Investigations in the garden at Carew Manor, Beddington

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This is one of a series of reports on archaeological and historical investigations at Carew Manor Carew, Church Road, Beddington, Surrey SM6 7NH.
The building is at TQ 296653.

The other reports are:

John Phillips and Nicholas Burnett
The garden at Carew Manor, Beddington: an interim report on investigations, 1979-2005.

John Phillips
The Orangery at Carew Manor, Beddington.

John Phillips
Beddington Park Cottages: Investigations before and during building work 1982-1987.

John Phillips and Nicholas Burnett
Carew Manor, Beddington.
Volume 1: The house and its owners.
Volume 2: The moat.

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1 INTRODUCTION

This is the first of two reports which will deal with archaeological investigations in the garden at Carew Manor, Beddington, Surrey.

Carew Manor – which is now a school – was a country house with a history extending back into the middle ages. Nicholas Carew acquired the site in the mid-fourteenth century and created a large moated house which was remodelled and modernised on several occasions.[1] In the second half of the sixteenth century Sir Francis Carew created a very elaborate and innovative garden which survived through the seventeenth century and was remodelled by Nicholas Carew, 1st baronet, between 1707 and 1727.[2]

This report covers five excavations which were carried out in the garden between 1989 and 1994. It includes observations when contractors dug a ditch in 1986 and during flood alleviation work on the river in 1990-1 and also the standing structures in the central part of the garden. The report expands on and supersedes some sections in John Phillips and Nicholas Burnett's *The garden at Carew Manor Beddington: an interim report on investigations 1979-2005*.

The second report will cover two trenches excavated into the lawn to the east of the house in 1995 and 1996 and the excavation of the fragment of a sixteenth century and later garden structure in 1999 to 2004.

The report is one a series detailing the findings of the Carew Manor project which started in 1979 and still continues under the auspices of the Carshalton & District History & Archaeology Society.

Acknowledgements

I would like to thank all the people and organisations who have helped over the course of these long-running investigations. I am grateful to Carew Manor School for permission to excavate. Thanks are due to Mrs Mavis Peart the former Chairman of the Governors, the two head teachers Brian Wilson and Martin Midgley and the school caretakers. I especially like to thank a small group of diggers who have been at the heart of the project through its ups and downs including Roger Brown, Jane Howard, Mike and Pat Bale, Val Coleman, Peter Stephenson and Derek Bradford as well as several who are no longer with us: Doug Cluett, Ron Green and Stan Coleman. Without them none of this would have happened. Nick Burnett carried out much of the documentary research and took part in several of the excavations. Steve Morris was involved in the 2007 excavation and has also done much work on the finds. Clive Orton has provided advice and has also proof-read the report. Valary Murphy, Kathleen Shawcross, Bev Shew, Andrew Skelton, Mark Stephenson and the late Dennis Turner have helped in various ways. Thanks are also due to the Surrey History Centre, London Borough of Sutton Archives and the British Library and their staff.

2 MAPS

Roque's mid-eighteenth century map of Surrey (figure 1) shows the Wandle dividing into two channels to the east of Beddington Lane. One channel appears to follow more or less the present course, crossing Beddington Lane, and then running into the garden of Carew Manor where it terminates short of the house, perhaps where the river now turns to the north.

[1] The history of the house is described in Phillips and Burnett 2016.
[2] For the sixteenth century garden see Strong 1990, Phillips and Burnett 2005 and 2008.

However, no northward-flowing channel is shown and it is not clear where the water went. The second channel crosses Beddington Lane to the north of the first channel. It then turns gradually to the west and flows along the north side the garden probably following the present line of the river to the north of Beddington Park Cottages.

The Beddington and Bandon enclosure map of 1820 (figure 2) shows a narrow hammer-shaped lake in the centre of the east end of the garden. The eastern end of the garden is closed by a bank and a semi-circular wall, parts of which still survive. The river entered the garden below the centre of the curved wall, passed under the bank, evidently through the surviving culverts, and then flowed into the lake. The exit from the lake ran northwards, in the channel which flows along the west side of what is now the Crispin Crescent estate. It then turned west and passed to the north of Beddington Park Cottages more or less on the present line. The existing brick boundary walls to the north and south of the lake are shown together with a bridge at the southwest corner of the present Crispin Crescent estate. The line of the northern outflow channel continued southwards from the lake for a short distance to form the southern part of the 'hammer' head. There are two line of trees to the north of the lake and one to the south, and trees are also shown on the bank at the east end of the garden.

The Tithe Award map of 1840 shows a similar layout to that of 1820 except that the lines of trees around the lake are not marked. The lake and watercourses are also little changed on the first edition 25 inch Ordnance Survey map of 1868 (figure 3). The area to the north and south of the lake is shown covered with mixed deciduous and coniferous woodland which also extended over the bank at the east end of the garden. A strip of open ground is shown along the edge of the lake which varies in width from about 7.5m to about 18.5m. This is the first map from which scaling can be done with some hope of accuracy. The lake measured about 150m from east to west along the centre line. It was about 9m wide at the east end and opened out to about 42m at the west end. The main northward-running outflow channel was initially about 7.5m wide and narrowed slightly as it approached what is now the Crispin Crescent Bridge.

By 1897, when the second edition 25 inch Ordnance Survey map was made (figure 4) the lake had been narrowed. The western end was about 15m across and the lake had been reduced to little more than a slight widening of the river. A weir is marked where the river enters the lake. There are no trees around the lake.

The 25 inch OS map of 1913 shows that the west end of the lake had been further narrowed so that it was no more than a river channel. The weir and cascade are marked and there was a mixture of deciduous and coniferous trees on the bank. The situation was very similar when the 1933 OS map was made. The 1941 edition shows the swimming pool to the west of the river near the Crispin Crescent bridge for the first time. The 25 inch grid sheet TQ2965 (figure 5) which was surveyed in July 1955 and published in 1956 also shows the swimming pool, the cascade and the trees on the bank. The east to west channel along the line of the former lake was wider than the south-north channel along the side of Crispin Crescent but it had lost the last traces of its former taper. At some date between 1955 and 1976 the river was altered so that it flowed around the southern end of the bank rather than through the culverts and cascade which were then left abandoned.

Figure 1.

Roque's map of Surrey about 1760.

Figure 2.

The enclosure award map of 1820.

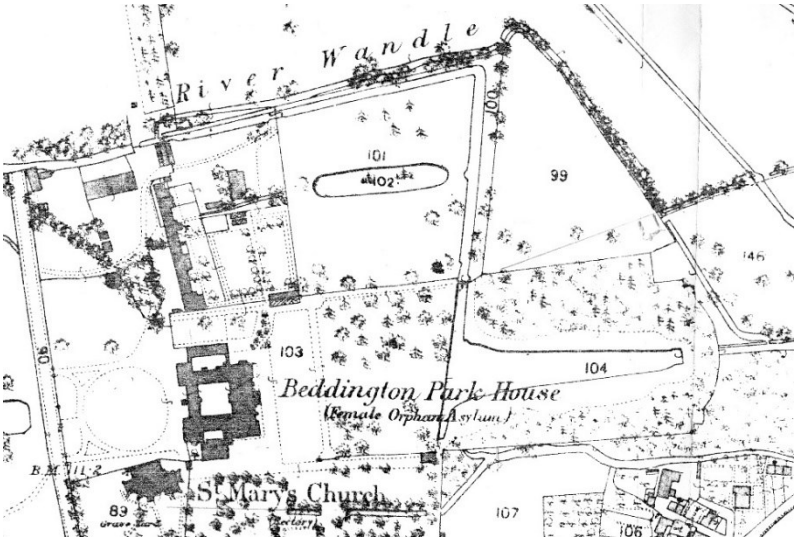


Figure 3.

The 1st edition 25 inch Ordnance Survey map of 1868

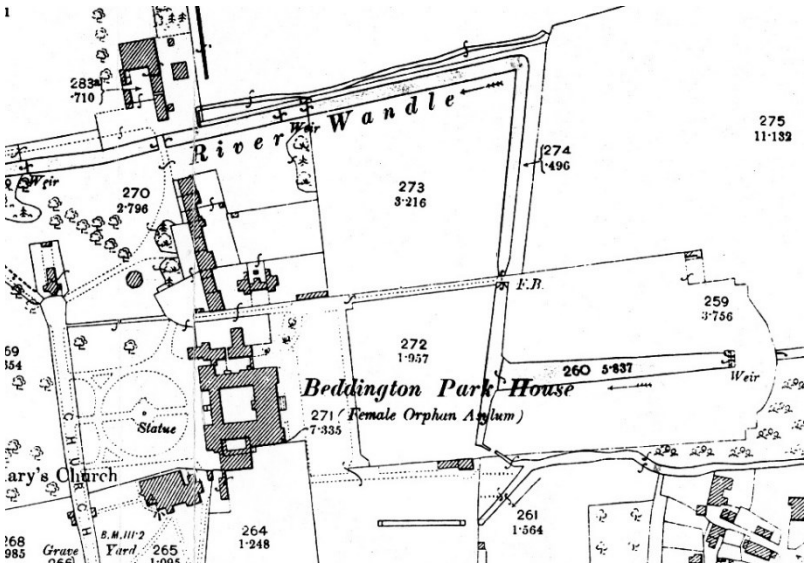


Figure 4.

The 2nd edition 25 inch Ordnance Survey map of 1896.

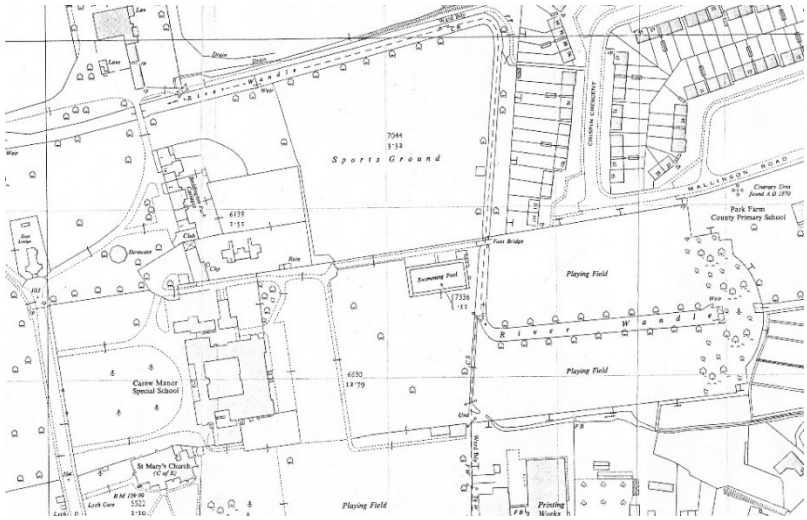


Figure 5.

The 25 inch Ordnance Survey map of 1955.

3 THE STANDING STRUCTURES

This section covers the standing and recently standing structures around the central part of the garden to the east of the house which are relevant to the interpretation of the excavation. It does not include the structures surviving from the gardens to the north and south of the central area.[3]

3.1 The boundary walls and gates

Nineteenth century maps show that the central part of the former garden at Carew Manor extended eastwards from the house for about 290m and terminated with a curved bank backed by a curved wall. The river entered the garden by culverts through the centre of this bank and flowed over a cascade into a 'T' shaped lake. It then flowed northwards from the east end of the lake (figure 6).

A gravelled walk ran from north to south across the garden 40m east of the house. At the northern and southern ends of this there were gates for the walk to pass into the northern and southern garden areas.

[3] These are described in Phillips and Burnett 2008.

Figure 6. The central garden area and its boundary walls from the 1868 Ordnance Survey map.
NG North gate; SG South gate; P Pillar by Wandle.

3.1.1 The northern gate

This is marked NG on figure 6. The gate disappeared many years ago and I have not seen any photographs of it. Before 2006 two brick pillars survived with Portland stone caps and bases shown in figure 7. The caps had the bases for an urn or other finial. The gate had been replaced by a brick wall capped by railings which are clearly no older than the late nineteenth century. There was a bond break in the walls close to both piers suggesting that the gate had been inserted into an existing wall. The structure was rebuilt in 2006-7.

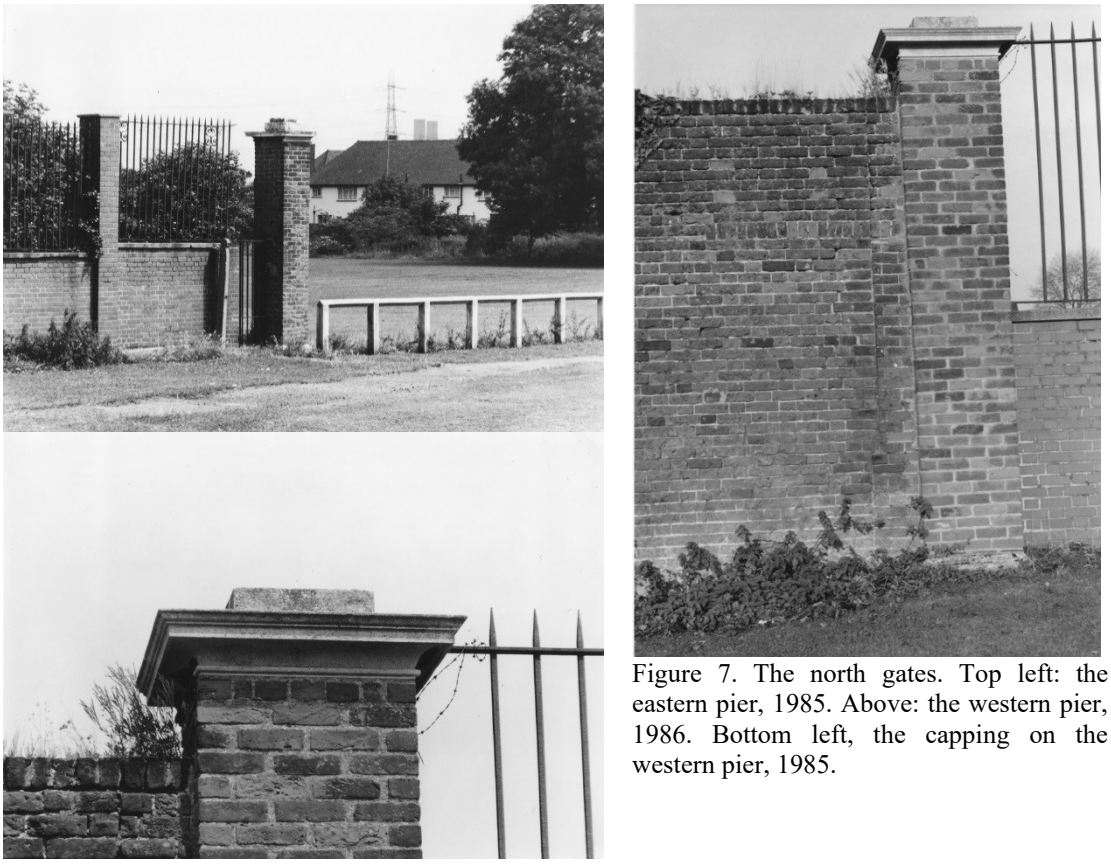


Figure 7. The north gates. Top left: the eastern pier, 1985. Above: the western pier, 1986. Bottom left, the capping on the western pier, 1985.

3.1.2 The wall between the north gate and the river Wandle

This section of wall ran from the eastern pier of the north gate to a brick pillar by the river Wandle (P on figure 6). It was of soft red brick bonded by lime mortar and was demolished by vandals in a few nights in May 1981.

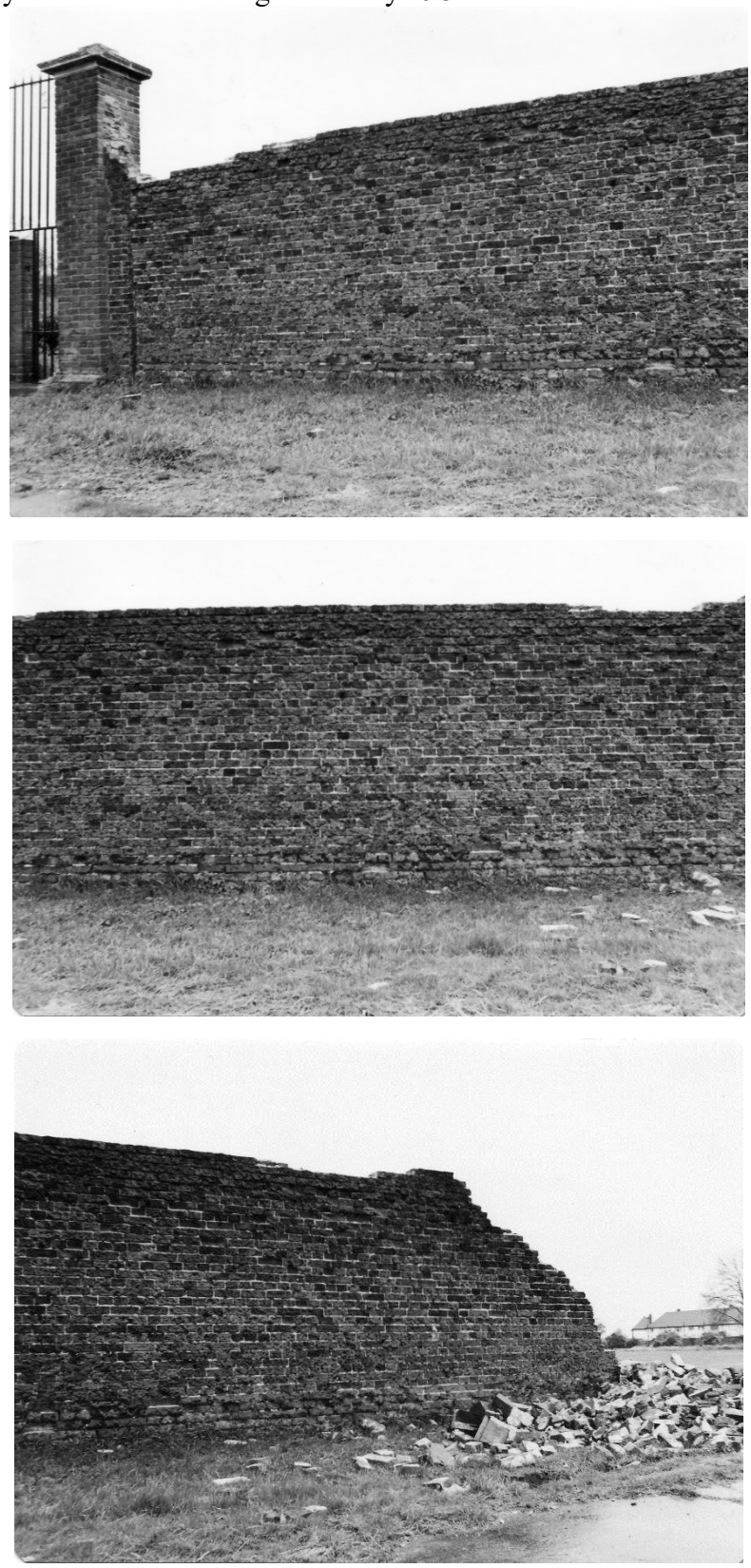


Figure 8. The remains of the wall between the north gate and river on 3 May 1981. Note the bond break adjacent to the gate pier.

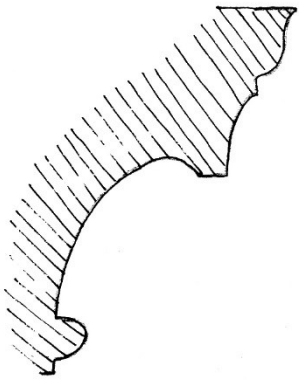
3.1.3 The pillar by the river (figure 9)

This is marked P on figure 6. It stands by the river at the eastern end of the section of wall which once connected to the north gate. There is a scar where the pillar was bonded into the wall. It is not known if there was an adjacent bonding break.

The pillar is brick with a Portland stone cap and base. In plan it is not square: the north and south sides are aligned with the wall along the north side of the central garden while the east and west sides are aligned with the adjacent river channel which is approximately north-south. At the northeast corner of the capping the angle between the two sides is 78 degrees.

The capping is made of three pieces of stone held together by iron cramps. The slabs are poorly fitted so that the east and west sides are not straight.

There are 16mm deep slots cut into the top of the northwest and northeast corners possibly for iron stays to stabilise an urn or other finial, now missing.



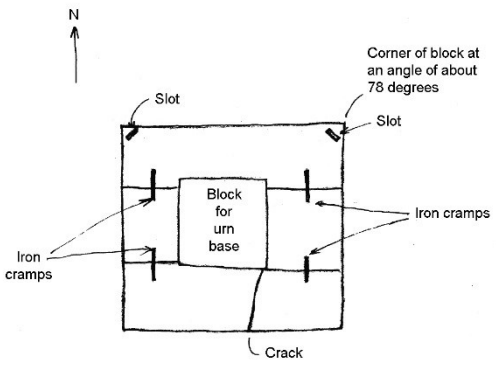


Figure 9. The pillar by the Wandle. Top left: west side of the pillar with the scar from the missing wall. Top right: sketch of the moulding on the pillar top. Bottom left: sketch plan of the pillar top.

3.1.4 The wall between the river and the east end of the garden

This runs from A to B on figure 6. It is a fairly featureless wall of soft red brick which now separates the east end of the garden from the Crispin Crescent housing estate. At the western end the south side of the wall is covered with the scars from swimming pool changing cubicles built against it in the early twentieth century.[4] There was a door through the wall about 26m from the east end which is blocked with soft red bricks.[5]

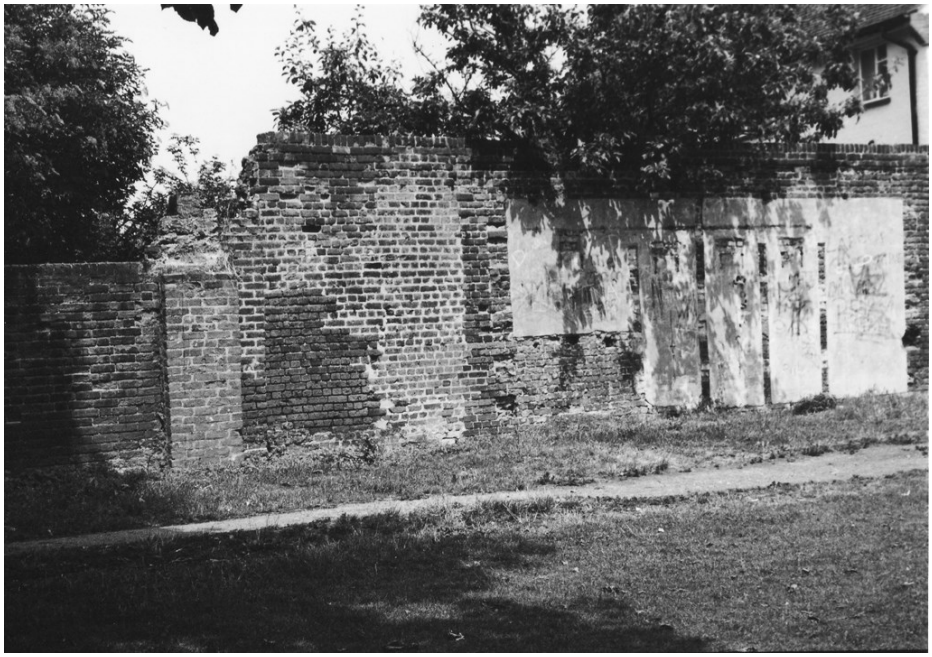


Figure 10. The west end of the north wall showing the remains of a pillar of uncertain date and the scars from the demolished swimming pool changing cubicles.

Figure 11. The north wall of the eastern end of the central garden in 1986 showing the blocked door.

[4] The pool was on the other (west) side of the river.
[5] This section of wall is currently covered with ivy.

3.1.5 The walls and bank at the east end of the garden

The east end of the garden is closed by a curved gravel bank which was backed by a curved brick wall on the east side from points D to E on figure 6. The bank and curved wall did not run all the way to the north boundary so the gap was filled by the wall B-C-D. This rather odd arrangement meant that the east end of the garden was not symmetrical.

The walls appear to have been of soft red brick although the southern half of the curved wall has now gone along with section B-C. Parts of the rest have been rebuilt.

The river originally entered the garden through two culverts which passed below the centre of the curved wall and bank and flowed over a cascade (see section 3.4 below). In the late 1960s or early 1970s the river was diverted around the southern end of the bank destroying the boundary wall in this area.

3.1.6 The wall along the south side of the garden east of the Orangery

This section is marked E-F on figure 6. The eastern half of this has now gone along with a short section at the western end. The surviving parts are plain and of soft red brick without any obvious features. The wall cuts across the foot of a slope so the ground is higher on the south side than the north (central garden) side.

3.1.7 The Orangery wall

The ornamental north wall of the Orangery (figure 12) continues the line of the central garden wall. The wall formed the north side of an Orange house, a brick structure with a temporary wooden roof to protect the trees in winter. It stood on the site of a wooden orange house created by Francis Carew in the second half of the sixteenth century. The southern side of the structure was demolished before 1820. The structure is described in detail in Phillips 2013.

Figure 12. The north side of the Orangery wall from the west end.

3.1.8 The southern gate

This gate (marked SG on figure 6) stood at the southern end of a north-south cross walk opposite the northern gate.

The gates were photographed around 1900 when the Royal Female Orphanage Asylum owned Carew Manor (figure 13). They consisted of a pair of wrought iron gates set in a frame surmounted by a double monogram NC arranged so that it can be read from both sides.

There were railings on either side of the gates which connected them to columns at the end of the walls. The eastern column is visible in the photos which show that it was covered with stone and had an urn on the top. The base of the column still survives and has Portland stone mouldings. In 1985 part of the Portland stone cap survived on the ground near the east end of the Orangery wall. It has since disappeared but was drawn and photographed (figure 14). The early photographs show weathering on the side of the columns suggestive of Reigate stone. The opening for these gates was significantly wider and grander that the answering pair on the north side of the garden.

Figure 13. Above and left: the north side of the south gates about 1900.

Figure 14. Left: part of the cap stone from the south gate piers abandoned by the Orangery stub wall in the 1980s. Right: the moulding on it the original way up.

3.2 The cross walk

The northern and southern gates were connected by a north-south cross walk. This is clearly marked on the 1820 enclosure award and subsequent maps down to 1956 (figures 3 to 5). The line is now marked by a clear ridge across the lawn which turns brown in dry weather. This appears to be a late resurfacing: probing the grass shows that the gravel is wider than the ridge.

Figure 15. The cross drive burnt out on the east lawn. The site of the north gates in the background.

3.3 The axial walk

In dry weather a burn mark can be seen running eastwards from the house along the axis of the central garden. Two trenches excavated in 1995 and 1996 showed that the burn mark is underlain by a thick chalk foundation with traces of a gravel surface on top of it. It was evidently a garden walk which originally had a gravel surface over a massive chalk foundation.[6] A resistivity survey shows that the walk had a width of about 9m. The foundations of the track covered deposits which contained material relating to the refacing of the house about 1710-12.[7]

3.4 The cascade

The east end of the garden was closed by a curving gravel bank. The river entered the garden by two brick culverts through the centre of the bank and then flowed over a cascade. Each culvert was 1.25m wide and about 0.78m high. Photos from about 1900 show that the cascade was a fairly simple structure with two short drops followed by one longer one (figures 16 to 18).

The culvert exits and part of the northern side of the cascade channel survive (figure 19). The north wall was 4.45m from the centre line between the two culverts suggesting that the original width of the cascade was about 8.9m.

Figure 16. The cascade around 1900. (Sutton Local Studies collection).

Figure 17. The cascade on 15 January 1901.

Figure 18. The cascade culverts in 1987.

[6] The trenches are described in Phillips and Burnett 2008 p. 39-41.
[7] Phillips and Burnett 2016 vol. 1 section 13.1.

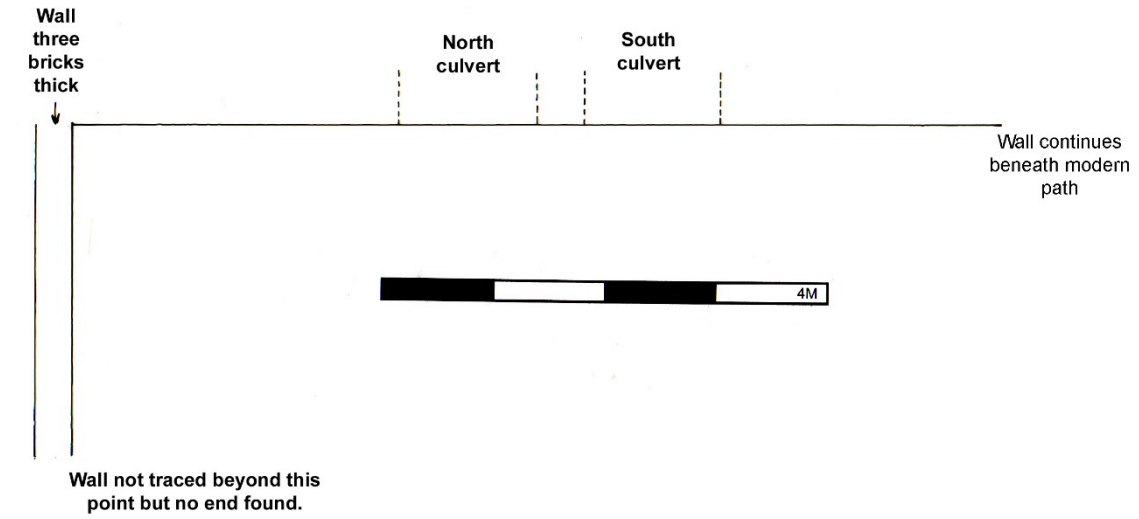


Figure 19. Plan of the remains of the cascade.

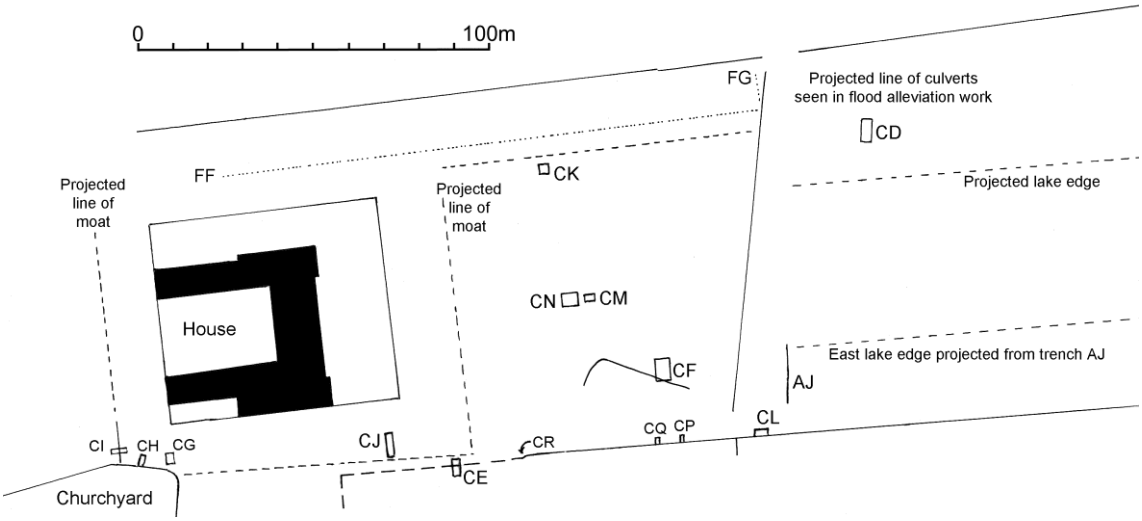


Figure 20. The location of the trenches. The dotted lines FF and FG are the projected lines of culverts seen in the flood alleviation work.

4 THE DITCH AJ

In March 1986 contractors dug a ditch which ran from the south boundary wall of the central garden 18.1m east of the east end of the Orangery wall northwards to the river Wandle (see figure 20). The opportunity was taken to examine and draw part of the east side. The trench cut through a gravel walk and brick retaining wall which had clearly once formed the southern side of the east lake. These overlay earlier and more enigmatic deposits.

The oldest layers in the drawn section (figure 21) were probably [AJ20] and [AJ21] which were only visible in a narrow band in the ditch bottom. [AJ20] consisted of sand with dark brown streaks. [AJ21] was also of sand which became coarse towards the north and had

some streaks of small flinty gravel in it. Both layers appeared to be water-laid. Their tops were at a similar height and it seems likely that they were two exposures of the same layer.

At the south end of the drawn section there was a layer of dark fine smelly sand-less silt [AJ19]. This was overlaid by [AJ18] which consisted of fine dark soil with sand in it. The significance of the two layers is unclear.

Layers [AJ20] and [AJ21] were both overlaid by layer [AJ17] which consisted of orange gravel in a sand matrix and it was not clear whether it was water laid or dumped. At the south end it terminated against and partly overlaid layer [AJ18] while to the north it thinned gradually and then disappeared.

Layers [AJ17] and [AJ18] were covered by layer [AJ16] which consisted of sandy clay. At one point there was a small lens of sand [AJ26] between layers [AJ16] and [AJ17]. Layer [AJ16] was in turn overlaid by [AJ15] which consisted of sandy loam mottled with iron stains. A pipe bowl of about 1700-70 marked WR was found in layer [AJ15] or [AJ16].

At the south end of the section [AJ15] was overlaid by [AJ14] which consisted of light grey sand. The northern part of this layer had been cut away and replaced by [AJ13] which consisted of coarse grey gravel. At the north end the upper part of the gravel was retained by a three course high brick wall [AJ23] which appeared to have formed the edge of a lake with the gravel making a walk 4.3m wide along the side. The wall was 23.1 m north of the boundary wall along the south side of the central garden. The gravel extended to a greater depth as it approached the lake wall and overstepped layers [AJ15], [AJ16] and [AJ21] which appear to have been dug away to accommodate it, presumably when the lake was made. The top of the gravel dipped downwards to the east of the wall where it appears to have formed a lake bed.

Within the lake the gravel layer [AJ13] was overlaid by layer [AJ22] the southern end of which butted up against the brick wall. The top of the layer was fairly level so it thickened to the north. The layer consisted of fine light chalky-looking silt which reacted very strongly in dilute hydrochloric acid.

At the south end of the trench layer [AJ14] and the southernmost part of the gravel walk [AJ13] were overlaid by [AJ11] which consisted of sandy soil with some small pebbles and flints. This layer tapered away to the north and was overlaid by layer [AJ12] which also rested on the walk [AJ13]. This consisted of green-coloured sand. [AJ11], [AJ12], the top of the lake side wall and the lake fill [AJ22] were all overlaid by [AJ10] which consisted of dark soil which extended up to the surface.

The deposits close to the river to the north of the measured section were dark and peaty and contained many late nineteenth or early twentieth century finds. It was not clear whether the deposit accumulated naturally or was deliberate fill. If it was natural the river conditions had obviously changed radically since the fine white silt [AJ22] was deposited. It is possible that the river had become oxygen deficient through heavy pollution. In the 1870s several Wandle-side landowners sued the Croydon Rural Sanitary Authority because of the polluted state of the river.[8]

[8] Smee 1872 p. 31-2; Crimp 1894 p. 191.

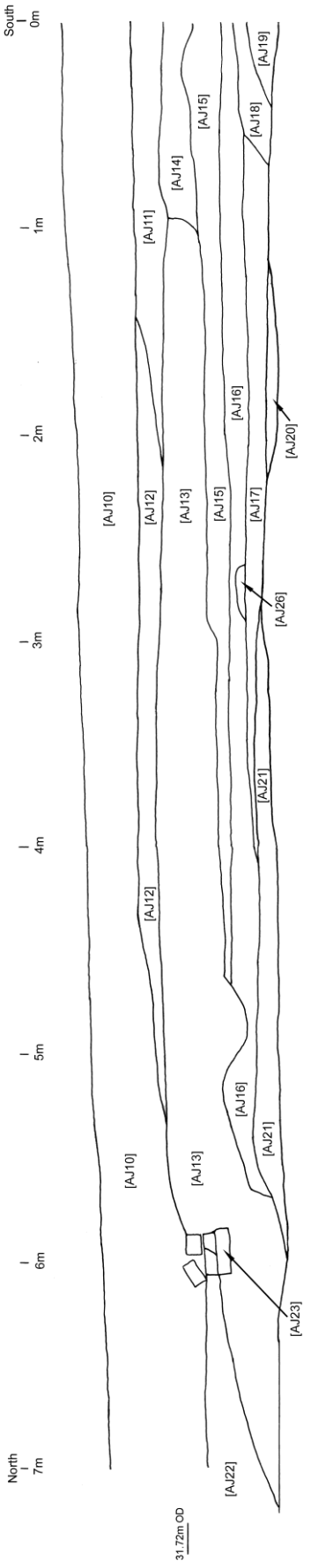


Figure 21. The east side of contractor-dug ditch AJ.

5 THE NORTH EDGE OF THE LAKE

In June 1989 a burn mark appeared on the grass on the north side of the river at the east end of the garden (figure 22). A subsequent resistivity survey suggested that the edge of the lake was about 44m south of the Crispin Crescent boundary wall (figure 23).

Figure 22. Scorch mark on the grass on the north side of the river probably marking the walk along the north side of the east lake, June 1989.

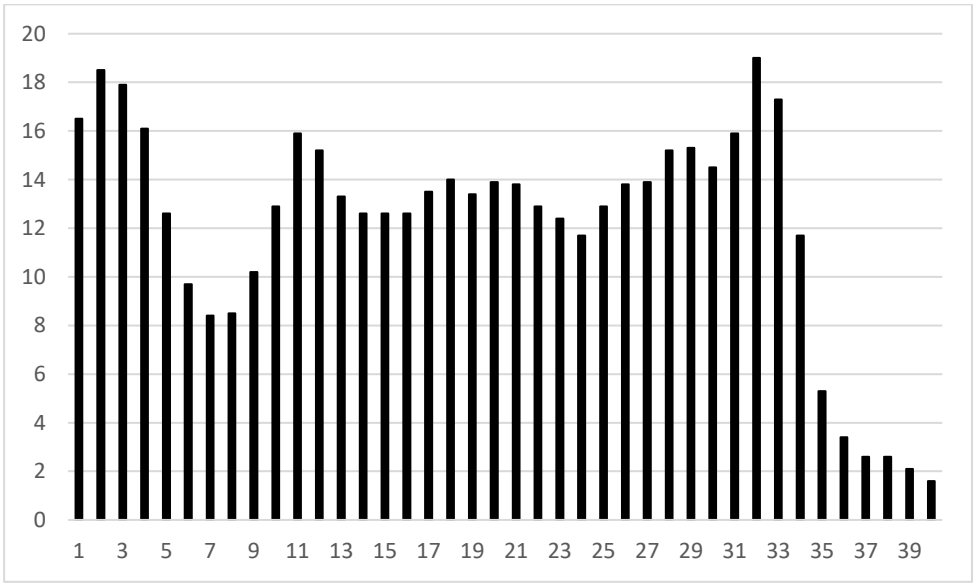


Figure 23. The average values of a ten parallel lines of resistivity survey readings running north south across the line of the projected edge of the former east lake. The survey was at 1m intervals and the northern end of the line (to the left) was 10.24m south of the Crispin Crescent boundary wall. The drop around reading 34 appears to mark the lake edge which would be about 44m from the boundary wall.

6 THE FLOOD ALLEVIATION WORK

In 1990 and 1991 the National Rivers Authority carried out extensive flood prevention works on the river Wandle between Richmond Green and Beddington Park. This involved deepening the bed and constructing a flow regulator near Beddington Park Cottages which diverted surplus water into a new channel running northwards across the former sewage farm to a holding lake at TQ288664. The banks were also altered to make provision for wild life. A new pool was dug in the former gardens to the east of Carew Manor and a number of bends were eased to improve the flow. The Carew Manor Group carried out a watching brief on the work within Carew Manor grounds and this report covers these observations. The flood alleviation work affected a small part of the area of scheduled ancient monument around the Beddington Roman Villa. This consisted of a narrow strip of ground along the north side of the Wandle to the east of the Crispin Crescent Estate. This was excavated by the Department of Greater London Archaeology and is reported elsewhere.[9]

The Carew Manor Group was allowed free access to the site which was visited every few days during the earlier part of the work. A record was made of any features which seemed to be of historical significance. Most of the observations were made on sections which had been created by machine and which had been subjected to little or no hand-cleaning. The site soon became very muddy so that observation was difficult. Features may easily have been missed so it is probably unsafe to argue from an absence of evidence.

6.1 The resistivity survey

Before the work started a resistivity survey was carried out covering part of the ground between the river and the south boundary of the garden in the area where a pond was to be created. The survey was carried out on 4 March 1990 using an RM4 meter set at 2000 ohms. The southern edge of the survey was 4m from the boundary wall along the south side of the garden while the western edge was 25m east of the northwest corner of the Church Paddock estate.

Figure 24. Resistivity survey on the site of the pond created during the floor alleviation work. Scale: one square per metre. North at the top.

[9] Bazely 1990.

On the western side an east-west aligned area of high readings more-or-less coincided with the lakeside wall and gravel walk seen in ditch AJ.[10] The high readings become less marked to east suggesting that the walk was less substantial or has been slighted.

The western side of the survey also shows a diagonal line of high readings running southeast from the lakeside walk and also two east-west lines of high readings on the southern part of the survey.

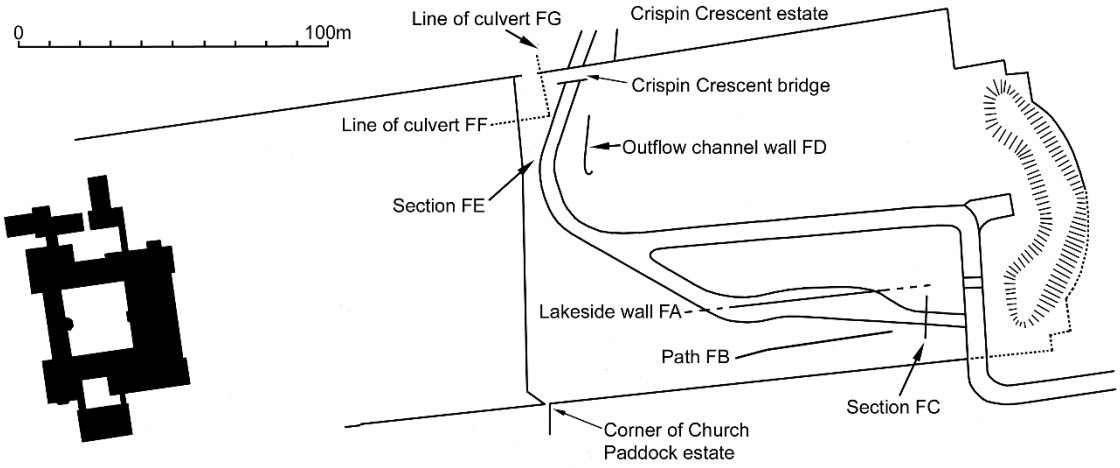


Figure 25. The features seen in the flood alleviation work.

6.2 The south wall of the east lake (FA)

When the site was visited on the 14 November 1990 a line of brickwork had been exposed by a mechanical excavator. It ran roughly east-west and was clearly the lakeside wall seen in the ditch AJ (section 4).

A 5m section of the wall was cleaned and examined. The west edge of this was probably 79m east of the corner of the present Church Paddock estate near the east end of the Orangery wall.[11] Only one course of brick survived in situ; a second course appeared to have been destroyed by the excavator. The surviving course consisted of pairs of stretchers alternating with headers to form Flemish bond. One irregularity was noted where there were two stretchers side by side.[12] The brick course rested on sandy gravel. This extended northwards from the base of the wall while on the south side it rose to a higher level. To the north of the wall the gravel was overlaid by fine light grey silt.

The wall was better preserved further east.[13] Here three courses survived. Seen from the north side the lowest was of headers while the upper two were laid in Flemish bond.

The wall was still standing upright about 90m east of the corner the church Paddock estate but 4m further east it had been tipped over to the north and was lying on its side (figure 26).

[10] The ditch AJ lay west of the survey area (see section 4). Within it the lakeside wall was 23.1m north of the south boundary wall and the walk had a width of 4.3m. On the west edge of the survey the north edge of the high readings was 22m north of the wall with a width of about 3-4m.

[11] The measurements along the wall were made to a post in the contractor's site fence. Unfortunately, the position of this post was not measured. Sutton Local Studies collection includes a set of plans for the work. If the fence was erected according to plan the post was most likely to have been 25m east of the corner of the present Church Paddock estate by the east end of the Orangery wall.

[12] The details of the bricks appear in section 12.

[13] Probably about 62.7m east of the corner of Church Paddock.

The wall to the east of this point was in the same condition for at least a further 17m, beyond which it was not exposed.

The beginning of the tipped-over section was examined in detail. Four courses of brick had survived. The bottom one was still in situ and consisted of a continuous line of headers. The second course had largely slipped off the first one in a northerly direction. It was in Flemish bond but it was rather irregularly constructed with a good many half bricks. The third and fourth courses were still together but had rolled over to the north and were lying on their sides. The third course was Flemish bond while the fourth course is all headers. The wall appeared to have tipped over in the past. This section was 24.1m north of the south boundary wall of the garden.

Figure 26. The tipped over section of the lakeside wall FA looking south.

6.3 A possible path south of the east lake (FB)

A rather irregular line of gravel was seen running roughly east-west between the lake side wall and the south boundary of the garden (figure 25). The feature appeared about 22.6m west of the river bank where it was 11.4m north of the south boundary wall of the garden. The gravel could be traced westwards for about 43.4m where it was 10.8m from the boundary wall. The gravel line then turned a little to the south and ran towards the end of the end of the Orangery wall. After a further 10m the gravel was covered by a contractor's spoil heap. About 20-30cm of soil had probably been removed from the surface before the gravel was recorded. The gravel was about 5cm thick. It seems likely that this was the remains of a path. There was no dating evidence.

6.4 The section at the east end of the new pool (FC)

A vertical north-south section was created as the contractors were excavating the inlet channel to the new pool about 11 to 12m west of the river (figure 25). Around 0.2m to 0.3m of soil had been removed from the surface by machine before the section was examined.[14] Below this the following layers were noted:

0m [FC1] Brown soil crumbly at the top. There was a concentration of bits of brick, tile, chalk and flint at a depth of about 0.36m. Below this the layer became stiffer and more compact. There were a few bits of brick and tile down to a depth of 0.46m. A sample, which was taken from the lower part of the layer was found to react quite strongly with hydrochloric acid.

0.59 [FC2]. Fibrous brown peat.

0.66 [FC3]. Light sand with some darker patches. A good deal of rounded and sub-angular gravel. The layer looked as if it was deposited by running water.

0.84 [FC4]. Sandy, dark brown with a good deal of flint.

0.94 [FC5]. Green sand with rounded, sub-angular and a little angular flint. The sand is fairly dark green but there were some lighter patches and a good deal of mottling with iron stain. Most of the flints had white or grey patination. There are only a few green patinated ones.

The boundaries between the layers were not absolutely level particularly below the top of [FC3] so the depths would differ somewhat if the section had been measured in a different position.

Judging by the uncleaned slope left by the digger the layers described in this section appeared to be present along the southern edge of the new pool. On the north side of the pool the soil appeared to rest directly on [FC5].

The new pool was deepened after this section had been recorded. When this had been done it was clear that the gravel [FC5] rested on green sand which extended over the whole area of the pool. This is presumably the Thanet beds.

[14] The measured section was 10m north of the south boundary wall of the garden.

Figure 27. The excavation of the new pond with the section FC in the background. Looking southeast.

Figure 28. Section FC.

6.5 The wall east of the lake outflow channel (FD)

A wall was found running roughly north-south on the east side of the Wandle south of Crispin Crescent boundary wall (figures 25, 29 and 30). It was first visible 16.5m south of the wall and from there it ran more or less southwards for 21.5m. It then curved slightly to the east and terminated in a buttress. The wall was one stretcher thick and the top, which appeared to be original rather than a demolition surface, was finished with a course of bricks laid length ways across it on their sides.

Most of the bricks were red and contained cinder and probably date from the nineteenth century. There were a few soft red bricks similar to those used in Carew Manor. The wall was tipped slightly to the west in places particularly in the area 30m south of the wall along the south side of Crispin Crescent. This was presumably a river bank retaining wall.

