

CERAMIC BUILDING MATERIALS, ST JOHN'S COLLEGE, OXFORD (OXJL16)

by John Tibbles

Introduction and Methodology

Four-hundred and thirteen fragments of ceramic building material weighing c.27904 grams were submitted for examination. All the material was retrieved from 46 contexts Information regarding the dimensions, shape and fabric of the material was recorded and catalogued accordingly. It should be noted that the diversity of size and colour within the material caused during the manufacturing process must be taken into consideration when comparing examples within collected assemblages and local typologies. The varying sizes and colours can be attributed to the variation in the clays used, shrinkage during drying, firing within the kiln or clamp and the location of the tile within the kiln.

The Assemblage

Table 1. Assemblage Quantification

Form	Number
Brick	81
Roof Tiles	200
Floor Tiles	29
Non identified	36
Modern Tiles	2
Totals	347

Bricks

Bricks were manufactured to the shapes required, the standard rectangular shape for common usage and the more specialised shapes to form architectural features around arches, doors, windows and vaults. Bricks and tiles were both made in a similar fashion by the insertion of a wad of prepared clay into bottomless moulds, moistened and often covered in sand to facilitate the removal of the formed clay. The excess clay would be struck off and the form tipped out onto a palette board and removed to prepared area of ground until partially dried and ready for firing. By 1840 new brick manufacturing techniques were employed creating more uniform and neater bricks.

Dating of bricks is highly contentious due to their re-use nature as a valuable building commodity. At York in 1505 bricks were standardised at 10" x 5" x 2 ½", Parliament in 1571 decreed that the size of a brick should be 9" x 4 ½" x 2 ¼" and again in 1725 the brick size should be 9" x 4 ½" x 2". By 1850 the size of bricks was generally 9 x 4 ½ x 3" (Dobson 1850) although by the turn of the 20th century this size varied slightly throughout the country (Rivington 1919,113).

Lloyd suggests that no ten inch bricks were manufactured after 1550 (Lloyd 1923, 89-100), however, a York charter of 1585 stipulates a brick size of 10" x 5" x 2 ¼". Bricks with a length of 9" are generally considered to be of a post early 16th century date although examples from the 13th - 15th century are known (Lloyd 1923,89). Brick statutes were implicated from the 16th century and were continually revised. Statute lengths generally decreased in size and thicknesses remained fairly constant throughout the 18th century (9" x 4 ¼" x 2 ½", 1769: 9"x 4 ¼ " x 2 ½",1776: 8 ½" x 4" x 2 ½"). Although due to technology of the time these sizes were not closely followed (Hartley 1974, 74) and varied widely (Campbell & Saint 2002, 180)

A single complete sample brick displayed dimensions of 230mm x 110mm x 70mm (9" x 4 ¾" x 2 ¾") from context 604. It displayed sharp arrisses and is of 'pressed' manufacture. Bricks of this size date in range between the late 17th century to the early 19th century. however, the manufacturing characteristics would tend to suggest a late 18th century date of manufacture.

Only one other sample from context 304 displayed width and thickness of 110mm x 46mm (4 ¾" x 1 ¾"). Substantial footwear was evident sealed with mortar suggesting reuse of earlier

material. The remainder of the assemblage displayed thicknesses within a range of 35mm to 50mm. This range of thickness is compatible with early medieval date.

Bricks displaying only width and thickness varied within a range of 110mm-140mm (4 ¼" – 5 ½") wide by 35mm-65mm (1 ¾" – 2 ¾") thick. Although bricks of the smaller thickness were manufactured in the early medieval period caution must be taken, as measured thickness may be the result of wear or over-firing. Generally the dimensions of the bricks were fairly evenly spread throughout the site phases suggesting that no direct correlation can be made between phase and part brick size. The continual re-use of brick as a building material may act as a contributing factor to this evenness.

Floor Tile

A total of 30 floor tiles were identified from within the assemblage of which 24 bore evidence of glaze, seven displayed heavy footwear, and the majority residual mortar adhesions. Possible evidence of demolition or renewing floor. Although it is likely that decoration may have existed on some of the tile the heavy wear experienced has destroyed any evidence. Tiles are of a probable 14th century date of manufacture.

From within context 285 a single fragment of a patterned glazed Delft wall tile. Decoration and colours suggest a 17th century date of manufacture.

Context 461 contained a single fragment of paviour or floor tile, displaying a thickness of 25mm and heavy mortar adhesions suggesting its reuse as a filler piece within a structure. Such tiles are recorded from the 18th century. (Drury 1975)

Ceramic roofing tile

Classification of roof-tiles involves recording of their dimensions, fabric and methods of suspension. The positions of the suspension pegs, nibs and holes are described from the underside of the tile (i.e. that which is beneath when hung). Only a small percentage (<1%) of the tile assemblage displayed only two diagnostic qualities, the majority showed only the suspension method and thickness. From such little data it was considered not possible to fully compare examples with the existing regional typologies and therefore a 'best fit' policy was adopted, biased heavily towards the suspension methods.

