



Excavation of Octagonal Roman
bath-house at Bax Farm, Teynham
JRA reprint 2012

An octagonal bath-house at Bax Farm, Teynham

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Introduction

In 1998, as part of the Swale Archaeological Survey conducted by the author, the probable site of a Roman villa was rediscovered¹ by fieldwalking and confirmed by test pits at Scotlands Field, Bax Farm, north of the village of Teynham, which in turn lies just west of Faversham (Kent).² The site lies north of Roman Watling Street and south of the Swale channel (Ordnance Survey TQ 9480 6421; fig. 1). Geologically, the site is similar to Teynham Court Farm with its possible Roman temple, a spine or finger of brick earth running north into the marshland of the Swale estuary. The brickearth low hill (5-17 m OD) has outcrops of Head Chalk. The Roman site itself is at c.8.50 m OD, and the Roman octagonal building (see below) would have had a good command of the Swale channel while itself remaining visible from Watling Street which runs c.1.45 km to the south. The Roman building lies on a shallow, E-facing slope which leads down to freshwater springs (Conyer springs, continuing to the moated mediaeval farm of Frognall). These springs flow north past the E side of the octagonal building to the Swale channel some 2 km distant. The east stream was probably utilised by the Roman villa as a water supply and to access the Swale channel via Conyer creek. To the west of the site, another freshwater stream,³ which fed the moat of the mediaeval castle of Tonge, encircles the hill before joining the eastern stream.

The fieldwalking of 1998, based on a 10-m grid, recovered Roman as well as earlier and later material. Roman pottery ranging in date from the late 1st to the 4th c. A.D.; it included Samian ware, Black-burnished ware, fine oxidised Upchurch type ware, Belgic shelly ware, Brockley Hill mortaria, and Dressel 20 amphoras. Other finds included mosaic tesserae, Late Roman window glass, a worked ivory object, a white clay figurine, copper alloy boat nails, and a Late Roman enamelled mount.

The Kent Archaeological Field School⁴ began work in 2006 with a geophysical survey conducted by M. Davies and test pits; it continued in 2009 with the complete excavation

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- ¹ In September 1986, B. Philp undertook some work on the site, but no report was published other than a brief mention in the *Kent Archaeological Review* for the winter of 1986, p. 121: "... Deep ploughing had revealed a scatter of Roman material on farmland and it seemed likely that a site was being badly damaged. Urgent trial excavations on the site, fitted between cropping and ploughing, were carried out by members of the KARU The excavations revealed part of a substantial Roman building, with some walls surviving to a height of about 4 feet and several rooms with traces of hypocausts. However, plough damage was found to be confined to the upper deposits only."
 - ² The land, in the ownership of Mr. O. Doubleday, is currently under arable cropping and archaeological investigation has shown that the Roman monument is not being seriously damaged. In the recent past this had been an orchard. The farming régime recently implemented by Mr Doubleday excludes deep ploughing, which means that the buried monument and its surrounding archaeology can be preserved *in situ*.
 - ³ This western stream originates in the Spring of St. Thomas Beckett immediately adjacent to Watling Street at Bapchild.
 - ⁴ The Kent Archaeological Field School is a non-profit organisation with some 800 members, committed to disseminating information about the techniques used in practical fieldwork and recording. To this end a number of annual training excavations have been carried out on sites either not well understood or under threat from farming activities. After excavation, the present site was reinstated to prepare the land for sowing during the autumn months.

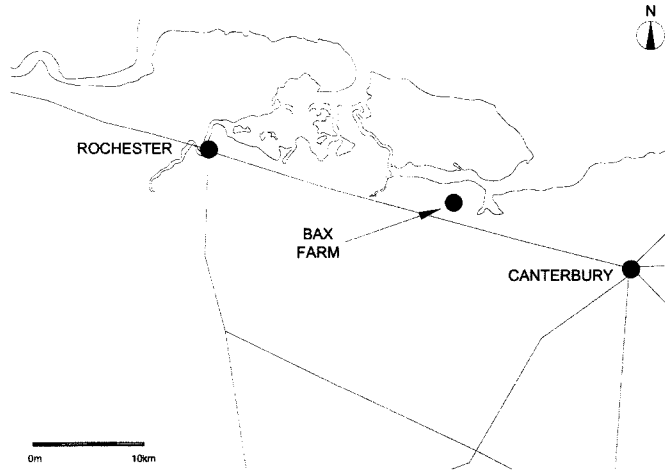


Fig. 1. Location map of Bax Farm.