Figure 29. Wall FD looking north with the river on the left and the site fence and Crispin Crescent estate on the right.

Figure 30. The curved southern end of wall FD looking northwest.

6.6 The section by the former swimming pool (FE)

This section was created when the west bank of the river was cut back immediately upstream of the Crispin Crescent bridge. The section was not cleaned and the top may have been about 0.3m below the original ground level:

0m [FE1]. Reinforced concrete which was part of the swimming pool which formerly stood near the west side of the river.

0.13 [FE2] Brown soil with a good deal of flint and some bits of brick and tile.

0.48 [FE3] Small orange gravel in a sandy matrix. A few pieces of chalk.

0.59 [FE4] Crushed chalk with occasional brick flecks although the latter may have been left by the excavator.

0.68 [FE5] Dark brown sandy soil with a good deal of angular and sub-angular gravel.

0.89 [FE6] Rounded and sub-angular gravel in a sandy matrix which is mottled dark brown and green.

1.02 [FE7] Larger angular and sub-angular gravel in a clayey matrix.

The layer of small orange gravel [FE3] and the crushed chalk layer [FE4] could be traced from the south end of the section where the old river channel turned to run north, to within 7.85m of the wall which runs across the Crispin Crescent bridge, a total length of about 52m.

The orange gravel was probably the surface of a path with the chalk forming its foundation. It probably ran roughly north to south across the west end of the former lake.

There was no sign of banks for a former river channel running westwards across the north side of Carew Manor although the section was so dirty they might easily have been missed.

Figure 31. Section FE on the west side of the realigned channel next to the former swimming pool.

Figure 32. The realigned channel where the river turns north. The view looks south and somewhat west with the Orangery wall in the background.

6.7 The culverts (FF and FG)

When the west bank of the river was cut back two brick culverts were found just upstream of the Crispin Crescent bridge.

The first of these (FF) was aligned roughly east-west and its centre line was 14.25m south of the wall which runs across the Crispin Crescent bridge and along the north side of the garden (figure 25). The culvert sides and round vault consisted of a single thickness of soft orange brick laid lengthways so both wall and vault were a single brick-width thick. They were bonded with spotty mortar which contained lumps of lime or chalk. The sides consisted of four courses with a total height of 0.305m. The inside of the arch rose 0.135m above this so the total internal height was 0.44m. The internal width was 0.36m. The culvert walls rested on water laid gravel and the bottom 0.11m of the culvert was also gravel-filled. Above this there was 0.125m of dark brown sticky silt which was overlaid by 0.055m of fine sand. There was a thin layer of dark sticky silt above this and then an air gap of 0.135m to the vault top. The culvert appeared to be aligned on the north end of the old laundry of Carew Manor and may be connected with the culvert seen there in 1983.[15] There was no sign of the culvert continuing on the east side of the Wandle so it almost certainly terminated at the river. There was no sign of a construction trench for the culvert but the section around it was not cleaned so it could easily have been missed.

The second culvert (FG) was found just to the north of the first one. It was probably aligned about 11.5 degrees west of OS grid north. The side walls were two brick-widths (0.22m) thick with five courses of brick giving a height of 0.35m on the east side and 0.36m on the west. The arch is one brick-width thick. The culvert had an internal width of 0.41m and had an internal height of about 0.5m. The culvert was almost totally filled with fine silt leaving a gap of only 0.02m at the top. The silt was 0.33m deep and was dark brown at the bottom and gradually changed to light brown at the top. The lower part of the culvert was filled with gravel and the culvert walls also rested on gravel. The culverts were converging and they would have met on or near the old river bank.

[15] Phillips and Burnett 2016 volume 2 section 2.4.


Figure 33 (left and right). Culvert FF looking west.

Figure 34. Culvert FF to the left and FG to the right looking northwest.

Figure 35. The two culverts (one behind Ron Green – the kneeling figure) and the section cut for the re-aligned river channel.

6.8 The Wandle to the west of Crispin Crescent

When the river channel was deepened in this area the Thanet beds were visible from the Crispin Crescent Bridge northwards for at least 70m. The northern edge was not seen so the full extent is not known. The beds were overlaid by about 1m of gravel and 0.5m of brown soil.

6.9 The Wandle along the edge of the sewage farm

The channel which flows westwards from the northwest corner of the Crispin Crescent Estate appeared to be cut into gravel. A dark feature was noted on the north side of the channel. The main part was directly north of the east end of the Orangery wall and around 40m west of the Crispin Crescent boundary wall (figure 36). The feature was observed on the uncleaned sloping river bank left by the mechanical excavator. The main dark feature extended for about 8m along the river bank and penetrated into the gravel to a depth of about 1m below the original ground surface. The gravel to the west of this was lighter than the main feature but darker than the normal gravel for a further 13m. The feature was most likely a silted watercourse. If so it was not seen in the Museum of London's trench which ran parallel to the north side of the river, so the channel would have to be more or less parallel to the Wandle rather than at right angles to it.[16] The feature may therefore be associated with the channel shown running parallel and close to the north side of the river on nineteenth century maps.

[16] Bazely 1990.

Figure 36. The channel running west from Crispin Crescent looking roughly northwest. Note the dark section in the upper part of the far bank.

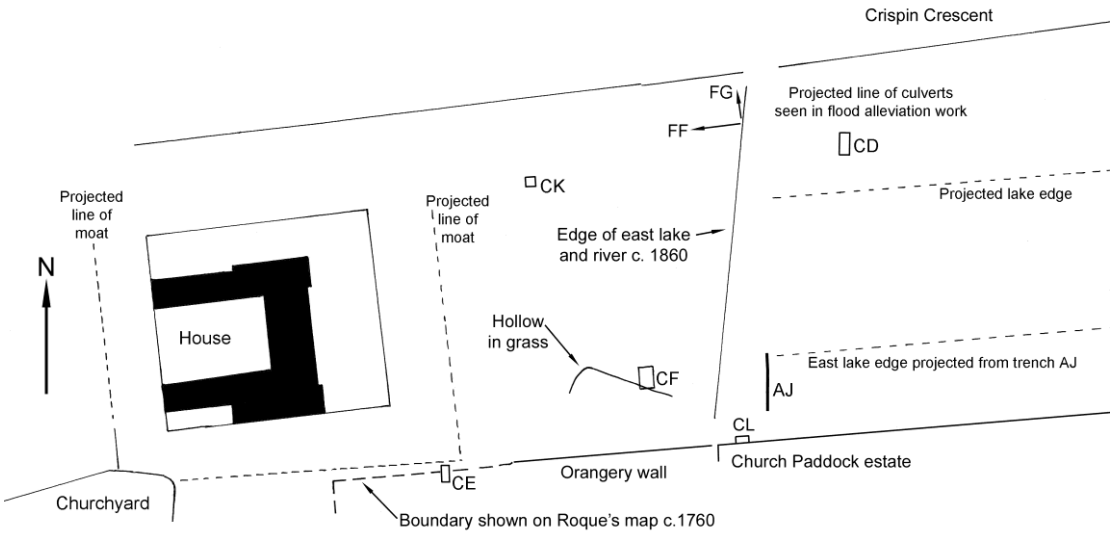


Figure 37. The eighteenth century house with the outline of the moat island and trenches CD, CE, CF, CK and CL.

7 TRENCH CD

7.1 The stratigraphy

This trench was at 160m from the northwest corner of Carew Manor and 20.63m from the boundary wall along the south side of the Crispin Crescent Estate in the position shown in figure 20.[17]

The turf and the topsoil were removed with a mechanical excavator until an area of gravel appeared in the centre of the trench at a depth of about 0.26m. The material removed by the excavator was treated as layer [CD1]. There was no systematic search for finds but roof tile, nineteenth and twentieth century pottery, unworked flint, pieces of brick, purple slate, green slate, slate pencil, an iron or steel drum top and modern glass were noticed. Most of the material was discarded.

A trench 3.6m east to west by 7m north to south was laid out on the surface left by the excavator but this was almost immediately narrowed to 3.6m by 3m at the northern end of the initial trench. A gravel deposit in the centre of the trench was treated as layer [CD3] (figure 38). There were areas of brown earth to the east and west of the gravel which were indistinguishable from the overlying layer [CD1]. The earth on the west side was treated as layer [CD2] while that on the east was [CD4]. It was initially assumed that the gravel was the fill of cut so it was excavated first. After a few centimetres had been removed the gravel was seen to extend under layers [CD2] and [CD4]. Work was resumed on these.

Layer [CD2] contained brick, slate, slate pencil, iron nails and other iron, bone, modern glass and pottery of nineteenth and early twentieth century date. There was a patch of coal ash towards the southern end of the trench and there was a scatter of coal particularly in the lower parts of the layer. Layer [CD4], on the east side of the trench, contained a few pieces of brick and tile, a lump of pink mortar, an oyster shell and a piece of cast iron pipe.

When these deposits had been removed layer [CD3] covered the whole of the trench apart from the fill of a gulley in the southwest corner which was filled by [CD5] (figure 39). The gully was about 0.1m deep at the south end and shallowed to almost nothing by the west section. The fill [CD5] was of brown soil which was lighter than the overlying layer. It contained a few pieces of bone, a snail shell and some tiny pieces of coal and cinder. At the bottom of the layer there was some clay which rested on the gravel as if the gully had once been clay lined. However, the clay was patchy and discontinuous.

After the gulley had been cleared [CD3] occupied the whole area of the trench. It consisted of angular, sub-angular and rounded flint gravel of very mixed size in a sparse matrix of brown soil. The gravel contained a few iron-bound sandstone pebbles. The top of the layer was not flat because of the gulleys already mentioned, and the pebbles were not packed together as if they had formed the surface of a path. The trench was narrowed from the top of [CD3] so the layer was only excavated in a 2m by 7m area which occupied the northeast corner of the original trench. The securely stratified finds from [CD3] consisted of pieces of tile and brick, some clay pipe stem, two tiny scraps of pipe bowl and some iron and snail shells. There was nothing that was closely datable.

When the underlying layer [CD3] was being removed a second gully was found close to the eastern side of the trench. This can be seen clearly in section in figure 43 which shows that it was about 0.26m deep. The smooth outline suggests that the gully had been left as a hollow when the gravel was deposited rather than being dug later. It was filled with light soil which

[17] TQ29786536. The ground there was at 32.24m OD.

was similar to the fill of the other gully [CD5]. There were a few isolated lumps of clay resting on the gravel at the bottom of the gully as shown in figure 43 (layer D). The finds from the gully consisted of 15 pieces of brick or tile, 3 pieces of chalk, a piece of slag, a piece of cinder and a piece of charcoal. These were removed during the excavation of layer [CD3] so there was a high risk of cross contamination.

Layer [CD6] underlay [CD3] and covered the whole of the remaining width of trench. It consisted of angular and sub-angular gravel in a matrix of stiff, dark, clayey soil which had a slightly fibrous peaty feel in places. The gravel tended to be smaller than that in [CD3]. The layer was patchy: in some places there was a great deal flint while other areas were almost pure dark soil. There were some patches of grey silty 'clay' which effervesced very strongly when put in dilute hydrochloric acid. The datable finds consisted of a mid-seventeenth century clay pipe bowl and a small piece of cup rim with manganese speckled tin-glaze of about the same date. Another, very similar, pipe bowl, which was found in the eastern baulk, in a position which would have been within this layer.

Layer [CD6] was underlain by layer [CD7]. This was stiff, dark brown, smelly clay-like soil with a large number of flints which ranged down in size from about 12cm. Most of the flints were angular and sub-angular with a few well-rounded ones. The matrix was very similar to the overlying layer but there was an increase in the size and quantity of flint. The only finds were two pieces of unworked chalk.

A spit was taken off the top of [CD7]. When this had been done it was realised that the spit had consisted of more than one layer. The situation after the removal of the spit is shown in figure 41. Layer [CD9] occupied the northeast corner of the trench while [CD8] covered the northwest corner and the centre. The southern end was still covered by [CD7].

Further excavation of [CD7] showed that [CD8] extended southward under it. On the west side of the trench there was a hollow in the top of [CD8] which was filled with yellow silt which was sandy and very stiff. It contained some iron stain and it did not react when placed in dilute hydrochloric acid. There were flint cobbles in the clay which were unevenly distributed so that there were a large number in some places and few in others. When the excavation finished part of [CD7] still remained in an area about 1m square in the south east corner of the trench.

The upper part of layer [CD9] consisted of large angular and sub-angular flints in dark stiff earth very similar to [CD7] except that it was a little lighter in colour. When [CD9] was removed [CD8] was found to underlie it. There was a hollow in the top of [CD8] which was filled with yellow silt similar to that under [CD7].

Layer [CD8] consisted of angular, sub-angular and rounded flint gravel which ranged in size from 3cm downwards. A spit with an average depth of about 0.1m was removed from the top of [CD8]. When this had been done two areas were apparent. The western side of the trench consisted of gravel in a sparse earth matrix while on the eastern side the gravel had a matrix of yellow clayey sand. The bottom of the trench was becoming damp. Two small trial holes were put down: one in each area. The western one was dug about 0.2m through gravel to end at about 31.12m OD. It rapidly filled with water. The eastern trial did not fill so quickly. It was clearly going to be impossible to dig any deeper on the western side of the trench. The main objective of the dig was to check the line of the sixteenth century river. As this was unfulfilled and the trench still thought to be in made ground it was decided to make a very narrow hole in the northeast corner of the main trench in the hope that it would either locate the river bed on run into clean natural gravel. As the trench was very narrow and was suffering from water inflow recording was concentrated on the east section.

Layer [CD8] was underlain by layer [CD11] which consisted of a mixture of brown sand, pea gravel and larger gravel. The deposit was penetrated by a large number of plant roots which did not extend upwards into [CD8].

Layer [CD11] was underlain by [CD10]. The upper 0.10m - 0.12m of this layer was largely silty grey sand. Below this the sand formed a matrix between large knobbly flints. At the south end of the section the boundary between [CD10] and [CD11] was more or less horizontal and quite clear. Further north the boundary was not clear but may have dipped northwards as shown by the broken line on figure 43. The plant roots in [CD10] crossed the boundary and continued downwards into [CD11]. There were no finds from either layer.

The top of layer [CD11] was at 31.05m OD, 1.19m below the grass.

7.2 Discussion

The layers can be divided into the following groups in order of deposition:

I	Gravel deposits [CD10] and [CD11]
II	The gravel layer [CD8]
III	The yellow silt layers lying in hollows on the top of [CD8] which form the lower parts of layers [CD7] and [CD9].
IV	Gravel in dark stiff soil in layers [CD6], [CD7] and the upper part of layer [CD9]
V	The gravel layer [CD3].
VI	The gulleys in the top of [CD3] with their filling [CD5]
VII	Topsoil [CD1], [CD2] and [CD4]

Group I

Layers [CD10] and [CD11] were appear to be water-laid gravel which has been penetrated by plant roots. As there were no finds from either layer there is no firm dating evidence.

Group II

The gravel layer [CD8] lacked plant roots and contained a small amount of earth and yellow silty sand. There was no evidence that the deposit was not natural.

Group III

Yellow silty deposits have been found on top of, and within, the natural gravel in several places in the immediate area. When Peake examined the Croydon to Hooley gas main trench she found a number of lenses of fine yellow and grey silt and peat in the gravels to the west and north of Carew Manor. The material appeared to have been in pollen zone III and a piece of wood in the gravel deposit gave a radiocarbon date of 10,130 BP.[18] Similar deposits were seen on the surface of the gravel when an overflow channel was excavated to the east of Beddington Park. Robin Nielsen noted that the area north of the Wandle was crossed by 'natural depressions running from ENE to WSW, and filled with pale yellow and light grey chalk clays'. These gullies were cut by later man-made features.[19]

On excavation the deposit in trench CD appeared to be a stiff clay. However, when it was dried and a lump immersed in water it broke up quickly of its own accord without being crushed. The material consisted of fine grey sand which was bound together with a limited amount of light silt. It did not visibly react in dilute hydrochloric acid. This shows that it did

[18] Peake 1971 p. 154-5.
[19] Nielsen 1990 p. 15.

not contain chalk although it could easily have been mistaken for a chalk-based deposit on visual inspection alone. It is not clear if the material from the overflow deposit was identified by eye or checked chemically.

The yellow deposits in trench CD and the underlying gravel are therefore likely to be natural.

Group IV

Layers [CD6], [CD7] and the upper part of layer [CD9] consisted of dark stiff earth with a varying amount of flint. The datable finds all come from layer [CD6] in the upper part of the group. They consisted of two clay pipe bowls of mid-seventeenth century date and a piece of a cup rim with manganese speckled tin-glaze. This is probably a former soil level. The top of layer [CD6] was at 31.64m OD.

Group V

Layer [CD3] consisted of flint of mixed shape and size. There were a number of finds of which were not closely datable although none need be later than the early eighteenth century. The position of the layer is consistent with dumped material.

The most likely occasion for dumping would be the reconstruction of the garden by Nicholas Carew 1st baronet between 1707 and 1727, and in particular, the construction of the east lake, which was located about 17m or 18m south of the southern edge of trench (see section 13.5.1).

Group VI

The two gulleys in the top of gravel layer [CD3] did not appear to have been cut from above and may simply be irregularities left on the surface of the gravel when it was dumped. The deposit of clay in the bottom of the western gully (layer [CD5]) appeared to be too discontinuous to have been a lining and its significance is unclear. The few lumps of clay in a similar position in the eastern gully are equally enigmatic. None of the finds in the gully fill were datable but it seems likely that filling took place soon after the gravel was deposited so that the area could be restored as a garden.

Group VII

Layers [CD1], [CD2] and [CD4] are topsoil. Photographs in Sutton Local Studies Collection show that the area was cultivated in the late nineteenth and the first half of the twentieth century. There were a considerable number of finds, such as slate pencils, which appear to relate to the orphanage's occupation of the house (1866-1939). It would appear that a good deal of miscellaneous rubbish found its way onto the cultivated ground in this period, perhaps in compost.

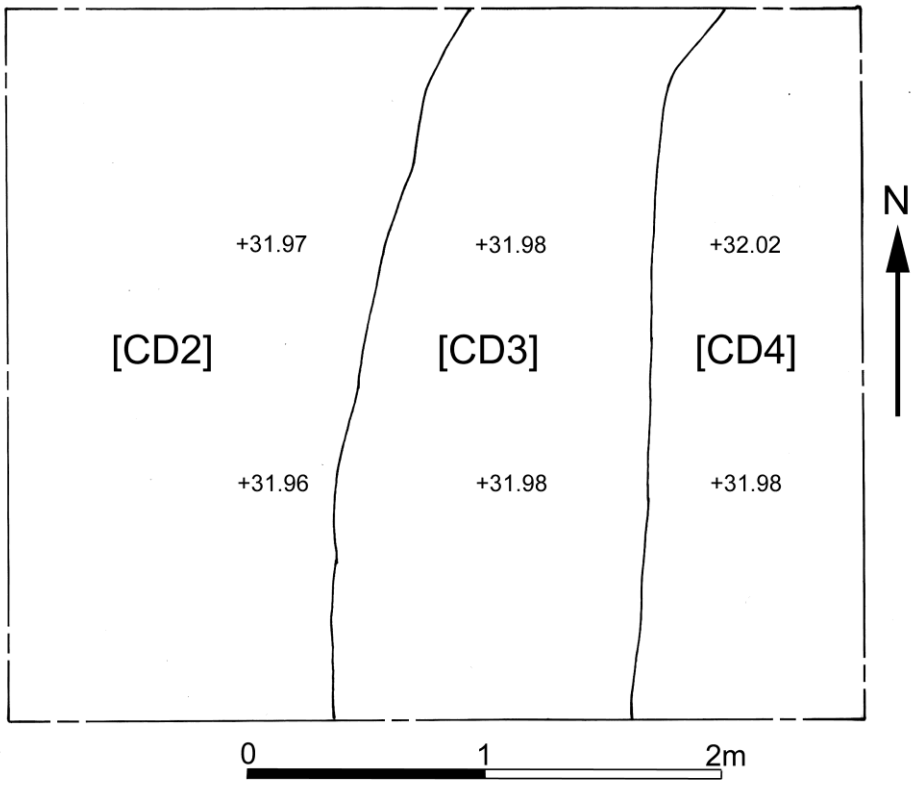


Figure 38. The trench after the removal of the topsoil (layer [CD1] with a mechanical excavator. It shows the top of layers [CD2], [CD3] and [CD4].

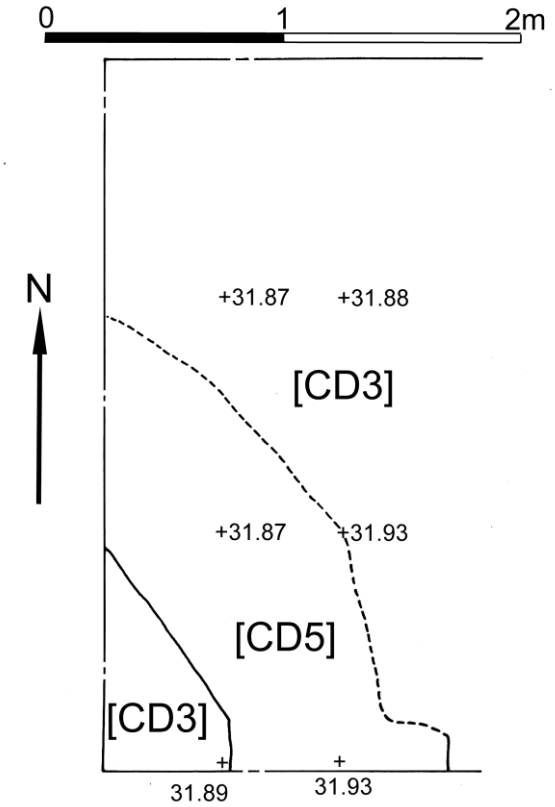


Figure 39. The western half of the trench after the removal of [CD2] showing part of the top of gravel layer [CD3] and the top of the gully fill [CD5].

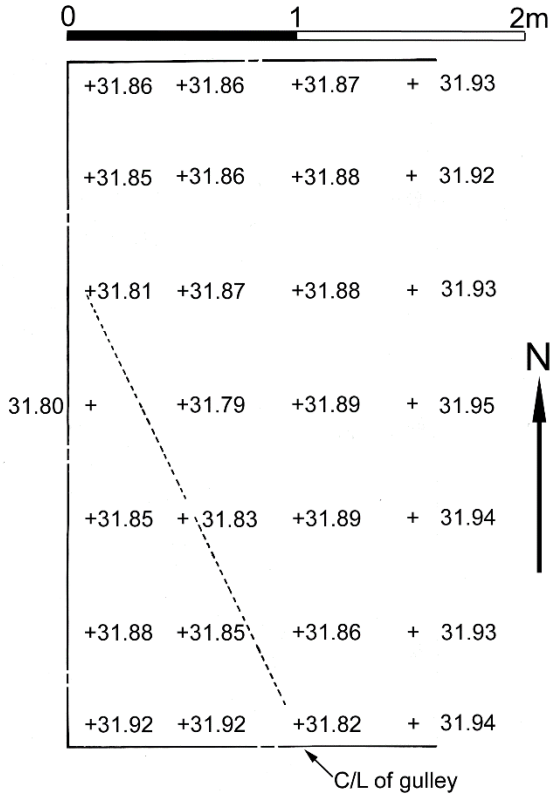


Figure 40. The western side of the trench showing spot heights on the top of layer [CD3] after layer [CD5] had been removed.

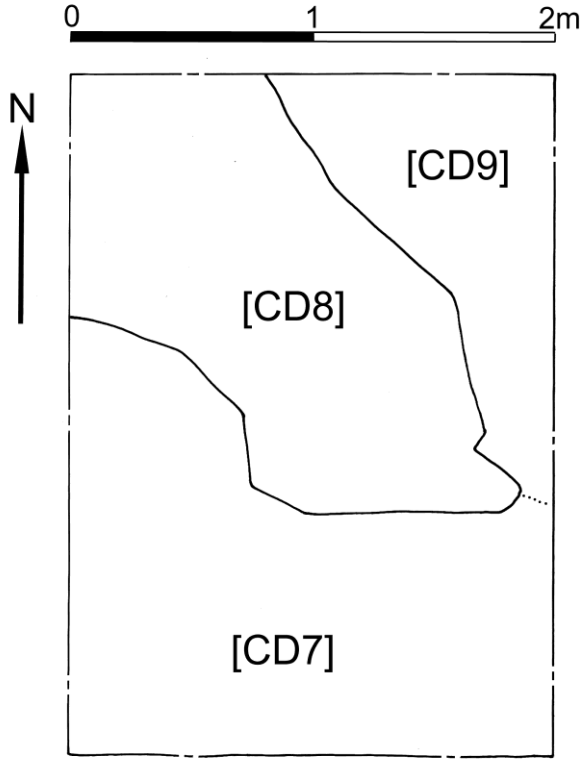


Figure 41. The trench after it had been narrowed to a 3m by 2m area in the northeast corner of the original trench. The drawing shows the trench after the 1st spit of [CD7] had been removed exposing [CD7], [CD8] and [CD9].

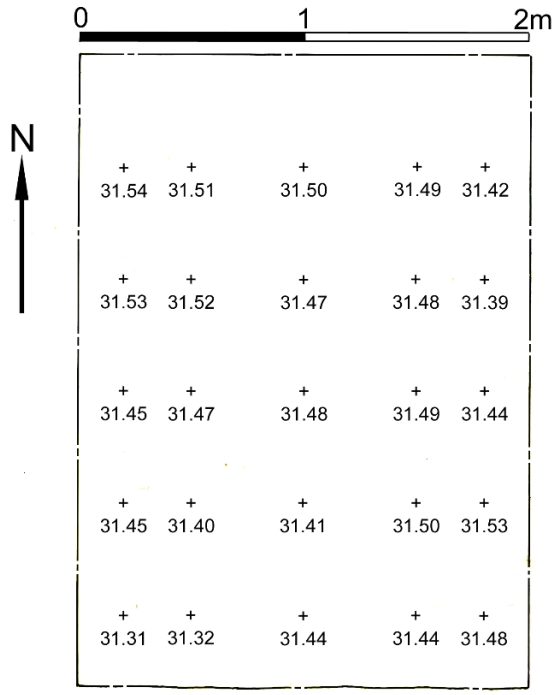


Figure 42. The narrowed trench showing levels on the top of [CD8] after [CD7] and [CD9] had been removed.

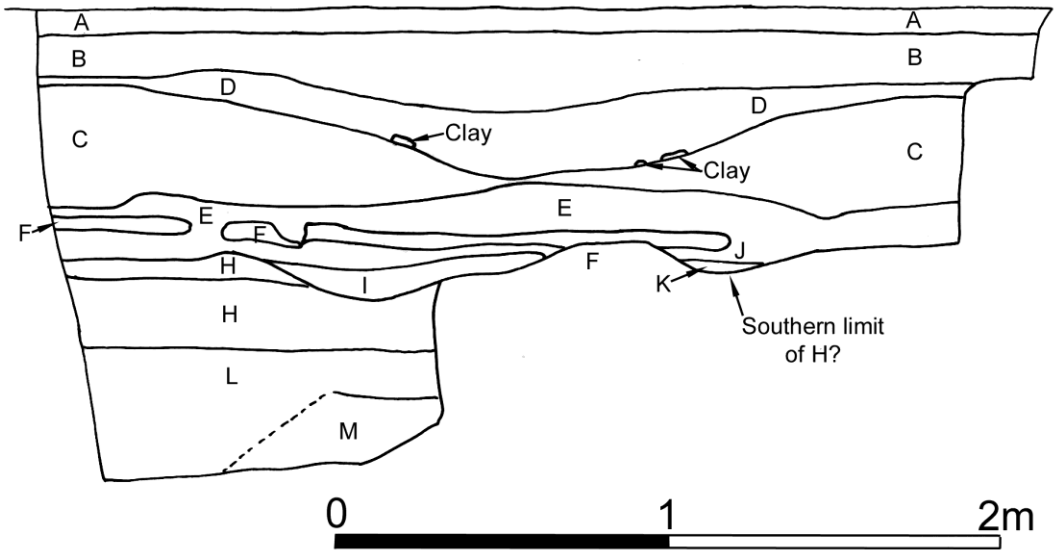


Figure 43. The eastern side of the trench.

A	Turf and loose fine topsoil. Few stones.
B	Brown topsoil. Scattered flint, brick etc.
C	Angular, sub-angular and rounded flint in brown earth matrix.
D	Brown earth similar to B but lighter. Boundary with B rather indistinct.
E	Dark stiff flinty earth.
F	Band of flint in dark earth.
G	Flint and some patches of iron stain in a dark clay-like matrix
H	Gravel in a stiff sandy light grey-brown matrix. Less stony towards the bottom.
I	Yellow clay streaked with iron stain.
J	Like G.
K	Like I
L	Orange-brown sand with much pea-gravel and some larger gravel up to 4cm.
M	Grey sand.

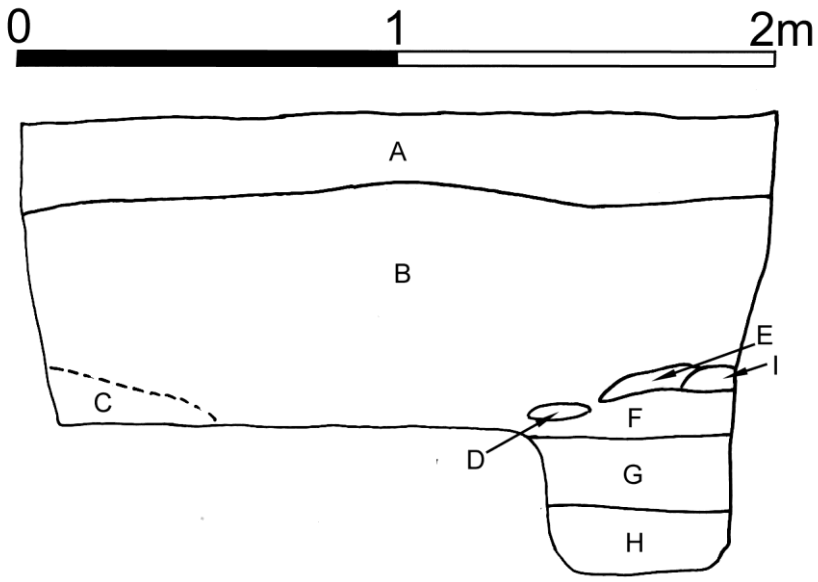


Figure 44. The northern side of the eastern half of the trench.

A	Brown topsoil with a few flints and pieces of brick.
B	Gravel in brown earth.
C	Smaller gravel than B in brown earth.
D	Yellow-grey sand.
E	Brown earth.
F	Gravel.
G	Gravel in brown earth. More khaki in colour than the layer above.
H	Brown sand with pea gravel and large flints.
I	Yellow clay.

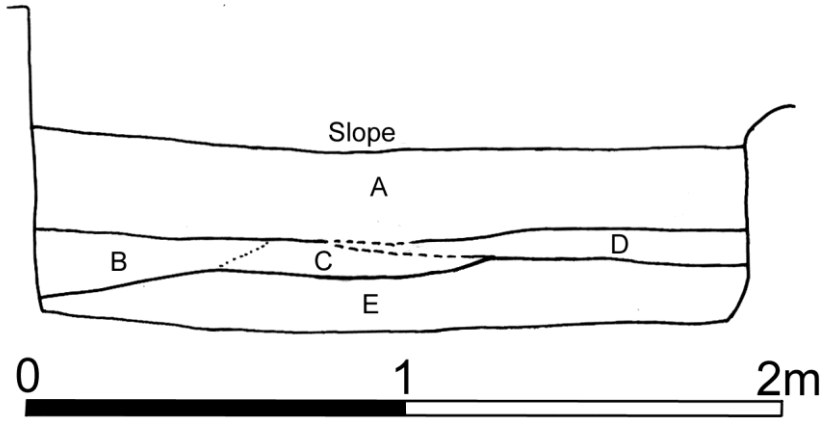


Figure 45. The south side of the eastern half of the trench.

A	Rounded, angular and sub-angular gravel in earth.
B	Brown earth with some flint.
C	Brown earth with more flint than B or D.
D	Stiff earth with some flint.
E	Mixed gravel, mostly smallish but with some large cobbles. A little black earth.

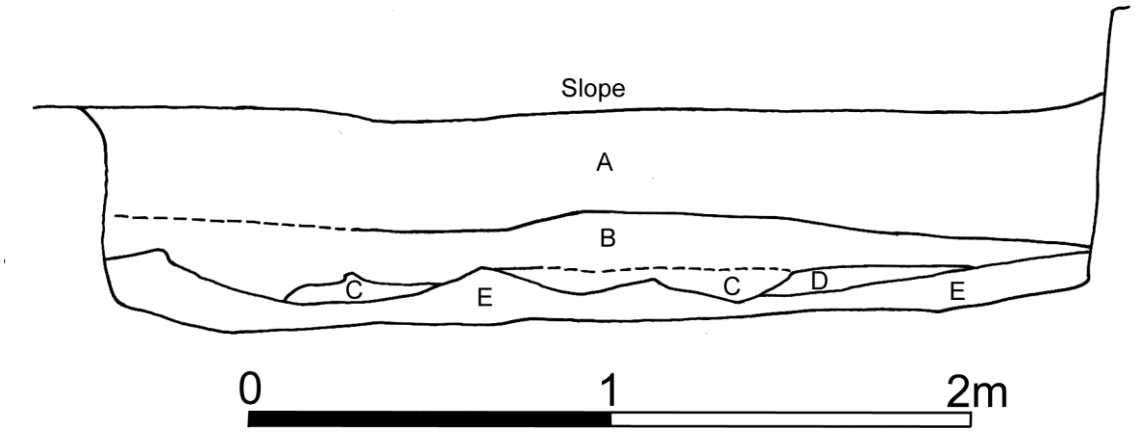


Figure 46. The west side of the east half of the trench.

A Flints of very mixed size in brown earth.
B Stiff earth with some flint.
C Yellowish patces of clay containing stoney patches in a brown earth matrix.
D Large flints in earth.
E Smallish tightly packed gravel in earth.

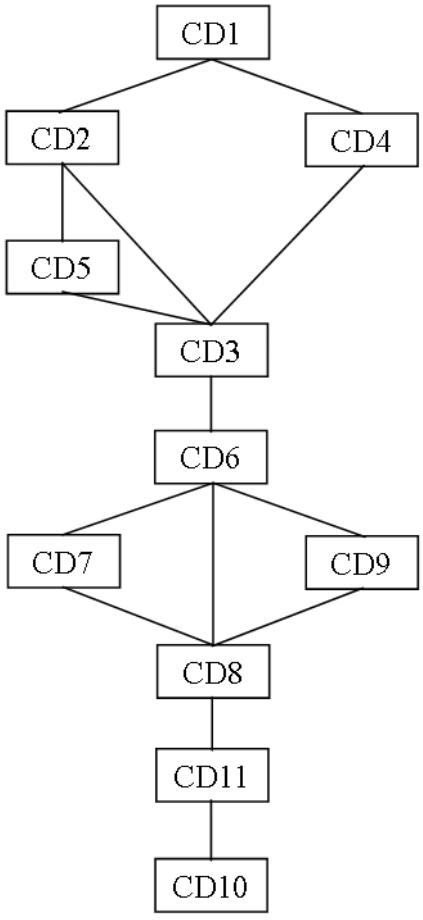


Figure 47. The site matrix.

8 TRENCH CE

This east side of this trench was 15.63m west of the west end of the stub wall which projects from the Orangery wall as shown in figure 20.[20]

The excavation was planned with two objectives. The first was to examine the outer edge of the former moat around Carew Manor and the second was to examine the moat fill to see if it contained grotto remains or other demolition debris from the pre-eighteenth century garden. The edge of the moat was thought to be marked by a rise in ground level which runs westwards from the west end of the Orangery wall. A trench 5m from north to south by 2m from east to west was laid out across the rise. After the first layer had been removed the footings of a wall were encountered which was aligned east to west and projected 1.3m into the trench from the east side. The wall was about 2.6m from the south end of the trench and therefore more or less divided it in two. The excavation was then continued as two separate areas, one to the north of the wall and one to the south.

The upper layers in the area to the south of the wall ([CE2], [CE5], and [CE6]) were largely excavated with a mattock. The layers below this were largely excavated with trowels and other small tools except for a hole which was dug into layer [CE16] with a mattock to check that it was natural gravel.

In the area to the north of the wall layers [CE3], [CE7] and [CE8] were largely excavated with a mattock. Part of [CE18] on the west side of the trench was also excavated with a mattock but it was soon realised that this was a mistake and the rest of this layer and all the underlying one were excavated by trowel.

Splitting the trench into two parts along the line of the wall meant that a robber trench to the east of the wall was not excavated in stratigraphic order. It is thought that this did not result in any major information loss. Repeated attempts were made to locate the edge of a construction trench for the wall. No trace was found but the adjoining layers had been much disturbed by cultivation.

8.1 The stratigraphy

Layer [CE1] underlay the turf and consisted of brown topsoil with a large number of finds including plastic and other obviously modern items. After it had been removed the trench was in the state shown in figure 48. An area of brick, which later turned out to be the top of a wall [CE 4], could be seen towards the centre of the east side of the trench. The area to the north of the brick was designated layer [CE3] while that to the south became [CE2]. On the west side of the trench there was no clear boundary between layers [CE2] and [CE3] and an arbitrary line was made as shown in figure 48. From this point the trench was divided by the wall [CE 4] so the stratigraphy of the two areas will be described separately.

8.1.1 The area south of the wall

Layer [CE2] at the south end of the trench consisted of brown soil with a good deal of small flint gravel of mixed shape. The gravel was particularly concentrated in a band across the south end of the trench which can be seen in figure 49. This gravel concentration seemed to be of irregular shape and it merged laterally into the less gravelly parts of [CE2]. It appears to have been the upper part of the gravel walk (see [CE6] below)

[20] TQ 29667 65265. Before excavation the ground level at the north end of the trench was at 32.11m OD and it was 32.44m OD at the south end.

which was probably disturbed when the telephone cable shown in figure 49 was laid across the south end of the trench. The layer as a whole contained a few large lumps of brick and some fragments of chalk and it was ashy in places. There was a wide range of finds including much nineteenth or twentieth century metal, glass and pottery. Layer [CE2] was underlain by two layers, [CE5] and [CE6] which are shown in figure 50.

Layer [CE6] which occupied the southern end of the area consisted of gravel which was mostly rounded and sub-angular in shape, and of mixed size up to about 6cm. There was a thin discontinuous layer of small orange gravel on top of the main deposit. In most cases this was only 4 to 6cm thick but at the southeast corner of the trench it was 20cm thick. The main gravel layer was 22cm thick at the southwest corner of the trench and 18cm thick at the northwest corner. The layer thinned somewhat to the north as shown in figures 65 (layer C) and 66 (layer B). The layer extended 0.89m further north on the west side of the trench than on the east, the difference in distance being made by the curved boundary shown in figures 50 and 51. The gravel layer can be equated with a burn mark that appears on the grass in a dry summer and is evidently part of a walk which runs east to west parallel with the Orangery wall. The small gravel was probably a surfacing which had been disturbed when the telephone cable was laid as noted above.

Layer [CE5] which lay to the north of [CE6] consisted of brown earth with some flint and pieces of brick and chalk. The finds included glass, pottery and an iron padlock case which were of late nineteenth or twentieth century date. There was one piece of seventeenth or eighteenth century pottery and a range of other material such as pipe stem, nails, coal cinder and tile, which cannot be closely dated, but are likely to have been made in the eighteenth or nineteenth centuries. There was one piece of pottery of doubtful, but almost certainly pre-twelfth century date, but no other items which need belong to medieval or earlier periods.

Layer [CE6] was underlain by layer [CE9] which consisted of orange sand with a scatter of flint in it. This occupied the south end of the trench as shown in figure 52. Layer [CE5] continued downwards for about 0.15m below the top of the southern end of layer [CE9] and bottomed against layer [CE9] which extended under it to occupy the whole area of the trench south of the foundation [CE4]. The boundary between the two layers was penetrated by root and worm holes and was not very distinct. During the excavation the base of [CE5] was thought to lie between about 31.73 and 31.82m OD. Comparison of these levels with the drawing of the east side of the trench (figure 66) suggests that the boundary lay at a slightly higher level and that layer [CE5] was over dug into [CE9]. The drawing of the western section (figure 65) suggests that on this side layer [CE5] penetrated almost to the base of [CE9] and may even have rested directly on [CE11] at about 31.6m OD.

On the west side of the trench the lower part of [CE5] met the upper part of [CE9] by a near vertical boundary which can be seen in figure 65. On the east side the boundary was a steep northward-dipping slope which appears in figure 66. These appear to be the limit of cultivation set by the overlying path. The two layers were therefore more-or-less the same deposit, [CE5] having been cultivated in the recent past and [CE9] not.

The pottery from layer [CE9] was mostly Saxon and early medieval the latest sherd being a piece of London type ware of the late thirteenth or early fourteenth century. There were a few pieces of medieval or post-medieval roof tile, a piece of probable Roman tile, a little Reigate stone, some scrappy broken bone, nails, burnt flints, a tufa pebble and some cinder, slag and oyster shell. The only modern finds were three pieces of clear glass which may have been intrusive as the boundary with [CE5] was indistinct.

Layer [CE9] was underlain by two layers: [CE11] which occupied the west side of the trench and [CE12] which occupied the east side as shown in figure 59. When [CE11] was excavated it was found to fill a shallow gully about 0.14m deep in the top of [CE12].

Layer [CE11] consisted of orange sandy soil with a few rounded flint pebbles. It was very similar in character to the overlying layer [CE9] and was probably stratigraphically identical with it: there was no visible boundary between the layers in the section formed by the west side of the trench (figure 65). The finds were similar There was one piece of London type ware and another sherd from the thirteenth or early fourteenth century but most of the pottery was earlier medieval. Other finds included scraps of bone, a whetstone, rusted iron, burnt flint, a small piece of Reigate stone, a piece of medieval or post-medieval tile and four scraps of dark soft red brick.

Layer [CE11] contained two small features which are both shown in figure 60. The first, which contained layer [CE14] was a small more or less rectangular feature with a curved northern side (figure 61). It partly underlay the west side of the trench and was 0.14m from the southwest corner. The other feature which contained Layer [CE15] was a small circular area 0.14m in diameter which was located just north of [CE14]. The tops of the features were at about the same height.[21] Layer [CE14] consisted of greyish sand which was looser than the surrounding layer and contained more flint. [CE15] contained grey sand similar to [CE14] but without the flint. Both features extended down to the base of [CE11] but did not penetrate the underlying layer. Their significance is unclear.

Layer [CE12] which underlay [CE11] and covered the whole of the south end of the trench consisted of dark brown earth which was in places mottled with sand. It contained some small pieces of chalk and medium-sized rounded and sub-angular flints which were more common at the bottom of the layer than at the top. The pottery was mostly of Saxon and early medieval date, the latest item being a piece of pre-wheel-thrown hard grey ware. There was scrappy bone, deer antler, some rusted iron, oyster shell, rounded tufa pebbles, fire-crazed flints, a piece or red sandstone and some light grey bubbly slag, Roman tile and medieval or post-medieval tile.

In the area immediately south of the wall, layer [CE12] was underlain by layer [CE17] as shown in figure 63. This consisted of brown sandy earth which contained some flint of mixed size. The layer was only a few centimetres thick and contained a scrap of peg tile and a few pieces of bone and tufa. The layer was probably not stratigraphically distinct from layer [CE12] but was recorded separately because layer [CE12] was slightly under dug when figure 63 was made.

Layer [CE17] rested on Layer [CE16]. At the south end of the trench, where layer [CE17] was not present, layer [CE12] rested directly on layer [CE16]. Layer [CE16] consisted of gravel of very mixed size, mostly about 5cm to 8cm in size but ranging up to 25cm. Some pebbles were still knobbly, but most were angular, sub-angular or rounded. The gravel was in a matrix of brown sandy earth and appeared to be natural. The top of the deposit varied in height between 31.33 and 31.41m OD. The excavation was continued in a small area in the southwest corner of the trench to check that the gravel was natural. Here a rough hole penetrated to 30.94m OD where the top of a layer of crushed chalk was encountered [CE19]. The chalk was mixed with some flint and sand and appeared to be natural periglacial deposit.

[21] The top of layer [CE14] was at 31.54m OD while [CE15] was at 31.49m OD.

8.1.2 The area north of the wall

Most of the excavation in this area was carried out with a mattock to a depth of about 0.8m below the grass and consequently the observed layers do not tie up well with the sections. The layers recorded in the excavation will first be described and then a number of points will be drawn from the section. The area below 0.8m will then be described as this was mostly excavated by trowel.

The uppermost layer [CE1] was underlain by layer [CE3]. This consisted of brown earth which contained a good deal of broken brick and a large number of other finds including a penny dated 1900 and other objects of late nineteenth or twentieth century date.

Layer [CE3] was underlain by [CE7] which consisted of brown earth which was slightly more yellow than the overlying layer. It contained two pieces of eighteenth century pottery, pipe stems and other finds.

Layer [CE7] was underlain by [CE8]. The upper part of this consisted of light grey sandy earth which contained flint, chalk and some bits of brick. The finds included a clay pipe stem, bone, oyster shell and scraps of iron. There was some rubble including brick and tile and two joining fragments of yellow terracotta.

The drawings of the east and west sides of the trench (figures 65 and 67) show a number of additional details. There was a very rubbly layer in the upper part of the east section (C in figure 67) which appeared to be associated with the demolition of the wall [CE4]. There was no equivalent layer on the south side of the wall so it appears that most of the debris fell to the north. The demolition layer is not present in the west section although there was a little scattered rubble.

The lower 0.2m of [CE8] was darker than the rest of the layer and should undoubtedly have been treated separately. The west section shows that this was a continuation of layer [CE12] to the south of the wall. All or almost all of the shell-tempered pottery found in [CE8] came from this zone.

After layer [CE8] had been removed, the trench split into two contexts. The northernmost 0.78m Layer [CE23] was of gravel, which appeared to be natural and the equivalent of layer [CE16] at the south end of the trench. It was not excavated. To the south of this at the foot of the wall [CE4] there was an area of very dark brown almost black soil which was treated as layer [CE18] and turned out to be the fill of a ditch. The layer contained 10% to 15% of small flint and a little large flint. There were occasional deposits of pea gravel which had probably been brought down by worms, some degraded crumbly bone and a little charcoal. The layer contained pottery of prehistoric, Roman, Saxon and early medieval date. There was a coin of 260-73. There was a good deal of bone which was mostly scrappy, a number of teeth, some heat-crazed flints, a piece of grey foamy slag, and some scraps of iron and charcoal. There were also several pieces of Roman tile, and one piece which looks rather like Tudor brick. This could possibly be contamination which had fallen into the trench from above as the excavation of the ditch was difficult due to the confined space.

Layer [CE18] contained a small deposit of stiff soil that was lighter and sandier than the main layer. This was treated as [CE20] (figure 62). It rested on, and was contained within [CE18] and was therefore part of that deposit.

Layer [CE18] extended almost to the bottom of the ditch. The lowest few centimetres were formed by layer [CE21] which consisted of gravel in a dark sticky matrix similar to [CE18]. There were no finds in the layer which appears to be primary fill.

Layer [CE21] was underlain by layer [CE22] which consisted of broken chalk and flint. The layer looked very similar to [CE19] at the south end of the trench and was assumed to be periglacial debris.

8.1.3 The foundation [CE4]

A foundation, which ran roughly east-west, projected 1.31m into the trench from the east side (figures 53 to 56). The western end of it was rough and it had clearly once extended further west but had been robbed out at some time.

The upper part of the wall was of brick which survived to a maximum height of three courses. The brick was supported by a substantial foundation of mortared chalk rubble. A rather roughly made extension had been built on to the brickwork on the north side. The whole wall had leant towards the north, possibly because the filled ditch partly underlay the north side of the wall so that the support offered by the soil was uneven.

The chalk foundation was about 0.33m deep on the south side and 0.36m deep on the north. It was 0.46m wide at the top and thickened to about 0.57m at the base. At least one chisel mark on the exposed part of the top ran across two chalk blocks showing that the upper surface had been levelled after construction.

The original brick wall was about 0.37m thick, which was narrower than the top of the foundation, the difference being made by a ledge on the north side. Two courses of brick and part of a third survived which was enough to show that the walls were laid in English bond. Their sizes are given in section 12.