There is clear evidence to show that clay roof-tiles were in use within the Hull valley and its surrounding regions by the late 12th century (Armstrong, 1992, 219; Armstrong, 1991, 201) and had become common roofing material in Hull by the 13th century. Beverley had flourishing tileries at the Becksby by the 13th century (Tibbles et al 1993) (Atkins et al 1987). Ten miles north of Hull, the Cistercian monks at Meaux Abbey were also manufacturing clay roof-tiles during the 13th century. (Eames 1961).

The manufacturing techniques for flat roof tiles was similar to that of bricks (see Bricks) with the exception of the suspension methods. These ranged from simple one or two holes for nails or pegs to applied nibs in varying forms. Often a combination of both hole and nib were utilised.

Demand normally dictated the size and quality, which often varied, until a statute was instigated in 1477 (17 Edward IV, c iv) which dictated the size. A flat-tile was fixed at 10 inches by 6 inches by 5/8 inch (255 mm x 153 mm x 16mm), a ridge tile 13 inches long by 1/2 inch thick, and a hip tile 10 inches in length with a convenient width and thickness (Celoria et al 1967, 218). Early flat roof-tiles were suspended by projecting nibs, wooden pegs or nails. Ridge and hip tiles were secured by iron nails and mortar. Each layer of flat-tiles overlapped the layer below and to make them weatherproof were bedded on moss. The lowest layers, and sometimes all the layers, were often pointed or rendered with mortar (Salzman, 1952. 233).

Flat roof tile

A whole or part suspension hole varying between 12mm-17mm in diameter was identified within the assemblage on twenty fragments and a single fragment displayed the residual elements of a pulled

nib. Both suspension methods were common in England from the late 12th century continuing through to the early 18th century.

Thickness of the flat tiles ranged between 9mm and 17mm, although ridge tiles within the assemblage have thickness towards the higher end of the range it is possible due to the small size of the fragments some of the thicker fragments may indeed be ridge tile.

There was very little evidence for reuse of the flat roof tile and although two fragments displayed evidence of burning the majority of the assemblage did not appear to be of demolition material.

Pantile

Although Pantiles were imported into Britain by the 16th century there is no evidence for their manufacture in this country before 1700 (Neave 1991). By the eighteenth century as they became more fashionable they became far more common replacing the traditional flat tile. It is difficult without fabric analysis to differentiate between the imported Dutch tiles (Dakpannen) and English pantiles manufactured locally. During the reign of George I an Act of Parliament was passed stating that a fired tile should not be smaller than 13 ½" x 9 ½" x ½" thick, which has been the accepted size to date.

A single fragment was present retrieved from context 1000 and may be classed as late 19th to twentieth century date of manufacture. The lack of suspension nibs inhibits accurate identification for dating purposes.

Glazed Flat Roof Tile

From the glazed building material assemblage 6 non-diagnostic fragments (26%) were identified as flat roof tiles. The glazed ranged between a dark brown (7.5YR/3/4) and olive yellow (2.5YR/6/6). The small amount of glazed flat roof tile recovered suggests that only the eaves of a building had glazed flat tiles, possibly in association with glazed ridge tiles. All the fragments were < 50gm and appeared to be of a residual nature, probably the result of importation within make-up dumps. Fragments of glazed roof tile have previously been recorded within early 12th-14th century deposits at Hull (Armstrong 1987.238) and 13th century deposits at Beverley (Tibbles 2001).

Ridge Tiles

Ridge tiles are specifically made for covering a roof ridge and according to Scott's description (1964), vary in shape between half-round (a semicircle of 7 ¾" diameter), hogback (half-round tiles with a raised centre), segmental (flattened half-round tiles) and angle (sharp angle bend with flat surfaces). Ceramic ridge tiles are generally either half-round or hogback in shape. They would be held in place by mortar and/or nails and overlap the adjacent tile, although in some cases may be butted up end to end.

Fourteen fragments of ridge tile were identified within the assemblage from 10 contexts, five of which are probable ridge tiles. Examples from contexts 34, 343, 457 and 1000 bore evidence of either an olive green or reddish-brown glaze. Their thickness varied between 16mm-35mm and six samples displayed mortar adhesions of which samples from context 1000 and 1014 showed mortar over breaks. The examples were probably hogback type.

Discussion

From within the written record and the brick assemblage the category of brick manufacture was identified based upon recorded dimensions: 13th-14th century, century. Caution must be taken however as these categories are based on the date of brick manufacture which is not necessarily the date of the structure.

The majority of the material examined showed little or no evidence of representing demolition material. The examined bricks appeared to be of good quality with only two examples

being classed as seconds. The tile assemblage was also of good quality and a significant proportion of the substantially worn floor tiles of 13th-15th century date had been reused as 'filling' pieces in walls and structures. The assemblage in general is made up from quality materials which would be associated with buildings of high-status or religious houses.

Two fragments of roof furniture of unidentifiable shape were recovered from contexts 238 & 1004 manufactured in a homogenous fabric with no visible inclusions. Evidence of green glaze was visible. From the thicknesses, 7mm and 12mm, and residual form it is likely that they represent roof finials of a medieval date. Also within the assemblage from context 1001 a fragment of a glazed ventilator flap (?) was present.

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