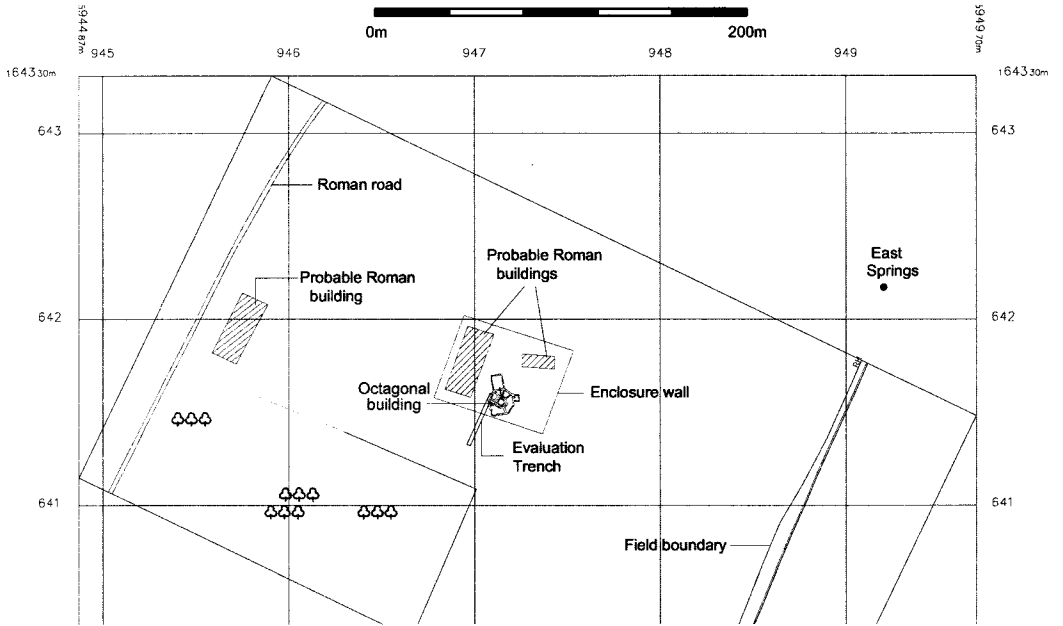


Fig. 2. Plan of site at Bax farm.

of the octagonal building. The geophysical survey pointed to a masonry Roman structure (c.10 x 18 m) lying just below a possible villa on the SE slope overlooking Conyer springs. The larger (c.40 x 20 m) building, most likely a villa, higher up the slope was located by keyhole investigations. Both Roman buildings lay within a rectangular (c.45 x 62 m) boundary wall and ditch (fig. 2). Most of the Samian pottery sherds were retrieved from the S part of the larger building. Test pits (1 x 1 m) dug in areas of high potential exposed Roman masonry at 1.03 m below the surface, along with large quantities of burnt Roman building material, soot and charcoal; the 176 pottery sherds retrieved from two pits have a date range from the Mid-Late Iron Age to Early Saxon, the majority of sherds being Roman and dating c.250-370.⁵ Then in 2006 a N-S evaluation trench (2 m wide, 30 m long), focussing on the area of the highest concentration of surface finds, revealed the base of a large corn mill dated by pottery to the same (Roman) timespan, a sunken road, post-holes, Anglo-Saxon buildings (identified by post-holes containing Anglo-Saxon pottery), Late Iron-Age ditches (again identified by pottery retrieved from the fill), and the stone walls of the octagonal Roman bath-house. There is ample evidence for agriculture in the layout (using *actus* measurements) of the surrounding fields. Other Roman buildings identified by fieldwalking may be part of the same complex or settlement.

The complex probably had river access to the Swale estuary by boat from a small harbour or landing-place north of the site. Access to Watling Street was by a paved road close to the octagonal building on its W side; it ran in surveyed straight segments, changing alignment on high points. The villa's estate probably occupied some 1950 acres (789 ha). It was bounded to the west by the villa estate at Mere Court, to the north by the Swale, and to the south by Watling Street. To the east, the boundary is a feature that runs for some 13 miles from the Swale south to the Pilgrims Way; for most of its length it is ditched, banked and straight, changing alignment at elevated points. Now serving as a parish boundary for most of its length, it is also the dividing line between two Minster lands and two Jutish *regiones*, and may have separated *Durolevum* (Faversham) from the Roman settlement at Milton,⁶ as well as the two probable villa estates of Deerton Street and Bax Farm.

Roman villas are spaced at fairly regular intervals (c.2.5 km) along the Swale/Watling Street corridor. Other Roman sites in the vicinity include the villa buildings at Mere Court c.2.25 km to the west and at Deerton Street 2.85 km to the east. Other Roman buildings include a probable Romano-Celtic temple adjacent to the ruined church at Buckland c.3 km to the east, a villa complex overlooking springs at Luddenham c.4.8 km to the east, and a probable Roman temple and other buildings underlying Teynham church 2 km to the east.

The octagonal building and its individual rooms (colour fig. 3A on p. 417, figs. 3b, 5a-b)

The whole footprint of the building had been excavated in the brickearth and the walls and substructures inserted into the cavity; thus there was no single trench for the outer ring of the octagon. The basic plan is of two octagonal rings with radiating buttressing walls between them. The outer ring (c.14.5 m in diameter) of walls (76 cm wide) was built of Kentish Ragstone blocks (23 x 13 cm) and large knapped flint nodules (c.18 x 16 cm) set in a cream/yellow lime mortar. Seven courses survived on the SW side, up to a levelling

5 M. Lyne, "Pottery report on fieldwalking at Bax Farm" (2006) p. 3.

6 A. Everitt, *Continuity and colonization. The evolution of Kentish settlement* (Leicester 1986) 320. The ecclesiastical topography may thus preserve a glimpse into Roman divisions.