At some point a rather rough extension had been added to the north side of the wall to thicken it. This is shown on the plan of the wall top (figure 55), in section (figure 56) while the north side is figure 58. The extension was about 0.22m thick and was not bonded into the main wall. The southern edge of it rested on the ledge at the base of the brickwork on the north side of the original wall, while the northern side rested on the soil. This uneven support had caused it to subside northwards away from the wall. Only two courses of the extension survived and both were rather roughly made. The lower course consisted of a mixture of flint and orange brick with one yellow brick which may possibly have come from Clack's brick works about 200m southeast of the excavation.[22] The second course consisted of a mixture of various types of pink and orange brick. The overall impression is of a rather slipshod and fairly recent attempt to prevent the original wall subsiding to the north. If the yellow brick is from the Clack's works it must post-date 1904.

There was a good deal of rubble in the upper layers of soil immediately adjacent to the north side of the wall. There was a much more extensive rubble spread to the south and it has already been suggested that the majority of the debris fell this way when the wall was demolished or collapsed.

A search was made for evidence of a construction trench along the sides of the wall. None was found and there was no evidence of one in the section. However, any traces would probably have been destroyed by the cultivation which appears to have been carried right up to the face of the wall on both sides.

[22] The fabric looked like Clack's bricks which were made from lime and fine sand. Most were grey. Some pink ones were produced but yellow ones are not recorded. The business started in 1904. Shew 2012 p. 23-4.

The western end of the surviving foundation was rough and it was clear that the wall had at one time continued to the west. The structure had been robbed out but its former line was marked by a pocket of rubble which appeared to define the bottom of the robber trench ([CE23] and H in figure 65). The upper part of the trench was sought but could not be defined and it seems likely that the ground had been cultivated since the wall had been destroyed. Layers [CE12] and [CE17] ran under the southern side of the robber trench and continued to the edge of the ditch.

A feature, which may have been the bottom of a post hole, was cut into the top of [CE12] beneath the robber trench. It was located just beyond the end of the surviving part of the wall as shown in figures 55 and 57. It was more or less square with rounded corners about 0.29m north to south, 0.28m east to west and 0.9m deep. The fill Layer [CE10] consisted of small crushed mortar and brick with some flint and brown earth. This was very similar to the fill of the robber trench above which suggested that the hole had been filled when the robber trench was created. The hole might possibly have held a large vertical post which was built into the original brick wall. If this was the case it is hard to see what purpose the post might have served particularly as it would have weakened the wall at this point.

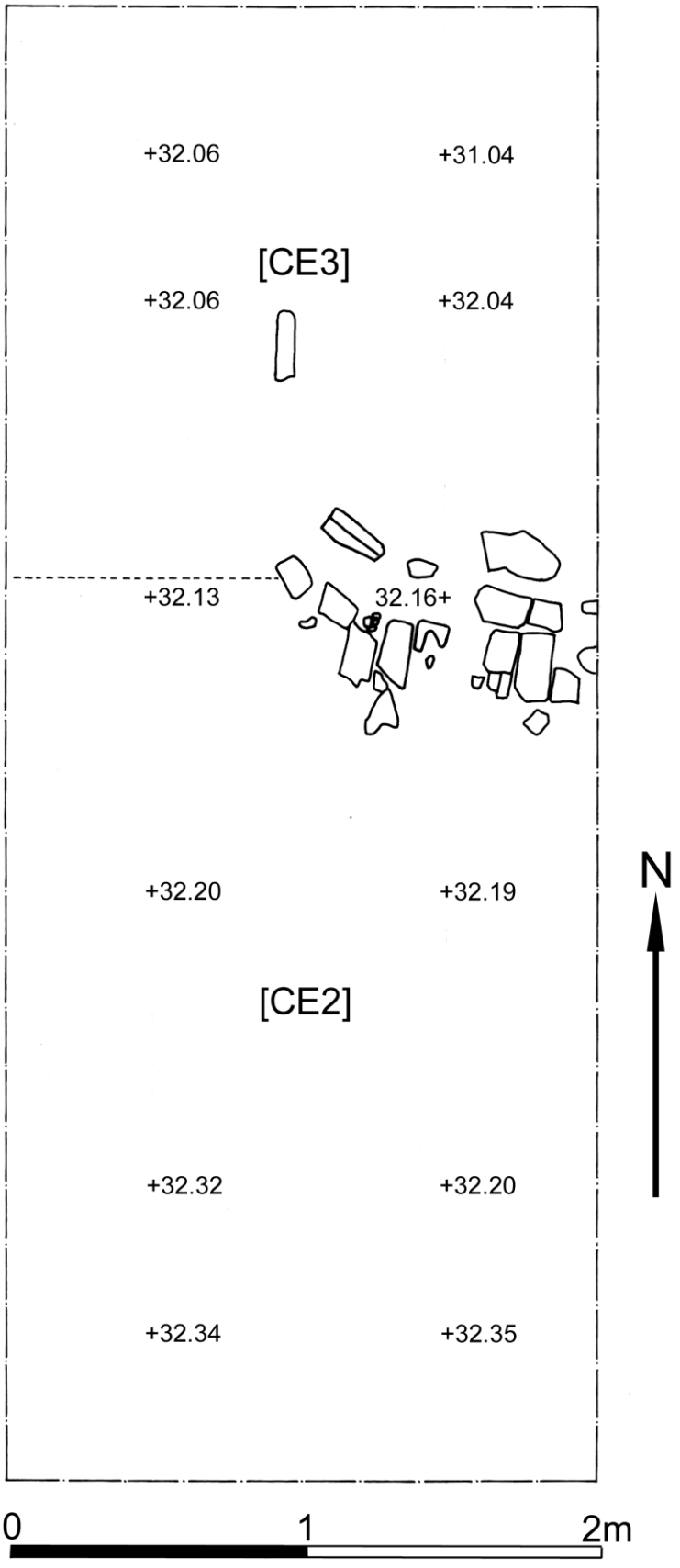


Figure 48. The top of layers [CE2] and [CE3].

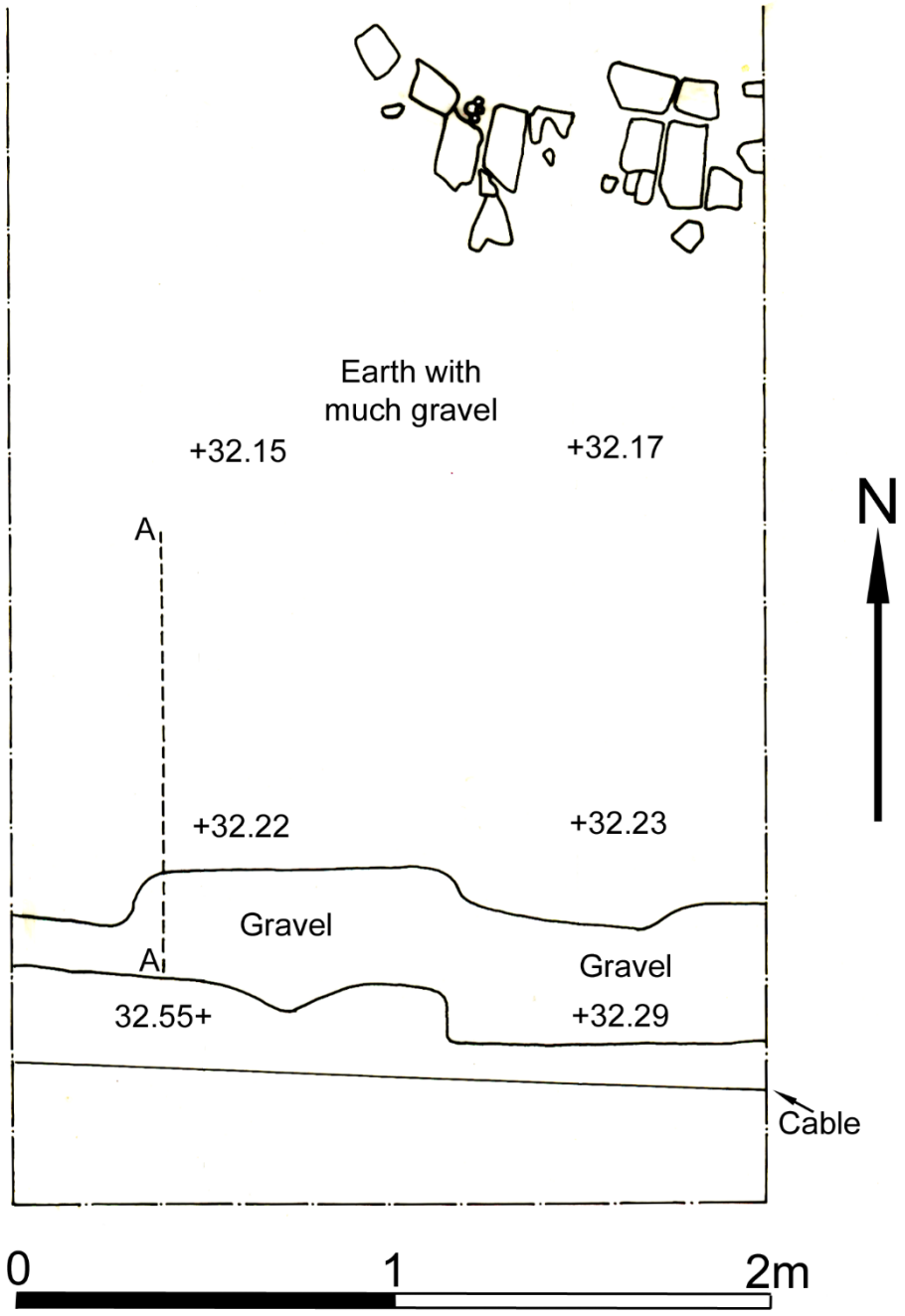


Figure 49. Layer [CE2] partly excavated. A-A is the line of the mini-section.

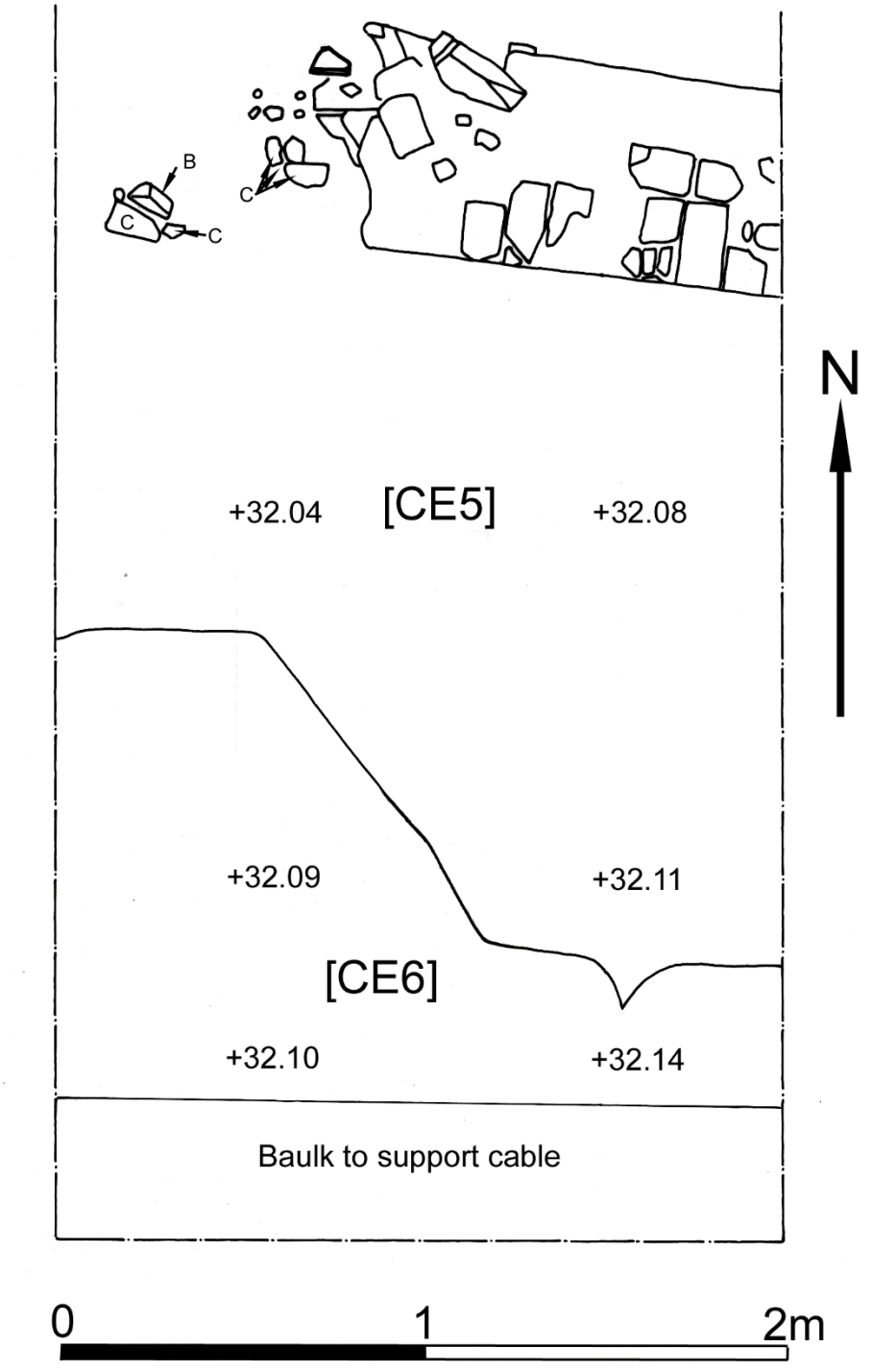


Figure 50. The south end of the trench showing the tops of layers [CE5] and [CE6].

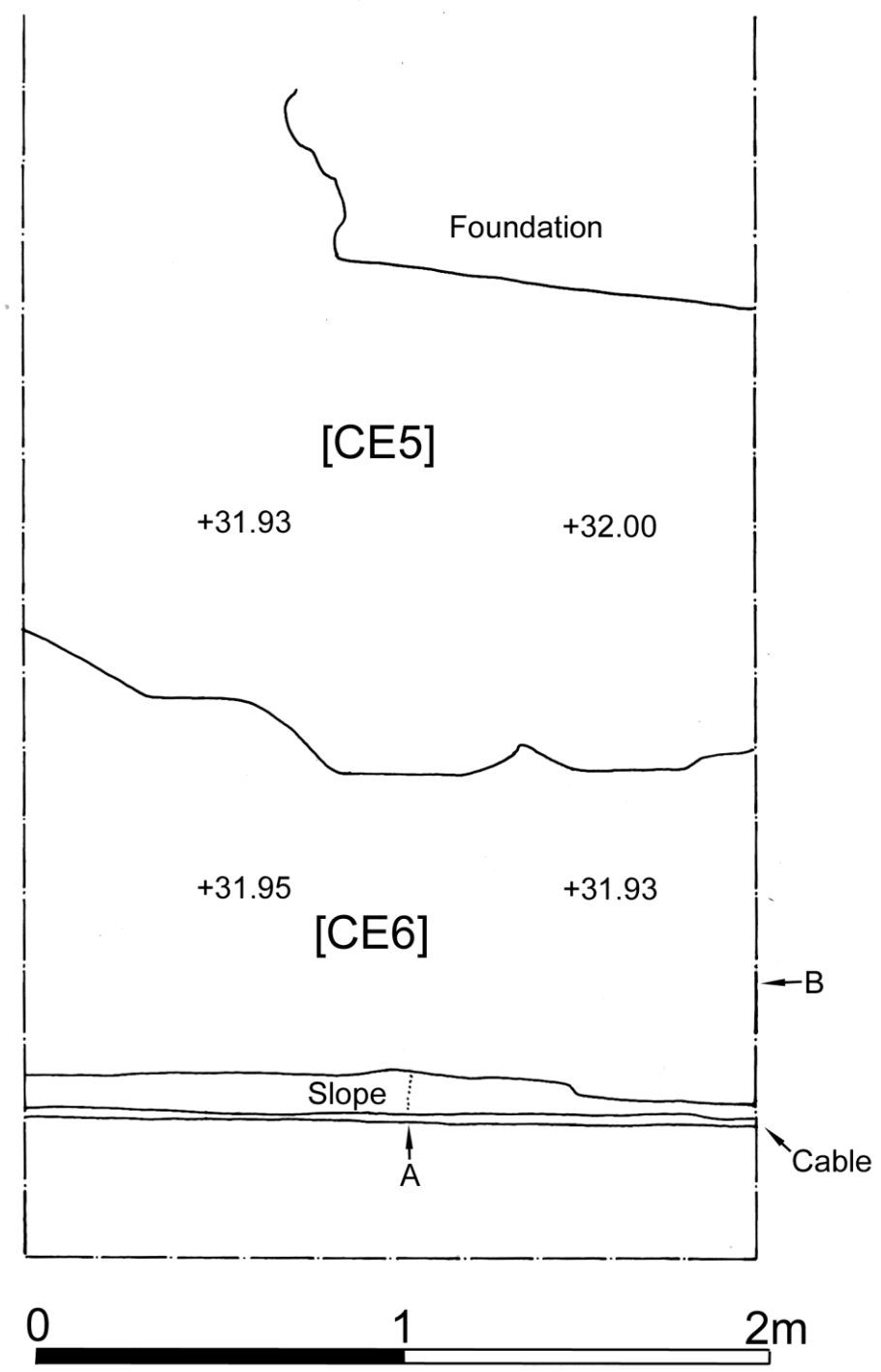


Figure 51. The south end of the trench during the excavation of layers [CE5] and [CE6]. A and B mark the edge of an area of gravel which was visible in the section and occupied the southeast corner of the trench.

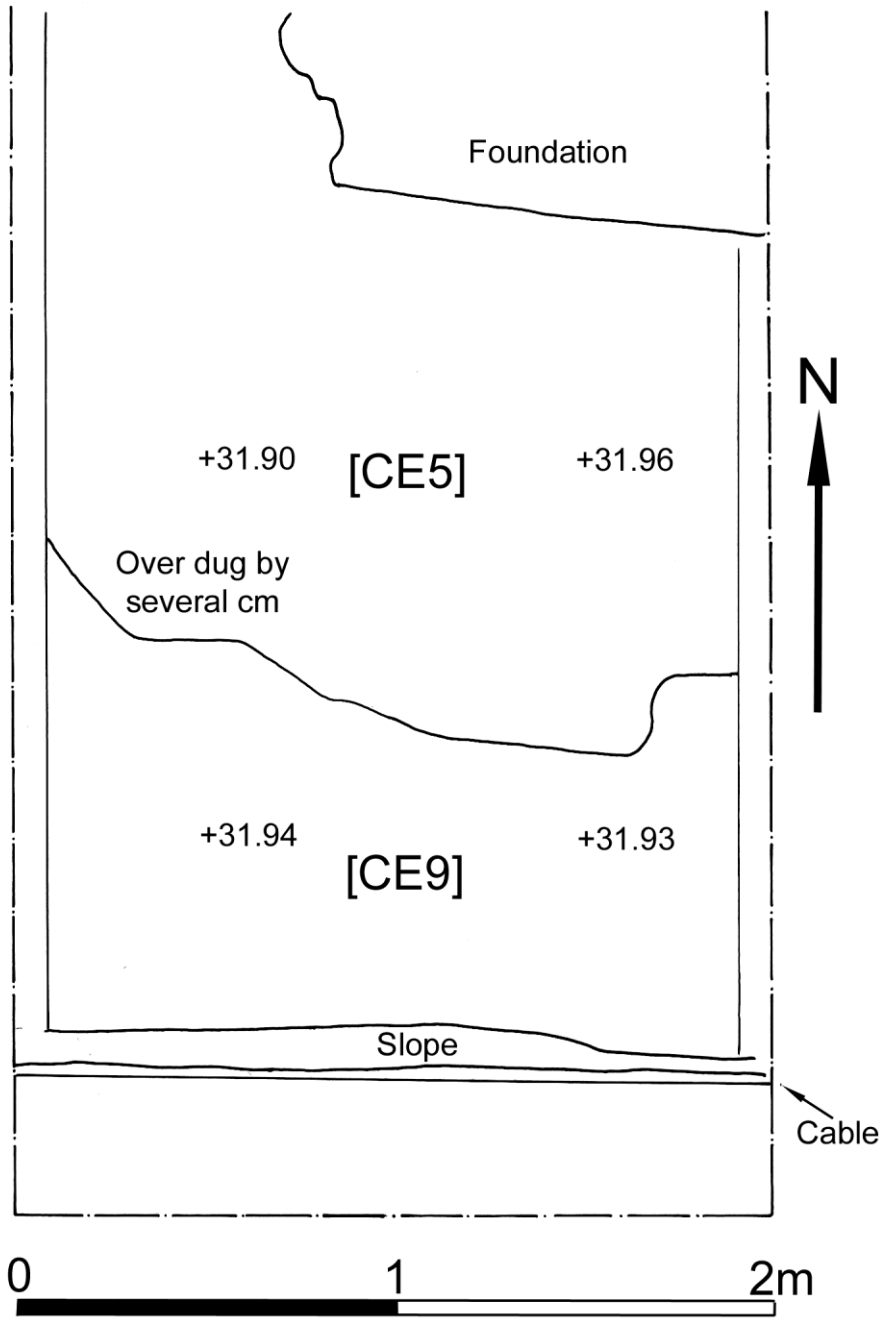


Figure 52. The top of layer [CE9] with layer [CE5] partly excavated.

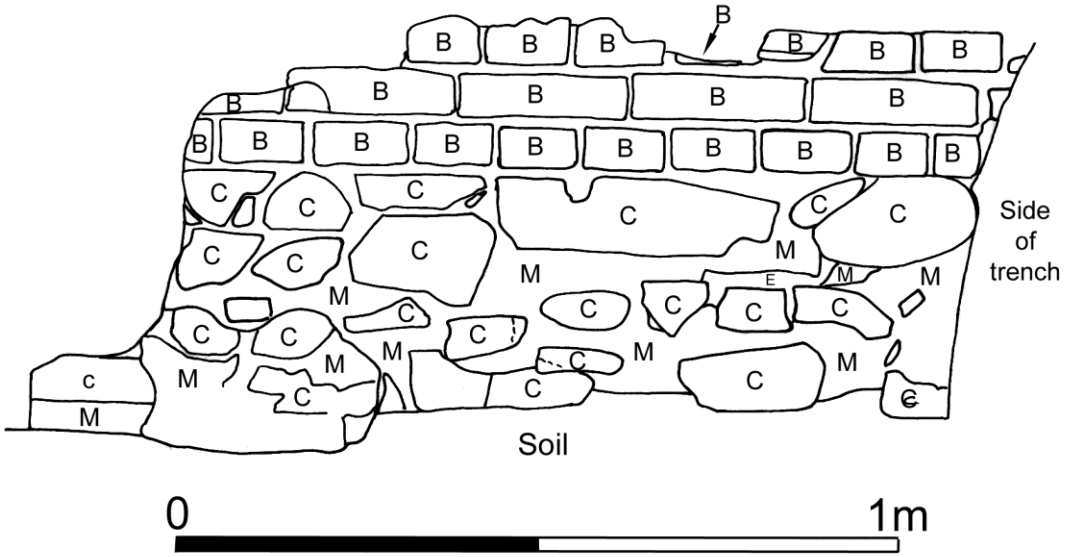


Figure 53. The south side of the foundation [CE4].
B = brick, C = chalk, M = mortar, F = flint.

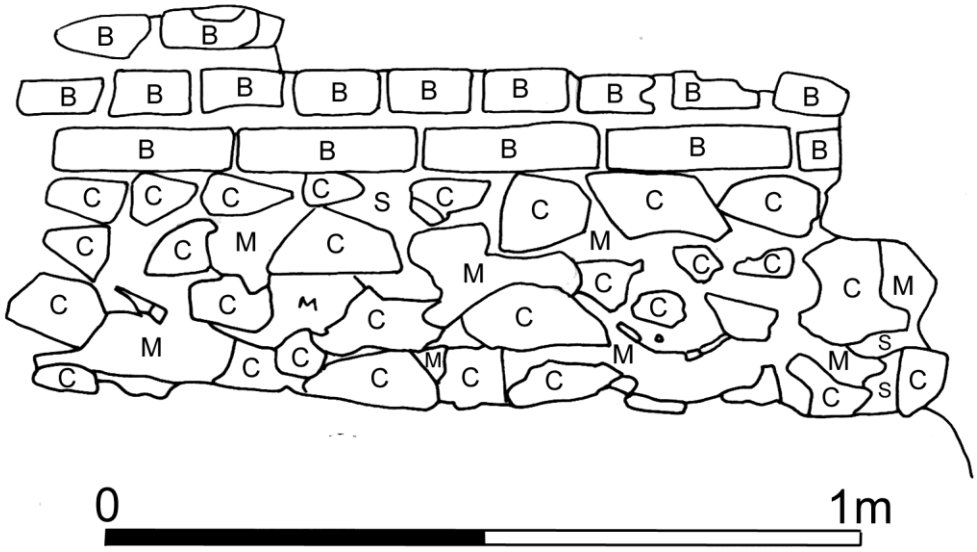


Figure 54. The north side of foundation [CE4].
B = brick, C = chalk, S = soil. Mortar obscures the chalk in many places and the edges of the chalk blocks were often unclear.

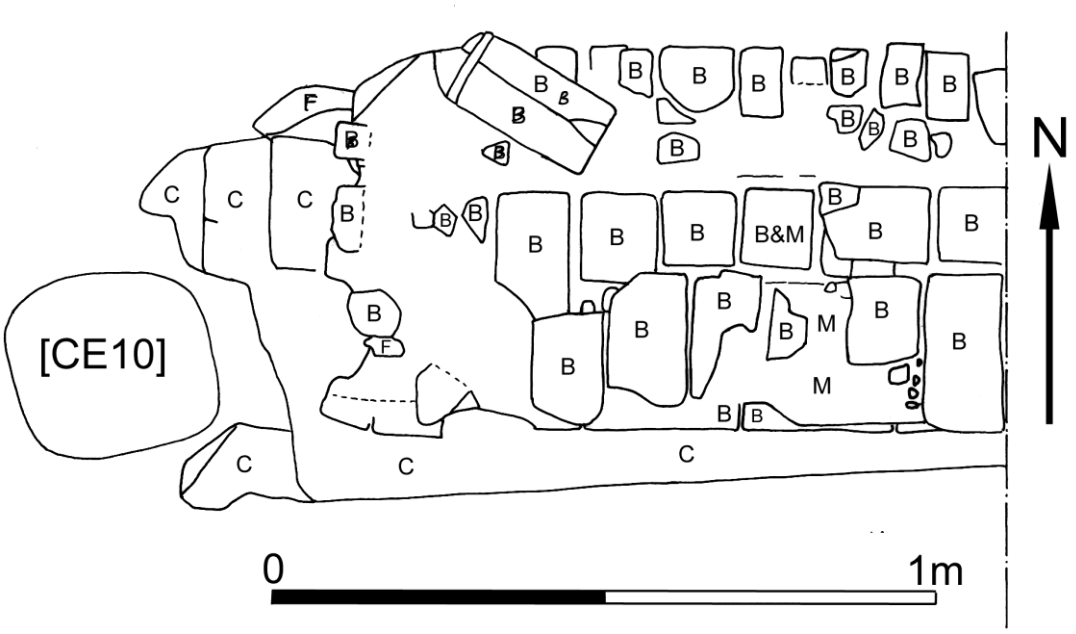


Figure 55. The top of the foundation [CE4] with layer [CE10] filling a cut.
B = brick, C = chalk, M = mortar, F = flint.

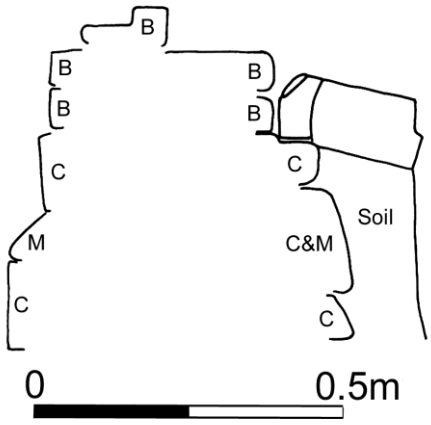


Figure 56. Section through foundation [CE4] 0.64m from the east side of the trench. Looking west. B = brick, C = chalk, M = mortar.

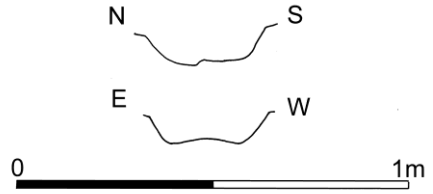


Figure 57. Profile of the cut which contained [CE10].

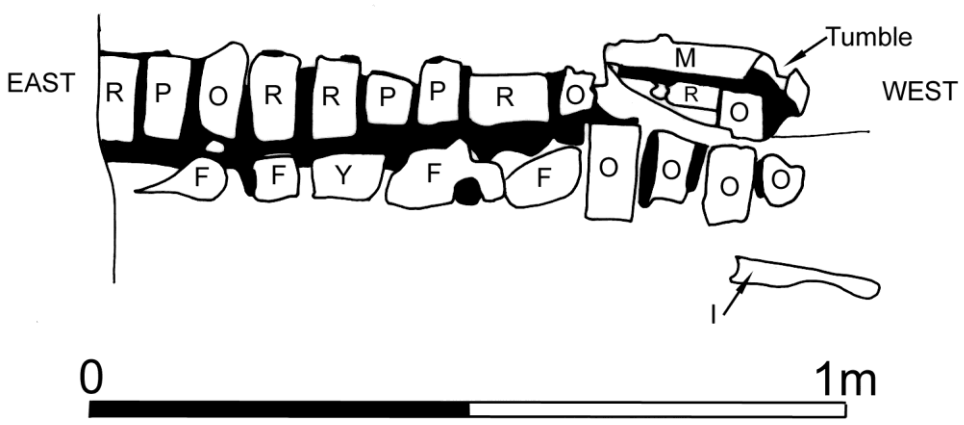


Figure 58. Elevation of the addition to the north side of foundation [CE4]. Looking south.
F = flint, I = iron, M = coarse red brick, O = soft red brick, P = Pink-red brick with dark inclusions, R = sandy red brick, Y = yellow brick. Black = mortar.

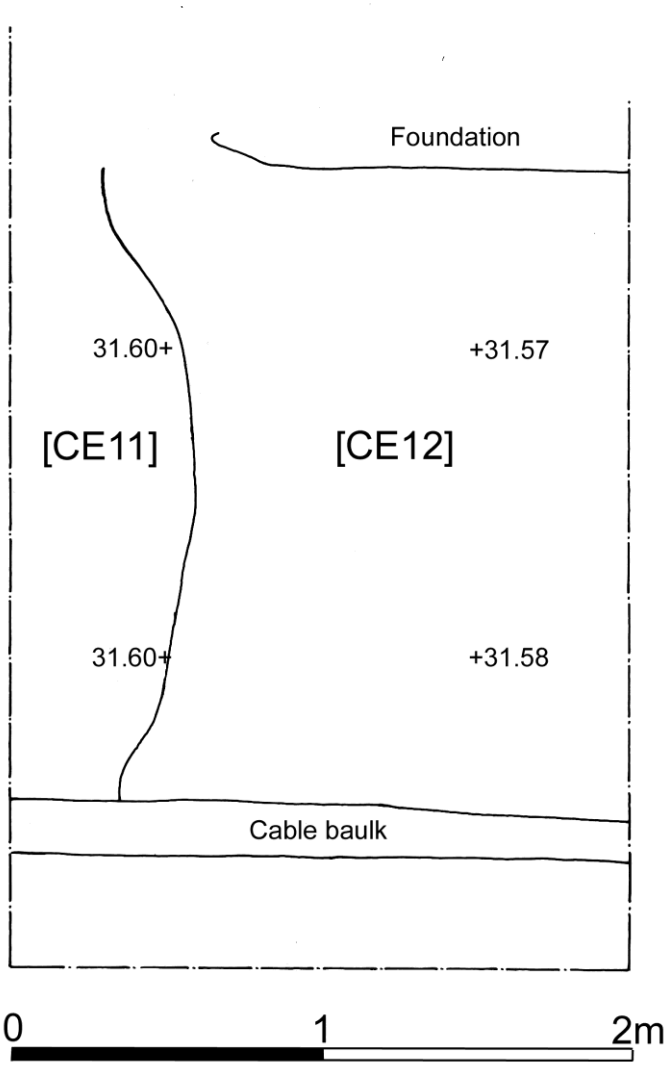


Figure 59. The south end of the trench showing the top of layers [CE11] and [CE12].

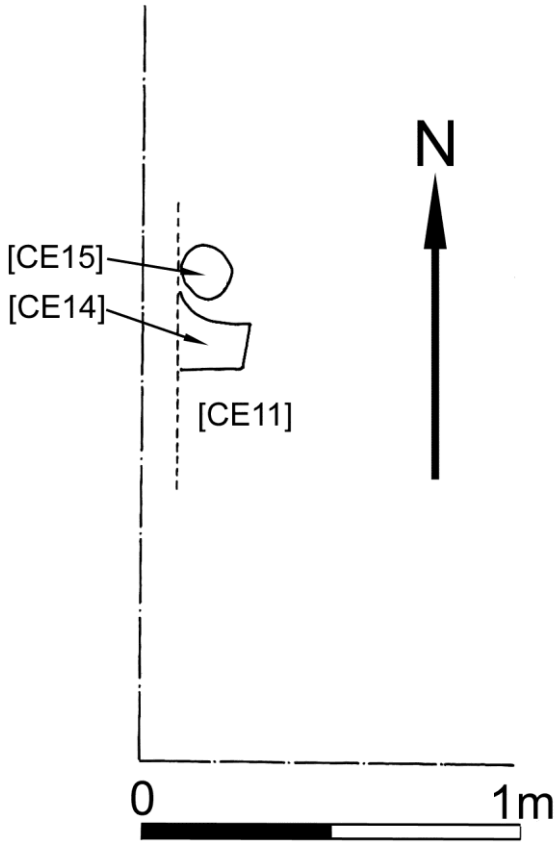


Figure 60 The southwest corner of the trench showing the tops of [CE14] and [CE15].

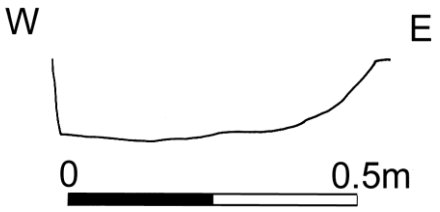


Figure 61. Section across the gully left by the removal of [CE11].

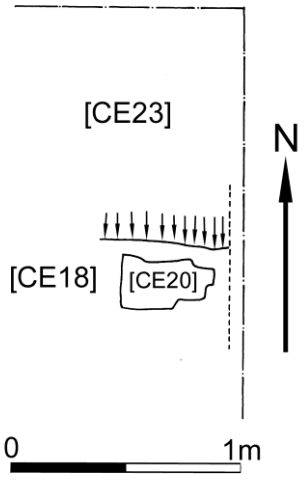


Figure 62. The top of layer [CE20] in the ditch fill.

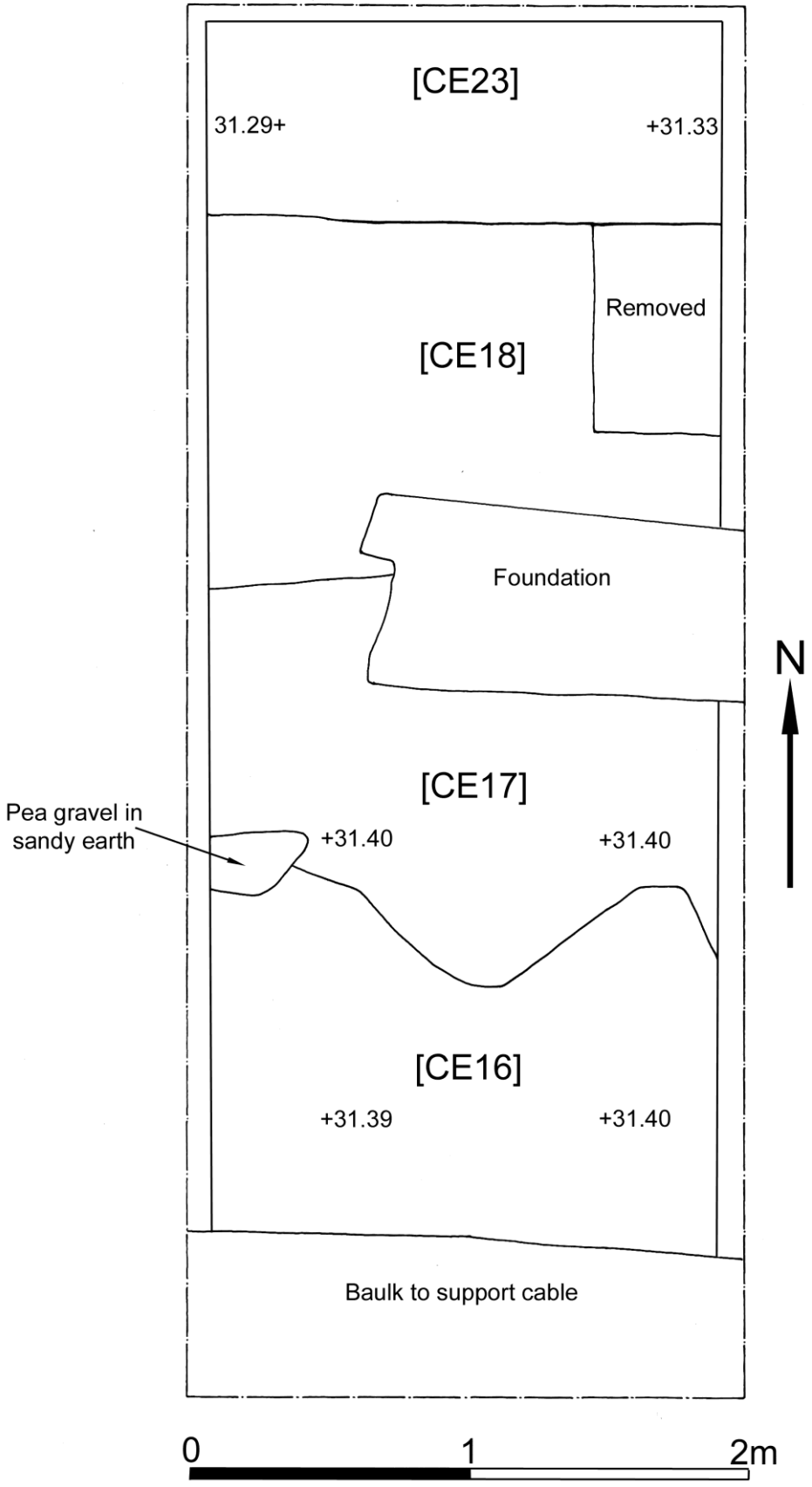


Figure 63. The tops of layers [CE16], [CE17], [CE18] and [CE23].

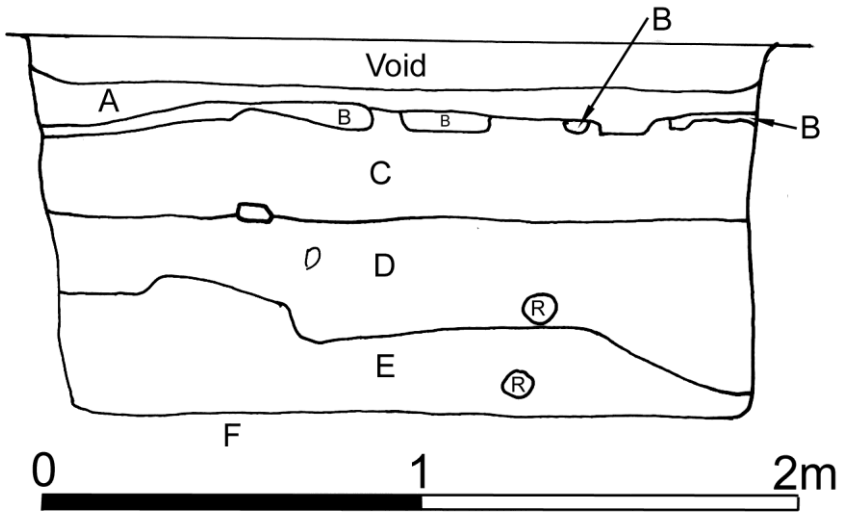


Figure 64. The south end of the trench.

A	Dark brown topsoil.
B	Small gravel in an orange matrix.
C	Coarse rounded and sub-angular gravel.
D	Orange sand.
E	Darker more earthy looking sand.
F	Gravel (unexcavated)
R	Empty root hole.

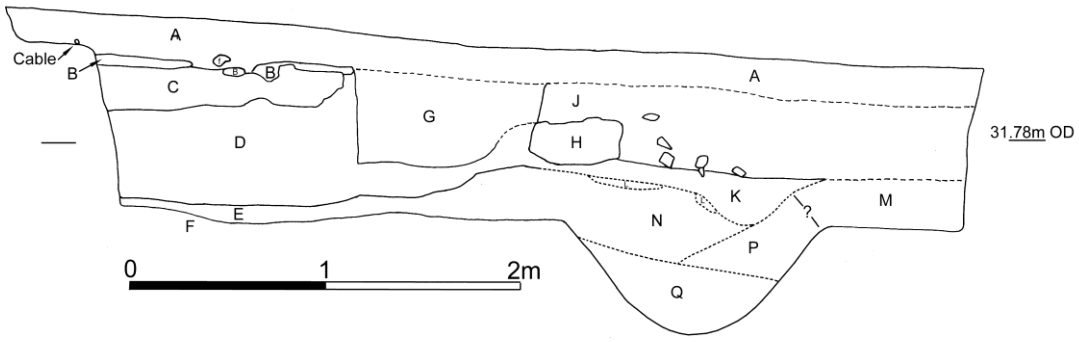


Figure 65. The west side of the trench.

A	Dark brown topsoil with a few pieces of flint and brick.
B	Small gravel in orange sand.
C	Flint gravel of mixed size and shape in sandy earth generally light brown but dark in places.
D	Orange earthy sand with a few scattered flints.
E	Dark brown soily sand (much darker than D).
F	Flint gravel of mixed shape and size with dark earth matrix.
G	Brown sandy earth similar to D but more humified.
H	Small broken chalk and brick rubble.
J	Brown earth lighter than G
K	Medium brown soil with a few small stones.
M	Dark brown fine silty sand with 5% small stones.
N	Similar to M but not as wet.
P	Similar to M.
Q	Dark brown to black fine silty sand with 25% medium stone and 5% small stones. Wet.

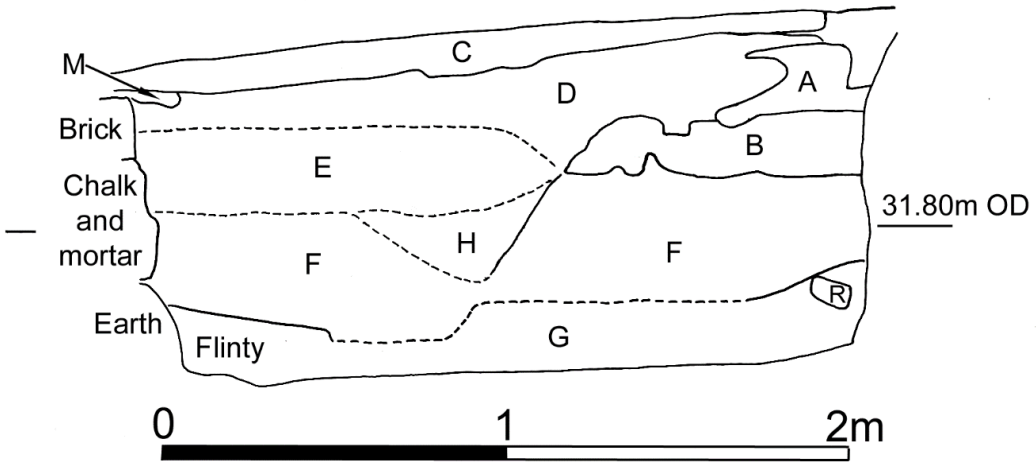


Figure 66. The east side of the south end of the trench.

A	Small gravel of mixed shape in orange sand.
B	Rounded and sub-angular gravel in orange brown earthy sand. A few roots.
C	Topsoil with a little flint.
D	Brown soil with flint. Occasional bits of brick and large roots.
E	Light brown very sandy soil with a wide scatter of small chalk, flint and brick.
F	Very similar to E but slightly less humified with less inclusions. More humified at the north end.
G	Similar to F but very few inclusions except flint.
H	Similar to F slightly more humified, looser and penetrated by worms.
M	Mortar.
R	Root hole.

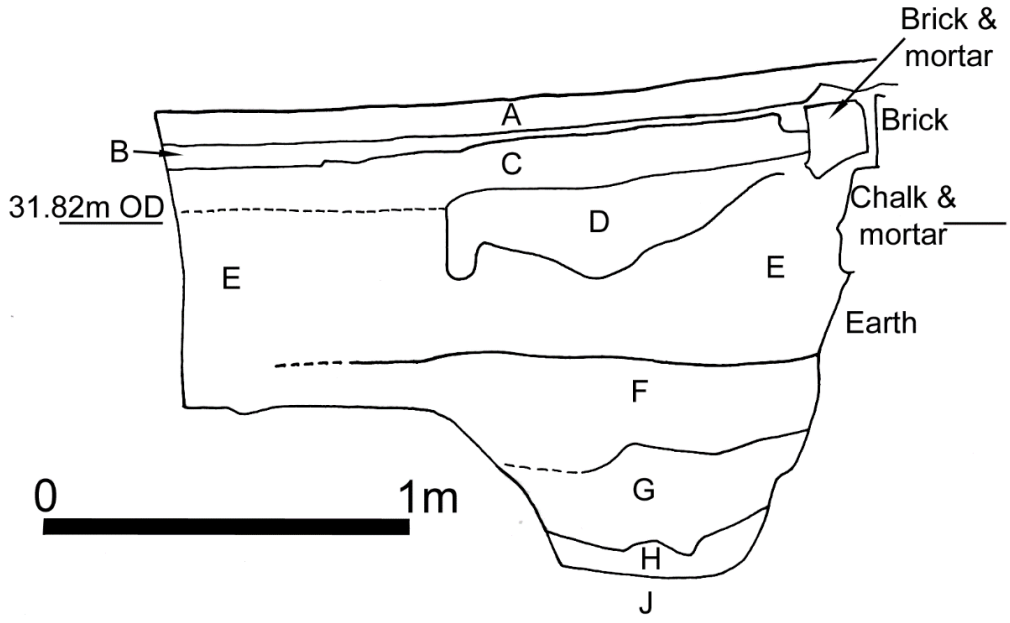


Figure 67. The east side of the north end of the trench.

A	Turf with dark brown soil below.
B	Rubble, mostly small, in dark soil.
C	Brown rubbly soil.
D	Lighter brown sandy soil with a scatter of flint pebbles. Greyish when dry.
E	Darker brown sandy soil with some flint.
F	Very dark brown almost black sandy soil, stiff, wet and sticky. Some flint.
G	Brown soil with a little flint and rubble.
H	Much flint. Matrix similar to F.
J	White flint and chalk.

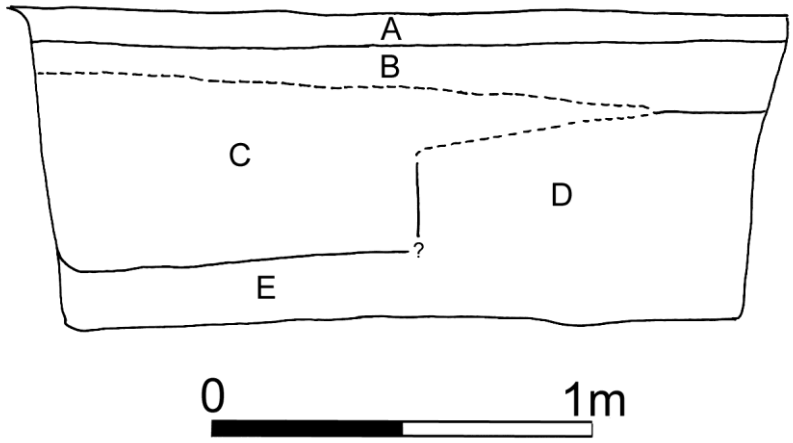


Figure 68. The north end of the trench.

