
**Proceedings of the
Cambridge Antiquarian Society**
(incorporating the Cambs and Hunts Archaeological Society)

Volume LXXXVIII
for 1999

Roman Cambridge
Excavations on Castle Hill 1956–1988
John Alexander and Joyce Pullinger



This volume is dedicated to more than 400 volunteers who worked in their free time on the excavations and post excavation work, and to those contributors to the final work who did not live to see the results: Don Allen, Bernard Denston, Ray Farrar, Chris Godfrey, Rex Hull, Joan Liversidge and John Scott.

Roman Cambridge: Excavations on Castle Hill 1956–1988

John Alexander and Joyce Pullinger

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Proceedings of the Cambridge Antiquarian Society
(incorporating the Cambs and Hunts Archaeological Society)

Volume LXXXVIII
for 1999

Editor: Alison Taylor

Published by the Cambridge Antiquarian Society 2000

ISSN 0309-3606

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XI. Building Materials

J Pullinger and F Weatherhead

These include worked stones, roof, floor, box and hypocaust tiles, wall plaster, opus signinum, mortar, tesserae and bricks. Nails, iron fittings etc are described under *The Small Finds, App. I*. We are grateful to Dr C Forbes for help with identification.

Worked Stones

These were almost all oolitic limestone from Barnack and occurred, apart from the late 2nd century *mansio* and the 4th century town wall, in features from the late 2nd century onwards throughout the Roman town. Fragments, some large, were found in many features, for example in the fill of the 3rd century pit RGN II (12) (10), with brick and tiles. Often the stones were burnt, as in the late 1st century ditch, RGS (31e).

Marble

A corner piece of marble was in the fill of Trench RGS V (17). Another piece was in the lower fill of the shrine.

Granite

A worked corner piece in the 4th century fill over the top of the shrine.

Daub

The earliest recorded fragments were in an Iron Age hut circle ditch (CP VII X) and enclosure ditch (IX). In the former, one fragment had a finished surface. There was a large piece of daub in the fill of the Claudian ditch (RGS III (4b)). By far the largest quantity in Roman features was in the shrine, amongst the wood ash. Approximately 56 lb (25.4 kg), most of it burnt, were recorded. Several fragments were large and had finished surfaces, and one piece had a nail through it. Well RGS VI (25b), also had a numerous fragments in the fill, many still attached to timber. Daub fragments in the shaft, RGS VI (19h), were stained green. In the fill of many features in Ridgeons Gardens, Comet Place and Shire Hall daub fragments were found.

Tile

Roof, floor and box flue tile fragments were found in

small quantities in many Roman features. Most were of red clay with large grit tempering but a few were shell tempered. Floor tiles varied in thickness from 2.5cm to 5cm and were more numerous than roof tiles. Box flue tiles tended to be in fills of 3rd to 4th century features. None was found *in situ*. The best samples came from the *mansio*. There were roof tiles in the upper ash fills of the shrine (some burnt) but were not numerous. Tile *pilae* of the hypocaust were square, mostly 28 x 28cm, but a few measured 24 x 24cm.

Brick

Very few bricks were recorded and none was whole. Four were among the ash in the shrine.

Mortar

Small fragments were found in many features: MP C (16) & (7a), SP J (22), MP E (10) Pit & (9b), SP L (19), MP C (28).

Opus signinum

Pieces of *opus signinum* were few. Small fragments were in the late 4th century fill over the shrine and a small fragment was in a late ditch in RGS VII, in PH and SH 83 VI. Most was associated with the hypocaust of the *mansio*, CH 86 A, for it formed the floor. It had had two coats of paint, each of a different colour.

Wall plaster

Fran Weatherhead.

Fragments were found in many features throughout the Roman period, but apart from places described below these were in very small quantities.

Cellar F12

A significant quantity was excavated. It was poorly preserved in a highly fragmentary state and could be seen to extend beyond the limits of the trench. Archaeological evidence suggests that painted plaster had collapsed into the cellar in antiquity, together with pottery and other building material, from the room

above after a fire had destroyed the building. This room had been well furnished, judging by the presence of painted wall decoration, and the quality of some of the work denotes wealth. The room and its contents may have collapsed before it had been fully decorated. Pottery dates the plaster to the late 2nd century, in accordance with the style of painting. Dado material can be identified as well as three types of design from the upper zone: a simple panel-scheme, a figural/vegetal composition and a plain area decorated with a plain band. The plaster remains are too scanty to say with any certainty how many wall faces are represented, but there were probably two or three, from the fact that three distinct design-types from the upper zone are known to have existed and that two distinct types of plaster fabric are present.