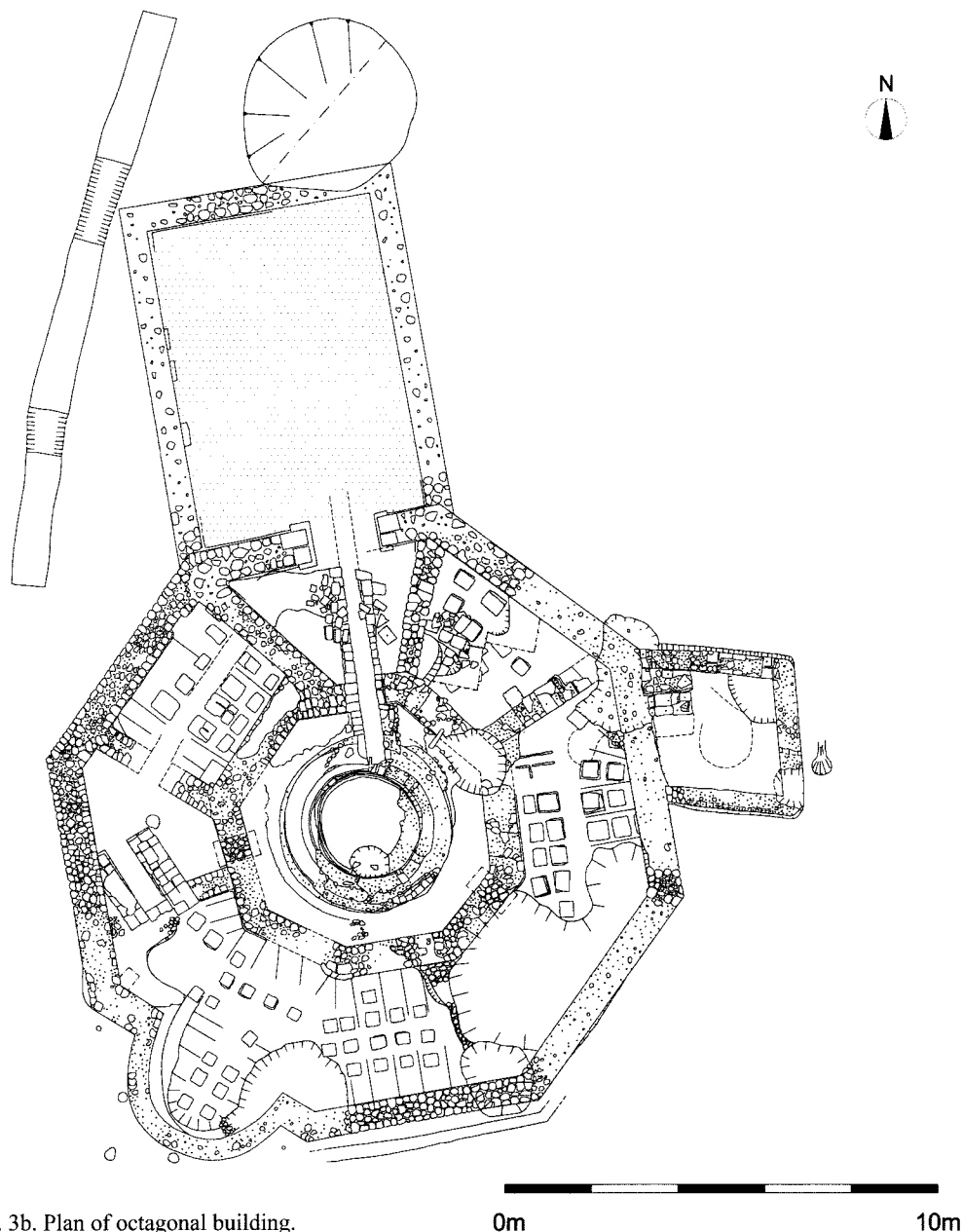


Fig. 3b. Plan of octagonal building.

tile course (38 mm thick), for a total surviving height of 1.02 m above the sub-floor (hypocaust floor) of the baths. On the NW wall a further course of Kentish Ragstone blocks had survived above the tile levelling course.

The inner octagon (c.7.10 m diam., walls 70-80 cm wide) was also built of Kentish Ragstone and is plainly of the same phase as the outer octagon (fig. 5). The inner octagon presumably supported a tower, at ground level pierced by columns and multiple entrances (see colour fig. 4 for a tentative reconstruction). The base of a rectangular pillar suggests the inner octagon was arcaded, and we found traces of a stucco ceiling. Six internal buttresses (average width 60 cm) were evidently contemporary with the two octagons and with the original form of Room IV's central circular plunge bath (ext. diam. 3.92 m, int. diam. 2.27 m), again of dressed Kentish Ragstone. The pool had been faced with *opus signinum* (40



Figs. 5a-b. Aerial photograph of octagonal building. Above: facing W. Apsed room (V) is at top left, while the probably changing room (III) is on the left, and the furnace room (II) is at bottom right. Below: facing SE. Probable changing room (V) is at bottom left, with apsed room (V) at center right.

mm thick), and some small cubes (1 cm) of coloured mosaic survived on its vertical face. One unworn coin of Constantine/VRBS ROMA with wolf and twins, dating to 330-335, was retrieved from the mortar of the earlier (original) build of the circular pool. Probably in its original phase the central pool was filled through room IX from the north (fig. 6a)



Fig. 6a. Excavations, facing SW. Student stands in room VII; behind her is room X, and beyond that the brick conduit. The central pool (IV) is visible at left, as is the inner octagon with internal buttresses.

by a covered conduit in brick.⁷ Room IX was the only one within the octagon that lacked a hypocaust.

In about the early 5th c. as part of a rebuilding, a shallower ornamental pool (too shallow for bathing) was set over the cold plunge bath (room IV); it was now reduced to an interior diameter of 2.28 m. At the same time, the area between the pool and the inner octagon was infilled with a mass of cobbles set in mortar, but the floor itself has not survived. The brick conduit running from the N entrance was blocked off at the point of entry to the central pool,⁸ and a lead pipe⁹ was installed (fig. 6b) to feed (at a much reduced rate) the pool and fountain, of which the base, decorated in blue fresco, still survives (fig. 7). There was probably a foun-



Fig. 6b. Blocked-off conduit, showing lead pipe feeding the central pool (IV).