A Turf with dark topsoil below.

B Dark brown topsoil with a good deal of brick, flint and mortar particularly towards the top of the layer and the east side of the trench.

C Brown slightly orange sandy soil with some flint and a few pieces of ceramic building material.

D Brown slightly grey soil with a scatter of flint but less than C.

E Dark grey-brown sandy soil. No visible boundary between D and E when the section is damp but B dried and became lighter, E did not dry out.

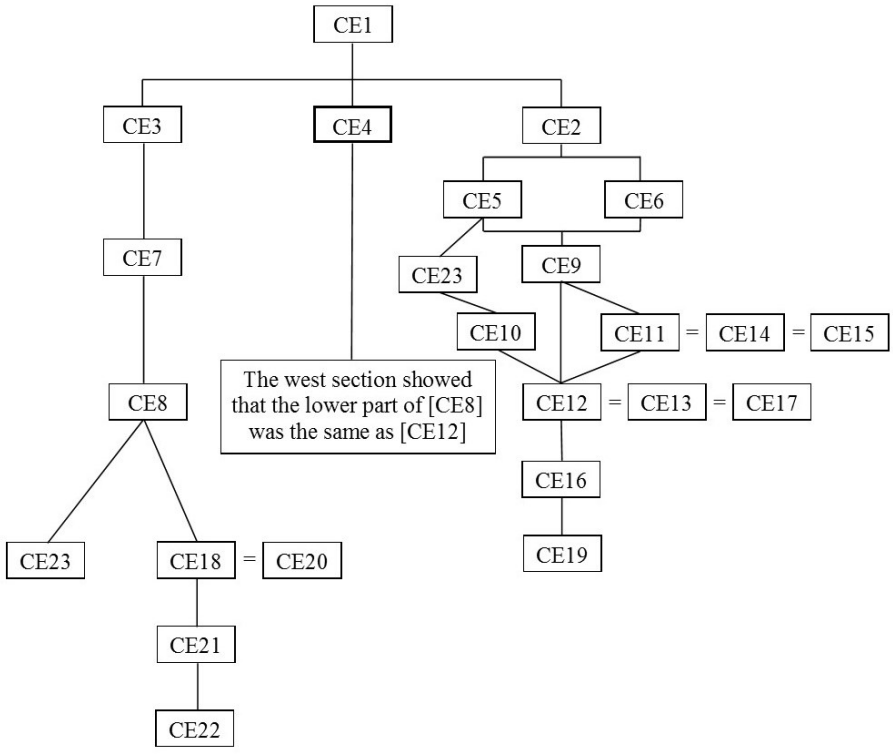


Figure 69. The site matrix for trench CE.

8.2 Discussion of trench CE

8.2.1 The stratigraphy

The gravel at the bottom of the trench (layers [CE16], [CE21] and [CE23]) appeared to be natural. Layers [CE16] and [CE21] were underlain by crushed chalk and flint and some sand in a sticky white chalk powdered matrix (layers [CE19] and [CE22]). This was almost certainly a periglacial deposit. Similar deposits were seen in a gas main trench in Beddington Park 300m west of the site.[23]

The gravel [CE16] was overlaid by a number of layers of dark soil. The lowest of these layers, [CE12], [CE13] and [CE17], all to the south of the wall, and the main ditch fill [CE18] were strikingly similar. They contained a significant amount of Saxon and early medieval pottery and a few prehistoric and Roman sherds, there was a good deal of broken scrappy bone, some Roman tile and a little medieval or post-medieval tile. The overlying layers [CE9] and [CE11] were of very similar to each other in both finds and character. The finds in them were also similar to those from [CE12]. Most of the pottery was of twelfth century or earlier with a few later medieval sherds and a certain amount of post-medieval building material and glass.

There are number of features which are probably the product of human activity. The most obvious of these is the ditch but there was also the shallow north - south running gulley in the top of layer [CE12], the two small features in the gulley fill [CE14] and [CE15] and the feature in the fill of the ditch [CE20]. None of these features were traceable upwards for any distance. There appeared to be no cut line for the ditch above the top of the natural gravel although it was looked for carefully when the sections were drawn. It seems unlikely that these features were dug from a level on, or near, the natural gravel so the cut line had probably been truncated by disturbance which is consistent with the mixed dates of the finds. The obvious agent for this mixing is cultivation. The majority of the pot sherds are still quite sharp and there are only a few which are heavily plough tumbled. The material from [CE18] which is within the ditch and would be protected from plough action by the surrounding gravel was more worn than the material from [CE12] which is not so protected. If the soil in the twelfth century was anything like its present depth most of the material within it would be below the plough zone.

The latest objects in the ditch fill [CE18] were early medieval and it seems likely that it was filled at this time. Filling could, however, have occurred latter as the site produced few late medieval finds. The ditch was almost certainly filled before medieval roof tile became common on the site. The purpose of the ditch is unclear, although its size, position and alignment, would be consistent with a field boundary.

At the south end of the trench layer [CE9] continued upwards to the bottom of the gravel walk [CE6] which was 0.5m to 0.6m above the natural gravel. The main part of the gravel walk was about 0.18m to 0.22m thick and the bottom of it was around 0.48m below the present ground surface. The upper part of layer [CE9] was very little humified so the upper part of the soil was perhaps removed when the walk was constructed.

The area between the walk and the wall had obviously been cultivated into the twentieth century. It seems likely that the soil here was originally the same as [CE9] and that cultivation had humified the sand to produce layer [CE5]. Root cavities and worm activity both penetrated to the natural gravel at the bottom of the excavation so the limit of

[23] Peake 1971.

cultivation was not sharply defined but was around 0.5m below the surface of the walk. However, layer [CE5] which contained a significant number of nineteenth and twentieth century finds but a very low proportion of medieval or earlier material.

The area to the north of the wall appeared to be similar to that south of the wall in that it had been subjected to cultivation to a considerable depth.

Layer [CE2] which overlay the walk to the south of the wall appears to be the result of recent ground levelling which probably took place after the wall was demolished.

8.2.2 Activity from prehistoric to medieval

There was a little prehistoric and Roman pottery and tile and much more Saxon and early medieval. This sequence ends with a piece of pre-wheel-thrown hard grey ware and a few pieces of London ware of the later twelfth or thirteenth century. Kingston, Earlswood and Limpsfield wares of the late thirteenth and early fourteenth centuries are absent although they were common in trenches CK and CF nearby (see below). Later medieval pottery was rare. This seems to suggest limited prehistoric and Roman activity and much more from the early Saxon period to the late twelfth or early thirteenth centuries. There were no Roman fine wares which suggests that it was not then a high-status site, but the status of the Saxon and early medieval site is less clear.

8.2.3 Late Medieval

The site produced only four pieces of late medieval pottery which suggests a break in activity. Two of these pieces came from [CE9], one from [CE8] and one from [CE2]. The piece in [CE2] was clearly residual as this layer contained many later finds. Layer [CE8] and [CE9] are much more problematic. They contained much early medieval material but also a good deal of tile and some brick. Three pieces of modern-looking glass in [CE9] might be dismissed as intrusive and the clay pipe stem from [CE8] may have a similar status as the boundary with the overlying layer was indistinct. It is possible that the roof tile was a product of activity in the later medieval period but it might equally have been introduced later. It is not known when brick was first used on the site, but is presence seems to favour the idea that objects were still entering the layers in Tudor or later periods.

8.2.4 The sixteenth and seventeenth centuries

There is little or no evidence for activity is this period. The site must have been within the Elizabethan garden, the south boundary of which is thought to have been marked by the wall along Church Path.[24] The site is 19.8m from the Orangery wall which was on the site of an Elizabethan orange house.[25] This was a temporary wood structure which was erected in the autumn and taken down in the spring. There is a chalk foundation along the south side of the eighteenth century brick north wall of the Orangery. The present eighteenth century Orangery wall has a length of 59.37m. Its Tudor predecessor is said to have been ‘above two hundred feet long’ (60.96m). The eastern end of the eighteenth century orangery was built over a filled-in pond and may have been 10m or more east of its Tudor predecessor. It is therefore possible that that the pit filled by [CE10] held a post which had been part of the orange house.

[24] Phillips and Burnett 2005 p. 178-181.
[25] Phillips 2013 p. 51-2.

8.2.5 The eighteenth century garden and later activity

In most summers the gravel walk [CE6] is clearly visible as a burn mark on the grass. It runs eastwards from the excavation along the south side of the Orangery wall. Trench CT on the south side of the Orangery wall showed that the walk there was laid after the south wall of the building was demolished sometime after the winter of 1739-40.[26] The finds from layer [CE9] beneath the walk were of no real help in establishing its date. The only material which need be post-1600 were three small pieces of modern-looking clear bottle glass. However, the deposit extended beyond the edge of the walk and had there been disturbed by cultivation.

The 1820 enclosure award map shows that the brick wall in the trench [CE4] originally ran from the end of the Orangery wall to a position south of the southeast corner of the house. The only section now standing above ground is the stub at the western end of the Orangery wall. The bricks in this are very similar in size to those of the Orangery wall suggesting that both structures are of the same early eighteenth century date. The bricks from the wall in the excavation are, however, not a close match with those from either the Orangery wall or the stub wall. Their closest affinity is with the dovecote (see section 12). There therefore appears to be a building break between this section of wall and the Orangery. It is possible that this break is no more than a single winter and that new brick moulds were used in the next season, but it is also possible that the break was longer and more significant and that the Orangery and the adjacent iron gates were inserted into an earlier wall.

Trench CL, which was excavated in 1994, showed that the garden wall to the east of the Orangery rests on a rather rough flint and rubble foundation rather than the neat chalk which underlay the wall in CE. This suggests that the two walls are of different date. The chalk foundation in CE may possibly be the remains of an earlier wall which was cut down and then reused as a foundation for the brickwork.

The demolition history of the wall is fairly well documented and this evidence seems fairly consistent with the excavation. The wall was still standing in 1820 when the Beddington and Bandon enclosure award map was made. Nash's print of the east front of the house between 1828 and 1834 shows that the wall west of the gates appears had been demolished almost to ground level leaving a short stub to support the western gate pillar.[27] The demolished section was robbed out by 1868 while the stub supporting the pillars seems to have survived until after 1955.[28] The excavation lies across the boundary between the robbed out section and the stub the footings of which survived to be recorded as [CE4]. A penny of 1900 which was found in the debris of the stub wall was presumably half a century old when it was lost.

8.2.6 The position of the moat

The original objective of the excavation was the location of the outer edge of the moat around the house. No trace of this was found so the outer edge must lie further to the north or northwest.

[26] Phillips 2013 p. 8.
[27] The print refers to Benjamin Hallowell Carew as the owner of the house.
[28] 25 inch Ordnance Survey map of 1955.

9 TRENCH CF

There is a shallow gully in the lawn to the north of the Orangery wall as shown in figure 70. This was interpreted as a watercourse with a ridge on the north side marking the line of a metalled path. The feature is not marked on the 1820 enclosure award of on any later map and it seemed likely that it formed part of either the sixteenth or eighteenth century gardens. As it crossed the garden at an angle to the main eighteenth century alignments it seemed more likely to be Elizabethan.

The proposed excavation area appeared to have been under grass throughout the nineteenth and twentieth centuries and the area might therefore contain traces of eighteenth century or earlier bedding arrangements.

The excavation was therefore carried out to obtain information on the following:

1. To find out if the feature was a watercourse and path.
2. To try to establish its date.
3. To try to establish the history of soil levels on the site and to look for any traces of planting arrangements in the eighteenth century or earlier gardens.
4. To look for small finds which may have been washed down watercourse from a fountain or grotto.

9.1 The stratigraphy

An 6m by 4m trench was set out in position shown in figures 20 and 70. The turf was underlain by layer [CF1] which covered the whole area of the trench and consisted of brown sandy earth with occasional flint pebbles and a scatter of coke. The layer contained plastic and other recent material.

Layer [CF1] was underlain by layer [CF2] which consisted of brown sandy soil with a little brick and flat roof tile together with occasional flint pebbles. There was an irregular line of coal cinder which ran from north to south across the trench. It was densely packed, 1cm to 2cm thick and varied in width from 0.1m to 0.7m as shown in figure 71. There was also a good deal of cinder in the lower 1cm to 2cm of the layer although it was not so concentrated as the line and had a widespread but patchy distribution. The finds included a piece of plastic and much material of late nineteenth or early to mid-twentieth century date.

Layer [CF2] was underlain by layer [CF3] which also covered the whole area of the trench. This consisted of orange brown soil with occasional flint pebbles and a little brick. Most finds came from the base of the layer close to [CF4]. The latest datable finds were two pieces of glass of probable nineteenth century date.

Layer [CF3] was underlain by layer [CF4] which again covered the whole area of the trench (figure 72). This layer, which was only a few centimetres thick, consisted almost entirely of crushed soft red brick which was quite closely packed with little soil. Much of the brick had been cut, shaped and rubbed and several of the mouldings could be paralleled in the Orangery wall about 11m to the south (see section 14.7). There was very little mortar in the layer and almost all the brick was unmortared. There was a scatter of flat roof tile and pan tile, a drip of lead, and some iron nails. Four pieces of hone which were found in the overlying layer probably came from the upper surface of [CF4]. The only closely datable artefacts were pot sherds, the latest of which were two pieces of stoneware dated to the eighteenth or nineteenth century.

Layer [CF4] was underlain by layer [CF5] which consisted of light brown earth with a scatter of flint of mixed size and shape together with some chalk. The layer contained a little flat

roof tile and other building debris and a piece of wine bottle. There were two scraps of yellow pottery, probably from a tin-glazed vessel, a piece of Tudor red ware and a piece of a late fifteenth or early sixteenth century stoneware mug. When the surface of the layer had been trowelled it was apparent that the trench could be divided into two areas which were assigned new context numbers.

Layer [CF6] at the north end of the trench consisted of light brown sandy soil with much flint and some chalk, tile and brick (figure 73). The latest datable objects were a pipe bowl of about 1640-70 and a sherd of redware of probable eighteenth century date.

Layer [CF7] to the south of it consisted of green-brown sandy silt of lighter colour than [CF6]. There was a widespread scatter of flint pebbles though less than [CF6] and a little brick, tile, chalk and mortar. The latest finds consisted of the lower part of a pipe bowl of mid-seventeenth century date, a piece of yellow-glazed border ware, and a piece of unglazed red ware probably flower pot.

Layers [CF6] and [CF7] were underlain by [CF8], [CF9] and [CF10] which are shown in figure 74. Layers [CF8] and [CF9] were in the north end of the trench and were overlaid by [CF6]. However, the boundary between [CF6] and [CF7] did not coincide with the northern edge of [CF10], as [CF6] extended further south so that it also rested on the northern part of [CF10].

Layers [CF8] and [CF9] were very similar and were almost certainly the same deposit. They consisted of coarse gravel of mixed size with a little chalk. The upper surface was rather rough and unevenly distributed with some projecting stones and no real sign of a smoothed or trodden surface which would be expected it the gravel had formed a path. The layers contained a piece of Surrey white ware cooking pot and some brick, tile and nails. The presence of brick suggests that the layer is post-medieval, despite the lack of later pottery.

Layers [CF8] and [CF9] rested on layer [CF11]. The top of the layer was fairly smooth with small gravel and pea-size mortar in brown earth. Below this the layer consisted of rounded and sub-angular gravel of mixed size up to 10cm in a matrix of brown sand with much rounded chalk up to pea size. There was a small amount of mortar which was also rounded and had presumably been transported in water. A number of flints also had mortar on them. A sample of 392 flints above 2cm in size were examined. Sixty-two of these (16%) had mortar on them. There were pieces of medieval pottery of thirteenth and fourteenth date. There were four also pieces of Roman tile and a number of pieces of flat roof tile but no pipe stem, and only one tiny scrap of brick.

Layer [CF10] filled a channel which crossed the trench at an angle (figures 75 to 78). The top of the layer was level with the top of the gravel layer [CF11]. The channel was about 1.1m deep and the bottom was flat, about 0.9m wide (figures 77 and 78). The lower part of the north side sloped upwards at an angle of about 65 degrees and then levelled off. There was then a 0.15m high vertical rise 0.56m above the bottom. Above this the slope rose at an angle of about 17.5 degrees. Only the lower part of the south side was exposed. This was formed by layer [CF12] which sloped down at an angle of about 47.5 degrees. The slope levelled off 0.58m above the channel bottom and then passed into the side of the trench. Figure 74 shows that [CF10] extended between the gravel layers [CF8] and [CF9] to reach the north edge of the trench. In this area the lower part of this deposit was excavated as [CF13].

Layer [CF10] consisted of very light grey-brown silt which was identical to the overlying layer [CF7] although the latter contained much more flint. The boundary between the two was fairly arbitrary as no clear stratigraphic distinction could be made. [CF10] was

excavated in two parts, the upper [CF10 spit 1] and the lower [CF10 spit 2], which were separated by an arbitrary boundary at about 31.35m OD, 0.88m above the channel bottom. Although the two spits were composed of the same material there was a considerable difference in the finds from them.

Spit 1 contained many small pieces of soft red brick, an unusually high proportion of which were overfired. Almost all of the brick has a smooth finish and five had narrow indentations along the top edge which are also found in the bricks from the Orangery wall in [CF4]. This suggests that the bricks were eighteenth century rather than Tudor. There was also some roof tile, mortar, a few pieces of Reigate and other stone and some nails and flat glass. The latest pottery consisted of a few scraps of tin-glaze, a piece of post-medieval redware, border ware and a sherd from an early to mid-seventeenth century bartman jug. The tin-glaze had been shattered in situ so that it disintegrated on excavation. There were four pieces of clay pipe stem and some bone and oyster and snail shells. The layer had therefore clearly been deposited in, or after, the seventeenth century. The smooth finished brick is unlikely to be earlier than the 1690s.

The finds in spit 1 gradually tailed away with depth without any clear boundary and spit 2 was started. This contained only one tiny scrap of probable brick. There was some peg-tile and a few pieces of Reigate stone. The latest pottery was a large part of a Cheam ware jug dating from the second half of the fourteenth century. There were some pieces of bone, oyster and blue mussel which were probably food waste. There were also the shells of swan mussels which had presumably been living in the silt. There was nothing that need be later than the fourteenth century. The finds from the bottom of the deposit where it rested on the surface of [CF12] consisted of three pieces of Reigate stone, oyster, blue mussel and snail shell and three pieces of pottery, none datable more closely than mid-twelfth to fourteenth century.

The north side of the bottom of the channel contained a pocket of dark smelly waterlogged silt, which contained some twigs and other organic matter as shown in figure 77. There was a deposit on the south side of the channel which was similar except that it contained some lumps of chalk up to 17cm is size. It was treated as [CF14] and contained two pieces of pottery of loosely thirteenth century date.

The upper part of the south side of the channel was formed by layer [CF12] which consisted of irregular flints in a matrix of grey brown silty sand. This contained three pieces of pottery of which two were identifiable. One was a rim sherd from a Kingston ware jug, the other was a base angle sherd possibly from Earlswood. There was a number of pieces of large flint within [CF10], adjacent to [CF12], but clearly separated from it.

The bottom of [CF12] was probably at or close to the bottom of the north end of trench at 31.33m OD. Below this the channel was cut into gravel. This was iron-stained on the south side of the trench but on the bottom of the channel the flint was in a matrix of green sand, almost certainly natural.

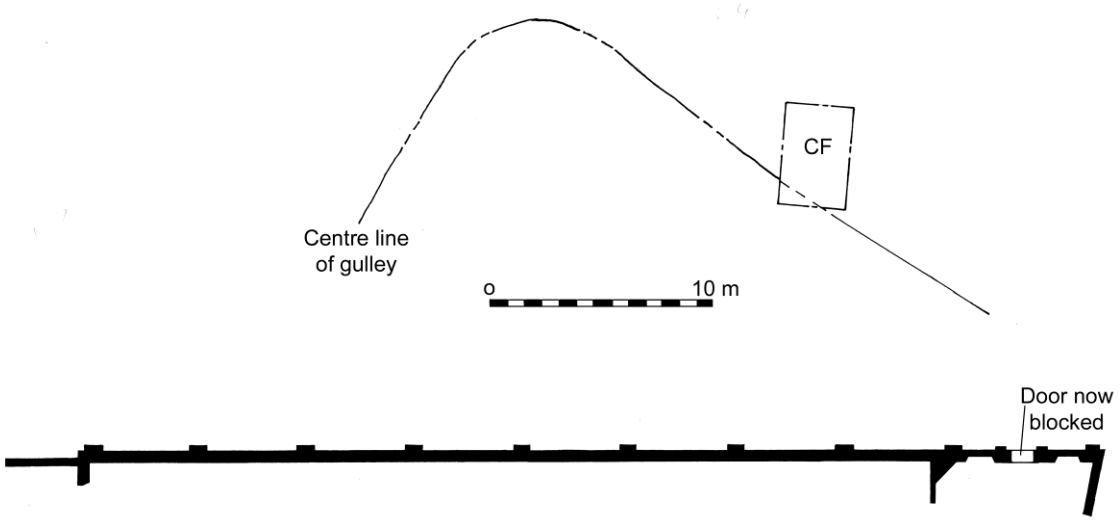


Figure 70. Trench CF and the centre line of the shallow gulley in the lawn in relation to the Orangery wall.

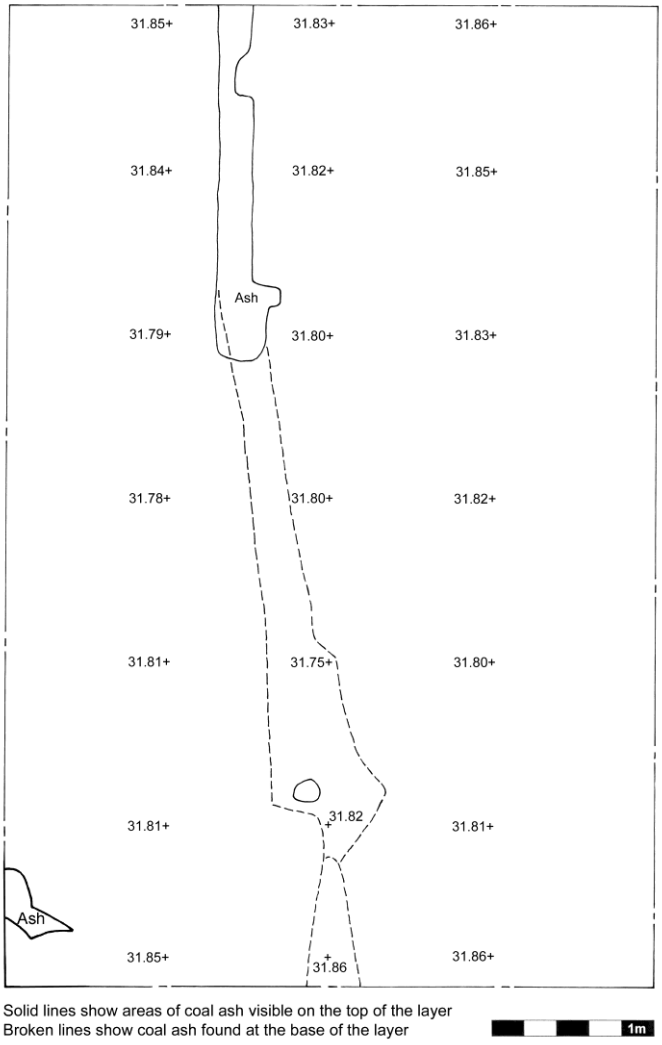


Figure 71. The top of layer [CF2].

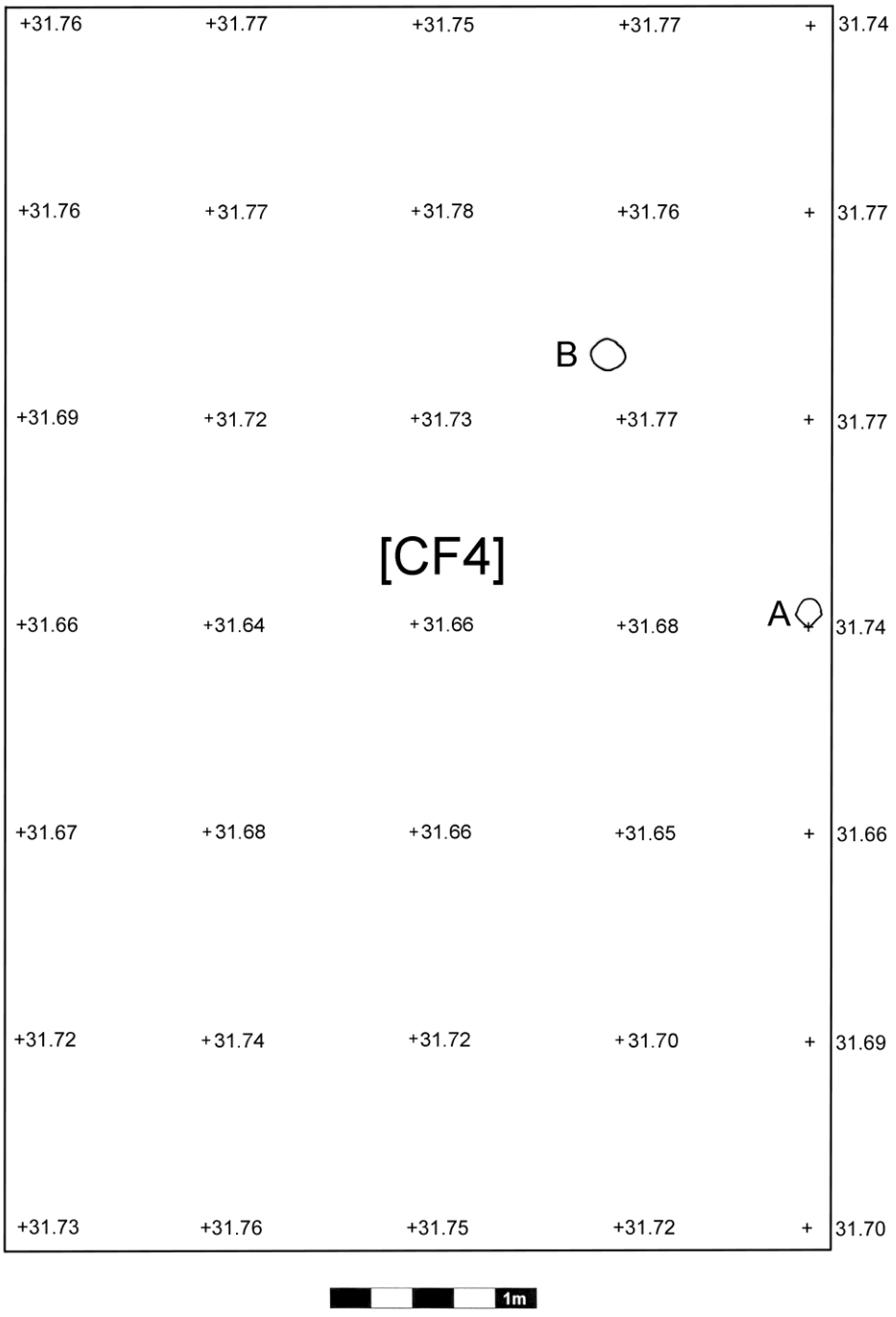


Figure 72. The top of layer [CF4]. A = Patch of chalk. B = filled sondage made prior to the excavation.

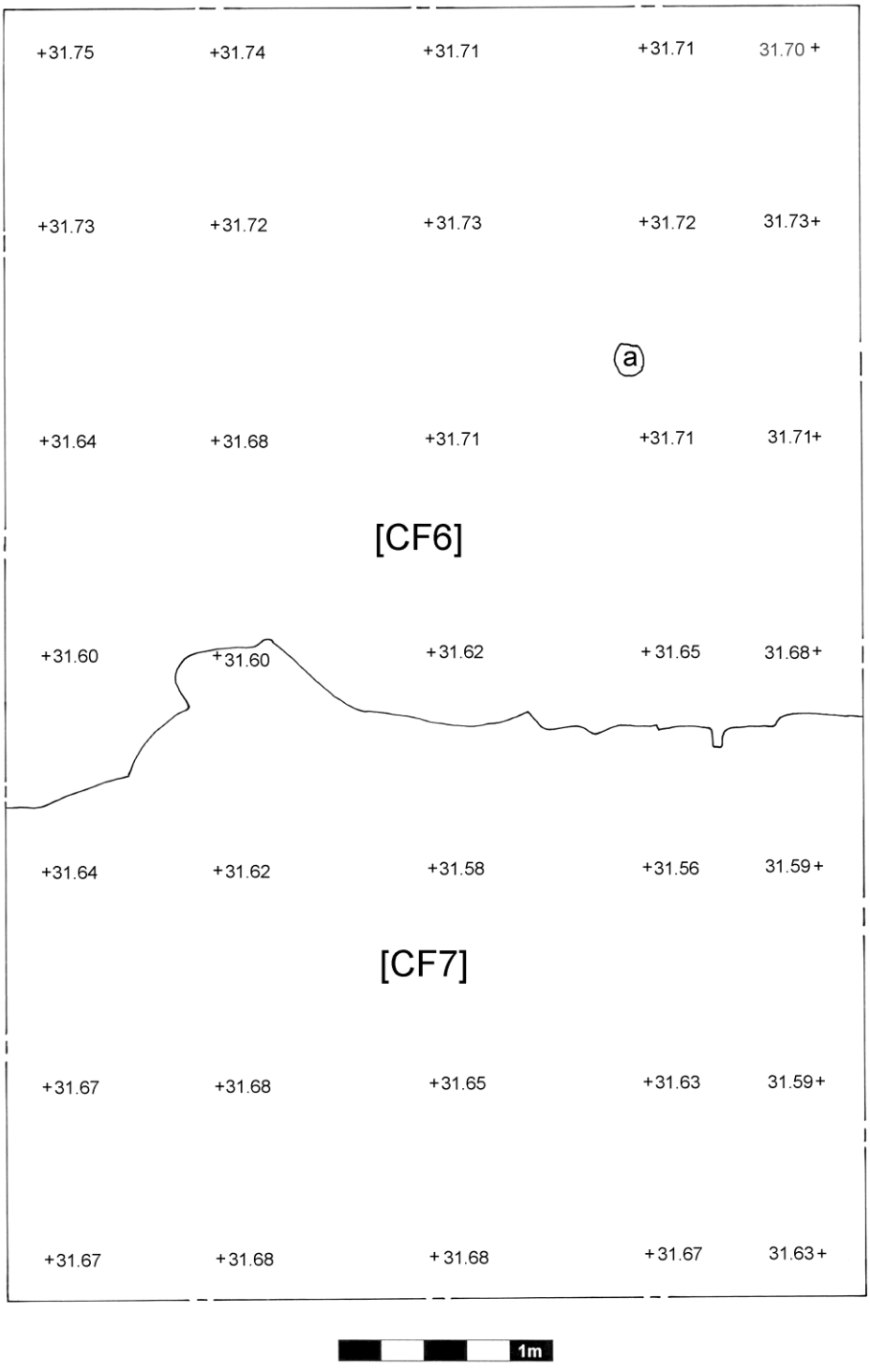


Figure 73. The top of layers [CF6] and [CF7]. A = filled sondage made prior to the excavation.

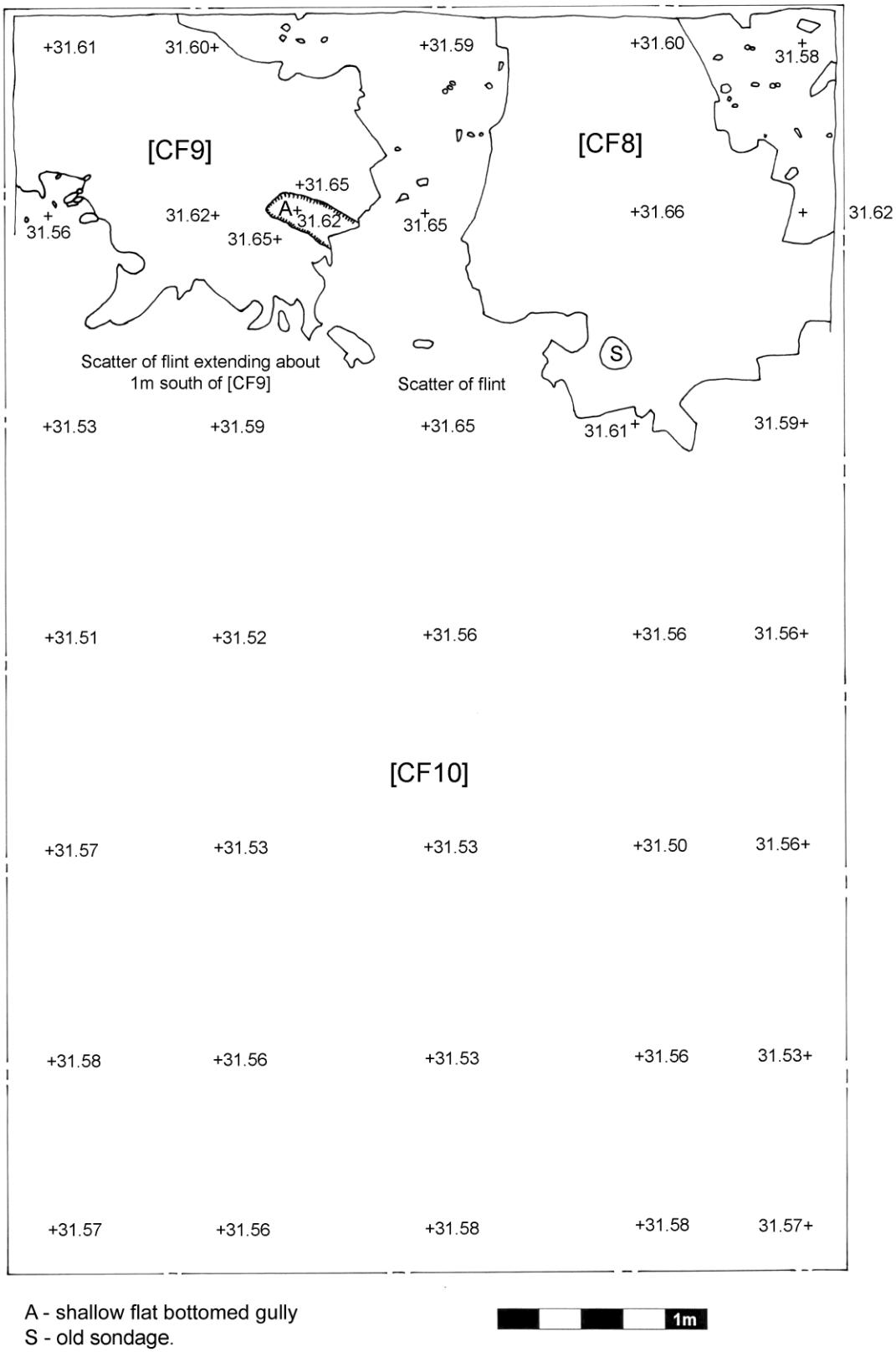


Figure 74. The tops of [CF8], [CF9] and [CF10].

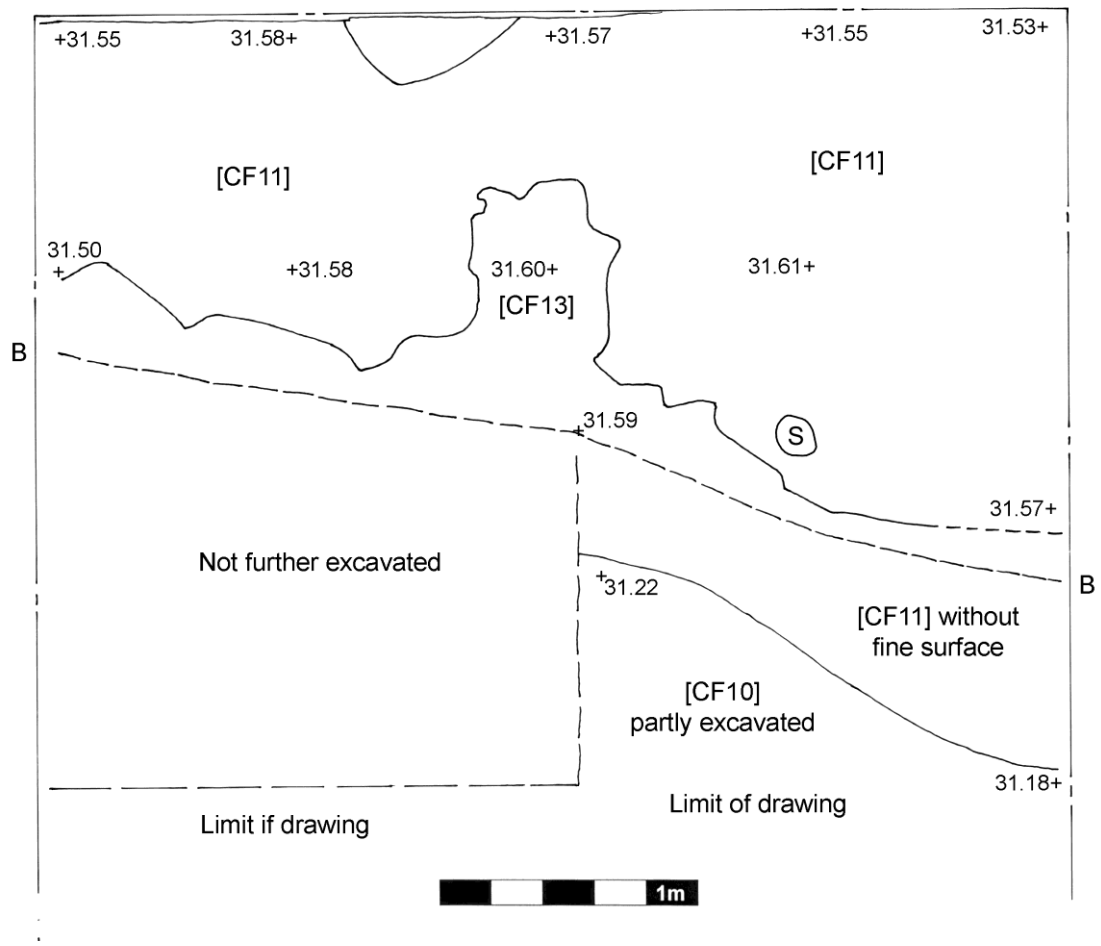


Figure 75. Layers [CF11] and [CF13] with layer [CF10] partly excavated.
B-B = approximate break in slope. S = Sondage.

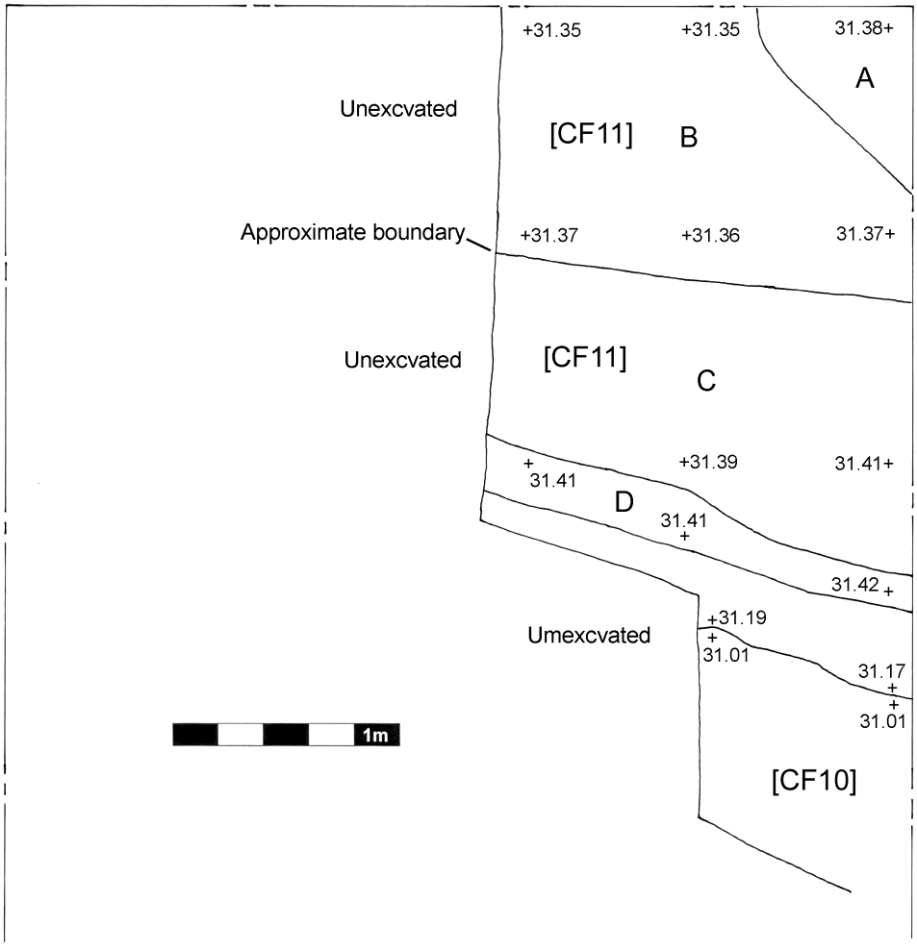


Figure 76. The top of [CF11] with [CF10] partly excavated.

A Grey-brown sand with much flint.
B Flint with much small rounded chalk in orange-brown sandy matrix.
C Brown sand with scatter of small flint and chalk.
D Grey brown silt with much flint of mixed size.

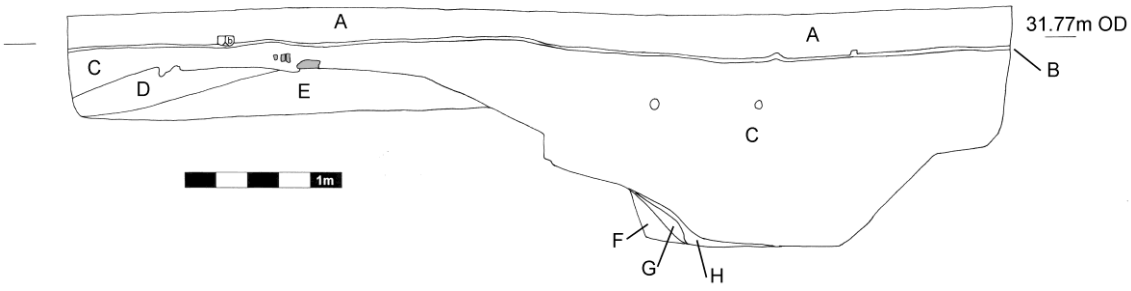


Figure 77. The east side of trench CF.

A Dark brown topsoil.
B Brick.
C Light brown sandy silt.
D Flint in Brown earth matrix.
E Yellow sand with some flint. Patches of small chalk.
F Flint in green sandy matrix. Base of the Thanet Beds?
G Dark very humic silt.
H Very dark silt with twigs and organic matter [CF14].

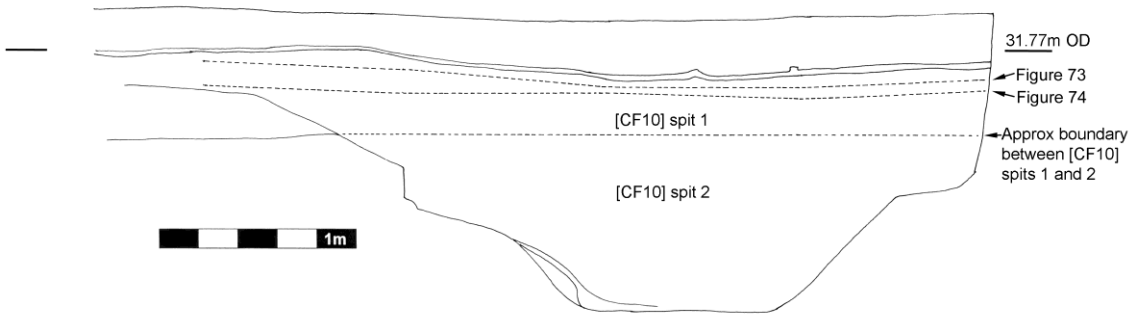


Figure 78. Section through the watercourse at right angles to the channel with the positions of the plans and the boundary between [CF10] spits 1 and 2.

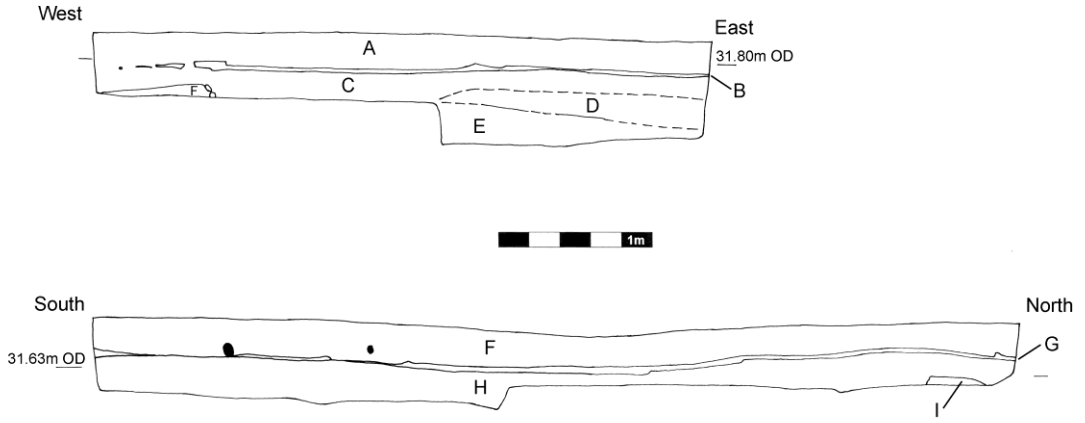


Figure 79. The north side of the trench (above) and the west side (below).

A Dark brown topsoil.
B Crushed brick and occasional chalk.
C Light brown silt with a scatter of flint.
D Grey silt. The boundary between this and C is indistinct.
E Brown sand with much flint and tiny chalk pebbles.
F Dark brown topsoil.
G Crushed brick.
H Grey silt with a scatter of flint and chalk.
I Flints.

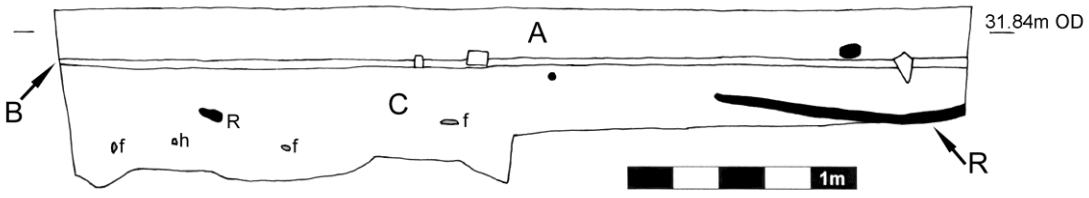


Figure 80. The south end of trench CF.

A Dark brown topsoil.
B Crushed brick and occasional chalk.
C Light brown silt.
f Flint
h Chalk.
R Root.

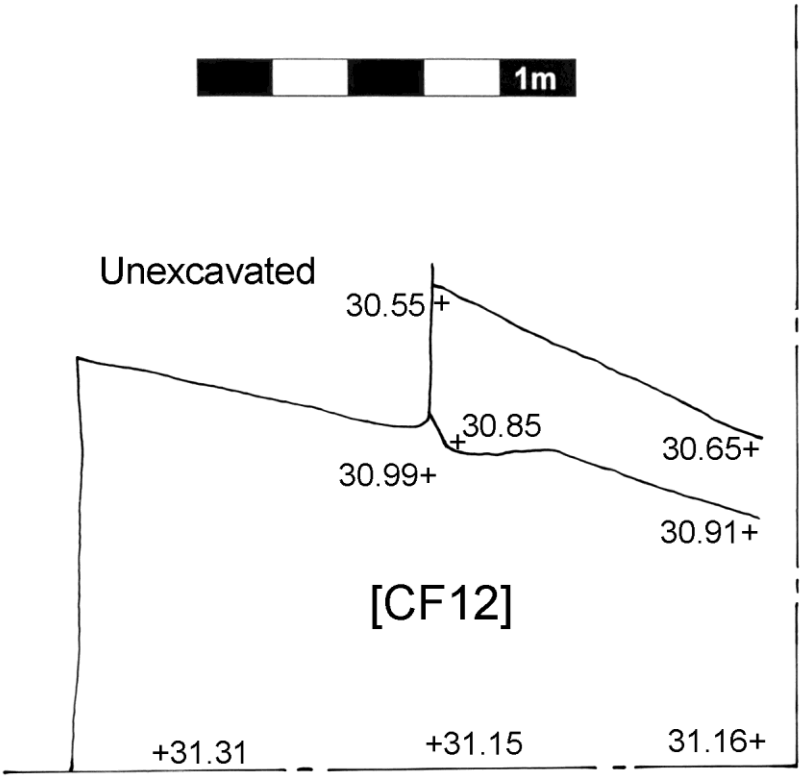


Figure 81. The top of layer [CF12] in the southeast corner of the trench.