Plaster Fabric Type 1

Most fragments are fairly small, mostly less than 3cm. They are extremely crumbly and it is impossible to find intact edges with which to make joins. They are mostly about 1cm thick, comprising the last application of coarse plaster and the very thin fine plaster upon which the paint was applied. The plaster underlying this, which had levelled out the irregularities of the wall surface, had stayed in place after the uppermost layer had fallen off, then it too had slithered from the wall probably as the walls collapsed during the conflagration. Remains of this first application were found mixed with fragments of painted plaster in the cellar fill.

One large intact piece shows four or five coarse plaster layers, 7 to 8.5cm thick. From this piece and other remains one can see that a first layer, 0.5 to 1.5cm thick, was applied to a wattle and reed framework, as there are fine horizontal impressions of reeds on the back surface. Next comes a layer about 4cm thick, comprising one or two plaster applications. Then there is a distinct layer, about 1.5cm thick and lastly the 1cm thick layer which survives the most and which bears the fine plaster and paint-work. Looking at the intact fragment in section, one can see that the filler gets progressively finer in the layers closest to the painted surface, although some comparatively large flint and stone particles still remain in the last coarse coat. In a similar direction the colour of the fabric changes layer by layer from dark-brown or black (evidence of burning) to dark-russet to pale-russet. The filler can be seen to comprise sand, various grades of gravel and crushed brick or tile which gives the russet colour. The addition of the latter had the effect of increasing the hydraulic properties of the lime in the mix. The fine coat, or *intonaco*, is visible as a white skim coat 0.5mm thick. This, no doubt, had been painted while still wet in the 'true fresco' manner to give the background colour, and the designs added later using the tempera method (Vitruvius, Book 7, recommends the addition of burnt brick to mortar where it is important to prevent the penetration of moisture in rooms susceptible to damp). This technique was the usual method of painting in Roman Britain.

Dado

Upon a red unburnished background there is a fine spattering of black and grey paint. This is a common Romano-British 'mock marble' design which appears in all periods but which was superseded to some extent by more elaborate designs in the later Roman period. One piece shows the edge of the design, a thin grey border line which is presumably the top of the panel (assuming that the brush-strokes run horizontally). Another fragment shows a flesh-coloured background with similar spattering of colour; perhaps this is the only indication of a different dado design from further along the wall or from a different wall.

Upper Zone

A few fragments, representing an area 30 x 30cm, show evidence of a red panel of indeterminate size. Most appear unburnished; the artist evidently had not taken the trouble to produce a very smooth surface. One piece has a very thin grey line, 0.5cm wide, and another dark-grey line 0.25cm wide. Four fragments show the remains of a small motif and blobs. One can envisage a plain red panel marked out with fine rectilinear lines which are interrupted at intervals, perhaps at the corners, by simple motifs. Comparison can be made with many other panel schemes from Romano-British sites such as the 1st century wall-plaster from Cirencester (Liversidge 1977) or the rather more elaborate late 2nd century plaster from Insula XXI, Verulamium (Davey and Ling 1981). This simple form of decoration occurs right through the Roman period, red panels with black intervals between being a common scheme in the late 1st and 2nd centuries. The Cambridge panel was bordered on one side by a grey band, evidenced by a few small fragments. Elsewhere there are a few black fragments over-painted with a white design, perhaps the remains of an ornamented black panel on another side. A few fragments of a lighter shade of red from an area about 15 x 20cm may have fallen from the same red panel, or alternatively, come from a separate panel close by; unlike the darker red fragments they have a smooth burnished surface indicating the care taken to produce a high quality finish. Again this panel was outlined with thin rectilinear lines. Remains exist of a thin purple line, 0.4cm wide extending 20cm. One piece has a thin grey line 0.25cm wide at a distance of 3.5cm away from a thicker white line, 0.5cm wide. Another piece shows light red next to part of a dark-blue band. Pink fragments from an area 10 x 10cm indicate yet another panel. One can perhaps reasonably conclude that a wall in the upper room had originally been decorated with three adjacent panels showing tonal variations of the same colour. We have, however, no connecting link between them and we have no idea of their sizes. Similar to the other two, the pink panel was marked with rectilinear lines; one fragment shows part of a thin grey line, 0.4cm wide, and the blue band bordering the light-red panel extended as a border to the pink area: three formerly pink pieces have been over-painted with the same blue. Some fragments show parts of designs: there are faint shades of grey and

mauve, and broad green brush strokes perhaps representing parts of leaves on a pink background. We have here either the evidence that the pink panel was once decorated with vegetal designs or these fragments are misplaced and really belong to the design to be considered below.