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- 7 The brick-built conduit seems to terminate under the floor in room III. There is no obvious way for it to work as a water conduit unless water entered the conduit at this point from a water tower of which no evidence survives.
- 8 After the conduit went out of use, its infilling included Alice Holt pottery (c.A.D. 270-400).
- 9 There were probably lead pipes draining the various baths, but no other evidence survives.

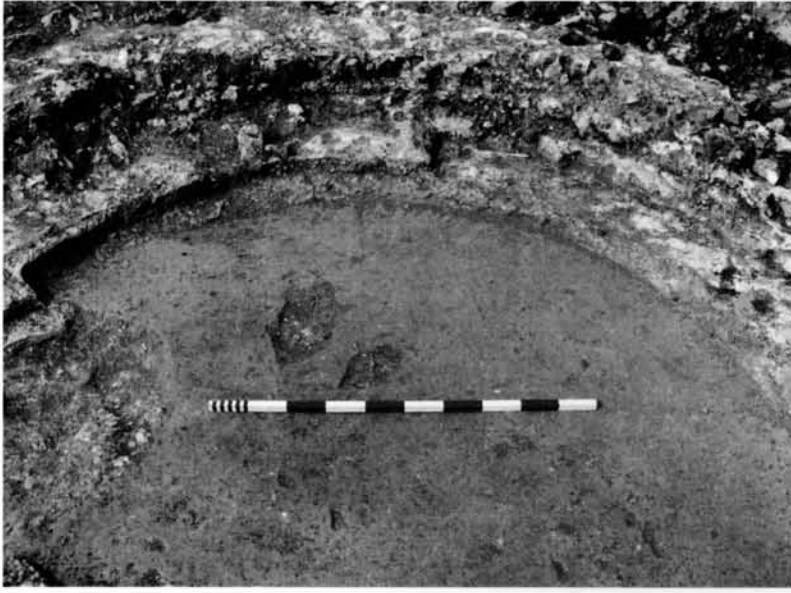


Fig. 7. Detail of central pool as rebuilt. It is constructed of layers of *opus signinum* and painted blue. Possible statue base is at the left where the *opus signinum* curves into the pool.



Fig. 8. Furnace room (II) facing W towards the rest of the building. The student is drawing sections through kilns built into the abandoned structure; the flue is to the right of the horizontal scale.

tain head or statue facing the entrance at the north. The water drains from the pool through a ceramic pipe on the E side which led to the hypocaust sub-floor surface in room VIII. The large amount of sediment deposited shows that it had seen considerable use. Demolition material subsequently filling room IV contained sherds dating to c.370-420, along with an earlier coin of Claudius II (Gothicus).

The brick conduit probably ran under the large rectangular (5.25 x 7.3 m) room (III) with *opus signinum* floor, built on to the main octagon at the north (fig. 11). Its wall foundations were not as substantial as those of the octagon and it may have been single storey or timber-framed. This room seems to have framed or to have acted as the main entrance, as well as the changing room to the octagonal baths. There are the remains of a substantial masonry and tile doorway at the S end of room III. The W jamb survives, and it probably supported a stone doorframe and lintel.

Also projecting from the octagonal plan, and at a irregular angle, is room II to the east, a furnace house (2.65 x 2.95 m; fig. 8), yet it seems to be part of the original construction while using narrower (48 cm) foundations. It was entered by a door (1 m wide) on its N side. The flue set in its NW corner would have provided heat to Rooms 1, XI, and VIII.



Fig. 9. Apsed room (V) facing E, showing the foundation of the *labrum* and hypocaust *pilae*.

and three fragments of decorated stucco were also found in the area of the apse. Possible scaffolding holes around the apse suggest that the apse could have risen more than one storey. Thameside greyware (c.A.D. 180-370) was found in one of the post-holes. There was probably a large window in the apse wall which faced southwest to introduce solar heat in the early afternoon. East of the apse are the remains of a gutter drain c.24 cm wide and 8 cm deep. The destruction deposit in the room included pottery dated to c.350-420 and 5 coins of Constantine.

There are several other signs of irregularity in the layout of the octagonal structure. The inner octagon does not consistently have the correct angles (135°). The build is on a twist or skew, with the result that the internal buttresses do not connect to the angles in the outer octagon. The main door into the baths (from Room III into IX; fig. 10) is not central in the wall and the layout of room IX as a whole is even more skewed, as is the conduit leading to the central pool (fig. 3).

Within the octagon, separated from the apsed room (V) by another furnace room (VII), the large hot plunge baths (X) are particularly important. They have a hypocaust below (standing *pilae* and *opus signinum* sides are preserved) while the floor proper was tessellated (in black, red, white and yellow stone or tile), the stones being set in a thick *opus signinum*. Large quantities of painted plaster were found (yellow ochre, Pompeian Red and white are the dominant colours), as well as many roofing tiles (*tegulae* and *imbrices*)

The third feature to project from the outer octagon is the apse of a large room (V) on the southwest. This room preserved the mortared foundations of a large basin or *labrum* (fig. 9). The circular below-floor base supported the central column, taking the weight of the basin. This feature was built over the hypocaust *pilae* so that the top of the foundation of the basin could be level with the *opus signinum* floor when it was built. The joint between the floor and walls of the room was sealed with a quarter-round moulding in *opus signinum*. Tesserae are still attached to the horizontal surface, large (25 x 27 mm) cubes in a dark grey stone. This room was certainly one of the most highly decorated,



Fig. 10. North entrance to octagon (on the right), with water conduit in room IX (facing SW).

in the demolition rubble. Below this were Roman layers of charcoal, soot, tile, brick and pottery, the pottery dating to c.300-420, including Late Roman handmade grog-tempered ware, Thameside greyware, Fine Alice Holt/Farnham ware, and Streak burnished ware. A coin of Antoninus Pius was also present.