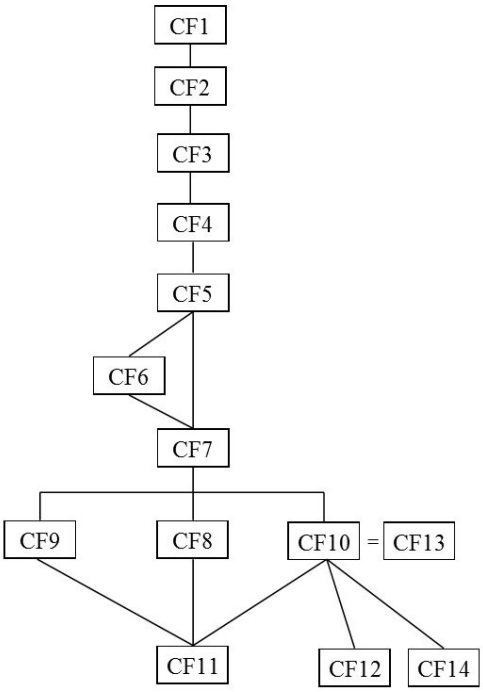


Figure 82. The site matrix for trench CF.

9.2 Discussion

The stratigraphy in the trench is neatly divided by layer [CF4] which covered the whole trench and consisted largely of broken brick with much cut and shaped material which probably relates to the construction of the Orangery wall which is 11m to the south and built between 1717 and 1721.[29]

The soil above [CF4] was presumably deposited to level up the ground after the Orangery had been built. It could be divided into two main zones, a lower one with brown soil and no modern finds [CF3] and the upper soil, layers [CF1] and [CF2] which contained a good deal of nineteenth and twentieth century material and a substantial amount of coal cinder. The clear distinction between the two layers and the lack of disturbance to [CF4] which was only 0.16 to 0.28m below the surface suggests that the area had not been deeply cultivated since the eighteenth century. For much of this period it must have been in the shadow of the huge plane tree adjacent to the trench.

The nature of layers [CF6] and [CF7] which underlay [CF4] is unclear. The two layers formed a thin deposit across the whole trench. They were very similar except that layer [CF6] contained more flint and was perhaps slightly more soily. The higher flint content of [CF6] may have been connected with fact that the underlying layers [CF8] and [CF9] were of flint but [CF6] extended further south beyond edge of the underlying gravel.

The deposits below [CF6] and [CF7] appear to comprise a watercourse, its silt fill and a gravel bank on the north side of it.

Layer [CF12], which formed the upper part of the southern bank of the watercourse, contained nothing later than a piece of Earlswood ware and Kingston ware, which suggest that the course was constructed before about 1350. The latest object in the lower part of the fill [CF10 spit 2] was a Cheam jug dating from the second half of the fourteenth century while spit 1, at the top, contained some tin-glaze, pipe stem and a considerable amount of brick of probable eighteenth century date. This suggests that the watercourse was open and gradually silting up from the fourteenth to the early eighteenth century. However, it is also possible that the channel was excavated into gravel which contained a significant amount of medieval pottery, perhaps in the sixteenth or seventeenth century and the site was subsequently kept clean.

The fill (layer [CF10] consisted of calcium carbonate precipitate with a small quantity of fine sand. Similar material was found in the eighteenth century east lake where 0.34m had been deposited in a maximum of 100 years – possibly significantly less.[30]

The vertical drop on the north side of the channel could have been caused by re-cutting although no cut lines were detected in the fill.

The tin-glaze pottery in the upper part of the fill appeared to have been heavily shattered in situ, perhaps through freezing in some of the severe winters which occurred in the late-seventeenth century. This would be more likely if the channel was slow flowing, as is suggested by the fine deposits in it.

At the excavation site the line of the watercourse was marked by a shallow but clear gully. This follows the line suggested on the resistivity survey for a short distance towards the

[29] Phillips 2013 p. 52-3.

[30] See page 14 and layer [AJ22] on figure 21. The lake existed by 1721 (p. 91) and this edge was filled by 1820 when the enclosure award map was made. The silt may have reached water level before the lake was narrowed. See section 13.5.4.

house then curves south towards the Orangery wall where the line is lost (figure 70). The surface indications are not, therefore, consistent with the resistivity survey but the reasons for this are not currently known.

It seems likely that the watercourse eventually emptied into the moat around Carew Manor. In trench CJ the, close to the southern edge, the moat bottom sloped down to the north from 30.61m OD to 30.43m OD.[31] It appears to have deepened further towards the north as the top of the silt was at 30.34m OD at the northeast corner of the island and the bottom, which was not seen, must have been a little below this. The bottom of the watercourse was at 30.45m OD, which would allow a small fall to the moat.

The evidence for moat water level is rather ambiguous. The base of a flow through privy tower survives in the culvert along the south side of the moat island. The bottom of the eastern opening is estimated to be at about 30.76m OD and moat water level would need to be below this to prevent any floating filth being trapped in the base. However, in trench AJ the moat silt extended to a height of 30.95m OD and water level must have been above this. It seems possible that the tower fell into disuse and that moat water level was raised but privies are still marked next to the tower on Colen Campbell's plan of the house which was published in 1717. It seems unlikely that moat water level was much above 31m OD. This would provide a reasonable gradient from the watercourse in CF. However, this situation would not exist after the course had become heavily silted. The silting may have reached the top of [CF10] spit 2 at 31.35m OD before the beginning of the sixteenth century as the layer contains no brick or post-medieval finds. If the water in the channel was only 0.05m deep there would then be a drop of around 0.4m between trench CF and the moat producing a gradient around 1 in 160. This would produce a reasonable flow which seems inconsistent with the calcium carbonate precipitate that filled the course. The gradient would become even steeper as further silting took place. By the time that the top of [CF10] was deposited at 31.53m OD there would be a gradient of around 1 in 110 between the watercourse and the moat. As the stream was slow flowing this drop must have been handled by some kind of feature: a weir or sluice, garden ornament or mill.[32]

The finds from the gravel layer on the north side of the watercourse [CF11] suggest that it was deposited when the course was constructed. The top of [CF11] had a fairly smooth finish and it was possibly a track. If this was constructed in the late thirteenth or early fourteenth century as the pottery suggests it is odd that there was no soil layer over it. The path would surely have become weedy and more worn in three centuries. This supports the idea that the watercourse is relatively late and that the medieval finds are residual.

The top of layers [CF8] and [CF9] were rather rough and the top of [CF10] appears to have run between them as shown on figure 74. They look as if they were deposited to make up the surface of the track when it was covered with shallow water. If calcium carbonate was deposited this water cover must have been more than a brief flood – but if so what retained it at this level? The carbonate over the track could have been deposited when the garden was being reconstructed in the early eighteenth century. Some sort of levelling operation to the west of the trench may have blocked the watercourse and formed a pool on the site of the excavation. The area to the northeast is a still slight hollow in which a pool sometimes forms after heavy rain.

[31] Phillips and Burnett 2016 volume 1 p. 65.

[32] The Elizabethan garden contained a ‘force mill’ – presumably a water powered pump. Phillips and Burnett 2008 p. 132.

10 TRENCH CK

When trench CD was excavated it was thought to have been dug into the fill of an east-west aligned watercourse. It seemed likely that the channel ran westwards along the north side of the main garden and then through the northern arm of the moat. A resistivity survey showed a high reading on or by the estimated position of the south edge of the channel. It seemed a likely position for a feature within the Elizabethan garden which is known to have been very elaborate and to have contained a rock, grottoes and other structures.[33] Trench CK was therefore excavated in August 1993 to find out whether the high resistivity reading marked the site of a sixteenth century garden building.

10.1 The stratigraphy

A 3m square trench was laid out in the position shown on figure 20. The turf rested on [CK1] which consisted of brown topsoil with a few stones. Layer [CK1] rested on [CK2] which covered the whole of the trench. It consisted of dark brown earth slightly lighter than [CK1] with a lump of yellow clay and a scatter of brick, flint and bits of mortar. There were crumbly patches with scraps of cinder and coal which became more common towards the bottom of the layer. There were also some patches of sand in the northeast corner of the trench.

Layer [CK2] rested on [CK3] which covered the whole trench and consisted of rounded and sub-angular flint up to 10cm across with some chalk, Reigate stone and a scatter of peg tile in a matrix of dark brown earth. There was more tile on the surface than there was within the layer. The top was quite rough with some peg tile lying on its edge suggesting the dumped material rather than the surface of a track.

Layer [CK3] rested on layers [CK4], [CK5] and [CK6] as shown in figure 83.

Layers [CK4], [CK5] and [CK6] all consisted of yellowish-brown soil but they differed in the amount of flint and chalk they contained. Layer [CK4] had a good deal of flint of mixed size and shape and also chalk. Layers [CK5] and [CK6] had less flint than and the latter was also lighter in colour. When excavation started the boundaries between the layers were ill defined. After a few centimetres had been removed it was clear that layers [CK4] and [CK5] were the same deposit while [CK6] was different.

A new drawing was then made (figure 84). Layer [CK7] occupied the south end of the trench. This was the same deposit as [CK6], the new number being allocated for administrative convenience. Layer [CK8] was in the north end of the trench and was the same as the overlying layers [CK4] and [CK5].

Layer [CK7] consisted of yellowish soil with yellow more sandy patches on the west side of the deposit. There were scattered pieces of large flint and chalk including a large mortared flint with a size of 175mm and also two large pieces of Reigate stone, one 155mm across, the other 175mm.

Layer [CK8] also consisted of yellowish brown earth with chalk, flint up to 170mm and pieces of Reigate stone rubble up to 220mm across.

Layers [CK4], [CK5], [CK6], [CK7] and [CK8] appear to be the result of a single dumping episode which involved the disposal of some structural material including Reigate stone and some or all of the larger flint.

When these deposits had been removed the trench was in the state shown in figures 85 and 86. There were three contexts: layers [CK9], [CK10] and [CK11]. All three deposits were

[33] Phillips and Burnett 2005.

fairly similar, consisting of varying mixtures of chalk, flint and brown earth. In places – particularly on the east side of the trench – the chalk was densely packed while to the west it was earthier. Layer [CK9] in the southeast corner of the trench had a good deal of broken roof tile on or in the surface.

Two possible surfaces were found during the excavation of these deposits. One formed by the top of [CK12] was a small area in the southeast corner of the trench (figures 87 and 89). The deposit consisted of tightly packed crushed chalk and small rounded flint pebbles. The top surface was not especially smooth and was not entirely convincing as a floor. The second surface [CK13] partly lay under the first but it extended over a larger area particularly to the north (figure 88). This consisted of crushed chalk with some large pieces up to 24cm across and rounded flints up to about 4cm. The top surface was quite smooth and looked worn while the overlying layer peeled off easily. The top of [CK12] was at 31.41 to 31.42m OD while the top of [CK13] was between 31.37 and 31.39m OD.

At this point the trench was narrowed to a 1m wide strip on the west side. The first deposit in this was [CK14] which consisted of brown earth with a good deal of flint and some chalk. The boundary between this and the overlying layers was arbitrary as a new context was allocated to separate the finds from the narrowed trench.

Layer [CK14] rested on [CK15] which consisted of gravel in a dark stiff sticky matrix containing fragments of blue mussel shell. The top of this deposit was between 31.15 and 31.2m OD.

Layer [CK14] rested on [CK16] and [CK17] the former filling a deep hollow in the latter (figures 90 to 92).

Layer [CK16] consisted of very stiff sandy clay mottled and patchy grey and yellow. There were scattered sub-angular flints up to 12cm across. The top of the layer contained a few blue mussels but only one was found in the lower part of the layer. There was twig at the bottom of the deposit.

Layer [CK17] consisted of gravel in a dark brown matrix. This was only excavated in a small area below [CK16]. The deposit appeared to become sandy with depth.

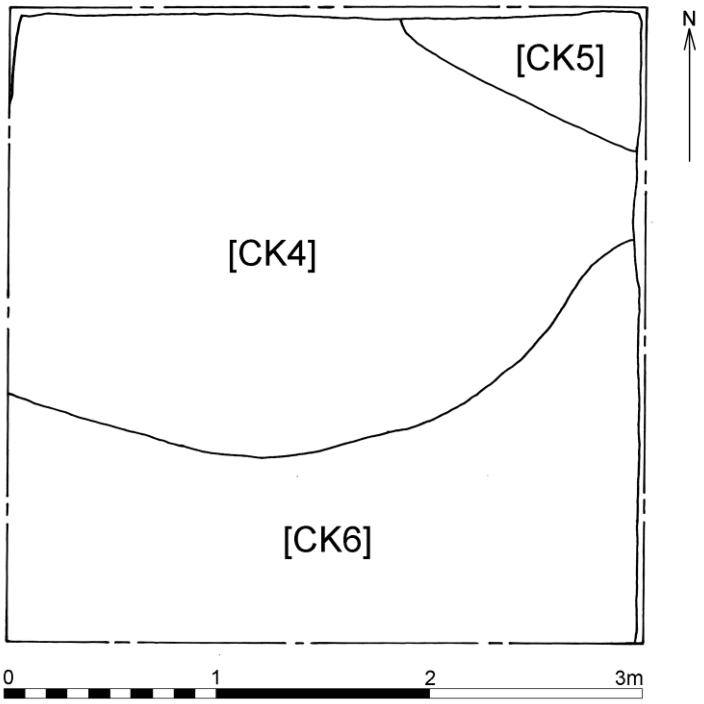


Figure 83. The top of layers [CK4], [CK5] and [CK6].

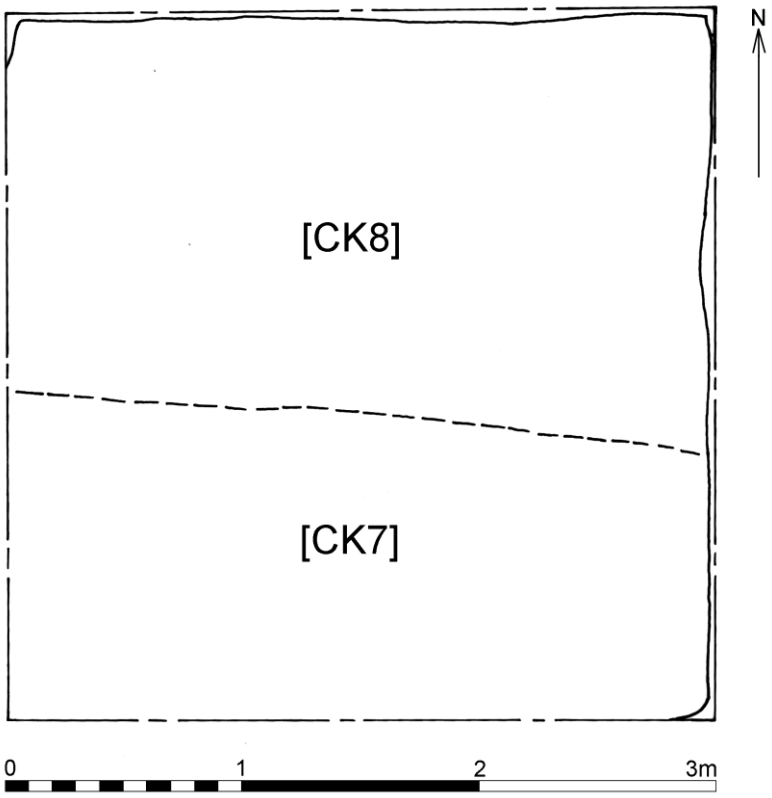


Figure 84. The top of layers [CK7] and [CK8].

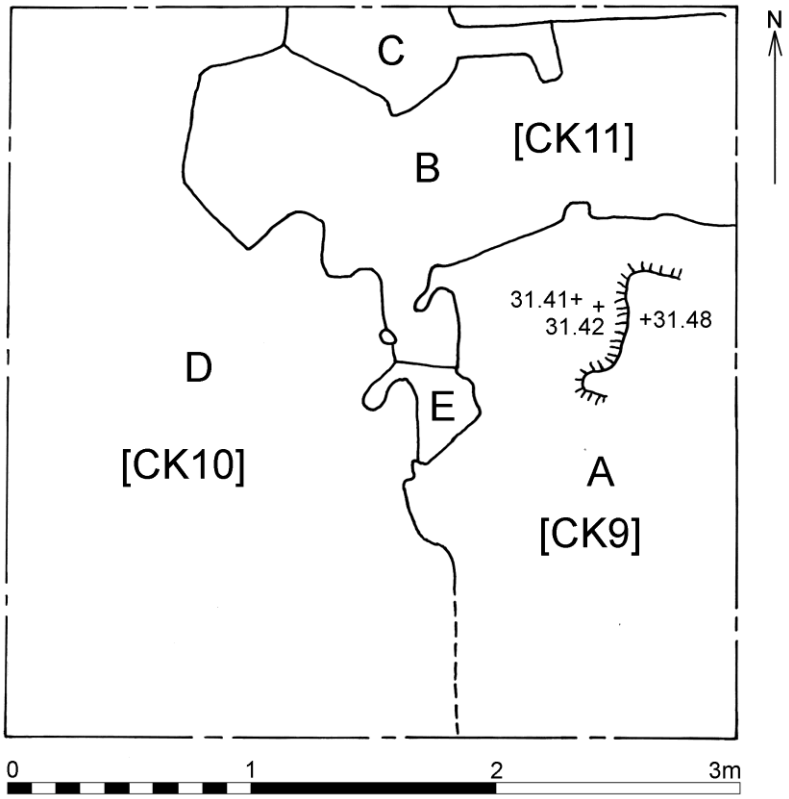


Figure 85. The tops of layers [CK9], [CK10] and [CK11].


Figure 86. The tops of layers [CK9], [CK10] and [CK11] looking west.

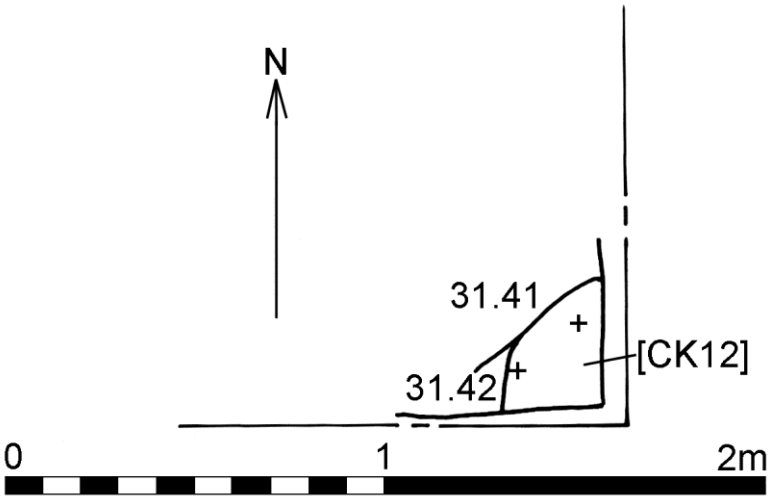


Figure 87. The top of [CK12] in the southeast corner of the trench.

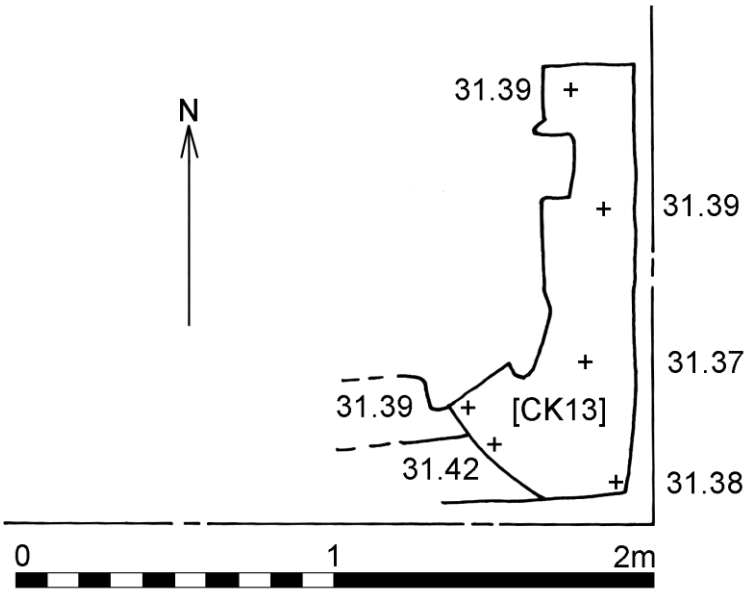


Figure 88. The top of [CK13] in the southeast corner of the trench.

Figure 89. The surfaces found in the south east corner of the trench during the excavation of [CK9]. The upper surface [CK12] is in the extreme corner of the trench while the lower one [CK13] nearer the foreground.

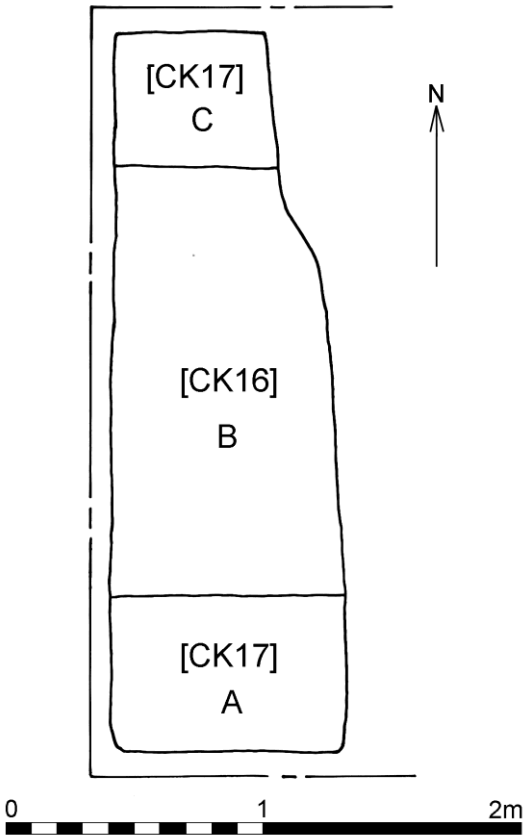


Figure 90. The top of [CK16] in a deep hollow in [CK17].

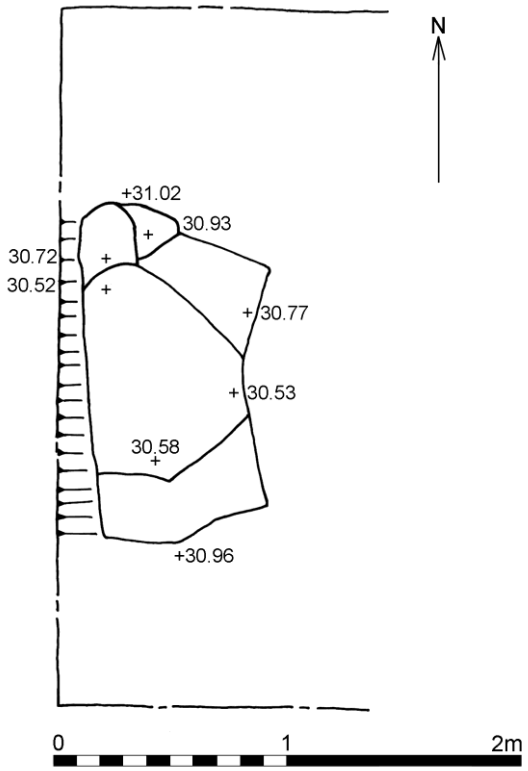


Figure 91. The hollow in [CK17] which contained [CK16].

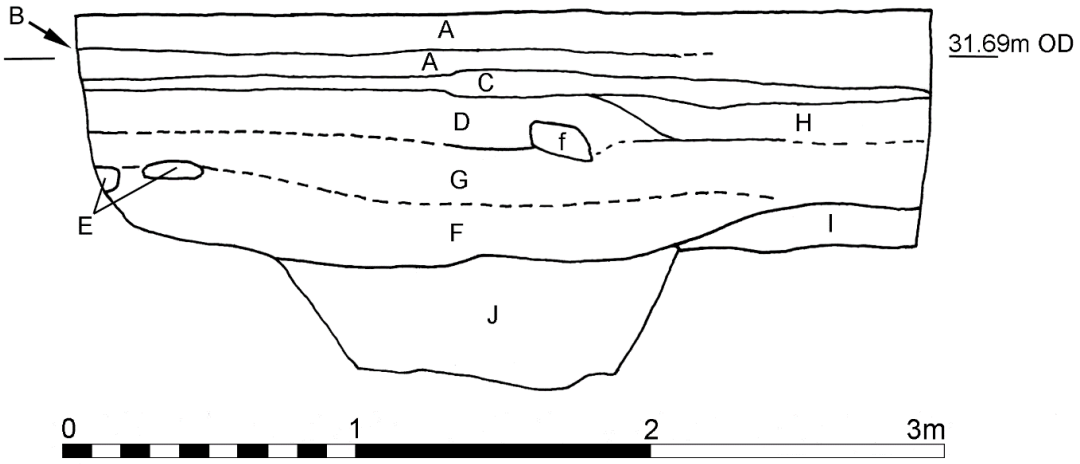


Figure 92. The west side of trench CK.

A	Dark brown topsoil with a few stones.
B	Thin layer of cinder.
C	Small flints in brown earth
D	Light brown sandy earth with a scatter of flint and chalk.
E	Chalk in stiff brown earth.
F	Flint and some chalk in stiff brown earth.
F	Flint
G	Brown earth with a scatter of chalk and flint (more than D).
H	Brown earth with a few flints and scraps of chalk.
I	Loose gravel with sub-angular and round pebbles.
J	Brown silt.

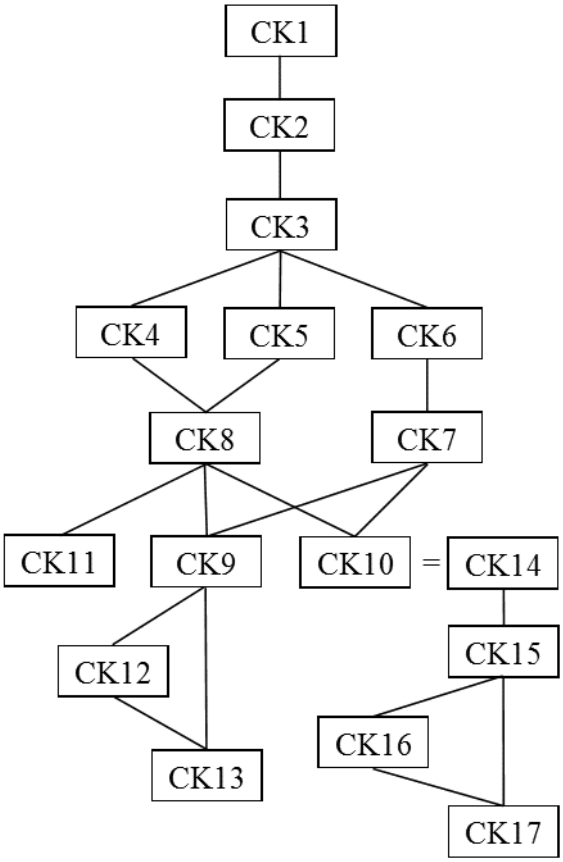


Figure 93. The site matrix for trench CK.

10.2 Discussion of trench CK

The earliest deposits were the gravel at the bottom of the trench. This was presumably water-laid natural. The deep hollow in the deposit may mark the site of a spring in the stream bed with the fill possibly largely calcium carbonate precipitated from the water.[34]

The overlying deposits fall into two groups: lower layers of chalk flint and soil and upper ones with a matrix of yellowish soil.[35] The finds in the two groups of deposits were distinctive and similar. The pottery largely consisted of Earlswood, Kingston and Limpsfield wares which were current in the late thirteenth and early fourteenth centuries. There was also a significant amount of Reigate stone and peg tile, much of the latter soft and poorly fired. It seems likely that two dump deposits are the result of a single episode which drew slightly different materials from the same general source.

The two fragments of possible surface were within the lower dump and may be the result of trampling during deposition.

Both dump groups contained a small amount of pottery, which was not very distinctive but clearly late medieval or Tudor rather than thirteenth of fourteenth century. There was also a single piece of clay pipe stem which cannot be earlier than the late sixteenth century and is far more likely to be seventeenth century. If the pipe was misplaced during the excavation a

[34] The author as seen similar spring-created hollows in the garden of the chateau at Chantilly in France.
[35] The lower deposits comprise [CK9], [CK10], [CK11], [CK12], [CK13] and [CK14]: the upper [CK4], [CK5], [CK6], [CK7] and [CK8].

filling date in the fifteenth of sixteenth century is possible: otherwise the deposits must have bene place in the seventeenth or less likely in the very early eighteenth century.[36]

The upper deposits – [CK1], [CK2] and [CK3] – contained modern items and consisted of topsoil and the disturbed upper part of the damp.

Pieces of boar tusk were found in both the upper and lower dump. Wild boar are last recorded in England in the thirteenth century in the Forests of Dean and Pickering. There were subsequent sporadic attempts to keep them in parks.[37] The Carews may have had a deer park at Beddington in the late fourteenth or fifteenth centuries although there is no certain evidence of one until the early sixteenth century. Nicholas Carew KG who owned the house 1520-39 is by far the most likely to have kept wild boar. He was one of the hunting and sporting companions of the young Henry VIII and is known to have enlarged the park at Beddington. The late medieval or early Tudor pottery in the deposits could relate to his ownership although the tusks are more likely to be of the same date as the majority of the pottery – about 1250-1350.

11 TRENCH CL

The trench was in the nature conservation area just outside the east boundary of Carew Manor School and against the north side of the northern boundary wall of the then Orchard Works, now the Church paddock estate, in the position shown in figure 20.[38] It was 1m north-south by 3m east-west and the western edge of the trench was 7.5m east of the eastern end of the Orangery wall.

The trench exposed the foundation of a short section of the wall along the south side of the central area of the eighteenth century garden. The main aim was to see if the wall stood on a Tudor foundation and there was a subsidiary aim of looking for evidence of a grotto in the vicinity.

11.1 The stratigraphy

The excavation site was covered by the edge of a mound of earth and rubble dumped when flood alleviation work was carried out on the Wandle in 1990 and 1991. This was treated as layer [CL1] and was removed with a mattock and shovel. It was found to consist of a mass of broken concrete covered with about 0.1m of earth. It was underlain by a more-or-less flat surface close to former ground level. This was treated as [CL2] and was trowelled to produce the situation shown in figure 94. The footings of a brick wall ran along the south side. To the north of this the trench was divided into two layers: [CL3] to the west and [CL4] to the east. A piece of angle iron, or steel, projected from the trench bottom at the boundary between the two layers. The post was subsequently found to penetrate to a depth to a depth of about 0.53m. There was no sign of a pit around it and it seems likely that it was driven into the ground possibly to support a chain-link fence.

Layer [CL3] at the west end of the trench consisted of brown soil with a good deal of crushed brick and mortar, some larger broken brick and flints which were mostly pebbles but ranged up to 0.1m. After 0.02m to 0.03m had been removed from the layer the crushed brick became

[36] Early eighteenth century and later material is very common on the site so more finds would be expected in deposits of this date.
[37] Rackham 1986 p. 36-7.
[38] TQ 2975 6527.

less common and the deposit then consisted of brown soil with patches of green sand and much broken brick, flint and chalk.

Layer [CL4] at the east end of the trench consisted of dark-brown soil with a good deal of brick and flint, some chalk and tile, and patches of green sand and orange clay. The larger rubble was chiefly brick. Once the upper part of layer [CL3] had been removed, it was indistinguishable from layer [CL4]. It is clear that the crushed brick forming the upper part of [CL3] should have been treated as a separate deposit.

Layers [CL3] and [CL4] had a total thickness of 0.07m to 0.08m. Both layers contained modern items including plastic, pottery, glass and asbestos cement.

When layers [CL3] and layers [CL4] had been removed the trench was in the state shown in figure 95. At this point most of the trench bottom [CL5] consisted of brown earth with a few large pieces of flint, chalk and other rubble. Although this layer was less rubbly than the overlying deposits the distinction between it and them was rather arbitrary. Layer [CL5] was underlain by [CL8]. This was indistinguishable from [CL5] as the division was arbitrary rather than stratigraphic. Layer [CL5] contained three pieces of modern pottery while layer [CL8] some nineteenth or twentieth century glass.

Two small pits had been cut into the south side of layer [CL5] adjacent to the brick wall in the positions shown in figure 95. One was filled by layer [CL6] the other by [CL7].

The pit containing [CL6] had a total depth of about 0.23m. The east side was more or less vertical while the west side sloped. It was filled with loosely packed broken and crushed brick, a little clinker, a large flint, and a piece of iron or steel wire. There was no sign of a post and no closely datable finds.

The second pit, which was filled by layer [CL7], was about 0.25m deep. It was filled with lumps of brick and crushed brick, a piece of chalk and several flints. There was a semi-circular patch of earth against the wall on the south side of the pit fill (figure 95) but it was not clear whether this was a filled post slot.

The pits were spaced at a centre to centre distance of 1.82m. If they were part of a series which continued to the east and west the other pits would have been outside the area of the trench. The pits must be modern as they cut into layers [CL5] and [CL8] which continued items of late nineteenth or early twentieth century date.

Layers [CL5] and [CL8] had a total thickness of between 0.27m and 0.33m. They were underlain by layer [CL9] which covered the whole area of the trench and consisted of light brown rather sandy earth with occasional flint, chalk and brick. The layer did not contain any closely datable finds and the late nineteenth and early twentieth century items found in the overlying layers were absent. Layer [CL9] had a thickness of around 0.05m to 0.08m.

Layer [CL9] rested on layer [CL10] which consisted of light brown soil with pockets of grey sandy silt, occasional lumps of clay and a scatter of chalk, flint and brick.

At this point the excavation was, for safety reasons, reduced to an area about 0.78m from north to south by 0.9m from east to west. The west side of this was 0.5m from the western end of the original trench. A few centimetres of earth were then removed, mostly from the western end of the excavation, and the trench was then in the state shown in figure 96. Layer [CL10] still occupied the western side of the trench and layer [CL11] filled the eastern. It seems likely that [CL9] was slightly under dug and that it rested directly on layer [CL11] rather than being separated from it by a thin layer of [CL10].

The lower part of layer [CL10] adjacent to [CL11] was less rubbly than the deposit above figure 96 and consisted of grey sandy silt which was heavily mottled with earth brought down by worms.

Layer [CL11] filled a cut within [CL10]. It consisted of brown soil with some large flint. It contained a circular area of grey mortar which was treated as layer [CL12] and is shown in figure 97. When this was excavated it was found to be only 1cm to 2cm thick.[39]

There were no closely datable finds in either [CL10] or [CL11]. The two layers had a total thickness of 0.04m to 0.07m. They were underlain by layer [CL13] which covered all the remaining area of the trench. This consisted of light brown earth with a good deal of brick, chalk and mortar and a lump of orange clay. Layer [CL13] was underlain by and identical with layer [CL14], the boundary between the two being made for administrative rather than stratigraphic reasons. Layer [CL13] contained a pipe stem which probably post-dated 1700 and [CL14] produced a scrap of redware. There was eighteenth or nineteenth century brick but no closely datable finds. The two layers had a total thickness of 0.2m to 0.22m.

At this point the trench was again narrowed for safety reasons and was reduced to an area 0.75m from north to south by 0.32m from east to west. This area was then excavated as layer [CL15] which consisted of light brown sandy earth with a good deal of flint and some chalk and tile. It had a thickness of 0.03m to 0.04m and, again, contained no closely datable finds.

It rested on layer [CL16] which consisted of brown sandy earth mottled with lighter sand and clay. There were flecks of chalk and much flint including some large irregular pieces. There were no finds.

This was underlain by layer [CL17] which consisted of dark grey sand and was probably the natural Thanet beds. Only a small sample of this was excavated. There were no finds and the bottom of the deposit was not seen.

11.2 The wall

This formed the south side of the trench. It was made of smoothly finished soft orange brick the sizes of which are shown in section 12. Most of the bricks had stacking marks across their sides. The profile of the wall is shown in figure 99. There was a step out of about 5cm on the north side of the wall close to ground level. One fragmentary course survived above this and there were six courses below. They were laid in Flemish bond with each course consisting of alternate headers and stretchers although there were several irregularities.

The brick rested on a 0.42m deep foundation of mortar and flint rubble which also contained some brick. The top of the foundation was the same width as the base of the brick and narrowed slightly with depth.

11.3 Discussion

The wall formed the south side of the central garden which extended eastwards from the house and terminated in a curved bank and cascade as already noted. This arrangement is currently attributed to Nicholas Carew, 1st baronet, who owned Carew Manor from his majority in 1707 until his death in 1727. Nothing found in the excavation conflicts with this interpretation. The upper layers [CL2] to [CL8] contained some recent finds which could be the result of cultivation which is known to have taken place in the Second World War.[40]

[39] It is clear from the context sheets whether [CL12] was an inclusion in [CL11] or a deposit resting on the underlying layer [CL13].
[40] Ordnance Survey Photograph dated 1946 in Sutton Local Studies Collection.

There were few datable finds below the top of [CL9] at about 32.04m OD and nothing which need be later than the early eighteenth century.

The site of the excavation has been considered as a possible site of one of the grottoes which are known to have existed in the Tudor garden. However, the trench did not produce any evidence of a grotto in the vicinity and there was no evidence that the wall had a Tudor predecessor.

Most of the excavated deposits contained a good deal of rubble and, apart from layers [CL16] and [CL17] at the bottom of the trench, they were clearly dumped rather than natural. There was no clear sign of a foundation trench for the wall although it is possible that the edge of this lay beyond the north side of the trench.

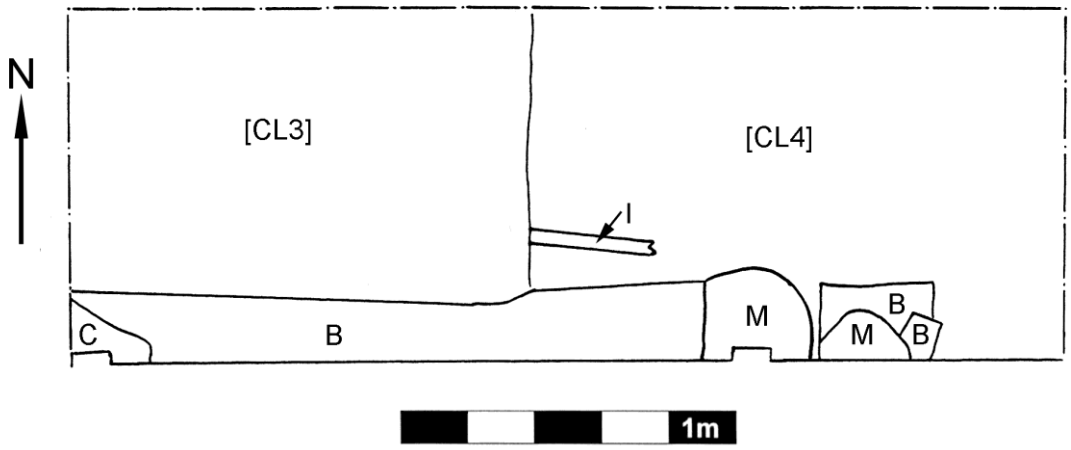


Figure 94. The tops of layers [CL3] and [CL4].
B = brick, c = concrete, I = iron, M = mortar.

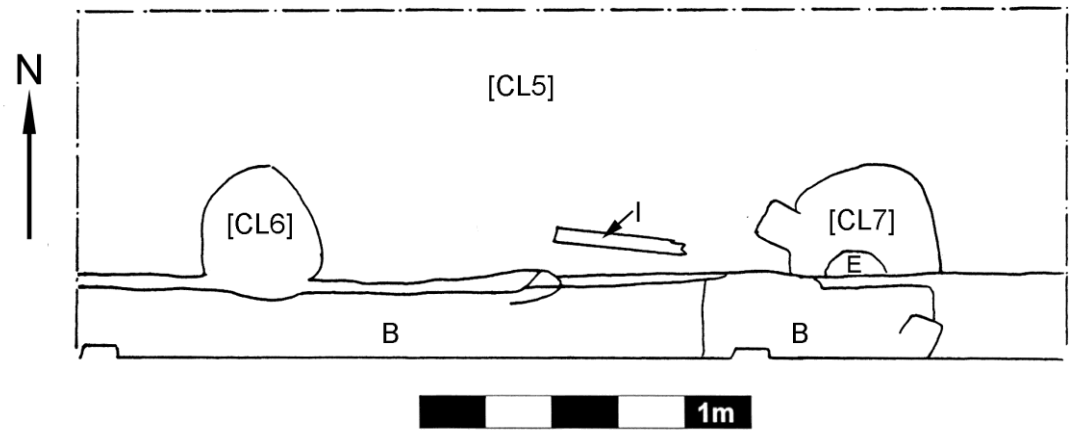


Figure 95. Layers [CL5], [CL6] and [CL7].
B = brick, E = earth, I = iron.

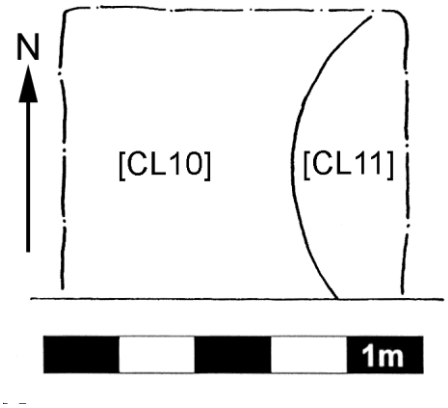


Figure 96 Layer [CL10] and the top of layer [CL11].

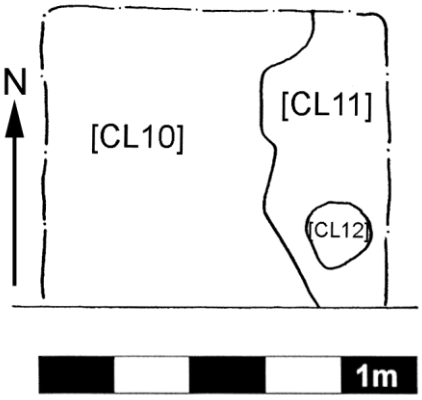


Figure 97. Layers [CL10], [CL11] and [CL12].

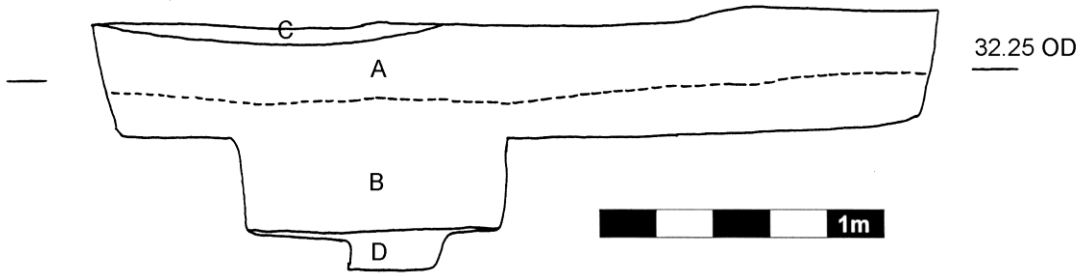


Figure 98. The north side of the trench at the end of the excavation.

A Dark brown soil with a scatter of flint, chalk, brick and occasional mortar.
B Lighter brown sandy soil with occasional flint, brick, chalk and mortar.
C Broken brick, mortar and some flint in earth.
D Similar to B but lighter.

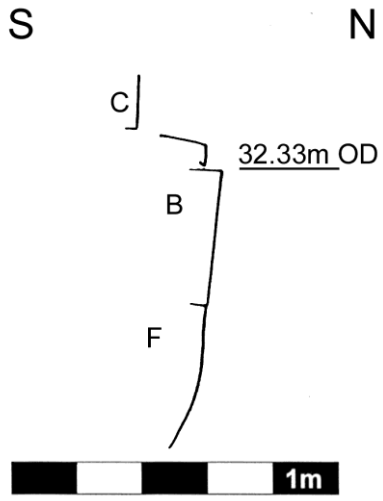


Figure 99. Section through the wall looking west.
B = brick, C = concrete slab fence, F = flint and mortar with some brick.

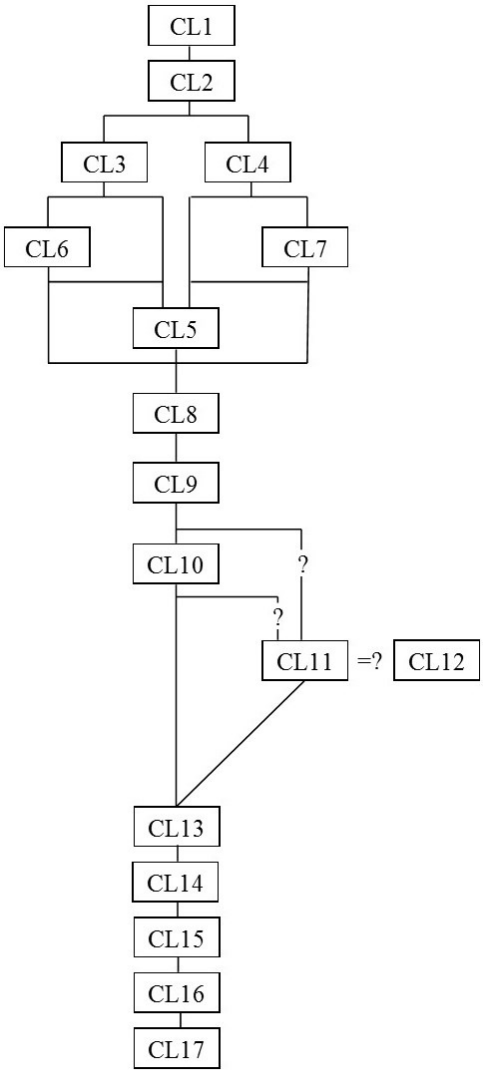


Figure 100. The site matrix for trench CL.

12 BRICK SIZES AND BONDS

The surviving sections of wall along the north and south sides of the central garden are generally in English bond or a have a more irregular bond using courses largely of either headers or stretchers (figure 101). There are two exceptions. One is the Orangery wall. The north side of this is English bond while the south side is Flemish although the decoration on the former means that there are many irregularities. The second is the short section of foundation exposed in trench CL immediately east of the Orangery. This is in Flemish bond although the standing wall to the east of it is in English bond as already noted. The exact position of the change in bonding is unknown.

The curved wall that closes the eastern end of the central garden may be in Flemish bond but the surviving northern half has been so heavily repaired that it is hard to be certain.

The two surviving sections of wall in the north garden are in Flemish bond. One of these marks the western boundary of the present Crispin Crescent estate, the other forms the eastern boundary of the allotments formerly the kitchen garden. It seems likely that these two walls are of a different and later date than the walls in the central and south garden.

The thickness of a number of bricks have been measured in standing walls and from excavated contexts:

Location	25th quartile mm	50th quartile mm	75th quartile mm	Number
Wall in trench CE to the west of the Orangery wall.	57.00	58.00	61.00	21
East end of garden north of the bank. Section B-C on figure 102 (BS12)	58.00	59.00	60.00	100
Foundation in trench CL on the south side of the central garden east of the Orangery wall.	62.00	63.00	64.00	31
Dovecote (BS17)	63.00	63.00	64.00	100
Bricks from the pillar by the bridge at the SW corner of Crispin Crescent	62.00	63.00	64.00	20
Bricks from the wall between the Crispin Crescent Estate and the east end of the central garden	62.00	63.50	64.00	50
Brick rubbing debris probably from the construction of the Orangery (context [CF4])	62.00	64.00	66.00	258
Orangery south side (BS13)	65.00	66.00	67.00	100
Orangery north side (BS16)	66.00	66.00	68.00	100
Garden wall section C-D on figure 102 (BS19)	65.00	66.00	67.25	100
Stub wall at east end of Orangery (BS18)	66.00	67.00	68.00	97
South wall of the East lake wall exposed in flood alleviation work	66.00	67.00	68.00	11

The bricks fall into three thickness groups one at 58-59 mm, another at 63-64 mm and a third at 66-67mm.