There are a few fragments representing an area of about 20 x 20cm with a white background, three of which make up part of a figural/vegetal design. Between two broad green brush-strokes (leaves?) there is a roughly lens-shaped object painted in different shades of red and pink. This might be drapery, indicating a fairly large-scale figure, (and as noted above, it might be associated with the vegetal designs occurring on the pink background). The quality of the paintwork is rather cruder than on the panel-schemes and no attempt had been made to burnish the surface. These features of the workmanship, if taken together with the stylistic evidence, (the large-scale depiction of representational subject-matter), would seem to indicate a later date for the figural/vegetal plaster than the panel-schemes, but archaeological interpretation of the cellar contents has securely dated all the plaster to the late 2nd century. The plaster fabric is also much the same in both cases, implying that the two very different styles of painting are probably contemporary.

Last to be considered in this section are a number of small miscellaneous pieces most of which are too poorly preserved to interpret their designs. One recognisable area shows a white stripe, 1.5cm, on a blue background, about 12cm long. This may be associated with the white panel described above.

Plaster Fabric Type 2

Here the coarse plaster comprising one or more coats is 2.5 to 5.0cm thick. Adhering to the back surface is a mortar-like substance, 1.0cm thick. The filler particles are comparatively large throughout the mixtures and even on the painted surface quite large particles can be seen. The quality of the paintwork is also crude and the overall effect is poorly executed. The rear surface is curiously flat, perhaps due to the fragmented wall-plaster having sheared away from an underlying levelling coat left attached to the wall when the wall collapsed. The painted surface shows a white background with a red band 2.5cm wide. It is uncertain how this design ties up with the other two described above, but the different type of plaster fabric probably indicates a different wall.

Pigments

From observation by eye one can say that the pigments used in the paintwork are those commonly found on Romano-British wall-plasters. They include carbon black, lime white and haematite or red ochre. Pink and grey would have been made by mixing the appropriate pigments. Yellows and browns are noticeably absent on our fragments, but this may be fortuitous and these colours may yet occur on material still under the ground. The paler blue granular paint on some of the fragments is presumed to be a mixture of white and the artificially produced (and imported?)

pigment 'blue frit'. A large lump of finely granular green pigment was found in the same archaeological context as the wall-plaster. This was identified by X-ray diffraction as glauconite, an hydroxy-silicate of potassium, aluminium, iron and magnesium, more commonly called 'green earth'. This lump of pigment was no doubt used in the decoration of the walls of the upper room, on work which was not finished. Green earth was widely used, being easily obtained and less expensive than malachite.

Mansio

It is evident that there were several design-areas, implying that fragments came from different walls, perhaps from different rooms. We have enough to say that mock-marble panels, probably from dados, had been popular in the building and a large-scale figure had once graced one of its walls. While it is often hazardous to attempt to date Romano-British wall-plaster by subject-matter large-scale figured compositions tend to occur in the 3rd and 4th centuries. We must be even less specific about dating the remains of our mock-marble panels since the method used, simple stippling or flicking the paint onto the surface, occurred right through the Roman period. They could thus date from the construction stage, of the building, no earlier than the second half of the 2nd century, up to its demolition in the 4th century. In the descriptions of the fragments we have attempted to group them by type of plaster ground. This can sometimes give an idea of the areas of wall-plaster where the same plaster mix had been used and thus indicate a rough proximity of the various colours and designs. However, the same plaster recipe might have been used for different walls, even for different rooms.

Plaster type A: Pinkish plaster with small inclusions of crushed tile or brick. 1.5–4.5cm thick

- 1) 13 fragments (c. 450sq cm) with white paint overlying earlier red. Where the red is exposed in one or two places around the edges spatters of black can be seen indicating a mock-marble design underneath. One piece shows an angled surface, perhaps from a window or door splay.
- 2) 2 fragments (c. 45sq cm) of orange-pink with worn white over-painting.
- 3) 2 fragments (c. 25sq cm) of pink background with white splodges. Another type of mock-marble.
- 4) 1 fragment (c. 10sq cm) of reddish-mauve next to white. Also 2 smaller plain white fragments.
- 5) 2 small fragments (c. 7sq cm) of plain red.
- 6) 1 fragment (c. 48sq cm) Showing small patches of white next to green.

Plaster type B: Creamish plaster, up to 4.5cm thick. Sometimes coarse constituents (small stones).