Fig. 11. Water conduit in room IX, facing SE towards the central pool (IV).

The water supply for the complex has not yet been fully determined. An aqueduct, cut into the natural soil, runs along the NW corner of the building coming from the direction of Conyer springs to the northeast (246 m distant), but it seems never to have been finished and the water level would have had to be raised at least 9 m at the source to allow flow to the bath-house. That would have entailed building a tower fed by a wheel or pump at the source. It may have been intended to bring water to room VII, where there was a furnace.

Room I (5 x 2.56 m), next to the furnace (II) on the E side, preserves 17 *pilae* from the hypocaust below the *opus signinum* floor and was probably a *caldarium*. The subfloor slopes down from both east and west, as do those in other Kent bathhouses at Lullingstone and Little Chart.¹⁰ The elevation of the W wall preserves a layer of *opus signinum* (c.2 cm thick). In the thick plume of soot fanning out from furnace II were sherds of C2B (Late Roman

10 J. Eames, "The Roman bath-house at Little Chart, Kent," *Archaeologia Cantiana* 71 (1957) 130-46.

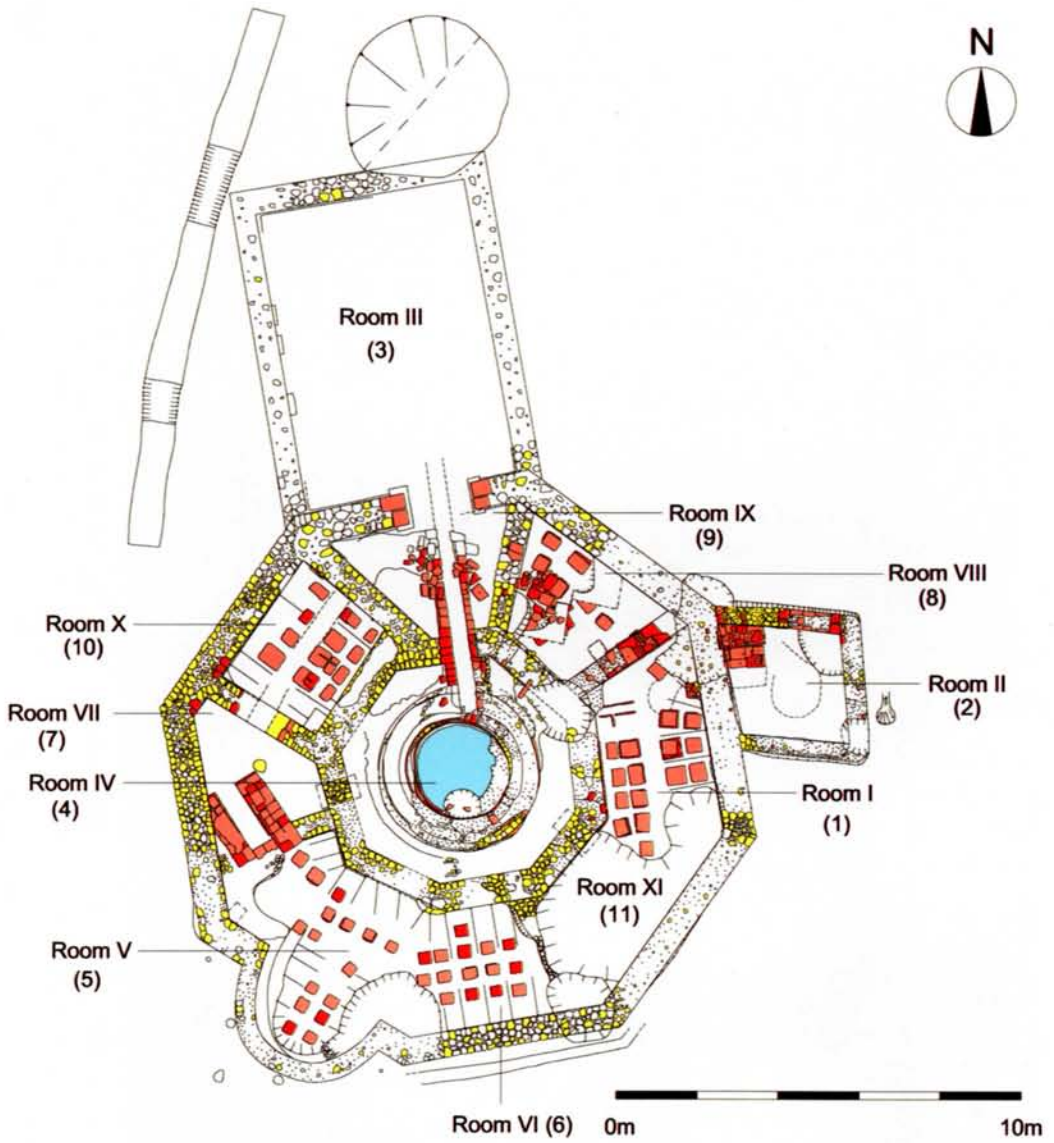


Fig. 3a (colour). Plan of octagonal building.