The thinner bricks were used for the wall between the central and south garden to the west of the Orangery wall and on the short section of north-south wall closing the east end of the garden (B-C on figure 102).

The middle group were used for:

- Wall by trench CL on the south side of the central garden east of the Orangery wall.
- The Dovecote.
- Bricks from the pillar by the bridge at the SW corner of Crispin Crescent.

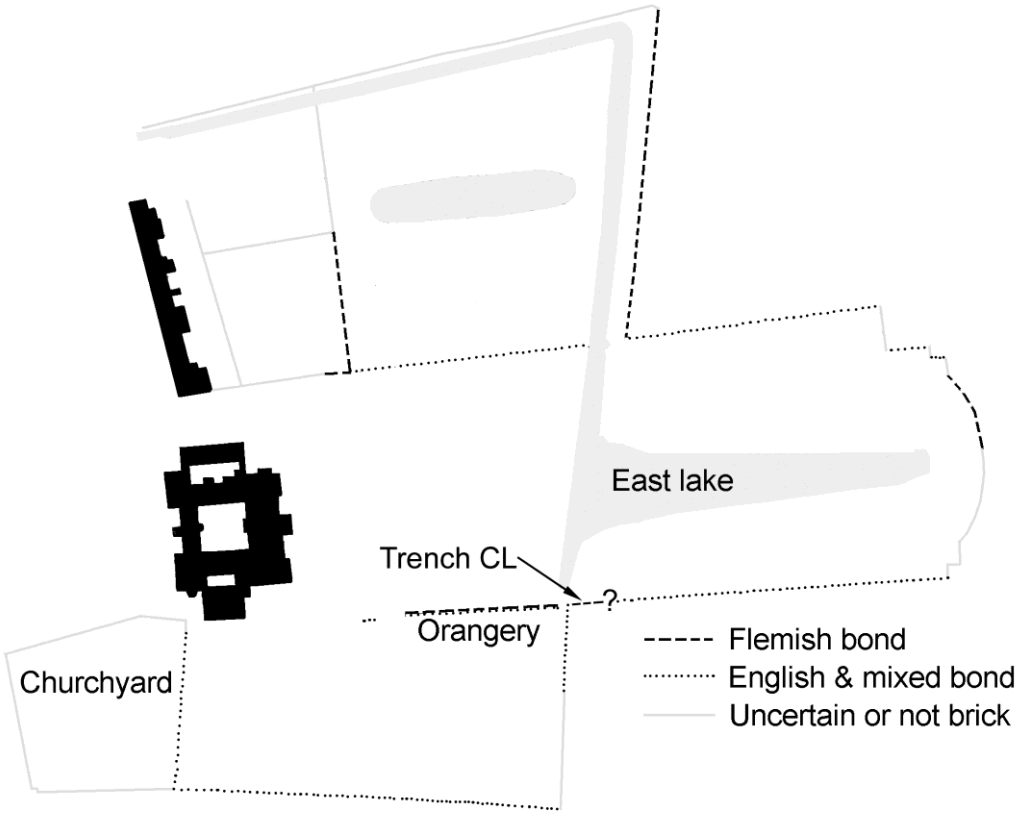


Figure 101. The bonding in the walls

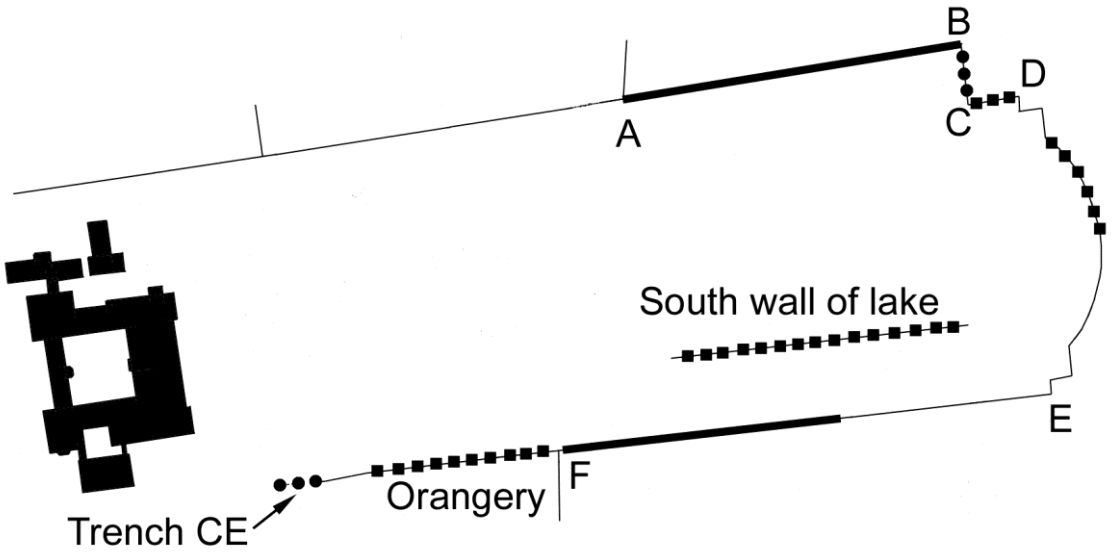


Figure 102. The walls and former walls around the central garden showing the median brick sizes where known. Round dots 58-59mm, thick lines 63-64mm squares 66-67mm.

- Bricks from the wall between the Crispin Crescent Estate and the east end of the central garden.
- Brick rubbing rubble from the construction of the Orangery in trench CF.

The third group are associated with the Orangery wall, the east lake and the wall closing the east end of the central garden:

- Orangery south side,
- Orangery north side,
- East garden wall section C-D on figure 102,
- Stub wall at east end of Orangery,
- South wall of the East lake wall exposed in flood alleviation work,

The Orangery related brick rubble from trench CF looks anomalous in the middle group. However, much of this brick had been rubbed which would make the material thinner.

This data is consistent with the garden being constructed in three phases or perhaps in stages at a time when bricks were becoming thicker.

Bricks from the thinner group can be found on the north side of the south wing of the house. A large part of the house was refaced in the mid-nineteenth century but this and some other areas probably date from the first baronet's re-facing of about 1710-12. Very similar bricks were used to construct the basement of Stone Court, Carshalton, built sometime between 1693-1710 These had a 25th percentile height of 57mm, a 50th percentile of 58mm and a 75th percentile of 59mm.[41]

The thickest group of bricks were used to construct the Orangery wall and the adjacent stub wall linking it to the gates at the end of the south cross walk. The Orangery was rebuilt between 1717 and 1721.

13 OVERALL DISCUSSION

1.1 Natural

The lowest deposits seen in both the new pond and the bed of the new river channel along the west side of Crispin Crescent was green sand which was almost certainly the base of the Thanet Beds. The northern edge of these deposits was not seen although they were present at least 70m north of the Crispin Crescent Bridge. This is consistent with the 1:50,000 Geological Survey map which suggests that the edge of the beds is about 130m north of the bridge close to the southern edge of the former sewage farm.

At the eastern end of the new pond the Thanet Beds were covered by several layers of sand and gravel [FC3], [FC4], and [FC5] which appeared to have been laid in water and presumably represent a former course of the Wandle. They were covered with about 0.07m of fibrous brown peat, which was in turn covered by over 0.5m of brown soil. The latter contained sand and many small grains of chalk and was not like the fine carbonate deposit in the lake. It seems likely that the material is the same as the hill wash seen in the gas main section in Beddington Park.[42] The peat is in a similar position to the tufa seen in the gas main section in that it lay between the gravel and the overlying hill wash. The tufa is thought to

[41] Sample of 49 measured during the 2005 excavation.
[42] Peake 1971 p. 149-152.

have been laid down early in the post-glacial period and it seems likely that the peat layer [FC2] is of similar antiquity although there was no direct dating evidence.

The deposits in the ditch AJ are more problematic. The lower sand layers [AJ20] and [AJ21] appeared to have been laid in running water and may possibly be equated with the water-laid gravels seen in the lower part of the pond section [FC3], [FC4] and [FC5]. These deposits were covered by Layer [AJ19] which consisted of fine dark smelly silt and layer [AJ18] which consisted of fine dark sandy soil. The origin of these layers is unclear. Both were confined to the south end of the section and may have been truncated by an excavation which was later filled by later [AJ17]. The layers overlying this [AJ14], [AJ15] and [AJ16] were all truncated to the north by the gravel which formed the lake side path and supported the lake wall: the lake had clearly been excavated into these deposits. They consisted of sand, sandy loam and sandy clay. A pipe bowl of about 1700-70 marked WR was found in layer [AJ15] or [AJ16]. This suggests that the layers were fill which cannot have been deposited much before the construction of the lake. However, the extent of the fill and nature of the feature are unclear.

The lowest deposits in trench CD consisted of gravel which had hollows on the top filled with patches of yellow silty sand. This is similar to the gravel seen in the Croydon Hooley gas main trench which were dated to the end of last ice age.[43] They were overlaid by dark flinty soil.

13.1 Prehistoric

Trench CE produced a small amount of prehistoric pottery and it is possible that there were more in the sherds that could not be firmly identified. The trench lay to the west of the Orangery wall and may have been on the edge of a low river terrace slightly above the flood plain although subsequent alterations to the landscape make this uncertain. There was little worked flint so it is unlikely that there was a huge amount of pre-Roman activity on the site.

13.2 Roman

Trenches CE, CF and CK all produced a small amount of Roman material. This consisted of a few pieces of coarse ware and a somewhat larger quantity of roof tile. About half the material came from trench CE with the rest divided between the other two. It could be associated the Beddington Roman villa which was about 500m north and slightly east of the site but could just as well reflect some fairly low-level activity in the immediate area.[44] Two Roman coffins, one stone and one lead, have been found to the south of St Mary's churchyard a short distance from the site.[45]

13.3 Saxon and medieval

Trench CE yielded a considerable collection of pot sherds which extended from the early Saxon period to the twelfth century. The latest pieces in the sequence were a sherd of pre-wheel-thrown hard grey ware and a few pieces of London ware. Kingston, Earlswood and Limpsfield wares which are commonly found in the area in the thirteenth and early fourteenth centuries were absent. It is possible that the Saxon and early medieval manor house stood to the east of the church just above the flood plain of the Wandle. The late

[43] Peake 1971 p. 154-5.
[44] Howell 2005.
[45] Adkins and Adkins 1984.

Saxon manor house may have been a substantial affair as Beddington was the head of a large estate belonging to the Bishop of Winchester in the tenth century, and one bishop – Aethelwold – died there in 984.[46] The estate probably provided a useful base on the eastern edge of the diocese, was close to the archbishop of Canterbury's house at Croydon and was on a convenient route way from Winchester to Canterbury.

The estate passed out of the archbishop's hands before 1066 and was split into two parts. The church was attached to the part belonging to Robert de Watteville and it is likely that his house was nearby. If so the manor house may have been moved in the late twelfth or thirteenth century perhaps to its present site on the river flood plain. This may have been to allow the construction of a moat.

Saxon pottery was absent from trenches CF and CK.

The medieval pottery sequence in trench CK was dominated by Kingston, Earlswood and Limpsfield wares but they were residual in dumped deposits which contained later rather non-descript fifteenth or sixteenth century sherds. They demonstrate continuing activity on the site as a whole but not at that specific location.

The medieval pottery in trench CF was again mostly residual although it is possible that the fill of the watercourse dated back to the late fourteenth century. The pottery in trench CF was more varied that CK and included Kingston, Earlswood, Limpsfield and Cheam. The sequence of sherds continued into the post-medieval period without an obvious break.

13.4 The sixteenth and seventeenth centuries

In the site is known to have been part of a major garden in the Elizabethan period.[47]

The investigations reported here produced evidence for two features which were probably in the sixteenth century garden:

- The watercourse in trench CF which appears to have been silting up through the seventeenth century and presumably existed in the preceding one.
- The filled pond or watercourse in trench CK on the north side of the central garden.

The chalk foundation in trench CE may also have been Elizabethan. It was aligned with the north wall of the orange house which is known to have existed in the sixteenth century. However, the brick wall on the foundation was clearly eighteenth century so the foundation may have been the same date.

The wider context of these features will hopefully be considered in a future report on the archaeology of the Elizabethan garden.

[46] Phillips and Burnett 2016 vol. 1 p. 3-4.
[47] Strong 1990, Phillips and Burnett 2005.

13.5 The early eighteenth century garden

13.5.1 Documentary evidence

Nicholas Carew died in 1689 leaving a young son, also called Nicholas, who did not come of age until 1707. The young man probably inherited a house and garden that was both dilapidated and old fashioned. He remodelled the house about 1710-12.[48]

There are only a few pieces of documentary evidence for the garden in this period. A surviving account book kept by Nicholas Carew spans the period when he came of age and took control of Beddington. It includes two relevant payments: one of £4 to the 'surveyor of my Gardens' in February 1707 and the other for £7 6s for cleaning a pond in 1708.[49] The second volume of Colen Campbell's *Vitruvius Britannicus* published in 1717 says that:

> The House stands in a large Park, the gardens are very curious and artful, the Orangery is esteemed the best in the Kingdom; here is a great plenty of excellent Water, with Canals and Cascades; and indeed every thing is truly worthy of so generous a Patron, who has spared no Cost to rebuild and imbellish his seat.

Aubrey's *History of Surrey* published in 1718 says that:

> The house ... having before it neat Gardens, not yet finished, with several canals, and orchard; but what more particularly deserves our notice, is the fine Orangerie, where are several orange trees, (transplanted from the warmer breezes of Italian air, into our more inclement climate) planted in the open ground, where they have throve to admiration for above a whole century; but are preserved, during the winter season, under a moveable covert. They were brought from Italy by Sir Francis Carew, Knt. (who built the old Mansion House) and it was the first attempt of this kind that we here of … In the Summer-House, round a red and white Marble Table, (formerly a grave stone, I conjecture) is this Dutch inscription
>
> HIER LEGHET MYN WROWE
> MARGRIETE (AN ANGEL WITH A LABEL) DE
> MEDEWE BANS. HEREN DACH
> DECEMBE BYD OBER DE YELE
>
> at the end is a hawke with a label; this was brought from abroad by Sir Franc. Carew, who built this pleasure house; on the top of which is painted the Spanish Invasion of 1588, much decayed; under which was a cold bath.[50]

John Aubrey collected material for a history of Surrey but left it incomplete on his death in 1697. The manuscript was added to and edited by Richard Rawlinson. The Beddington garden is not mentioned in Aubrey's manuscript in the Bodleian Library, Oxford, and internal evidence suggests that the section was written by Rawlinson who is known to have visited Beddington to collect material on 29 May 1717.[51] The description refers to Nicholas Carew as a Baronet and MP for Haslemere. He received his baronetcy on 11 January 1715 when he was already MP for Haslemere.

[48] Phillips and Burnett 2016 volume 1 section 2.9.
[49] BL Add Ms 30335 f53r, f57v.
[50] Aubrey 1718 v.2 p159-160
[51] Enright 1956 p. 124-133 esp. 129.

The first edition of Defoe's *Tour* published in 1724 says that the house was rebuilt by Sir Nicholas Carew MP for Surrey and then continues:

> ...the gardens are exquisitely fine ... the court before them [the wings] is extremely fine, and the canal in the park, before the court, is so well that nothing can be better, having a river running through it; the gardens are exceedingly enlarged, they take up all the flat part of the park, with vistas, or prospects thro' the park, for two or three miles; the orange trees continue, and are indeed wonderful; they are the only standard orange trees in England, and have moving houses to cover them in winter; they are loaded with fruit in the summer, and the gardeners told us, they have stood in the garden where they now grow above 80 years.[52]

Sir John Evelyn, baronet, visited Beddington on 19 November 1721 and in his diary he noted that:

> Before the house ["in a line" inserted] is a fine canal near a thousand foot long and fifty wide, & at ye end of the garden behind ye house a large square of water with a cascade. ye day was so wett yt [=that] we could not stir out. so far as to ye green house lately built over ye Orange Trees, which are in ye ground, & said to be ye first yt were brought into England, being as old as Queen Elizabeth's time.[53]

The Carew papers in the British Library include a single sheet of paper with a list of trees in two columns. This is undated but appears to belong to the late seventeenth or early eighteenth century.[54]

13.5.2 The layout

The overall layout of the central part of the early eighteenth century garden is fairly clear. The central area extended eastwards from the house for about 290m. It was defined by brick walls to the north and south and the east end was closed by a curving bank backed by a wall. The River Wandle entered the garden through two culverts in the centre of the bank and flowed over a cascade into a more or less rectangular lake. The lake occupied the centre of the eastern end of the garden. There were gravel walks along the sides and another wide walk connecting the lake to the house along the garden axis. A walk ran north to south across the garden connecting ornamental gates in the boundary walls. These opened into the north and south garden areas.

Roque's map of Surrey and the 1820 enclosure award map (figures 1 and 2) show an area of garden on the south side of the central garden between it and Church Lane. The gates opening into this area were larger and more elaborate than the gates to the north area suggesting that it was the more important. Roque's map shows it divided into four areas, one directly south of the house, two formal garden areas to the east, and area with trees at the eastern end. The area south of the house and the westernmost formal garden appear on the 1820 enclosure map and substantial parts of the boundary walls survive. There was a large brick Orangery along the south side of the formal garden which stood on or near the site of the Tudor orange house. This was rebuilt by the 1st baronet between 1717 and 1721 and is described elsewhere.[55]

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[52] Defoe 1724 v.1 p.158.
[53] British Library Add Ms 78,514 B fol. 45-6.
[54] BL Add MS 29606 f79.
[55] Phillips 2013.

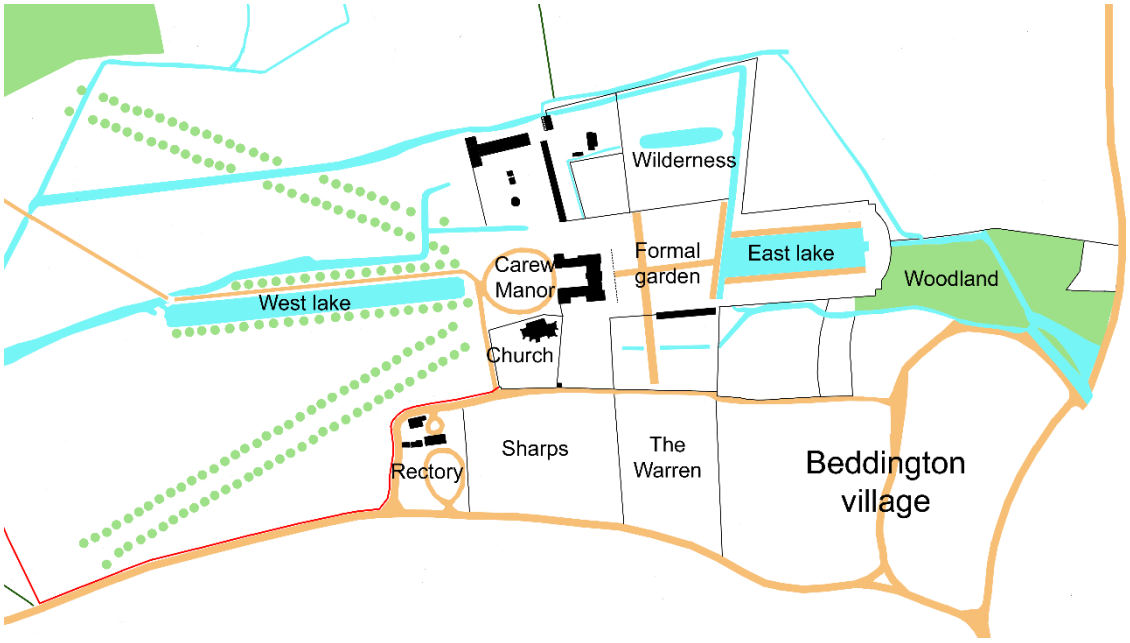


Figure 103. Reconstruction of the early eighteenth century garden.

Roque's map of Surrey of about 1760 shows two areas of formal garden to the north of the central area. The westernmost of these may be the wilderness which survived to be shown on the 1820 enclosure award map. This extended north to the river Wandle and had an oval pond in the centre. The eastern area appears to have been on the site of the present Crispin Crescent housing estate. This is not shown on the 1820 map and is very difficult to reconcile with features shown on an air photo taken before the estate was developed.[56] It is possible that Roque depicted a proposed layout which was never completed.

13.5.3 Details of the lake

The lake appears to have been about 147m long and to have been aligned parallel to an axis through the centre of the east side of the house. If it is assumed that the lake was symmetrical about the axis it would have had a width of around 46m. The width of the lake appears to have been about twice the distance between the lake edge and the south boundary wall.

The Wandle originally entered the garden through two culverts below the centre of this bank. At the end of the nineteenth century there was a cascade at the culvert exits where the water entered the lake. It seems likely that this was part of the original arrangement although it is not unequivocally shown on earlier maps. The walls to the north and south of the lake appear to have formed the sides of a linear vista which ran eastwards from the house and was closed by the bank and cascade.

The Ordnance Survey maps show that the western end of the lake was at an angle of about 77 degrees to the axis of the lake. This arrangement must date back to the early eighteenth century as it is reflected in the end of the Orangery wall and the pillar by the Crispin Crescent

[56] The photo was taken for the Ordnance Survey in 1946 and is in the Sutton Local Studies Collection.

bridge. The alignment was continued by the northward-running outflow channel.[57] This is not aligned on any known feature and the reason for the arrangement is uncertain.

13.5.4 Silting and the water level

The grey silt in the lake [AJ22] appeared to consist largely of finely divided material which was highly soluble in hydrochloric acid. It seems likely that this material was precipitated from solution within the lake. In the past most of the water in the river came from chalk springs at Croydon and Waddon. The water would have had a very high concentration of calcium and carbonate ions. When the water is in the open air it tends to loose carbon dioxide, and calcium carbonate is precipitated. The lake was quite shallow and would probably warm significantly on a hot summer day which would speed precipitation partly through evaporation and partly because carbon dioxide is less soluble in warm water.[58]

The top of layer [AJ22] was more or less level. As the banks sloped and the depth of water was not uniform the layer would only have a level top when the water surface was the factor stopping deposition. This suggests that the margins of the lake seen in AJ were more or less totally silted by the time that they were filled. If this is correct water level in the lake would have been close to the top of [AJ22]. This was 0.12m above the base of the lake edge wall which was at 33.95m OD so water level was around 34.07m OD.

13.5.5 The chronology of the early eighteenth century garden

The brickwork and bonding allows the eighteenth century garden walls to be divided into at least two clear groups as shown in section 12. Most of the boundary walls around the central and south garden are laid in English or some more irregular bond. The curved wall at the eastern end of the central garden, the ornamental northern side of the Orangery and the walls in the north garden are laid in Flemish bond.

The bricks can be divided into three groups. The first is 58-59mm thick, another is 63-64mm and a third is 66-67mm. The thin bricks are very similar to those used to build the Stone Court mansion house in Carshalton around 1700 and can also be found in the surviving areas of eighteenth century facing of Carew Manor which probably date from about 1710-12. The thickest bricks were used to construct both sides of the Orangery wall. This can be closely dated. The wooden orangery was still standing in May 1717 when Richard Rawlinson visited Beddington to fill the gaps in Aubrey's History of Surrey. The brick orangery had been built by 1721 when it was mentioned in the diary of John Evelyn, baronet.

The earliest walls appear to be the westward continuation of the line of the Orangery wall and a short north-south aligned section of at the northeast end of the central garden (figure 102 B-C). The foundation of the first of these was exposed in trench CE. The brickwork rested on foundation of mortared chalk rubble. It was aligned with the north side of the orange house which was created in the Elizabethan period. It is likely that there was a Tudor wall on the site, perhaps resting on the chalk foundation and the wall may have been rebuilt about the same time as the house – around 1710-12. The second section of early wall is more anomalous. It may have been part of the eastern boundary of the early eighteenth century garden. If so, the other early structures have gone leaving it without a context.

The second group consists of the wall between Crispin Crescent and the garden and the wall along the south side to the east of the Orangery.

[57] The channel was realigned during the flood alleviation work.
[58] Pentecost 1991.

The third group consists of the Orangery wall, the stub of wall at the western end of the Orangery, the south wall of the east lake, the curved wall at the end of the garden and a short east-west section in the northeast corner of the central garden.

The layout suggests that the Orangery wall, the lake and the curved bank were fitted into a pre-existing walled garden which was not symmetrical with the axis of the house – hence the irregular shape of the north side of the central garden.

However, the width of the lake appears to have been about twice the distance between the lake edge and the south boundary wall. This might suggest that the lake originally occupied half the width of the eastern garden, except that the existing northern boundary wall is too far north. However, the curved wall which closes the east end of the garden is not symmetrical. If the northern boundary wall originally extended west from wall C-D in figure 102 the east end of the garden would be symmetrical and the lake in the centre occupying half the width as shown in the reconstruction plan (figure 103). This arrangement may be supported by Roque's map of Surrey (figure 1) which shows the eastern end of the north garden extending further south than the western end. However, Roque's map is small scale and lacking in detail and there is no evidence that there was ever a formal garden to the north of the eastern end of the central garden on the site of the present Crispin Crescent estate. At present there is not enough evidence to be certain which of these interpretations is correct.

13.5.6 The context of the early eighteenth century garden

The axial arrangement of the garden is typical of the late seventeenth and very early eighteenth century although the overall arrangement at Beddington is a compromise with the site's past and its topography. It was usual for a great house of the period to have a large forecourt at the front with the formal gardens at the rear and the park beyond with an avenue and possibly a canal extending into it. This arrangement was not possible at Beddington without re-orientating and probably rebuilding the house which faced west towards the park. The garden was on the east side and there was no space for an extended vista beyond it so the avenue and lake were created at the front where they ran westwards into the park.

The central garden on the east of the house was more or less rectangular with a curved extension on the eastern or outer edge. This shape is found in various French, Dutch and English gardens in the late seventeenth century.[59] The curved end often connected the formal garden to an avenue into the park so that it was visually open rather than a barrier. At Beddington there was not enough space for an avenue beyond the garden, so the view was terminated by a bank and a cascade – the latter made possible by the position of the river Wandle.

The brickwork suggests that the curved bank and lake were more-or-less contemporary with the brick Orangery which was constructed between May 1717 and November 1721. The arrangement seems rather old-fashioned for this date. The privy garden at Hampton Court was rectangular with a curved end. This was completed about 1701 for King William, but he was then about 50 and his tastes would have been formed many years before. The work at Beddington was more-or-less contemporary with Bridgeman's work at Carshalton House for Sir John Fellowes, the sub-governor of the South Sea Company. This was 2km away and it seems unlikely that Sir Nicholas Carew was unaware of it. It seems that he chose to look back to the past rather than the immediately fashionable.

[59] Jacques and van der Horst 1988 pages 11-2, 25, 31-2, 38, 48-9, 53, 56.

13.6 The minority and the 2nd baronet (1727-1762)

When the 1st Baronet died in 1727 aged only 41 his son, another Nicholas, was still a minor. The 1st baronet's widow re-married to William Chetwynd and they appear to have run the estate during the minority. We know little about the garden during the minority except that the orange trees died in the severe winter of 1739-40.

Nicholas, the 2nd baronet, came of age about 1741 and was soon in financial trouble. A letter of 1743 was concerned with reducing the costs on the garden

> S[r] Nicholas Carew Bart at ?
> near Cambridge 13 June 1743
> ...The purport of our conversation at Beddington turned chiefly
> on the Garden how to preserve the Simitry and take away some part
> of the Expense and in this we had the opinion of M[r] Harris who
> dined with us that day. Plantations which you seem to favour are
> condemned as making the view of the House too confined. Lawns had
> the prevailing influence which I beg to describe to you. It was
> thought advisable to cover the Graveled vista walk and those
> below it with a greensward from end to End, to level the two
> groves next the Bason of each side and to leave that standing
> next the North wall which answers the Elme hedges in the Upper
> quarters, to take down the Elme hedge in the orchard and plant
> thereon Espaliers and fill the orchard full of Fruit trees and to
> clean the drying ground of weeds but anything we talked on must
> wait on your approbation and appointment. Hahaws or any division
> with paling are condemed for it is not supposed anything can
> feed in the Garden therefore no need of seperation ...[60]

We do not know what economies were made. The 2nd Baronet had inherited an Orangery with dead trees. At some subsequent point the south side of the Orangery was demolished but it is not clear whether it was done immediately. All we know is that the structure had been reduced to the surviving north wall by 1820.[61]

13.7 The garden after 1762

We know almost nothing about the garden between the death of the 2nd baronet in 1762 and the enclosure award map of 1820 (figure 2). The map is supported by two views. The first is a drawing by John Buckler showing the southeast corner of the house in 1827. The other is a print by John Nash showing the east front and gardens in the 1830s (figure 104).

[60] Berkshire Record Office D/EL1 C1/240.
[61] Phillips 2013 p. 52-4.

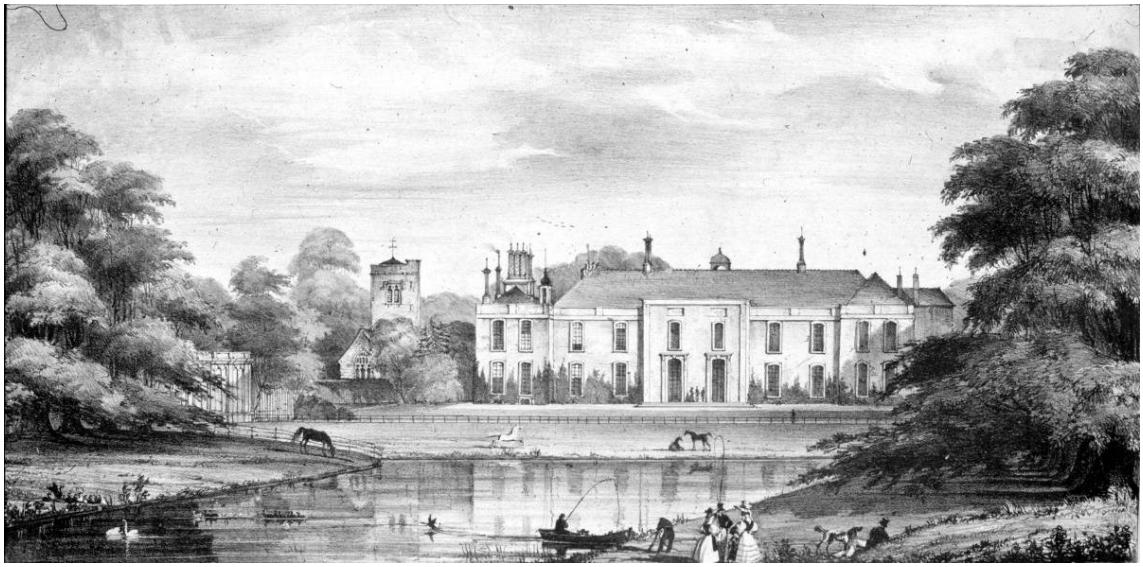


Figure 104. The east front of the house by John Nash in the 1830s.

These show that the garden had been grassed over and that the edges of the east lake had been filled in to give it a more natural shape. The tithe award map of 1840, the first edition 25 inch Ordnance Survey map of 1868, and the second edition of 1897 show a great deal of stability. The Orphanage grew vegetables in the area south of the Orangery wall and on both sides of the east lake. The lake gradually silted up and by 1896 it was little more than a river channel.

The twentieth century has not been kind to the site. A factory was developed on the land to the east of the south garden. After the Second World War the Crispin Crescent Estate was built to the north of the east end of the garden. We do not know if these areas were part of the former gardens. A swimming pool was built for the orphanage on the northeast corner of the east lawn in June 1933. It survived until the 1960s.[62] In the 1960s the river was diverted around the south end of the bank at the end of the central garden and the cascade went out of use and fell into decay. In 1990-1 the river was re-graded and a flood pond was constructed in the east end of the former garden destroying much of the south wall of the former east lake. In addition to this the whole area has been subject to great deal of vandalism. The Orangery wall has suffered terribly despite numerous repairs by the local authority and many sections of boundary wall have been damaged or demolished.

[62] Shew 2012 p. 358-9.

14 THE FINDS

14.1 Coins

Layer [CE3]

- Penny. 1900.

Layer [CE18]

- Roman base radiate. 260-73.

Layer [CF10]

<40> Part of coin Charles I copper rose farthing with sceptres below crown. Oxford 1644.

14.2 Pottery

Layer [CD1]

Stoneware

- White with hand-painted blue and white decoration on the exterior. Base angle. 5g.

Post-medieval redware

- Glazed inside, sooted exterior. 1 piece, 4g.

Flower pot

- Rim. 1 piece, 4g.

Transfer print

- Straight-sided storage jar. White with '…E', oak leaves and acorn on exterior in black.

Layer [CD2]

Stonetware

- Scrap. 1g.

Flower pot

- Rim. 1 piece, 6g.
- Wall sherds. 2 pieces, 10g.

Transfer print
- Cup handle with blue and white decoration. 6g.

Modern white
- Rim from straight-sided jam jar. White. Vertical fluting on exterior.
- Plain white. 11 pieces, 16g.

Layer [CD6]

Tin-glaze
- Cup rim? Mottled manganese on the outside. Some manganese streaking on inside rim but most of the inside glaze missing. 2g.

Uncertain
- Unidentified object of fine white pipe-clay. A scrap, 1g.

Layer [CE1]

Saxon
- Reduced. Voids for temper - vegetation? Scatter of rounded and angular quartz up to about 1mm. Also a thin scatter of small pale inclusions and a few dark red ones. Handmade. 7 to 8mm thick. 12g

Transfer print
- Blue and white on one side, white on the other. 5mm thick. 2g.
- Part of deep lid. White glaze with grey-green decoration on rim. 6g.

Layer [CE2]

Stoneware.
- Light grey-brown. Glossy one side, rough the other. 4 to 6mm thick. 12g. 18th century or later.

Porcelain
- Rim of a small pot. White both sides. 1g.

Transfer print
- Plate? White body. White glaze one side. Green flower pattern on white on the other side. 1g.
- Base angle sherd from a plate. White body. White glaze one side. Brown printed leaf on white glaze on the other side. 1g.

Modern
- Very large bowl. Dark brown body with small light spots. Clear glaze on exterior. Off-white glaze on interior. 12 pieces, 218g. 19th or early 20th century.
- Base of a jar. White body with white glaze on both sides. 10 joining pieces, 54g. 19th or early 20th century
- White fluted body glazed on both sides. 2.5 to 3mm thick. 1g. Modern.
- Rim sherd. White body with white glaze. 2.5mm thick. 1g. Modern.

Doubtful date
- Rim sherd. Red sandy body. Inside eroded.

Layer [CE3]

Surrey white ware
- Jug shoulder. 3g.

Post-medieval redware?
- Very heavily burnt with burnt deposit on interior. 7g.

Flower pot
- 6mm thick. 1 piece, 10g.

Layer [CE4]
Flower pot
- Rim sherd with brick red body with dark surface. Perhaps flower pot. 6g.

Layer [CE5]
Post-medieval red ware
- Scrap. One side reduce with spot of glaze. 1g.
- Red body. Dark brown glaze on inner side. Dark surface on outer side. 5.5mm thick. 1g.

Staffordshire white salt-glaze
- Thin wall sherd. 1g.

Uncertain
- Red oxidised surface with lighter core. Moderate quartz of mixed colour under 1mm. Occasional grog. Faint grooves about 2mm wide on one surface. Other surface rough - flaked? 5 to 6mm thick. 5g.

Layers [CE5] or [CE6]
Flower pot
- Red oxidised body 5.5mm thick. 2g.

Layer [CE7]
Medieval
- Pink body mostly oxidised - a reduced patch in the core in one place. Moderate rounded quartz up to 1mm. Thickness 3 to 5mm. 2g.

Stoneware
- White with raised ribs around the exterior. 5g. 18th century.

Post-medieval redware
- Rim of a mug. Red body with dark brown glaze. Two grooves on exterior. 3mm thick. 3g. 18th century.

Layer [CE8]
Shell-tempered (date uncertain)
- Reduced core, oxidised surfaces. Much shell temper. Thin scatter of quartz. 5 to 7mm thick. 6g.
- Reduced. Much shell temper. Thin scatter of small quartz. 1g.
- Mostly oxidised. Patchy reduction particularly towards one surface. A little shell temper and many voids. Thin scatter of small quartz. 7 to 8mm thick. 4g.
- Oxidised surface. Patchy reduction in core. Shell temper. Thin scatter of small quartz. 6mm thick. 2g.

Layer [CE9]
Prehistoric
- Dark brown - grey. Coarse with scatter of sparkling quartz. Dark brown inclusion 4mm ironstone? Flint up to 4mm. 12mm thick. 4 joining pieces, 29g.
- Fabric similar to above but contains moderate amount of ironstone. Flint smaller and less frequent. 5g.

Roman
- Reduced - sandy but fairly smooth surface. 7mm thick. 12g.
- Reduced - surface looks pimply. Much quartz up to 1mm. 4 to 5.5mm thick. 3g.

Early Saxon

- Hard - reduced. Quartz of mixed size up to 1mm - almost all rounded and mostly dark in colour though some red and some clear. Moderate amount of dark red-brown inclusions probably grog but possibly ironstone. A few small white inclusions. One or two scraps of flint? 5mm thick. Impressed band with stamped reverse S below. 5g.

Early or mid-Saxon

- Rim sherd - evidently handmade. Reduced black body except on outside where shallow zone oxidised to a dirty brown. A few voids in section where temper has been leeched out. 7mm thick. Thin scatter of tiny sparkling quartz. 11g.
- Similar to above but wholly reduced. 4 to 6mm thick. 3g.

Early Medieval (10th-12th century).

- Rim sherd. Reduced core oxidised surface. A few pieces of shell tempering and many voids where tempering has been leeched away. Occasional grains of quartz. Body 6mm thick. 4g.
- Three sherds. Reduced body and oxidised surface. Moderate quartz rounded and of mixed colour. Occasional white inclusions. One sherd has part of rim. Thicknesses 6mm, 6mm and 5mm. Wheel-thrown. One sherd has striations where the grits have been dragged through the wet clay. 19g.
- Reduced grey core. One surface reduced and darker than core. Other surface oxidised - pinkish. Moderate amount of quartz - more than sherds above - a white inclusion. 6mm thick. 4g.
- Reduced dark grey. Moderate sand. Occasional flint. Up to 6mm thick. 11g.
- Brown rather greyish body with scatter of conspicuous white angular flint up to 2mm. 7mm thick. 10g.
- Oxidised red surface reduced core. Scatter of quartz, a little grog? and shell. One surface is smooth with fine horizontal lines - evidently made on a fast wheel - other surface more uneven. Sherd has corner joining rim or base at about 45 degrees. Thickness varies 5 to 7mm. 7g.
- Body reduced except for one surface which is slightly oxidised. Feels sandy but grains not conspicuous under the lens. A few white inclusions (shell?) 3 to 4mm thick. 4g.
- One surface oxidised, one reduced. Reduced side very black - much darker than core - perhaps sooted. Much rounded quartz of mixed size up to 1mm. 5mm thick. 1g.
- Reduced grey-brown. Quartz grains - some red. A little flint up to 3mm. 6 to 8mm thick. 5g.

London type ware (late 12th or 13th century)

- Reduced core, oxidised red surface. Patches of glaze on exterior. Some quartz of mixed size up to 1.5mm. 4mm thick. 5g.

Uncertain date

- Reduced light grey - one surface darker grey - 4.5 to 6mm thick. Scatter of rounded quartz and also of voids from which something has been leeched. A few pieces of chalk (?) up to 3mm, flint and some red grains - ironstone. Shell-tempered ware uncertain date. 4g.
- Reduced. Most of shell leached out. Angle sherd. 5mm thick. 4g.

- Reduced core. One surface oxidised. Other surface oxidised but heavily sooted. 7mm thick. 5g.
- Reduced body. One oxidised surface. Other not preserved. 1g.

Layer [CE11]

Early to mid-Saxon

- Black. Scatter of small quartz. Grass or straw impressions on exterior. 3 to 5mm thick. 5g.

12th century

- Two sherds from vessel with sagging base. Dark brown core with moderate quartz and some red inclusions. Thin black surface on both sides. 8g.

13th century

- Spouted bowl. Reduced core, brick-red oxidised surface with patches of glaze on exterior. Rim sherd with part of spout. London ware. 13th century. Form is not in Pearce et al 1985. 11g.
- Rim sherd of bowl? Reduced core. Thin oxidised layer on surface with thin white slip. Some glaze on exterior. 4g. c1250 - c1350.

Uncertain date

- Reduced. Inside grey-brown, outside heavily sooted. Rounded quartz with scatter of red inclusions and also a few angular white inclusions (flint?). 4 to 6mm thick. 3g.
- Reduced body with grey-brown surfaces. Gritty appearance partly from quartz and partly from a black opaque slag-like-looking substance. There is more quartz on the inner surface and more of the black material on the outer. 4 to 6mm thick. 4g.
- Red oxidised body - one side darker - slightly reduced. Much rounded and angular quartz up to 2mm. Scatter of red inclusions. Slight striations caused by inclusions during shaping. 9mm thick. 19g.
- Red oxidised on one side, grey core, other side dark grey. Much quartz up to 2mm. A few red inclusions. 5mm thick. 8g.
- Reduced, black. 7mm thick. 2g.
- Three assorted tiny scraps. 1g.

Shell-tempered ware of doubtful date.

- Four pieces. Brick-red when oxidised with occasional tiny sparkling quartz. Most of shell leeched out. 8, 6 and 5mm thick with reduced core and oxidised outside. Other sherd a thin scrap. 8g

Waster or crucible

- Light grey body. One surface rough and irregular. Other smooth and covered with a light brown glaze of uneven thickness. Glaze crazed. Body below the glaze partly vitrified. About 7mm thick. Perhaps a waster or part of a crucible. 4g.

Layer [CE12]

Late Bronze Age

- Shell-tempered ware. Oxidised interior, lightly reduced exterior, core patchy. Shell up to 5mm. Rounded grey inclusions to 3mm. Rim more or less square. Thickness 8 to 10mm. 4g. Possibly late bronze age.

Roman

- Almost flat, 9mm thick. Body oxidised brick red, moderate sand, scatter of grog, sparse flint up to 2mm. One surface grey presumably reduced but zone less than 0.5mm thick. Other surface less red than the body. 26g.
- Worn and rounded. Reduced body with purplish oxidised outer surface. Original thickness greater than 10mm. 7g.
- Reduced. moderate quartz. 7mm thick. Well rounded. 4g.

Early to mid-Saxon

- Flared rim sherd from a pot. Smooth reduced black body. A little shell tempering and voids where more has been leached away. Sparse fine quartz. 5g.

- Rim sherd - fabric similar to the above but without the shell. 2g.
- Dark brown body heavily reduced on outside. Body 11mm thick has a gritty feel. Scattered quartz. White inclusions (shell or chalk?) up to 4mm. 5g.
- Rounded, reduced, shell tempered, 5 to 6mm thick. 2g,
- Reduced. Inside has voids where inclusions have been leached out. Outer surface grittier with some voids. Total thickness 6mm. 2g.
- Reduced smooth black body with scatter of fine quartz. Thin lighter slip on outer face. Worn, rounded. 3g.

Early medieval

- Almost flat. Fabric sandy so surface feels rough. A little grog. Occasional scraps of shell? Core reduced. One surface well oxidised the other slightly oxidised. 5mm thick. 7g.

11th century

- Two sherds from a large cooking pot. Probable waster. Grey over-fired body with traces of vitrification on the surface. Some shell tempering and a scatter of quartz grains. Many voids where temper has been leeched out. 48g.

12th century

- A rim and a body sherd of a cooking pot. Reduced except for a thin oxidised layer on the surface which is rough due to a large number of quartz grains in the fabric. 2 pieces, 12g.

Pre-wheel-thrown hard grey ware

- Reduced light grey exterior, dark grey interior. Outer side covered with separate layer of finer clay about 2mm thick. This has small dark grit and clear quartz. Sparse ironstone and very small grains of some light brown material. Dark probably diagonal line on the exterior - uneven width 3-4mm wide - presumably decoration. Possible part of another wider line about 11mm from it. Inner side is rougher - quartz up to 2mm - some ironstone. Total thickness 8 to 12mm. Very little curvature - obviously from a large vessel. 28g. Late 12th century.

Shell-tempered ware of uncertain date

- Seventeen pieces and scraps. 78g.
- Lump of shell-tempered material possibly from a loom weight. 40g.

Uncertain

- Six assorted scraps of pottery too small to identify. 3g.
- Reduced - hard. Rounded quartz - various colours - wide size range up to 2.5mm. Thickness 3 to 6mm. 3g.

Layer [CE13]

Roman

- Oxidised core, reduced exterior. Light zigzag pattern on one side. Much sand below 1mm. 4mm thick. 2g.

Saxon

- Reduced, black except for slight oxidisation on one surface which is dark brown. Scatter of small quartz. Voids for larger temper. 6mm thick. 1g.

Layer [CE18]

Prehistoric

- Grey-brown. Conspicuous scatter of angular flint up to 3mm. Thin scatter of quartz and rounded brown grains. 9mm thick. 8g.

Roman

- Base angle at about 45 degrees. Inner side oxidised. Rest reduced. Sandy fabric soft red inclusion. 4g.

Early to mid-Saxon

- Rim sherd. Reduced shell-tempered body with oxidised outer surface. 8mm thick. 3g.
- Reduced black. Voids for (grass?) temper. Thin scatter of small quartz. 4-6mm thick. 2g.
- Reduced black. Thin scatter of small quartz. 6mm thick. 3g.

Mid-Saxon

- Reduced. A fair amount of sand with a scatter of larger rounded quartz up to 0.75mm. Occasional flint up to 5mm. Surface has a number of irregular shallow depressions about 1mm wide and up to 7mm long. Some of these are filled with white material. 19g.

Early Medieval

- Reduced core. Oxidised surface. Shell temper and voids. 7mm thick. 8g.
- Reduced except for one surface which has patchy oxidation. Much rounded quartz of mixed size of which some is coloured. Scatter of red inclusions. 7 to 8mm thick. 14g.
- Oxidised red surface. Reduced grey core. Scatter of small shell mostly under 1mm and voids for more. Rounded quartz gives sandy feel. 5mm thick. 8g.
- Reduced grey-brown except one surface which is grey. Rounded quartz up to 2.5mm though most under 1mm. 4.5 to 6mm thick. 7g.
- Scrap from junction of base and side. Reduced grey with thin pale red oxidised surface. Much rounded quartz up to 1mm. 2g.

Doubtful date

- Handmade. Reduced on one side, oxidised on the other, core patchy. Voids presumably for shell. 7 to 8mm thick. 4g.
- Handmade. Reduced. Shell temper and voids. 5mm thick. 4g.
- One side reduced other oxidised. A little shell and many voids. 9mm thick. 5g.
- Fast wheel. Reduced core, oxidised surface. Some shell and many voids. Striations on one surface where inclusions have dragged in clay while the pot was on the wheel. 4g.
- Fast wheel. Red oxidised surfaces with reduced core. Occasional piece of shell and many voids. 5mm thick. 3g.
- Handmade? Oxidised body. Some shell and some voids. 3 to 7mm thick. 3g.
- Reduced except for some oxidisation on one surface which is bubbly and partly vitrified. 4 to 8mm thick. 2g.
- One surface oxidised, rest reduced. Voids for temper. 4 to 6mm thick. Too small to be certain how made. 1g.
- A scrap with shell and voids. Oxidised surface, reduced body.1g.
- A scrap. Patchy oxidisation. Shell and voids. 5.5mm thick. 1g.
- Tiny scrap. Oxidised. Voids for temper. 1g.
- Reduced dark brown. Much quartz ranging up to about 0.5mm. Piece of ironstone? Occasional flint up to 3mm. 5.5 to 8mm thick. Possibly made on slow wheel. 24g.
- One side oxidised rest reduced. Quartz of mixed size up to 1mm, mostly rounded,

some clear and some coloured. Voids on reduced face where some sort of tempering has been leached out. Hard. 8mm thick. 8g.
- Reduced dark grey except for a thin oxidised layer just below the outer surface. Moderate quartz. 8 to 10mm thick. Somewhat rounded. 13g.
- Soft red body with angular flint. Rounded. 2g.
- Reduced body, one surface oxidised red, other brown. Sparkling quartz and darker sand size grains. Occasional shell. Some voids. 4.5mm thick. 2g.
- Reduced core. Surfaces brown slightly oxidised. A few small white inclusions. Scatter of small voids where inclusions have been leeched out. 5mm thick. 3g.
- Reduced grey core, dark grey surfaces inner one sooted. Rounded quartz. 3mm thick. 2g.
- Oxidised. Rounded. 7 to 9mm thick. 6g.
- Reduced except for one surface which is oxidised pale red. Rounded quartz of mixed size and colour up to 1mm. A piece of shell or chalk 4mm. 3.5 to 5mm thick. 2g.
- Oxidised on 1 surface rest patchy. Rather porous sandy-looking surface with a scatter of quartz. 9mm thick. 9g.
- Reduced core. Pale red oxidised surfaces. Much quartz of mixed colour up to 1mm. Noticeably high proportion of larger grains. 5mm thick. 1g.
- Flake. Reduced dark grey one side and dark brown on the other. Much quartz.
- Scrap of red pot or tile.1g.
- Reduced core, oxidised surfaces. A few small pieces of shell and small voids. 2g.