- 1) 2 fragments of pink background with small splashes of black, white and red stippled onto the surface or flicked on with a brush. Mock-marbling. Coarse filler in one (c. 35sq cm). (Fig. XI.1)
- 2) 7 fragments (c. 155sq cm) of purplish-mauve, possibly a thick border band. One small fragment shows a small area of white. Another shows at its edge where it abutted

- against a flat surface, probably indicating a corner or a door or window-frame. Two more show part of the light green which appears on the fragments listed below. Large filler particles in the outer plaster layer. One fragment shows a black band, 1.5cm wide, separating the purplish-mauve from the light green.
- 3) 5 fragments (c. 40sq cm) of plain light green. One shows part of an unrecognisable purple design.
 - 4) 1 fragment (c. 28sq cm) dark green overlying yellow next to creamish piece of drapery or clothing. Shaded pink at the edge and in the folds. Three more dark green pieces close by. (Fig. XI. 2)
 - 5) Possibly belonging to a figure wearing the afore-mentioned clothing is a fragment showing two flexed-over fingers, on a cream background with traces of mauve and red. The fingers are skilfully painted with light pink highlights and red outlines. The finger widths are about 1.25cm, and the lengths between the upper and lower finger-joint are about 2cm. This would perhaps indicate a figure about two-thirds life-size. (Fig. XI.3)
 - 6) 1 fragment with a small patch of paint 3sq cm) shows a red stripe, 0.8cm wide, on a white background.
 - 7) 2 plain white fragments (c. 12sq cm).

Plaster-type C: Pinkish plaster with fine filler particles. Less than 1cm thick. 2 small pieces of white with reddish-mauve stripe, 0.9cm thick. Traces of two splashes of transparent pale green on one piece.

Area A, Well.

Plaster-type A: Similar to Plaster-type A from *mansio*

- 1) 1 fragment (c. 20sq cm) of white painted over red, like those from *Mansio* No 1. Only instance where fragments from both sources can be matched by design but it is enough to corroborate the idea that plaster from the large building had been deposited in the well. This fragment also shows a splay.
- 2) 1 fragment (c. 15sq cm) of plain green. Here the coarse plaster layer had been applied over a previous whitish-cream plaster.

Plaster-type Ai : This might be the same as Type A. It looks similar, but the only distinction is that the fragments are all about 1.5cm thick. (Type A is often thicker).

- 1) The largest fragment (c. 45sq cm) shows part of an outlined panel: a black stripe, 0.6cm wide, is painted on a white background and is 6.5cm away from a red band. There are also 8 white fragments perhaps also associated, one showing the edge of a golden-yellow band and two others part of a red area.
- 2) 2 small red fragments (c. 7sq cm).

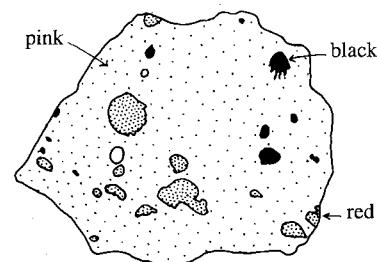
Plaster-type B : Creamish plaster, 0.75-2.5cm thick. Similar to Type B, but not necessarily the same plaster mix.

- 1) The largest piece (c. 25sq cm) shows a thick deep red band, 4.5cm wide, next to a white area. There are two more deep red fragments (c. 8sq cm).
- 2) 2 fragments of white, both showing the edge of a red area (c. 8sq cm).
- 3) 2 fragments (areas c. 9 and 12sq cm) each pinkish, showing traces of darker red shading. One has a trace of deep

mauve and some white over-painting. Both impossible to interpret.

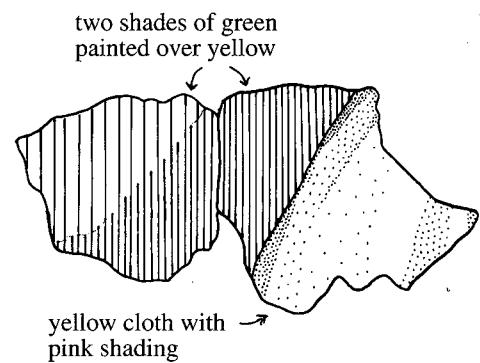
- 4) 1 brick red fragment (c. 12sq cm) with small white flecks of paint. A fourth type of mock-marbling.

Plaster-type D: one small piece with greyish plaster. c. 6sq cm, painted orange.



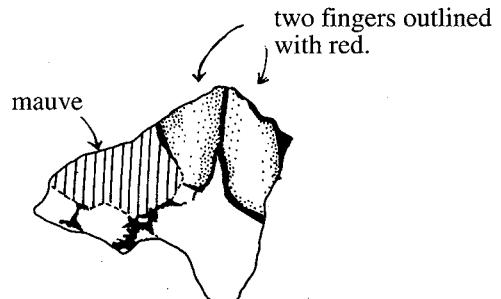
Plaster type B No. 18

XI.1 Fragments of wall plaster



Plaster Type B No.4

XI.2 Fragments of wall plaster



Plaster Type B No.5

XI.3 Fragments of wall plaster

Proceedings Volume LXXXVIII, 1999

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