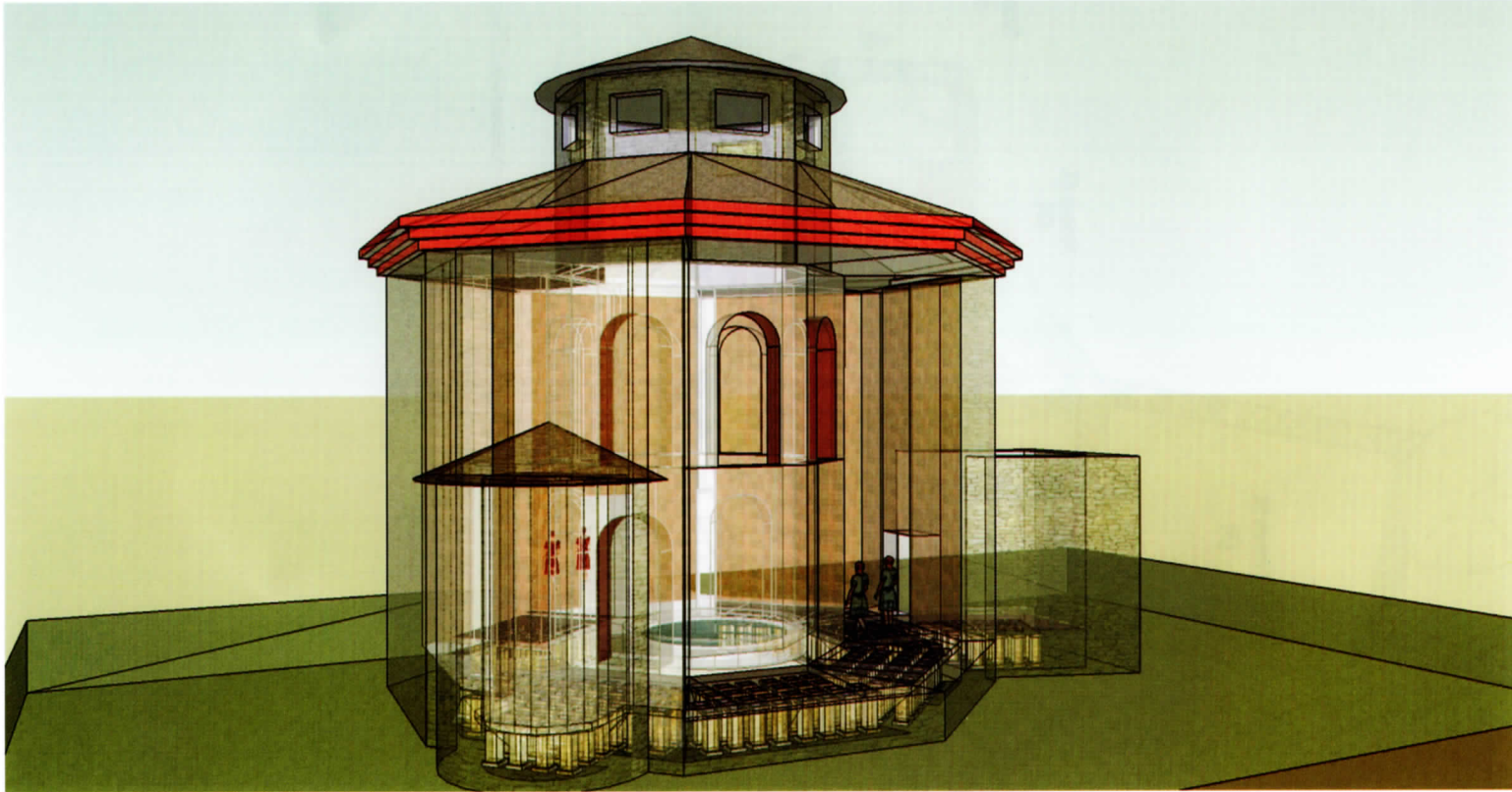


Fig. 4. Hypothetical reconstruction drawing (computer model, based chiefly on bathhouses and baptisteries in Italy and elsewhere) of the octagonal building, facing N, with apsed room on the left and furnace room (II) on the right.

handmade grog-tempered ware dated *c.*370-420). A fragment of a *tegula mammata* was retrieved from the demolition fill in the room, as well as pottery dating as late as 650. The furnace room itself (II) was full of demolition material, a mix of roof-tiles, nails, lumps of lime mortar, flints, pottery, soot and charcoal. In a later phase it had been decorated with painted plaster, mostly rectangles or squares of 'Pompeian Red' with an off-white background. This in turn suggests that in this phase the room was roofed.



Fig. 12. Kiln built out of Roman building ceramics within demolished structure of furnace room II.

After the demise of the baths, a large kiln was inserted into the rubble of the furnace room (II), its flue set into the remains of the north doorway (fig. 12). Associated pottery is ES1, a silt-tempered handmade fabric dated *c.*450-650. Early Saxon pot (ES5) dated *c.*450-650 was found in a pit in the NE corner. The late robbing of the E and S walls probably dates to the 13th-14th c., to judge by the pottery found in the backfill. Similarly in room VIII there were post-bathhouse kilns, built of re-used Roman materials. It can be dated by the pottery to *c.*450-650 (no coins were found); the upper layers of these kilns and their contents had evidently been removed by B. Philp's 1986 excavation. A small section cut through the stratification revealed at least 6 cycles of kiln build, with heavy burning to the re-used Roman brick and tile.

The later kiln in furnace room II had to be removed to expose the remains of a brick furnace (1.50 m wide) in the NW corner of the room, its central flue measuring 49 cm (fig. 13). The base of the flue, running E-W, was made of upturned *tegula* tiles, badly burnt by exposure to heat. The N wall of the flue was made of Roman brick and faced with a thick (30 cm) vertical face of *opus signinum* (also severely burnt). A coin of Constantine (330-335) was found in the soot of the flue. The charcoal fragments identified so far are dominated by oak (some perhaps being sweet chestnut) and elm, with some fragments of hazel. Two brick piers with a central flue may well have held water tanks to be heated by the furnace.