Layer [CE23] Top of gravel at N end of trench.
Doubtful shell-tempered
- Reduced except for one surface which is oxidised. Some shell and also voids. 7mm thick. 1g.

Unstratified
Doubtful shell tempered.
- Reduced. Some shell and also voids. 6mm thick. 5g.

Layer [CF1]
Earlswood
- Reduced body with red oxidised interior. 5mm thick. Uneven green glaze on exterior with three darker incised lines at right angles to each other forming three sides of a rectangle 20mm across. 5g.

Porcelain
- Tea cup handle. White. Two joining sherds, 3g. 19th century.
- Curved with high relief decoration on the exterior. 2 joining sherds, 4g. 19th century.

Transfer print
- White interior, blue and white decoration on exterior. 5g. 19th or 20th century.

Flower pot
- Wall. 2 joining pieces, 17g.

19th and 20th century
- Rim of bowl or cup. White on both sides. Large fluting on exterior. 2 joining pieces, 3g. 19th or 20th century.
- White on both sides. 2g. 19th or 20th century.
- Rim of plate or saucer. White with pink band round the interior rim with three gold lines below it. 2g. 19th or 20th century.

Uncertain

- Pale buff 4 to 7mm thick. 2g.

Layer [CF2]

Post-medieval redware

- Brick red rim - probably from a plant pot. 10 to 14mm thick. 42g.19th century?
- Wall sherd 9mm thick. Unglazed. 11g.
- Base sherd. Flat bottom with turning marks a splashes of glaze on the interior. 10 to 14mm thick. 13g.

Stoneware

- Straight-sided jam jar. Light grey with darker brown band around the exterior of the rim. 8 joining pieces, 34g.

Porcelain

- Poor quality fabric, blue and white hand-painted decoration. 8 pieces, 16g. 19th or 20th century.
- Torso of a hunch-back figure in 'Jacobean' dress. 33mm high. The head appears to have broken off. There are pin holes for fixing arms and legs. 13g.
- Arm almost certainly for the above torso. Part of shoulder and hand missing. 1g.
- Base angle of cup. White undecorated. 2 joining pieces, 4g.
- Rim sherds, white undecorated, 4 pieces, 2g.

19th and 20th century

- Two joining base angle sherds from a straight-sided jar. White both sides. Vertical fluting on the exterior. Stamped '…W[?]CASTLE' on the base. Also a scrap of the wall. 43g.
- Three rim sherds and a base sherd from a white plate. 41g.
- White with purple decoration on the interior. Two joining rim sherds, 1g. 19th or 20th century.
- White on both sides. 27 pieces. 37g. 19th or 20th century.
- Oval handle. White earthenware with white glaze. Brown decoration on outer side. Probably from cup or small mug. 1g. 20th century.

Layer [CF3]

Stoneware

- Part of handle. 6g. London? 18th century?

Layer [CF4]

Medieval

- Small dark grey sherd with sooted exterior. 1g. 13th century or earlier.
- Moderately gritty. Reduced core. One surface oxidised red. Other surface has an area of oxidisation and may possibly be sooted. 6mm thick. 7g. 13th century or earlier.

Post-medieval redware

- Rim sherd from a large Woolwich jar. Decorated with big finger impressions. 123g. 1660-1700.

Stoneware

- Two joining sherds from a straight-sided jar. Part of the outside dark brown part light grey separated by a horizontal boundary. At the edge the dark brown seems to have permeated into the light brown. Inside medium brown. 3 to 4.5mm thick. Another sherd probably from the same pot. Light grey with patch of dark brown on exterior. 9g. 18th or 19th century.

Uncertain

- Red oxidised brick like-sherd 4mm thick. Possibly medieval - 13th century or later but may be post-medieval flower pot. 6g.

Layer [CF5]

Early post-medieval redware

- Grey core with oxidised exterior. 5mm thick. Outside undecorated. Inside partly covered with thin white slip and then the whole covered with thin uneven green glaze. 16th century. 7g.

Stoneware

- Mug handle attachment. Light grey with pale brown finish on interior. Raeren. 18g. Late 15th to mid-16th century.
- Grey. 4mm thick. Brown mottling on exterior. 2g. 17th century.

Tin-glaze

- Fine yellowish fabric, 2 joining scraps probably from tin-glazed pottery. 2g.

Uncertain

- Shell-tempered ware. Reduced brown core with red oxidised surface. 2g. 12th century or earlier.
- Red, partly reduced. Possibly tile. 2 pieces, 14g.
- Red body. Peg tile or Roman? 16g.

Layer [CF6]

Medieval

- Base angle. Light grey reduced core with oxidised surface. Splashes of green glaze on exterior. 5g. c. 13th century.
- More or less flat, gritty fabric, 6 to 7mm thick, reduced on one side, lightly oxidised on the other. 13th century or earlier. 20g.
- Gritty fabric, slightly oxidised core with reduced surfaces. 4 to 5mm thick. 13th century or earlier. 2g.

Border ware

- Red body. Brown glaze on interior. 17th century. 4g.

Post-medieval redware

- Sherd probably from a drain pipe. Red body 6 to 8mm thick. No glaze. Cement on exterior and interior but not on fracture. 50g.

Uncertain

- Shell-tempered. Reduced body except for thin oxidised zone on the outer surface. 9mm thick. 12g.

Layer [CF7]

Medieval

- Reduced grey, moderately gritty. Sooted exterior. 5mm thick. 12th or 13th century. 9g.
- One side oxidised, the other light grey-brown. Core grey brown. Moderately gritty. 6mm thick. 5g. 12th or 13th century.
- Red body with pink inner side. Thin green glaze on exterior. 4mm thick. 12th or 13th century. 3g.
- Reduced core with oxidised surfaces. White slip with glaze on inside. Scrap of unclear form. 2g.
- Smooth red oxidised body with uneven green glaze on exterior. Traces of relief decoration on glazed side. 4 to 6mm thick. 3g.
- Red with reduced core. Thin patchy glaze on exterior. 3g.

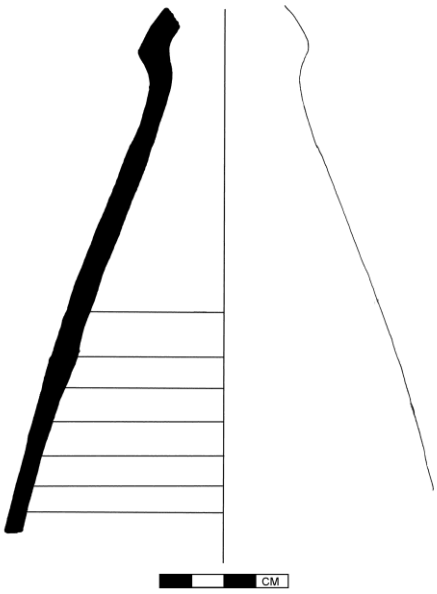
Border ware
- Yellow glaze on interior but not on the exterior. Possibly from the side of a chamber pot. 6g.

Redwares
- Unglazed 5 thick. Probably flower pot. 7g.
- Form uncertain. Red, unglazed with reduced core. Post-medieval? 10g.

Layers [CF8] or [CF9]
From mini section on the east side of the trench.
Medieval
- Cooking pot? White gritty body with sooting on exterior. 6mm thick. Surrey white ware? 8g.

[CF10] spit 1 and [CF7]

<50> Eleven joining sherds from the top of an alembic, three of which came from [CF7] and eight from [CF10]. Pale pinkish-brown body containing pink quartz. Interior has prominent wheel throwing marks and is covered with yellow glaze which is greenish around various bubbly defects. The exterior has a few small splashes of yellow glaze.



Layer [CF10] spit 1
Medieval
- Moderately gritty. 5mm thick. Slightly oxidised core with reduced surface. 3g.
- Moderately gritty. 5mm thick. Reduced core with slightly oxidised surface. Two joining pieces, 6g.
- Grey moderately gritty, light grey core oxidised surface, 4-5mm thick. 1g.
- Grey. 1g.

Earlswood
- Pink-red body 4mm thick. Green glaze on exterior. Interior slightly paler than body. Earlswood?

Surrey white ware
- Three joining pieces from the base and base angle of a cooking pot. Greyish white body. Uneven green glaze on interior. Splashes of glaze on the base. 14th or 15th cent. Probably not Cheam. 43g.
- Pale pink body 3 thick. No glaze. 2g.

Border ware
<118> Pipkin handle. White border ware. 17th century.
Post-medieval redwares

- Base angle sherd. Pink-red body with slightly reduced core. Dark brown glaze on interior and base. Side unglazed. 10g.

Stoneware

- Sherd from bulbous jug. Light grey body with darker brown patches on exterior. Light brown interior surface. Early to mid-17th century. 16g.

Tin-glaze

<3> Shattered yellow ceramic – probably tin-glaze body. 47 pieces, 42g.

<31> Body without glaze. 6 pieces, 10g.

<48> Sherd probably from a tile which has been shattered in situ so that it was together when found but disintegrated on excavation. The photo shows the sherd before excavation. 138 pieces, 87g.

- Fine yellowish earthenware, a scrap probably from the body of a tin-glazed vessel. 1g.
- Scrap of body. 1g.
- Pale blue glaze one side. 1g.

Layer [CF10]?

Tudor green?

- Rim from a small bowl. About 100mm diameter. 5g.

Layer [CF10] Spit 2

Roman

- Scrap of amphora or less likely red tile. 18mm thick.

Medieval

- Base angle sherd. Reduced grey with sooting on exterior. Medieval? Probably pre-14th century. 15g.
- Rim sherd. Reduced, grey. c. 13th century. 8g.
- Red body with pale brown surface coating which extends over the fractures. Dark olive-green glaze on exterior. Part of a boss. 5g. 13th or 14th century.
- Light grey. 3 to 6mm thick. Large black inclusion goes through the whole thickness of pot. Exterior has darker patches possibly sooted. 13g. Medieval? Probably pre-14th century.
- Grey with pale brown interior. Gritty with some shell temper. 5 to 6mm thick. 7g. Medieval? Probably pre-14th century.

Surrey white ware

<61> Part of a jug. Cheam - late 14th century.

- Buff fairly smooth 3 to 3.5mm thick. 2g. Surrey white ware?

Uncertain

- Reduced grey except for one side which is pale brown. About 6mm thick. Gritty with a few red inclusions. 7g.

Layer [CF10] from cleaning the surface of [CF12]
Medieval
- Base angle sherd from a cooking pot. 6mm thick moderately gritty. Grey exterior and core. Inner surface oxidised pale brown. Soot on exterior. 9g.
- Moderately gritty slightly oxidised body 3 to 4mm thick. Soot on exterior. 2g.
- Sherd from side of jug. Buff body with ridges from wheel turning on the interior. Dark red inclusions up to 6mm, olive-brown glaze on the exterior. 4mm thick. 6g. Late 12th - 14th century.

Layer [CF11]
Roman
- Wall sherd. Hard grey body. 6g.

Limpsfield
- Rim sherd from cooking pot. Reduced body, gritty. Some sooting on exterior. 14g. c. 13th century.
- Base angle sherd from a bowl. Reduced body. 18g. c. 13th century.

Earlswood
- Rim. Red body with buff surface. 6g.
- Base angle. Red body. Reduced exterior buff interior. 2 pieces, 8g.
- Wall sherds. Some buff slip on interior. Traces of soot on exterior. 2 pieces, 20g
- Wall sherd with traces of slip on interior. 9g.

London ware?
- Wall sherd. Red body, reduced care. Patchy olive-brown glaze on exterior. 6g.

Cheam
- Jug (?) wall sherds. Traces of glaze on exterior. 2 pieces, 23g.
- Jug (?) wall sherds. Sooted interior. Traces of glaze on exterior. 2 pieces, 20g.

Uncertain
- Smooth pale buff body 5 to 6mm thick. Grey sooted (?) interior.

[CF11]?
Earlswood
<51> Cooking pot rim. Late 13th or early 14th century.

[CF12]
Earlswood
- Base angle sherd - oxidised interior with reduced exterior. Splash of glaze on the base. Sagging base. 24g.

Kingston
- Jug rim sherd. Rib round the exterior 15mm below the rim. Uneven green glaze on the exterior, partial glaze on the interior. Late 13th to 14th century. 24g.
- Wall sherd. 1g.

Uncertain
- Large flake of pottery - exterior probably missing. Reduced grey body with oxidised interior. 30g.

[CF14]
Medieval
- Wall sherd, Grey gritty. 9g.
- Cooking pot. Grey sandy. Base angle and wall sherd. 31g. Probably c. 13th century

CF (Unstratified)

Surrey white ware.

- Uneven poorly-finished exterior with a few spots of glaze. 20g.
- Wall sherd. Appears to have been burnt after being broken. 18g.
- Wall sherd flake. Pinkish. 3mm thick. 3g.

Medieval

- Hard dark grey body with black exterior. 4mm thick. Wavy comb decoration on surface. 8g.

Layer [CK2]

Limpsfield

- Coarse Limpsfield ware? 3g.

Surrey white ware.

- Scrap. 1g.

Stoneware

- Mottled brown exterior. 2g.

Porcelain

- Hand-painted blue and white with traces of fine gold decoration on exterior and a green line on the interior. 7g.
- White porcelain nozzle. 3g.
- Minute white porcelain dish probably for a doll's house. 2 pieces, 3g.
- Neck of very small bottle with nick around the rim. 2g.

Flower pot

- Fragment of red unglazed fine-sandy fabric, probably flower pot. 8g.

Modern white

- Rim and 2 wall sherds, possibly from a jam jar. 6g.

Layer [CK3]

Earlswood ware

- Body sherd of jug with external white slip and spots of green glaze probably from a baluster or conical jug. 19g.
- Fragment of a strap handle with white slip and mottled green glaze from a large jug. 47g.
- Small body sherd of a jug, external white slip with green glaze. 1g.
- Two unglazed body sherds, coarser fabric than the glazed sherds; grey core, yellow-red margins and surfaces. Probably from cooking pots. 11g.

Kingston ware

- Very small body sherd, external green glaze; probably from a jug. 1g.

Limpsfield ware

- Body sherd; grey with dark surfaces; applied thumbed strip. From cooking pot. 38g.

Tudor brown

- Wall sherd. 8g.
- Rim from bowl. 23g

Layers [CK4], [CK5] and [CK6]

Earlswood.

- Cooking pot rim. 29g.

Layer [CK7]
Earlswood
- Jug. Green glaze over white slip. 2 pieces, 2g.

Layer [CK8]
Earlswood
- Six body sherd(s) of jugs with external white slip and mottled green gaze, probably from one baluster jug and possibly one globular jug. 14g.
- One fragment of strap handle, unglazed; from a large jug. 39g.

Kingston
- Body sherd, external green glaze and horizontal grooving; from a jug, probably small and globular. 4g.
- Body sherd, external green glaze and pink core and internal surface; possibly from another Surrey source. Worn. 2 joining pieces, 5g.
- Probably also two unglazed body sherds; probably from cooking pots. 7g.

Limpsfield
- Rim sherd (squared and hooked) and four body sherds (two join), all from cooking pots; grey with grey-brown surfaces, some have reddish margins. 42g.

Other
- Rim sherd of a bowl in fine-sandy red fabric with grey core. Spots of glaze on the interior below the rim. 23g.
- Body sherd of a jug in yellow-red fabric similar to Earlswood ware. External glaze is clear and shows brownish. Small patch of slip near one edge. 1g.
- Body sherd in unglazed sand fabric with reddish inclusions (grog?); grey core, brown surfaces. 8g.
- Rim sherd red body with patch of green glaze. Late medieval? 1g.

Layer [CK9]
Roman
- Grey with oxidised exterior. 9g.

Earlswood
- Rim and body sherd with external white slip and mottled green glaze (extending over inside of rim); from jug. 12g.
- Rim and small body sherd with external white slip; patchy green glaze on the rim. 4g.
- Ten unglazed body sherds, probably from cooking pots (could all be from the same pot); one has applied thumbed strip. 33g.
- Four unglazed sherds probably cooking pot. 21g.
- White slip on one side. 4g.
- Two sherds probably from jugs. 16g.

Kingston ware
- Four joining sherds, rim / handle of a jug (probably small, globular); mottled green glaze on both surfaces. 49g.
- Five joining body sherds, similar to and possibly from the same pot as above. 9g.
- Two rim sherds of different jugs (one may belong to the above). 8g.
- Three body sherd and five very small body sherds; all from jugs. 9g.
  All the above may be from only two jugs.
- Base angle sherd with internal mottled green glaze; probably from a bowl or cooking pot (seems to have pellets of pure copper in the glaze). 5g.

- Two joining unglazed rim sherds (squared everted rim) and two body sherds, all from cooking pots. 50g.

Limpsfield ware
- Fragment of rod handle in grey sandy fabric, patch of white slip; from jug. 23g.
- Wall sherd. 2g.

Other
- Rim sherd in red fine-sandy fabric with patchy clear (brown) glaze on the interior, red slip (?) on exterior. 9g.
- Wall sherd. Gritty red body with clear (?) glaze on interior. 12g. Medieval.

Layer [CK10]

Earlswood
- Slip and green glaze on one side. 1g.
- Handle attachment and body sherd. White slip with thin green glaze. Possibly Earlswood. 34g.
- Two unglazed wall sherds, Coarse Earlswood? 22g.

Kingston
- Glaze on one side. 1g.
- Trace of glaze on one side. 2g.
- Unglazed. 2g.

Cheam
- Dark green glaze on one side. 2g.

Other
- Grey with oxidised surface. Some small flint. 7g. Late Saxon or early medieval.

Layer [CK11]

Roman
- Grey sherd. 9g.

Earlswood
- White slip and green glaze. 2 pieces probably from jugs. 4g.
- Rim and wall sherd. Coarse Earlswood? 18g.

Kingston
- Scrap with traces of green and clear glaze. 1g.

Layer [CK12]

Kingston
- Two sherds with green glaze. 7g.

Layer [CK13]

Kingston
- Unglazed. Limescale on surface and fracture? 7g.

Other
- Pale red gritty. 4g.

Layer [CK14]

Earlswood
- Jug rim and 2 wall sherds. 12g.
- Coarse Earlswood. 23g.

Discussion of the pottery from trench CK

Date
The three main groups ([CK3], [CK8] and [CK9]) comprise mainly pottery that can be dated to about 1250 - 1350 (Earlswood, Kingston and Limpsfield wares). The other wares in these groups are a problem, as they appear to be later (15th- or 16th- century), but do not belong to any clearly identifiable types. Layer [CK3] also contained a clay tobacco pipe stem suggesting a late date (17th century). The smallest group, [CK2], contains only Roman and modern material.

Function
The forms represented in these groups are mainly jugs and cooking pots, with only one or two possible bowls. The ratio of jugs to cooking pots seems relatively high (although the groups are too small to quantify reliably); this may indicate a relatively high-status site.

Sources
The sources of the pottery are just what one would expect from a group dated about 1300; i.e. the most local sources of that date are well represented. The sources of the 'other' wares are unknown.

Layer [CL2]
Stoneware
- Brown exterior. Clear glaze on interior. 9.5mm thick. 10g.

Modern soft paste China
- White rim sherd. 2g.
- White glazed sherd. 2g.
- Mug or cup rim with cream glaze and traces of brown decoration. 2g.

Layer [CL3]
Stoneware
- Grey wall sherd. Clear glaze. 82g. 19th or early 20th century.

White porcelain
- White both sides. 3 pieces, 6g.

Transfer print
- Rim and base sherd from transfer print plate with floral decoration. 78g.

White soft paste China
- 2 pieces, 2g.

Layer [CL4]
Post-medieval redware
- Reduced grey both sides. 2 pieces, 8g.

Flower pot.
- Crudely-shaped rim with possible band of decoration on exterior. 10g.

White soft paste China
- White both sides. 2g.

Layer [CL5]
Post-medieval redware
- Rim, probably flower pot. 14g

Rim. Top of pot blackened. Patch of glaze on exterior. Probably flower pot. 40g.
- Wall sherd. Probably flower pot. 60g.

White soft past China.

- 3 pieces, 12g.

Layer [CL7]

- Pointed rim from large flower pot. Splashes of clear glaze. 31g.

Layer [CL8]

Flower pot.

- Wall sherds with dark surface. 3 pieces, 31g.
- Rounded rim sherd. 10g.

Layer [CL9]

Post-medieval redware

- Scrap with olive brown glaze. 1g.

Layer [CL10]

Shell-tempered ware

- One side oxidised the other reduced. 4g

Surrey white ware

- Base angle from a large bowl. Spotty green glaze inside. 21g.

Uncertain

- Scrap of redware with fine body and reduced core. 2g.

Layer [CL14[

Tudor brown

- Dark olive brown glaze.1g.

[CL] from north section

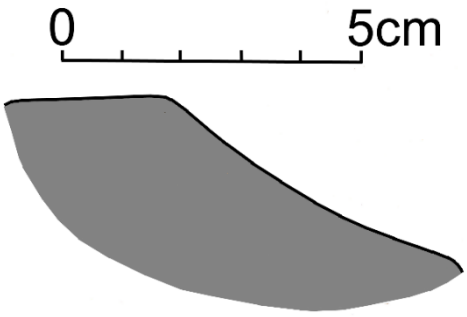
Flower pot

- Wall sherd. 21g.

14.3 Terracotta

Layer [CE8]

<6> Terracotta. Pale yellow ceramic with black flecks. Moulding probably from a window on the edge of a panel. 2 joining pieces, 294g. Probably 16th century.



Section through the moulding.

The surface.

The fracture.

14.4 Tobacco pipes

By Steve Morris

14.4.1 Bowls

The L series form numbers refer to Atkinson and Oswald 1969.

Layer [CD6]

<3> Pipe bowl. L9. 1640-70. Rouletted rim. Small spur. Bore 8/64in. 11g.

Layer [CE3]

- Stem with small foot marked RC. Bore 5/64in. 2g.

Layer [CF6]

<117> Bowl and part of stem. L9 1640-70. Large, so probably late in the range. Rouletted rim. Spur with no marks. Bore 7/64in. 20g.

Layer [CF7]

<122> Lower part of bowl and part of stem. Wide foot. Close to L10. 1640-60. No marks. Bore 7/64in. 12g.

Layer [CK2]

- Stem at junction with bowl with fluted decoration. Bore 4/64in. 2g.
- Scraps of bowl with foliate decoration. 3 piece, 1g. 19th century.
- Scrap of plain bowl. 1g.

Layer [CK3]

- Scrap of bowl wall. 1g.

14.4.2 Pipe stems

Context	Bore (64th in)	Pieces	Weight (g)
[CD3]	7	1	2
[CD3]	8	1 in 3 pieces	8
[CD6]	7	5	13
[CE1]	6	1	7

Context	Bore (64th in)	Pieces	Weight (g)
[CE2]	10	2	6
[CE3]	4	1	2
[CE3]	5	2	2
[CE3]	6	1	3
[CE4][63]	7	1	3
[CE5]	9	2	5
[CE7]	4	1	4
[CE7]	5	1	1
[CE7]	7	1	3
[CE8]	5	1	1 mouth piece
[CE9]	8	1	2
[CF3]	5	3	6
[CF3]	6	1	1
[CF4]	5	2	10
[CF4]	6	3	6
[CF4]	7	3	7
[CF6]	7	1	3
[CF7]	7	1	5
[CF10] spit 1	5	1	3
[CF10] spit 1	7	2	6
[CF10] spit 1	8	1	2
[CK1]	4/64	1	1
[CK2]	4/64	16	19
[CK2]	5/64	4	
[CK2]	6/64	6	
[CK3]	6/64	1	4
[CK8]	5/64	1	8
[CL5]	5	1	4
[CL10]	5	1	3
[CL13]	5	1	3

14.5Glass

Layer [CD2]

- Blue hexagonal bead. 1g.
- Base of clear moulded bottle. Bottom not flat. Possibly for salt or pepper. 22g. Modern.
- Clear curved glass. 2 pieces, 11g. Modern.
- Clear flat glass. 2 pieces, 1g. modern.

Layer [CE1]

- Green glass bead. Round but rather crudely shaped. 1g.

Layer [CE2]

- Green glass bead. Round but rather crudely shaped. 1g.

[63] [CE4] robber trench.

- Clear bottle glass. 6 pieces, 41g. Modern.
- Clear flat glass. 2g. Modern.
- Heavily patinated bottle glass. 2g.
- Clear bottle glass. Light patination. 3 pieces, 26g. 19th or 20th century.

Layer [CE3]
- Clear slightly green bottle glass. 4 pieces, 11g. Modern.
- Clear bottle glass. 4g. Modern.
- Flat, green tinted, slightly patinated. 2 pieces, 2g.
- Rim from clear thin walled (wine) glass. 1g. Modern.
- Green bottle glass. Heavily patinated. 8g.
- Green glass. Half, 1g.

Layer [CE4]
- Clear bottle glass. 8g. Modern.
- Clear flat glass. 5 pieces, 2g. Modern.

Layer [CE4] robber trench
- Pale green, patinated, probably from a bottle. 2g.

Layer [CE5]
- Flat, clear, 1g.
- Green wine bottle. Heavily patinated. 5g.
- Flat window glass. Slight blue tint some patination. 1 g.
- Clear bottle glass. 2g. Modern.
- Base angle from lime-green bottle. Art deco? 2g.

Layers [CE5] and [CE6]
- Clear bottle glass. 1g. Modern.
- Flat glass, lightly patinated. 1g.

Layer [CE7]
- Flat, green tinted, heavily patinated. 1g.

Layer [CE9]
- Clear bottle with light patination. 4 joining pieces. 20g. 19th or 20th century.
- Flat clear. 1 scrap, 1g.

Layer [CF1]
- Clear base. Milk bottle? Inscribed '…NITED'. 23g.
- Clear wine glass base. 7g. Modern.
- Clear glass ball 14mm diameter. Possibly a stopper. 4g. Modern.
- Clear flat glass. 2 pieces, 5g.
- Clear bottle glass. 10 pieces, 26g. Modern
- Thin curved glass. 5 pieces, 3g. Modern.

Layer [CF2]
- Clear wine glass. 2 pieces from base. 15g. Modern.
- Clear curved glass, possibly from wine glass. 16 pieces, 11g.
- Clear bottle glass. 9 pieces, 25g. Modern.

- Base and part of wall of pale blue glass bottle. Walls meet at angle of 48 degrees. Slight patination. 14g
- Base and part of wall of clear bottle. Walls meet at angle of 48 degrees. Slight patination. 4g.
- Curved black glass. 1g.
- Brown glass. 1g.
- Green bottle glass. 1g.
- Jar rim clear slight green. Patinated. 10g.
- Clear flat. 4 pieces. 2g.
- Thin opaque glass – possibly a lampshade. 1g. 19th or 20th century.

Layer [CF3]
- Bottle, pale green, heavily patinated. 2 joining pieces. 13g.
- Pale blue, flat 3.5 to 4.5mm thick. 3g. Modern.
- Rim of thin green glass bottle. Rim diameter 13mm. 1g.

Layer [CF4]
- Heavily patinated green bottle glass. 3 pieces, 26g.

Layer [CF5]
- Heavily patinated green bottle glass.7g.
- Patinated blue-green flat glass. 2g.

Layer [CF10] spit 1
- Flat almost wholly patinated. 1g.
- Flat, pale green. Patinated. 1g.

Layer [CK1]
- Clear wire-reinforced glass. 2 pieces, 6g.
- Clear glass. 4 pieces, 8g. Modern.

Layer [CK2]
- Wine bottle base angle. Dark green glass with heavy patination on one side. 44g
- Wine bottle. Third of the rim. Dark green glass. 8g.
- Clear flat, 1.5mm thick. 1g.
- Clear bottle glass. 2g. Modern.
- Scrap of clear glass with thin pale blue ribs. 1g.
- Opaque white glass. 1g. Modern.
- Pale blue glass bead. 12mm diameter. 2g.
- Pale blue glass bead. 5mm diameter. 1g.

Layer [CK4], [CK5] and [CK6]
- Square-section glass tube with round hole through the centre. Striated as if made of fibres welded together. Length 31mm. 1g.

Layer [CK8]
- Thin pale green curved glass. Patinated. 2 pieces, 2g.
- Two tiny scraps. Similar to above but too small to say if flat or curved. 2 piece, 1g.

Layer [CL3]
- Flat glass with no patination. Rounded corner. 2g. Modern

- Flat glass. 4 pieces with slight patination. 6g.
- Pale green bottle sherd. Patinated. 10g.

Layer [CL4]
- Slightly green, flat with thicker rounded edge. Possibly from a shallow dish. 2g.
- Base angle from clear bottle. 10g. Modern.
- Clear moulded 'cut' glass. Possibly the foot of a bowl. 22g. Modern.
- Wall sherd from clear slightly patinated bottle. 3g.
- Nearly flat heavily patinated sheet glass. 4g.
- Clear flat glass with light patination. 12 pieces, 13g.
- Clear flat glass without patination. 3 pieces, 18g. Modern.

Layer [CL5]
- Kick-up from wine bottle. Heavily patinated. 45g.
- Wall sherd. Heavily patinated. 7g.
- Flat, heavily patinated. 1g.

Layer [CL6]
- Clear flat glass. Slight patination. 3 pieces, 1g.

Layer [CL8]
- Flat clear with patination. 6 pieces, 8g.

Layer [CL9]
- Flat, clear, patinated. 2 pieces, 3g.

14.6 Brick

Brick is not included in this catalogue unless it had a surviving dimension or some unusual feature. The worked brick from [CF4] is described in section 14.7.

14.6.1 Bricks with surviving dimensions (mm)

Context	L	H	W	Fabric	Notes
[CF7]		65		SR	Overfired. Sooted surface. 149g.
[CF7]		56		SR	Overfired, glazed. Rough finish probably Tudor. 284g.
[CF7]		54		SR	Roud surfaces and rough vertical striation on the edge. Top possibly worn. 313.
[CE8]		58	113	SR	Rough finish possibly damage. Two joining pieces. Mortar on surface. 753g,
[CE8]		59		SR	333g.
[CF8] or [CF9]		64		SR	Smooth finish. Slightly overfired. From mini-section on E side of trench
[CF10] spit 1		59		SR	Rough finish. Possibly Tudor. 288g
[CL4]			112	SR	Bottom cut away? 976g.
[CL13]		64	106	SR	Overfired. Smooth finish. 918g.
[CL13]		64	106	SR	Overfired. Smooth finish. 500g.

Bricks in the wall [CF4]:

L (mm)	H (mm)	W (mm)	
242	53		
238	56		
230	59		
239	61		
	63		
	63	107	
	57	116	
	65	113	
	58	112	
	58	110	
	57	105	
	59	107	
	62	102	
	58	106	
	58	112	
	57	104	
	58	105	
240	64		
230	57		
237	53		
	58	110	
234	57	105	25th quartile
238	58	107	50th quartile
240	61	112	75th quartile
7	21	13	Number in sample

Bricks from the wall in trench [CL]

L (mm)	H (mm)	W (mm)	
	64	109	
230	65		
233	65		
	63	109	
225	62		
	60	108	
234	64		
	63	110	
224	63		
226	64		
	64	112	
231	62		
	62	106	
231	61		
	63	110	
228	64		
	64	112	

L (mm)	H (mm)	W (mm)	
228	65		
	66	107	
231	63		
	62	109	
233	62		
	61	110	
224	62		
	62	111	
231	62		
	63	109	
229	62		
	63	109	
191	61		
	61	110	
225.75	62	109	25th quartile
229.5	63	109	50th quartile
231	64	110	75th quartile
16	31	15	Number in sample

14.6.2 Bricks with unusual features

Layer [CD3]

<1> Bull-nosed soft red brick. Corner of the point with two flat faces and one curved one, all worked. 9g.

<2> Soft red brick. One flat face with tool markings and another possibly roughly worked face at an acute angle to it. 11g.

- Soft red brick possibly with surviving rough top. Underside worn into smooth curve. Possibly a paver. 246g.

Layer [CD3] high risk of contamination

- Scrap of yellow ceramic. Possibly paving brick, 1g.

Layer [CE2]

- Heavily overfired brick with glazed surface. 2 pieces, 90g.

Layer [CE3]

- Brick with pale red rather tile like fabric. 1 piece, 24g.
- Overfired. 7 scraps, 6g.

Layer [CE4]

- Overfired brick. 2 pieces. 32g.
- Firebrick – probably from the side of a hearth. 48g.

Layer [CE4] from extension to north side of wall.

<4> Fine bright yellow ceramic with rough surface and a rounded edge. 2 pieces, 88g. Possibly yellow stock but fabric too light and soft.

Layer [CE4] robber trench

- Overfired brick. 1 piece, 12g.

Layer [CE5]

- Heavily overfired brick with glazed surface. 1 piece, 14g.
- Overfired. 1 piece, 9g
- Brick with pale red rather tile like fabric. 1 piece, 133g.

Layer [CE7]

- Brick, heavily overfired with mortar and limescale on the surface and fractures. 1 piece, 60g.

Layer [CF1]

- Rubbed soft red brick. 4 pieces, 97g.
- Red brick. Harder than usual. One piece with Portland cement on it. 4 pieces, 49g.
- Soft red brick overfired. 6 pieces, 63g.
- Coarser red brick overfired, 4 pieces, 129g.

Layer [CF2]

- Hard red brick. 6 pieces, 96g.
- Soft red brick, rubbed, 2 pieces, 16g.
- Hard blue engineering brick with round-ended frog. Inscribed S… in frog. Height 67mm, width 111mm.

Layer [CF3]

- Rubbed brick.7 pieces, 172g.

Layer [CF4]

- Heavily overfired with some glazed surface. Rough surfaces with uneven thickness up to 58mm. 342g.

Layer [CF5]

- Fairly dense pale red body 50mm thick. Bottom rough. Top probably worn. Possibly a paving brick. 122g. Kept.

Layer [CF7]

<1> Overfired brick with glazed surface. 36g.

- Overfired brick with sooted surface. 2 pieces, 178g.
- Soft red brick with 2 surfaces at an angle. Smooth finished, possibly rubbed. 129g.
- Soft red brick with mould impression along the 2 surviving top edges. 158g. probably Tudor.

Layer [CF10] spit 1

- Scrap of overfired brick. Two surfaces at about 45 degrees to each other. 14g.
- Soft red brick with rubbed surfaces at an angle of about 38 degrees. 105g,
- Smooth finished soft red brick with curved rubbed surface. 184g.

Layer [CL4]

- Piece of Fletton brick. 15g.

Overfired brick from [CF10] spit 1

This layer contained an exceptional number of scraps of overfired brick. This was examined to see if could have been grotto decoration and whether it was sixteenth or eighteenth century.

- The following was recorded for each piece:
- Whether there was glaze on the surface. For the first 31 pieces this was only recorded as a yes or no. The remaining pieces were recorded as p for poor glaze, g for good or n for none.
- Whether any of the surface of the brick had survived.
- Whether the surface had a smooth 18th century look or a rough Tudor-looking one.
- The number of surviving corners
- Whether there is any mortar on the original surface.
- Whether there is any mortar on the fracture.

Eleven corners survived which at 8 corners per brick would equal 1.375 brick equivalents.

142 pieces had some surface preserved. Of these:

76	54%	had no glaze
41	29%	had poor glaze
7	5%	had good glaze
17	12%	had some glaze but the quality was not recorded

In one case it was uncertain whether it was glazed.

Eleven pieces had mortar on them. Of these 10 had mortar on the original surface. This is 7% of the fragments with surviving surface. Five pieces (2%) had mortar on the fracture.

Of the 142 pieces with surviving surface 140 were smooth and looked 18th century and 2 were rougher and looked Tudor.

A total of 65 pieces had some glaze on the surface. The quality of this was recorded in 48 cases. Of these only 7 (14%) had good glaze. If the brick was used to decorate a grotto good glaze would only be needed on one surface so the percentage is probably not inconsistent with this application.

Brick used to decorate a grotto would presumably have been mortared and it is likely that traces would survive on many bricks. Only 7% of the bricks with surviving surface had mortar. This would seem to be too low for a grotto but too high for unused discarded brick.

14.7 The worked brick from trench CF

14.7.1 Catalogue

This material is from layer [CF4] unless otherwise noted.
The allocation of top, bottom, end, and sides is often arbitrary.
The brick is soft red and has a smooth finish unless otherwise noted.

Find <4>
Corner with top and side moulded, end rubbed with striations, end moulded? Doubtful scrap of diagonal stacking mark. 25g.

Find <6>
Narrow strip across the width of the brick. Height 60mm, width 103mm. Maximum surviving length about 50mm. Cut from top to bottom across one side to a depth of 8mm evidently to start a fracture to break the brick. Part of a diagonal stacking mark on the other side. Rubbed on the top and bottom with score marks. The side without the stacking mark is also rubbed and scored. 356g.

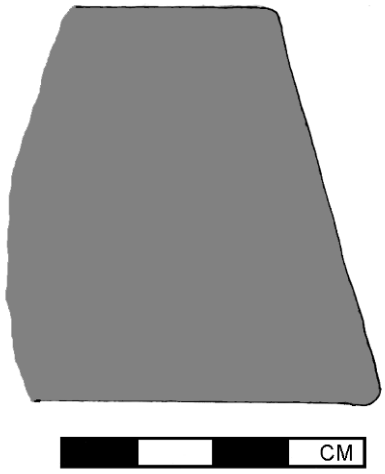
Find <7>
Fragment with a small length of preserved top and bottom. Height 61mm. Top rubbed with striations. Bottom and side moulded. 153g.

Find <8>
Part of the top and side. Striations on the top but not the side. 158g.

Find <12>
Small area of moulded surface. 97g.

Find <13>
Corner of brick with part of the top, bottom, one side and one end. Thickness 60 to 62mm. Top slightly hollow – possibly rubbed. End and side moulded. Bottom rubbed with striations and a shallow cut at an angle to the side. Traces of mortar on the fracture. 161g.

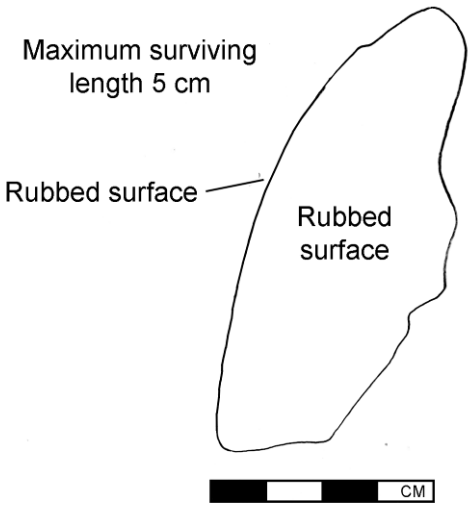
Find <14>
Parts of the top, bottom side and end all rubbed with striations. The end is cut at an angle of 74 degrees to the bottom. Thickness 54mm. Vertical score mark on the side which intersects the cut face. Angle similar to <70>. 170g.



Find <15>
Thin piece of cut brick. 20 to 22mm thick possibly with a deliberate taper. Top, bottom and side rubbed and striated. Traces of mortar on the edge. 35g.

Find <16>

Side and a curved surface with a diameter of about 160mm. No striations on the flat surface but possibly rubbed smooth. Curved surface smooth. Curve is the same as the <71> and the cut on find <94>. 113g.



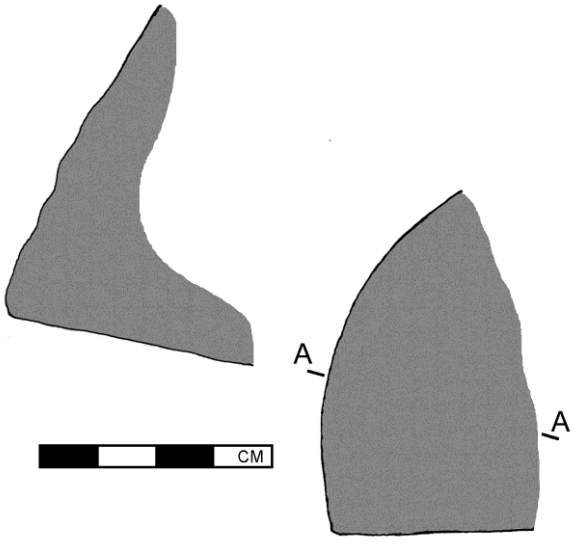
Find <17>

Part of the top, bottom and side all rubbed with striations. Height 61mm. Struck off at an angle of about 103 degrees to the side. 125g.

Find <18>

Bottom moulded. Side rubbed with striations. End roughly shaped into a tapering curve 90mm diameter on the edge if the brick. Possibly a core left from making something else. The drawing shows a section through the brick and a further section on line A-A. 114g

<18> The side

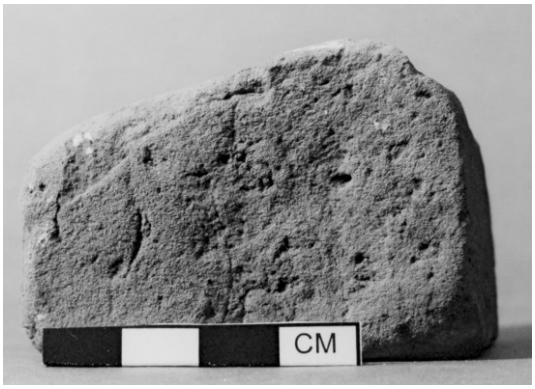


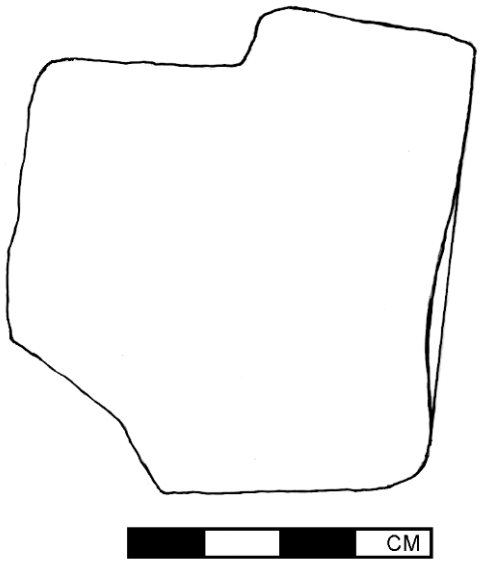
<18> Sections.

<18> The bottom

<18> The curved surface.

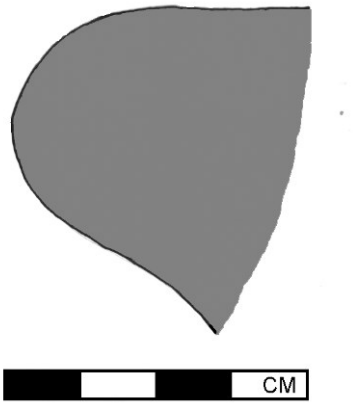
Find <19>
Part of the top, bottom, side and end. Part of the end is slightly concave, possibly from wear. Side and bottom moulded. Top rubbed with striations and is not parallel to the bottom. 138g.





Find <20>
Two joining pieces. Top moulded, edge rubbed with striations. Doubtful cut to start a fracture running across the moulded face. Bottom roughly finished. About 25mm thick. 78g.

Find <21>
Part of a rubbed roll moulding similar to the *astragal* moulding on the pilasters on the north side of the Orangery wall. Similar to Phillips 2013 figures 10 to 12. It is not an exact match as it is too deep at the bottom. 100g.



<21> Section.

<21> End

<21> Top

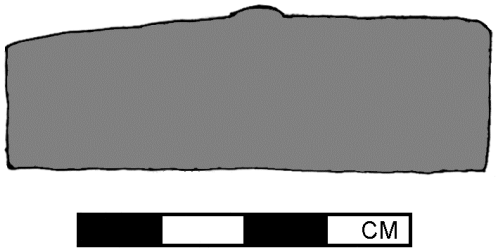
<21> Bottom

Find <23>
Top and bottom rubbed with striations. Side moulded. Height 60mm. 177g.

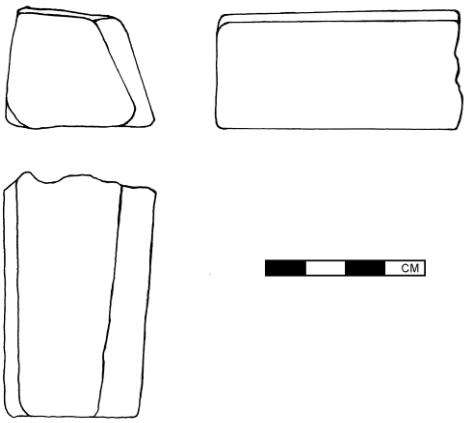
Find <24>
Corner of a brick. Side moulded. The end and part of the top rubbed and striated. 67g. Scale 5cm.

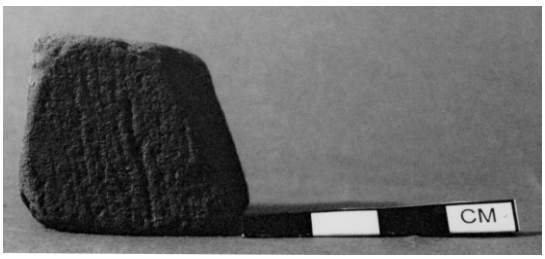
<24> Top

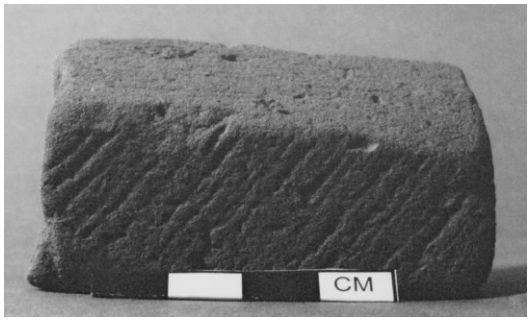
Find <27>
Thin piece probably cut from the end of a brick. Top rubbed with striations. End, bottom and side probably rubbed. Notch cut in one corner between the bottom and a fracture. A pair of saw cuts from either side which nearly meet in the centre leaving a ridge about 4mm wide from which a piece of angular flint projects. These cuts are parallel to the end. Possibly an off cut. 88g.



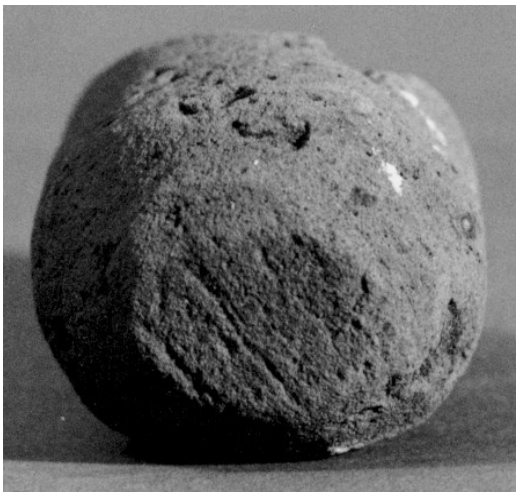
Find <28>
Rubber. Top, bottom, two sides and end all rubbed with striations. Height 30mm. Surviving length 65mm. 82g.







