show yellowish glassy surfaces where they have vitrified during firing. One from the moat fill has a worn upper bedface and was probably used, set flat, as paving, internal or external.

3.2 Group 2

These bricks are represented mostly by fragments. No lengths or breadths are preserved and only two thicknesses, 65 mm and 66 mm, were recorded. Sunken margins are not present and arrises are quite sharp. The thickness (of just over 2½in) suggests an 18th-century or later date, as do the arrises. They were probably hand-moulded, but as 'stock bricks', with the mould placed over a stock-board fixed to the bench; the bricks were carried to the drying area in batches, with small pallet boards between them, and were set on edge even for initial drying (Smith 2001, 40). The use of stock-board and pallets accounts for the much sharper arrises compared with earlier bricks. It is possible, though far from certain, that some of the Group 2 bricks were machine-moulded, in which case they cannot be earlier than the second quarter of the 19th century, when various brickmaking machines were introduced.

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