The other furnace room (VII), within the W half of the octagon, measures *c.*4.20 m on its external wall and 1.20 m on its inner side. It served Room X to the north, a hot room probably with a hot plunge bath, and V, the apsidal room, a warm or hot bath (possibly with a hot plunge bath on its N wall) to the south. The furnace room VII had been badly damaged by Philp's 1986 excavation but the lower levels still contained stratified layers of charcoal and soot, including 18 sherds with a date range of *c.*270-370. One coin retrieved from the demolition fill was a barbarous radiate dating post-270.

The chronology and use of the building

Coins found in undisturbed contexts suggest the bath building dates to the end of the reign of Constantine (307-337) or slightly later. The building should be considered in conjunction with the octagonal buildings at Holcombe (Devon), dated mid-4th c., and Lufton (Somerset), dated early 4th c., as well as villas at Littlecote (Wilts.) and Maidstone (Kent)



Fig. 13. N wall of furnace, facing N. The flue into the heated room XI runs in the foreground to the west (left). The service doorway is built into the N wall of the furnace house.

(fig. 14). Those have been discussed by M. Todd and M. Henig, amongst others. One fundamental question is whether the octagon was always a bath building, or whether it may have been converted to Christian or other religious use. Many scholars keep coming back to the idea that an octagonal pool at the centre could have been used for Christian baptism.¹¹ This would further encourage a restoration of the complex with a vaulted ceiling carried on arcading or columns, perhaps with a dome set on pendentives.



Fig. 15. Seal with possible menorah.

Holcombe and Lufton bear an uncanny resemblance to Bax Farm, although the dimensions vary (the octagon at Holcombe measures over 15 m, Bax Farm is 14.5 m, while Lufton is 8.5 m). All have a central pool (at Holcombe 1.55 x 1.55 m, 1.05 m deep, and with one step on 6 sides; at Lufton 3.6 m internally, 0.75 m deep, and with two steps), all seem to have buttresses to support a central clerestory tower, and all generally lack large attached structures. B. Walters observed that at Holcombe "the symmetry and construction of the building was poor, whilst at Lufton the large buttresses seem only to have been an afterthought",¹² and

this is also the case at Bax Farm. He suggests that the interiors belong more to the early Byzantine world where complex vaults would have been produced in tile and concrete — forms generally beyond the experience of Romano-British builders.¹³ M. Todd believes that Holcombe and Lufton are ecclesiastical structures:

The scale and pretension of these buildings [Holcombe and Lufton] are not to be underestimated. In both cases there (*sic*) structures may have risen to a height of 8 to 10 m. This is far higher than what was required of a cold plunge bath, not least in the British climate.

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- 11 Or possibly even Jewish sacred bathing? A lead seal found at Bax Farm (fig. 15) may depict the Jewish menorah.
- 12 B. Walters, "Exotic structures in 4th century Britain," in P. Johnson and I. Haynes, *Architecture in Roman Britain* (CBA Res. Rep. 94, 1996) 152.
- 13 *Ibid.* 157.

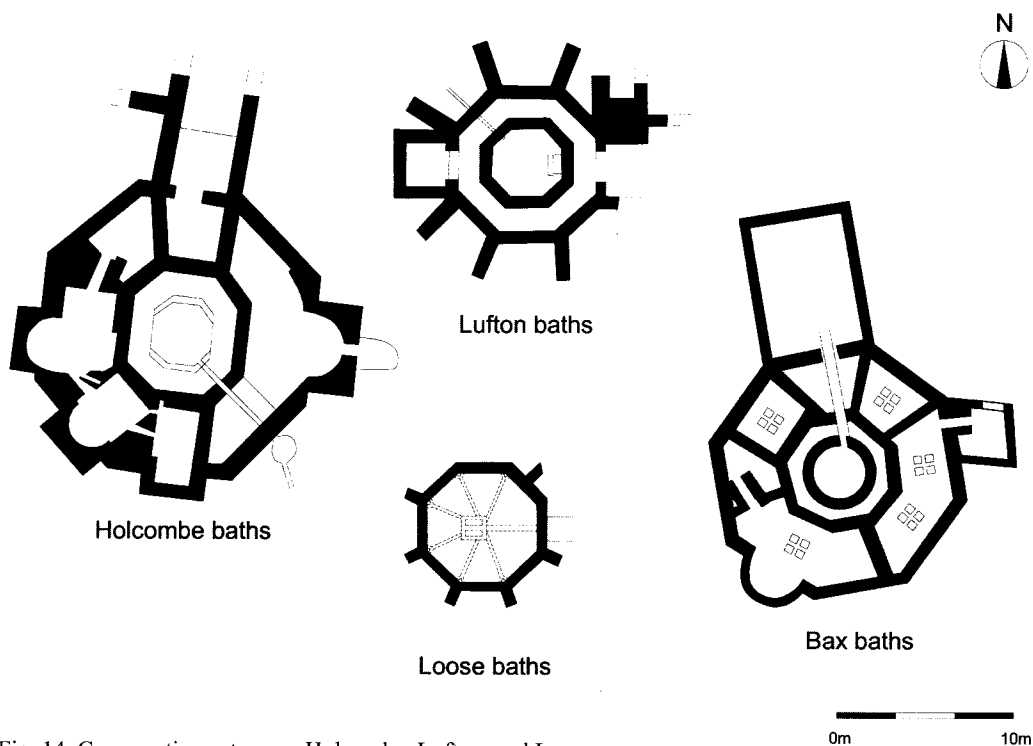


Fig. 14. Comparative octagons: Holcombe, Lufton, and Loose.

The architectural effect of both buildings was clearly directed outwards, not inwards. Both would have been visible from some distance. If bathing was not the purpose, what was their function? Although this cannot be proven, their context in fourth-century villas encourages interpretation to (*sic*) a Christian milieu, and the most obvious link is with the central rite of baptism.¹⁴

M. Henig, however, urges caution, asking where are the affiliated churches and preferring to interpret these octagonal structures as fountain rooms gracing grand reception rooms.¹⁵ But we still need to locate the rest of the sumptuous villas at Holcombe and Lufton that would have needed such a grand reception room. Neither Todd nor Henig cite other Romano-British octagonal bath-houses (and none are known to the present writer) or octagonal reception or cold rooms embedded within bath suites (of which there are many). But a close look at the plans of both Holcombe and Lufton suggests that both of those, like Bax Farm, seem to have functioned as bath-houses. At Holcombe, Rooms 21 and 26 were furnace rooms, similar in their layout to Bax Farm. Lufton has a complete suite of bathing rooms with a furnace east of Room 10, which itself has hypocaust heating and a hot plunge bath above the furnace on the E wall; the adjacent room (12) to the north, also with hypocaust, is likely to be the warm room. The octagonal structures at Lufton and Holcombe could therefore, as Henig suggests, be a combination of a grand space for reception, with fountain and clerestory lighting, within what may, to all intents and purposes, be a 'public' bath in a rural setting, the whole design intended to impress guests, clients, and tenants.

14 M. Todd, "Baths or baptisteries? Holcombe, Lufton and their analogues," *OJA* 24 (2005) 307-11.

15 M. Henig, "Neither baths nor baptisteries," *OJA* 25 (2006) 105-7.

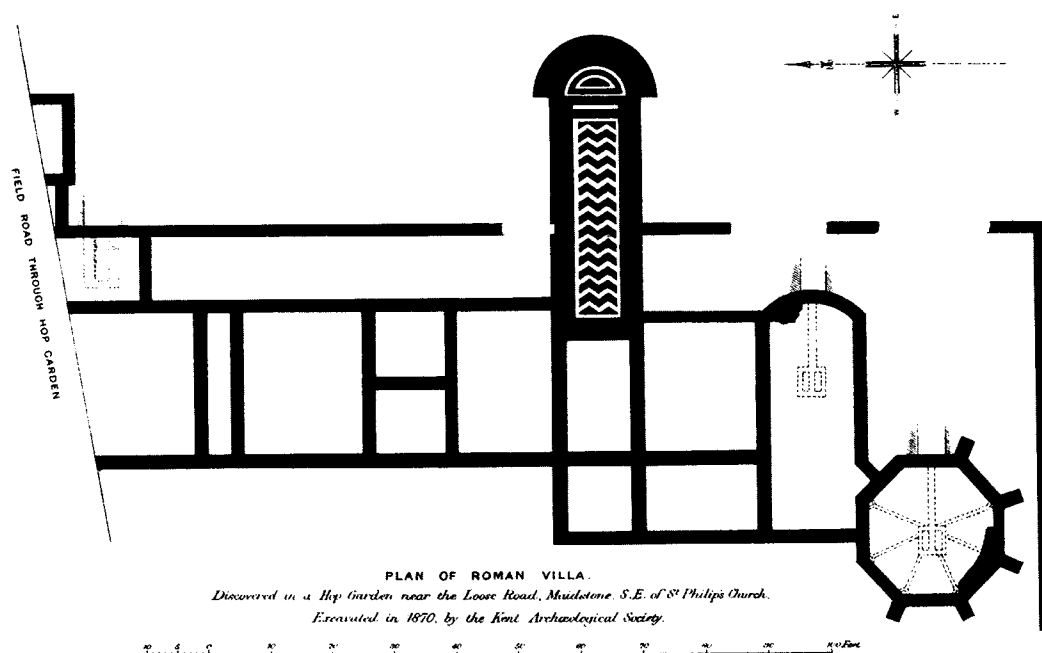


Fig. 16. Roman villa at Loose.

Still, having a baptistery attached to or re-using a former bath-house makes good sense. The water supply is available, as are large heated rooms for the throngs awaiting baptism, which usually took place on the eve of Easter Sunday. Thus we cannot rule out that an original bath was later converted to Christian uses.¹⁶ There may be a distant parallel at Nettleton Shrub (Wilts.) in the conversion of an octagonal pagan temple to Christian chapel in the mid-4th c.¹⁷

The building at Bax Farm also recalls an octagon attached to the main villa at Loose, Maidstone (fig. 16). Excavated by H. Bensted in 1870, its exact location is now lost; the only surviving record is a short article in *Archaeologia Cantiana* 10, 163-72. Only a portion of the foundations were exposed, the excavator considering that there were more rooms to the west and south. The surviving walls of Kentish Ragstone were about two feet thick and mostly set in lime mortar. Three rooms were heated by a hypocaust system; the octagonal room (c.24 feet, 7.31 m in diameter) had radiating flues lined with tiles, and its floor was tessellated, as were some of the adjoining rooms. The octagonal room was probably a tower with clerestory lighting since it was buttressed externally with 8 engaged piers. Bax Farm may thus belong to a group of architecturally pretentious baths at 4th-c. villas in southeast and south-central Britain.

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16 It is possible, given the space around the central pool, that there were steps into it, but no evidence either for or against such steps has survived.

17 W. J. Wedlake, *The excavation of the shrine of Apollo at Nettleton, Wiltshire, 1956-1971* (Soc. Ant. Res. Rep. 40, London 1982) 38-53.