Find <29>
Piece of brick rubbed into a hone-like shape with a more or less oval section 29 by 36mm. 48mm long. End is rubbed to a blunt point with striations on the end.
Scale to the right 5cm.



Find <30>
Corner of a brick. Maximum surviving length of faces 43, 45 and 35mm. Two faces have moulding marks, the other rubbed with striations. 78g.

Find <33>
Rubber? Height 21mm. Maximum surviving length 44mm, maximum surviving width 30mm. Top, bottom, side and end rubbed with striations. The other two sides are breaks. Shallow (under 0.5mm) vertical cut mark on the side. This continues across the bottom but not the top. 38g.

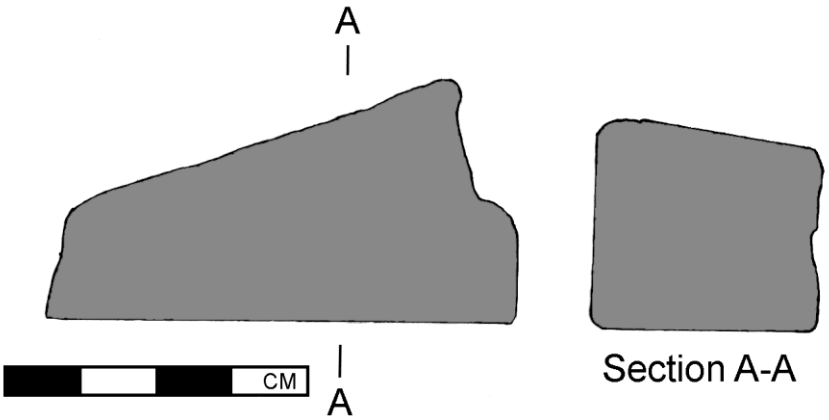
<33> Bottom and side

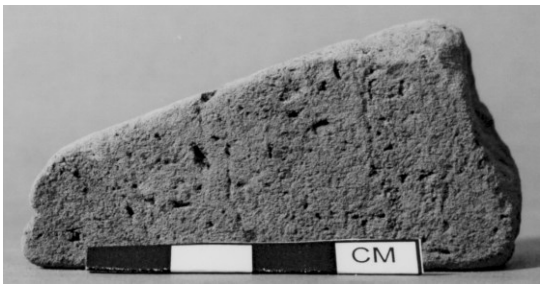
<33> Bottom

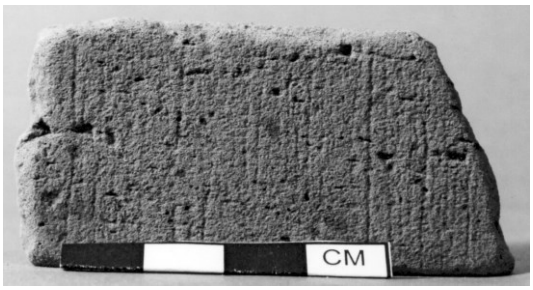
<33> End

Find <34>

Wedge-shaped piece of brick. The two faces would come to a point at an angle of about 21.5 degrees. Both rubbed and lightly striated. One side probably rubbed smooth, the other a fracture. Point and thick end broken. 60g.







Find <38>

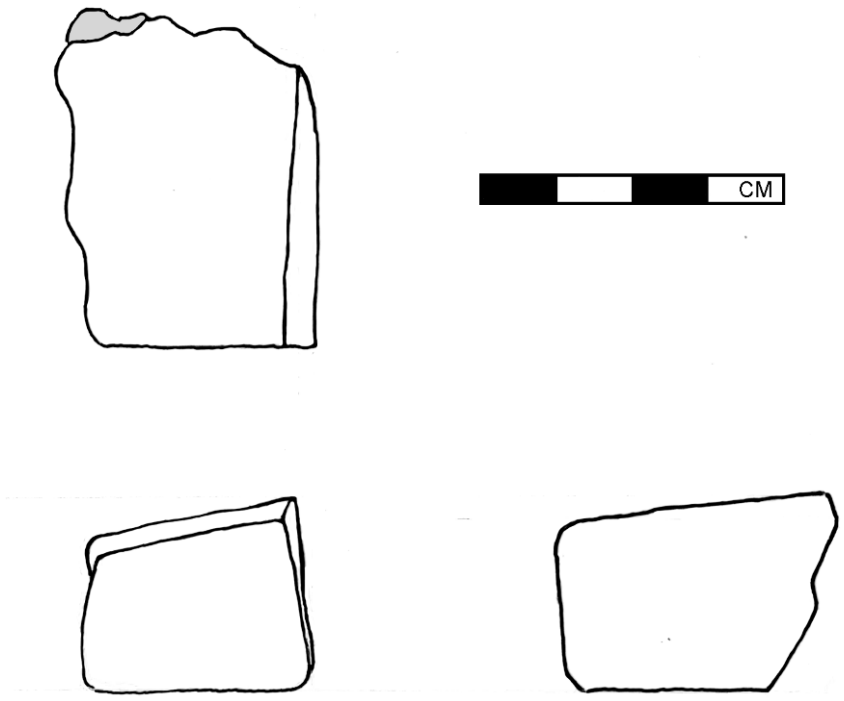
Corner of a brick, side and end rubbed and striated, bottom moulded. Top possibly roughly shaped. Maximum dimension of the faces 40, 34 and 28mm. Height increases from 20 to 24mm. 35g.

Find <39>
Corner of a brick, One face rubbed with striations, one face has clear moulding marks, the other has light marks probably from moulding. Maximum length of surviving faces about 18, 32 and 40mm. 39g.

Find <42>
Corner of a brick. Height 64mm. Small scrap of top preserved with possible edge nick. Two smooth sides. Bottom rubbed with striations. 61g.

Find <43>
Part of a moulded side or top. 33g.

Find <44>
Rubber. Top, bottom, side and end rubbed with striations. The other side and end are fractures. Maximum thickness 26mm. 44g.



<44> Top

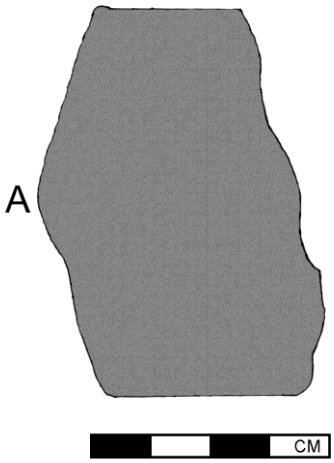
<44> Bottom

<44> Side

<44> End

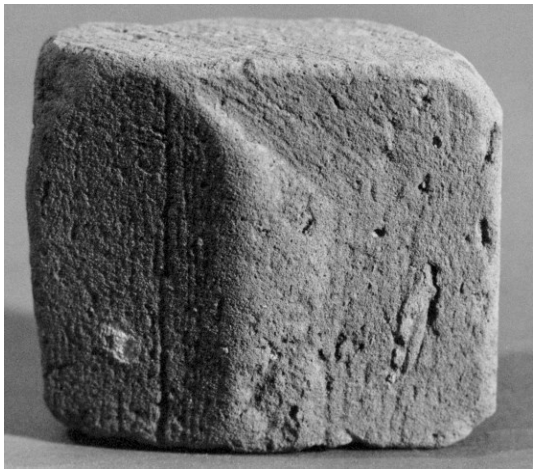
Find <52>

Side of a brick roughly cut to a blunt point. Rubbing marks on one face of the point, saw marks on the other which is not finished. Top moulded, bottom and end rubbed with striations. Similar to <53> and <70>. 191g.

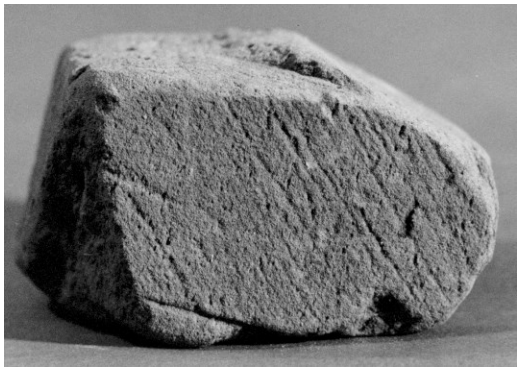


<52> Section

<52> Side A



<52> Side A



<52> End

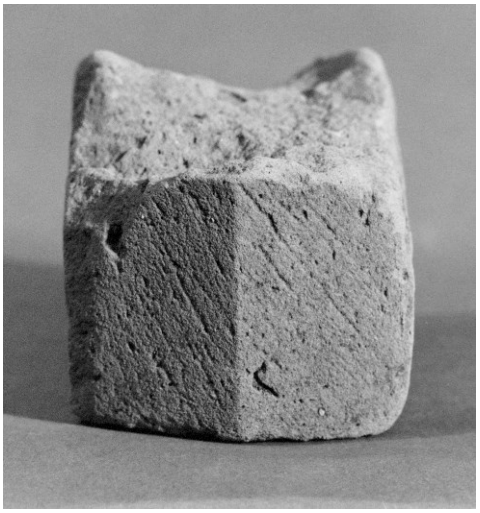
Find <53>and <70>

Two joining pieces from the end <53> and centre <70> of a brick. Height 64 to 66mm. Top moulded or rubbed smooth. Bottom rubbed with faint striations. The top has shallow uneven angled cuts across it both of which have formed the start of fracture. One is the fracture between <53> and <70>, and the other between <70> and a missing piece of the brick. The two cuts are more or less parallel, about 58 to 59mm apart, and at an angle of about 70 degrees to the edge of the brick. One side cut to a blunt point with an angle of about 146 degrees. The faces of the point are rubbed with striations apart from an area of fracture on <70>. Other edge rubbed with striations. Bricks of this shape are not present in the Orangery wall. <53> 511g, <70> 595g.

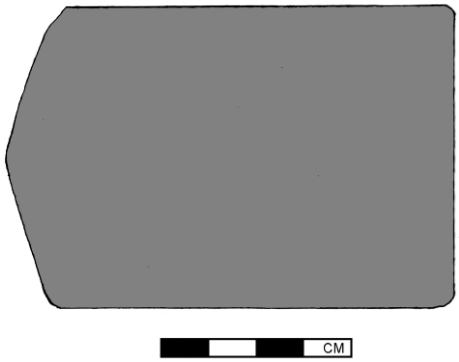
<53> and <70> cut side.

<53> and <70> top.

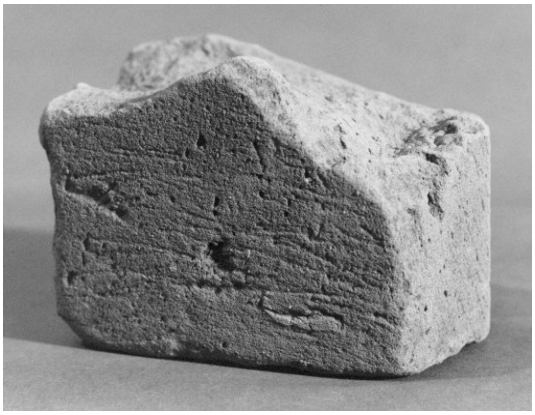
<53> and <70> bottom.



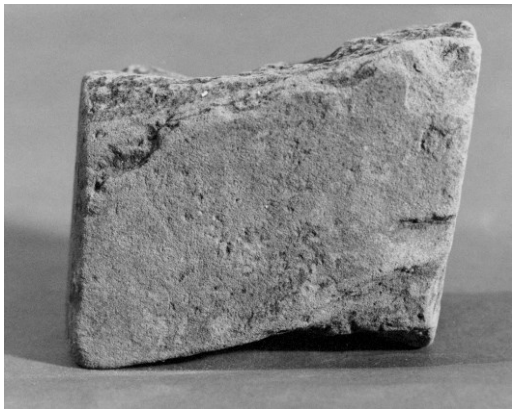
<53> cut side.



<53> section.



<53> bottom.



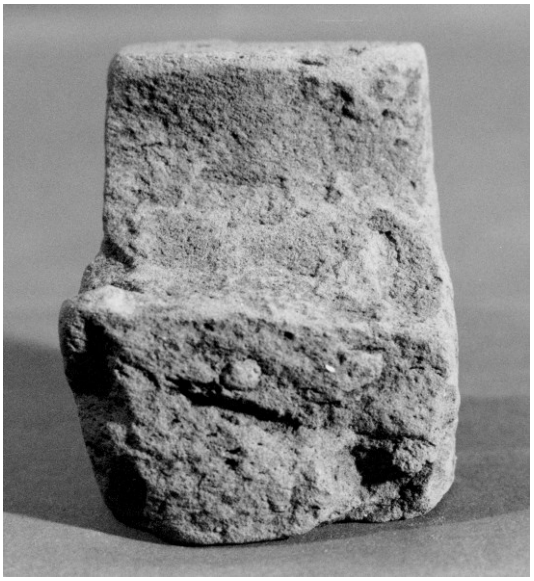
<70> top.

Find <54>

Corner of a cut brick. 45 to 49mm thick. Top has an undulating saw cut which ends in a fracture after 31mm. Bottom has a cut which ends in a fracture after 35mm. End and side rubbed with striations. A rough more-or-less circular cut out of the side about 50mm in diameter (not a saw cut). 218g.

<54> Bottom

<54> Top.



<54> Curved surface.

<54> Curved surface.

Find <55>

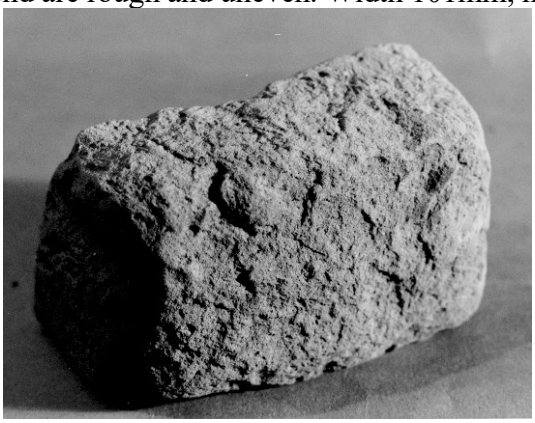
Cut brick 32 to 35mm thick. Bottom uneven with saw marks and striations. Top probably moulded. One end has been partially cut into a quarter roll moulding about 90mm diameter. The shape of this moulding is only clear on the edge as the rest is an irregular fracture, Curve similar to find <18> but shorter due to a fracture. One side moulded, the other a fracture. 223g.

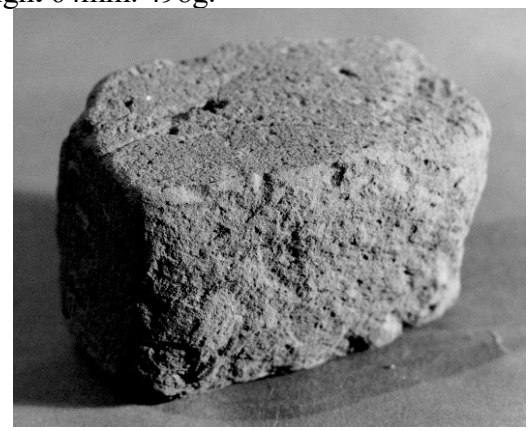
<55> Top with curved end to left.

<55> Curved end.

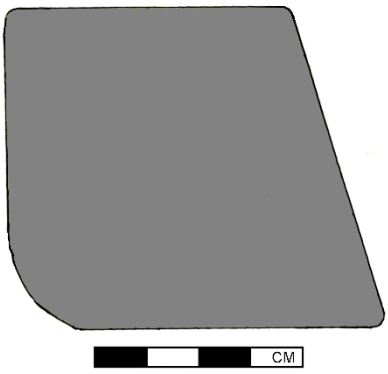
<55> Bottom.

Find <56>
Bottom and one side rubbed with striations. The other side smooth. End and most of the top end are rough and uneven. Width 101mm, height 64mm. 498g.





Find <57>
End of a brick. Height 61mm, width 95mm, maximum surviving length 72mm. One side moulded. Top, bottom, end, and the other side rubbed with striations. The other end has been cut at an angle of 74 degrees and has also been rubbed with striations. 514g.



<57> Section through cut end

<57> Side.

<57> Cut end.

<57> Top.

<57> Bottom.

Bottom of <57> with <16> resting on it.

Find <58>

Brick with angled cut across it from top to bottom. Top probably moulded although the surviving area is small. Bottom, side and cut face all rubbed with striations. The cut is at an angle of 73.5 degrees. Height 60mm. 113g.

Cut face to the left.

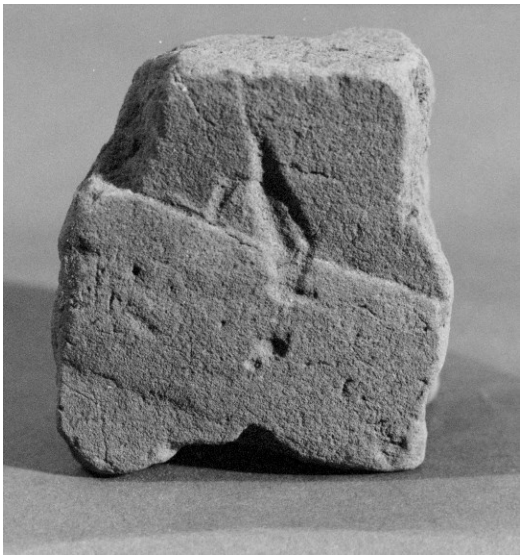
Bottom.

Find <59>

Top, bottom and side rubbed with striations. Those on the top are light. Height 61mm. 235g.

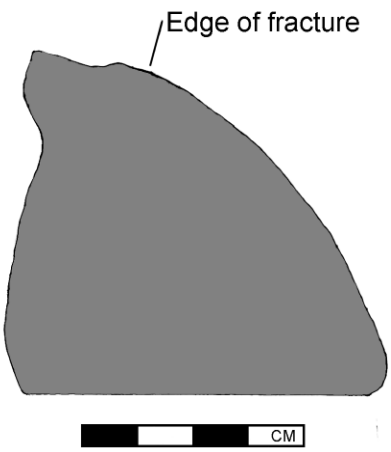
Find <60>

Top rubbed and scored. Bottom possibly rubbed smooth, side moulded. Well marked diagonal stacking mark 27mm wide. Height 64mm. 263g.



Find <70> see find <53>

Find <71>
Top moulded. End rubbed to a curve. Both edges rubbed with striations. Width 100mm. Height 58 to 59mm. The curved end is accurately cut to a diameter of 160mm and is similar to the mouldings on the pilaster capitals and cornice of the Orangery wall although these are thinner – about 49 to 55mm (Phillips 2013 figures 8 to 12). 438g.



<71> Section.

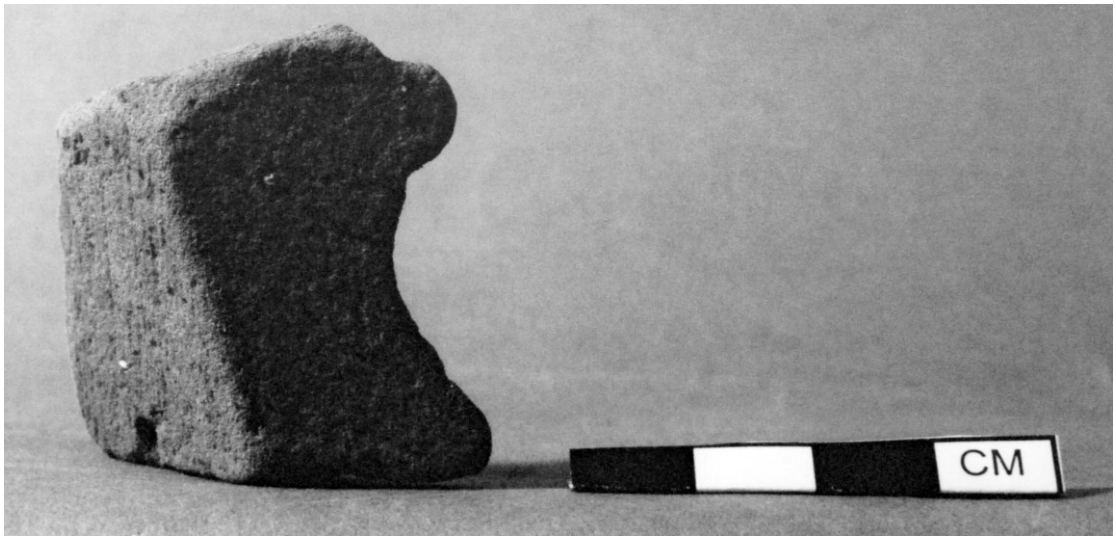
<71>

<71>

Find <72>
Corner of brick. One side at an angle of 115 degrees to the other. Back hollow. Possibly a rubber. 28g.
(Drawn scales 5cm).

<72>

<72>



<72>

Find <73>
Part of a soft red brick. Height 84mm, width 105mm. Near vertical hack stacking mark on one side close to the end. 981g.

Find <74>
Middle of brick with top, bottom and two sides. Height 49mm, width 103mm. Bottom moulded with an impact mark. The top has an incomplete angled chisel cut with setting out marks for it on the top and both sides. The cut marks are at an angle of 15 degrees on one side and 16 on the other. 688g.
(Scale 5cm).

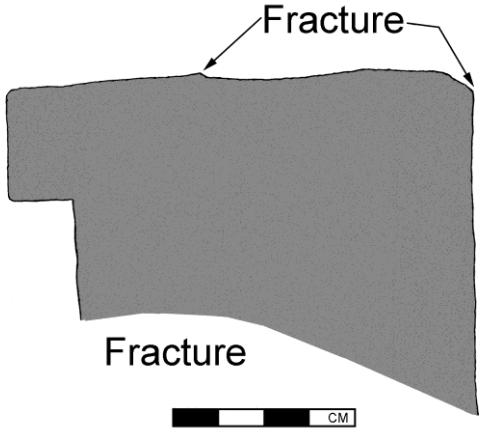
<74> Top and side A.

<74> Top.

<74> Top and side B.

Find <75>

Top and end moulded. One side rubbed with striations, the other cut as shown on the drawing. Surviving width 102mm. Possibly cut for the neck and cavetto of the Orangery wall capitals. 516g.



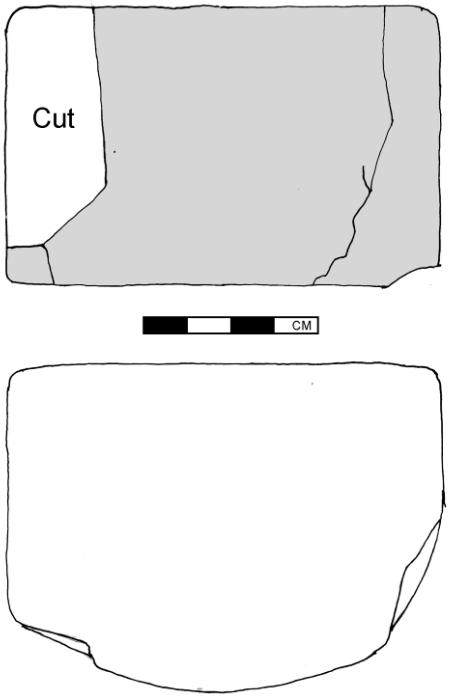
<75> Section.

<75>

Find <76>

End of a brick. Height 63mm, width 101mm. Angled cut across the side of the brick on the broken end. Cut has a depth of 20 to 25mm. Top bottom and the side with the angled cut rubbed with striations. 601g. (Drawn scale 5cm).

<76>

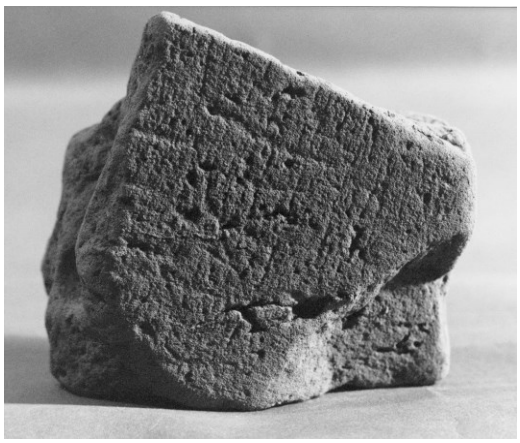


<76>

<76>

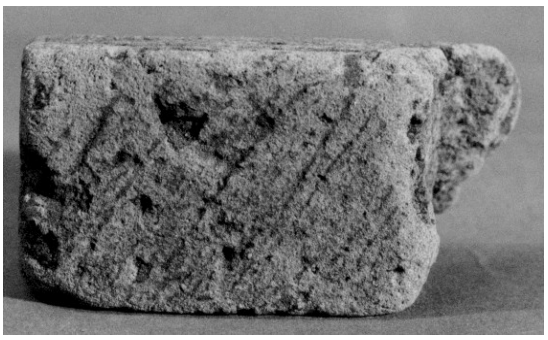
<76>

Find <77>
Corner of a brick with top, bottom, end and side. Bottom rubbed with some striations. Top lightly rubbed smooth but with some traces of moulding crinkles. Part of two sides, both moulded. Maximum thickness 42mm. 336g.



Find <78>
Brick rubber. Roughly square in section approximately 32 by 31mm. Maximum surviving length 68mm. Surfaces striated. 82g.

<78>

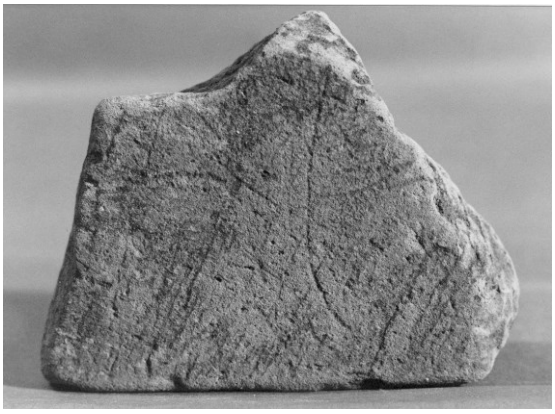


<78>

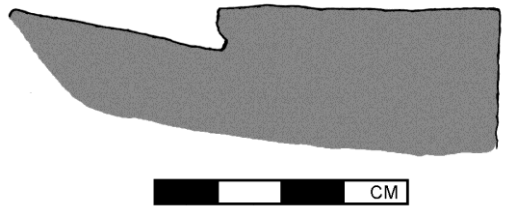
Find <79>
End of a brick. Height 68mm, width 98mm. Top slightly convex and probably rubbed smooth. Bottom rubbed and striated but has surviving moulding marks. One side moulded, the other rubbed with striations. 448g.

Find <80>
Piece of dark slightly overfired brick with an edge notch. Top, bottom and side moulded. Height 66mm. 222g.

Find <81>
Brick rubbed with striations on both top and bottom. One face the striations are both straight and curved. Part of one side which may be lightly rubbed but has clear traces of moulding. Top and bottom not parallel so the thickness varies from 31 to 39mm. 331g

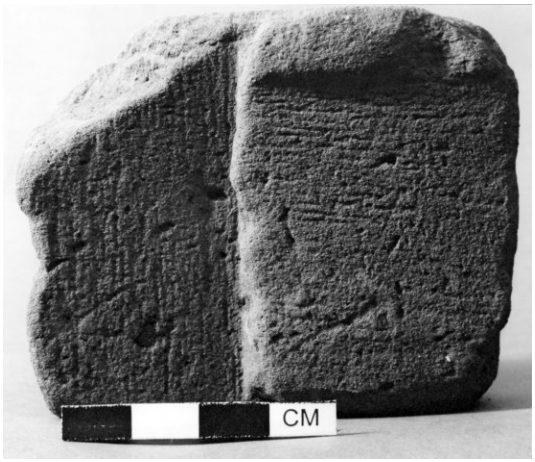


Find <82>
Bottom moulded or rubbed smooth. Top probably cut. Height 65mm. Part of the side has an angled saw cut in it. The other part has a saw cut running from bottom to top and ending in a fracture after 54mm. One end probably cut but possibly rubbed with striations. The two other faces are fractures. This could be a failed rough out for the *guttae* on the Orangery door (Phillips 2013 figure 5). 215g.



<82> Section through the best preserved part of the cut.

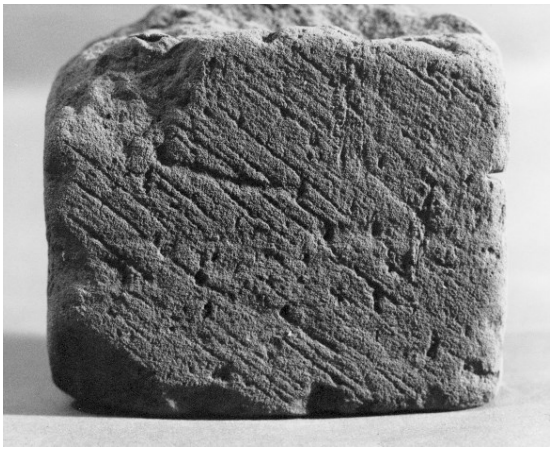

<82> Top.



<82> Cut side.

<82> Cut side.

Find <84>
End of a brick. Height 55mm, width 97mm. Top, end and one side are rubbed with striations. Bottom and possibly the other side rubbed smooth. Vertical cut mark on the striated side about 2mm wide and 5mm deep in 49mm from the end. 675g.



<84>

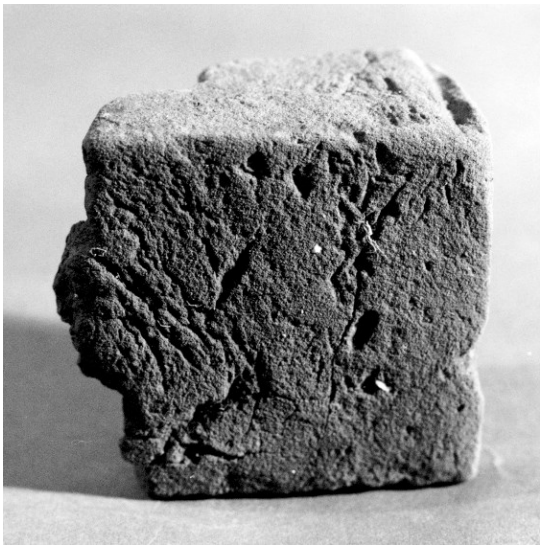
<84>

<84>

Find <85>
Corner of a brick. Height 60mm. Top and bottom rubbed with striations. Side and end moulded. 143g.

Find <86>
Corner of a brick. Bottom and one side rubbed with striations. Top and one side moulded. Height 66mm. 272g.

Find <87>
Corner of a brick. All surfaces moulded. Height 63mm. Edge nick. 232g.

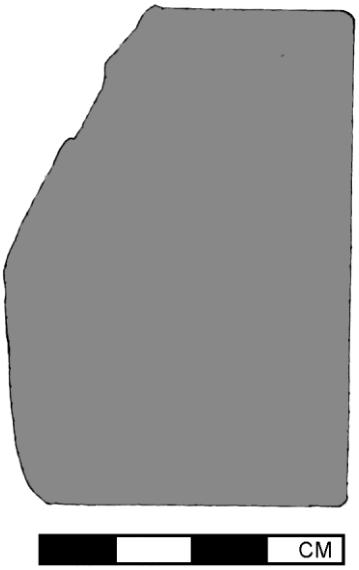


Find <88>
Top and bottom rubbed and lightly striated. Side moulded. Height 50mm. 222g.

Find <89>
Top, bottom, side and end all rubbed with striations. Height 61mm. One corner cut to a curve 160mm diameter. 249g.
(Scale 5cm).

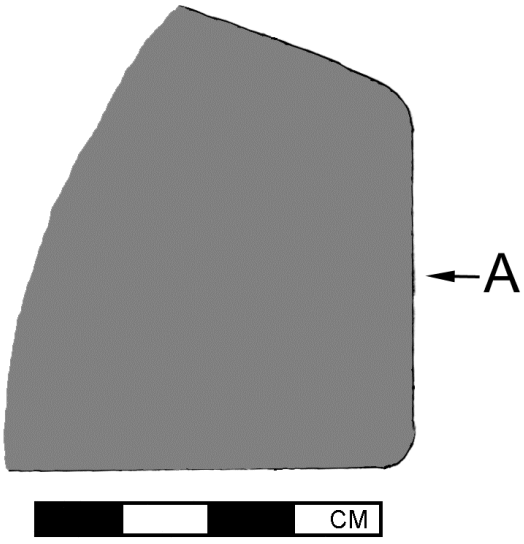
Find <90>

Four faces. Top and end rubbed with striations, side and bottom rubbed smooth. End not quite square with the top and bottom. Side has a straight break across it 36 to 37mm from the corner. Face opposite the side has been worked into a rough curve about 90mm diameter. 171g.
Curve similar to <18>.



Find <91>

Two joining pieces of brick with top, bottom, end and side and an angled face opposite the side all rubbed with striations apart from the side. Angle 111 degrees. Height 62mm. 175g.



The face marked ‘A’ on the section to the right.

Find <92>

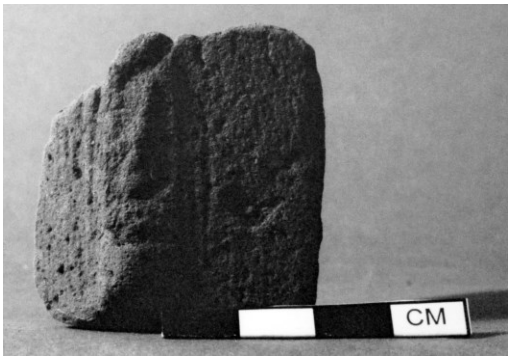
Top rubbed with striations. Bottom possibly rubbed smooth but uncertain as the surviving area is small. Side possibly rubbed smooth. Height 59mm. 289g.

Find <93>

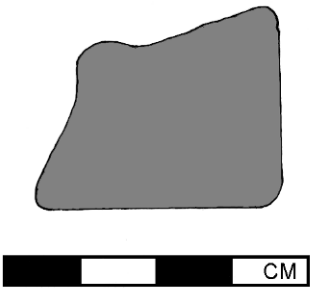
Top, bottom, end and side. Side and end moulded. Bottom rubbed with striations. Top cut at a shallow angle probably to both end and side. 159g.

Find <94>
Top (photo to the right) has an edge nick and is rubbed with striations. Side and end possibly rubbed smooth. Curved fracture on the side matches the curve on find <16>. 166g.

Find <95>
Off-cut or rubber? Four sides and an end. Two sides saw-cut and meeting in a break at the corner. One other side rubbed with striations and one moulded. One end moulded, the other a fracture. 42g.



<95>



<95>

Find <96>
Top bottom and sided moulded. Height 65mm. Edge indentation. Slightly overfired. 213g.

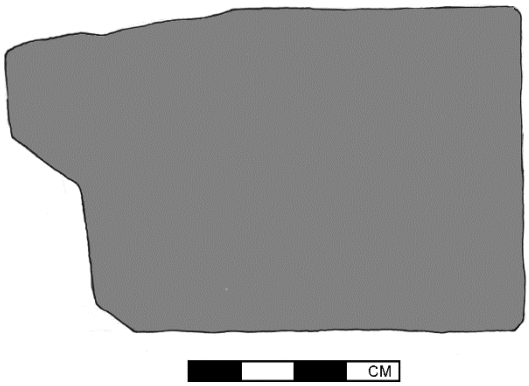
Find <97>
Top and end rubbed with striations. Bottom moulded. Side possibly lightly rubbed. Height 69mm. 185g.

Find <98>
Rubbed and striated on the top and one side. The other side may be lightly rubbed. Bottom is rubbed and has a saw-like cut mark about 1.5mm wide and 53mm long. The depth of this is uneven. The mark could not be made by an ordinary saw. Height 57mm. 282g.

The bottom.

Find <99>

End of a brick. Sides, end and bottom rubbed with striations. Height 61mm. One side has a rough chisel cut moulding on it. Setting out marks for a moulding which is close to those below the cornice on the Orangery pilasters (see Phillips 2013 figures 10 and 11). 391g.



<99> Section through cut.

<99> The cut.

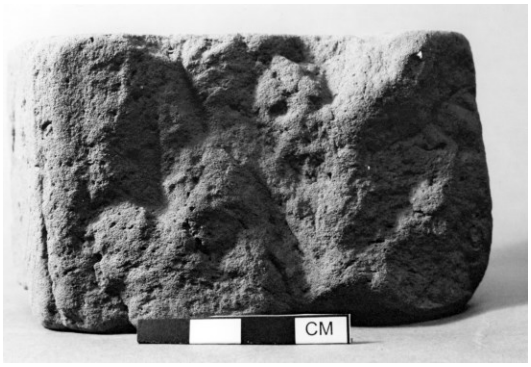
<99> Cut side to the right.

Find <100>

End of a brick. Bottom, end and one side moulded. Top and the other side rubbed with striations. Vertical cut mark on the rubbed side 40mm from the end. Cut mark on the top along the length of the brick parallel to and 23mm from the unrubbed side. Height 59mm. 476g.

Rubbed side with cut and fracture to the left.

<100> Top with cut mark parallel to, and 23mm from, the rubbed side.



<100> The cut (to the left) and fracture.

Find <101>
Sliver of brick. Small part of the top, bottom and side. Height 61mm. Maximum surviving length of the side 15mm. All 3 faces rubbed with light striations. There is a cut to a maximum depth of 15mm which runs from top to bottom on one of the broken faces. 44g.

Find <102>
Top rubbed with a few striations. End, bottom and one side rubbed with striations. The other side has a fairly smooth slightly hollow cut face without clear tool marks. Height 48mm, width 57mm. Mortar on the side and end. 216g.

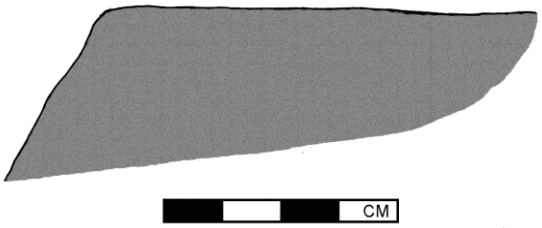
Find <103>
Part of top, bottom end and side. Height 38-42mm. Top and side rubbed and striated. The other side and bottom moulded. Top is scored and has three possible cut lines. 153g.

The top.

Find <104>
Corner of a brick. One face rubbed with striations, the other smooth. The fracture is hollow so that only the surface of the corner survives. 35g.

Find <105>
Strip cut across the side of the brick. Top bottom and side rubbed with striations. The two fractures across the brick start parallel to each other about 20mm apart. A cut on the bottom possibly made to start one of the fractures. Height 62mm. 110g.

Find <106>
Part of the top, bottom and side. Height 67mm. Bottom moulded, side scored, top probably smoothed but only a small part remains. A roughly-cut face at an angle of about 118 degrees to the side. 285g.



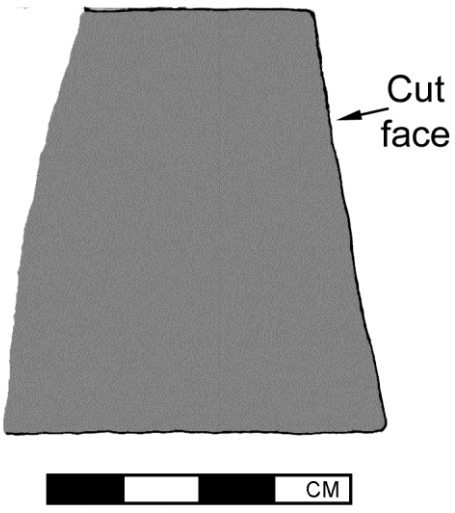
<106> Section.

<106>

<106>

Find <107>
Part of the centre of a brick. Height 58mm, maximum surviving length 22mm. Both ends look deliberately broken at right angles to the faces. Rubbing with striations on top, bottom and side. Mortar on the top and the fractures. 75g.

Find <108>
Corner of a brick with top bottom, side and end all rubbed with striations. Height 56mm. The end is at an angle of 80 degrees to the bottom. 166g.

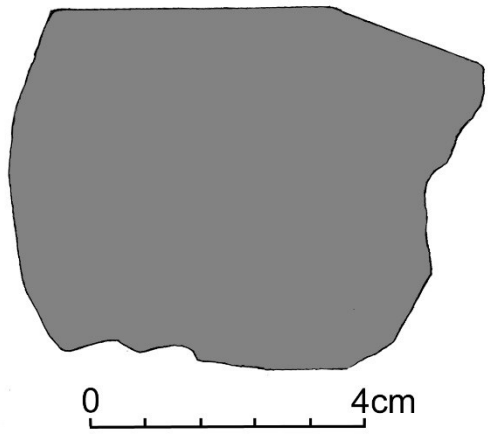


<108> The cut face.

<108> The side.

Find <109>
Three faces at right angles to each other. Top moulded, side probably moulded, end moulded. One end is a hollow fracture which was started by scoring the brick. 61g.

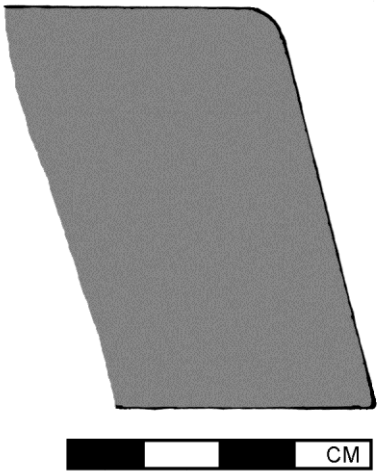
Find <110>
Corner of brick. End, bottom and side moulded. Top rubbed has a saw cut with a surviving length of 38mm. Top also adjoins a rubbed face cut at an angle of 159 degrees. Height 66mm. 228g.



<110> Section.

<110>

Find <111>
Top, bottom, side and cut all rubbed with striations. The cut runs from top to bottom and is at an angle of 75 degrees. Short curved score mark on the top. Height 53mm. 118g.

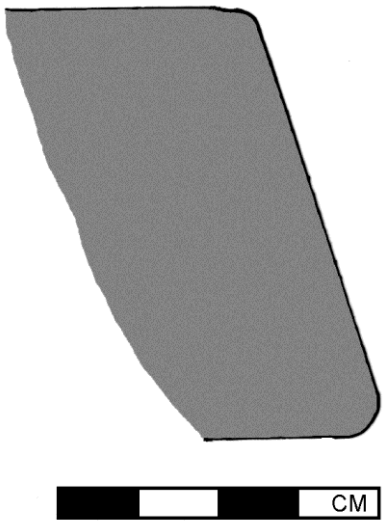


<111> Section

<111> Cut face with the top to the left.

<111> The side.

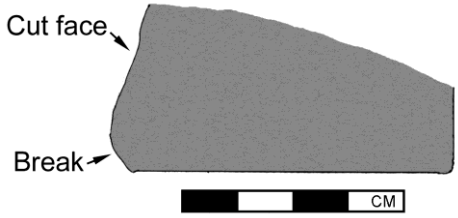
Find <112>
Part of the top and bottom with a cut across the thickness at an angle of 72 degrees. Height 52mm. Bottom and cut face rubbed and striated. The top may be moulded but only a small part survives. Possibly partly cut to a curve of 90mm. 106g.



<112> Section through the cut face.


<112> The curve with the cut face at the bottom.

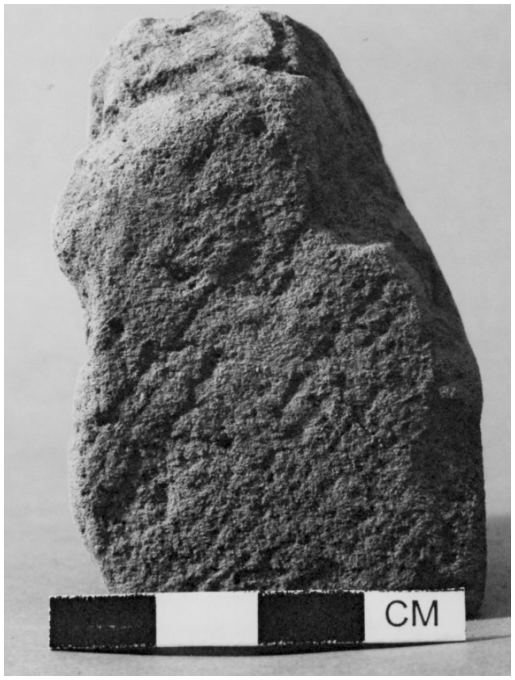
Find <113>
Top, side and end with a cut at an angle of 74 degrees opposite the end. Top and side moulded, end rubbed with striations. Angled cut uneven – possibly chiselled or sawn. 94g.



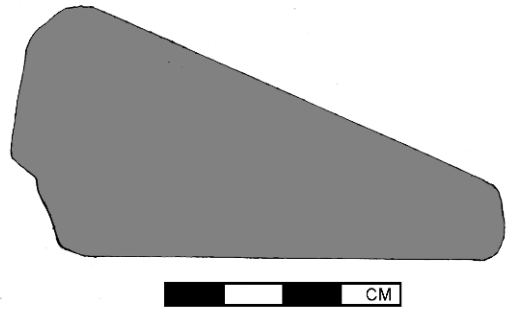
<113> Top with the cut face to the left.

Find <114>
Top, and side rubbed with striations. End and probably the bottom moulded. Height 61mm. 78g.

Find <115>
Corner of a brick. Top possibly rubbed. Bottom rubbed with striations. Edge rubbed with striations. End (or possibly the side) rubbed or cut to a shallow curve. 177g.



Find <120>
Wedge-shaped piece of brick. The point of the wedge is missing but the faces would have met at an angle of 23 degrees. Both sides rubbed with striations. One face of the wedge has rubbing with striations which has not reached the bottom of the hollows left by chiselling. The other face rubbed. Width 103mm. 309g.



Find <121>
Top, bottom, side and end. Circular slightly tapering cut and fracture. The circular face is uneven. Diameter 90mm. 129g. (Scale 5cm).


<121>


<121>

<128> [CF7]
Brick? Soft red groggy body. Surface flat in one direction but curved in the other. Slightly overfired.

Find <133> (layer 6)
Scrap of cut brick 13mm thick. Three rubbed faces with striations. 6g.

Find <134> (layer 5)
Edge of brick with one face moulded and one striated. Another surface is an irregular curve with tool makes on it. 63g.

14.7.2 Index of angles and diameters

Angle	Find number
14	74
16	74
21.5	34
23	120
70	53
72	112
73.5	58
74	14
74	57
74	113
75	111
80	108
103	17
111	91
115	72
118	106
146	53
159	110

Diameter mm	Find number	
50	54	Concave
90	18	Convex
90	55	Convex
90	90	Convex
90	121	Convex
160	16	Convex
160	71	Convex
160	89	Convex

14.7.3 Discussion of the worked brick

The modern methods of rubbing and cutting brick are described in Gerard Lynch's *Gauged Brickwork: a technical handbook*. He says that the bricks should be specially made so that they are fine and soft and do not contain any stones. It is important to keep them dry as they will not cut or rub properly when damp. The first process is squaring up in which in which the brick is reduced to the correct size with all the faces at right angles to each other. One face is rubbed flat on a piece of York stone or similar material. The brick, or often a pair of bricks, are then put in a wooden cutting box which has a flat bottom and two sides which are the correct length and height and have any mouldings required. These are then used as a template to cut the brick to size, traditionally with a bow saw which has a double strand of twisted wire as a blade. This is used because wire keeps its direction better than a saw-like blade. When cutting downwards to square up headers or cut bevels a 25mm deep 'curf cut' must be made from the bottom to stop a ragged edge developing. Most bricklayers will then square up one header and one stretcher face.

The cutting and shaping tools used are:

- The rubbing stone.
- The grub saw which consists of a metal blade about 150mm long and 75mm high, backed by a wooden handle. It is used for cutting a deep line in the brick around the template to give the bow saw a start and prevent the edges from spalling.
- The bow saw with a blade of twisted wire.
- Metal files and rasps for giving a final finish to the bricks in the cutting box.

- Hand stone of either York stone or carborundum stone used to give a final polish after laying.

Some aspects of this are consistent with the finds. The oversize brick <73>, which had a height of 84mm, suggests that special bricks were made for the project but there is evidence that the clay contained stones so the preparation was not as rigorous as Lynch requires. Many of the bricks show evidence of a preliminary saw cut. Finds <74> and <99> are good examples. However, many of the shaped sections seem to be too rough and uneven to have been cut with a wire saw – a chisel or some similar instrument looks more likely. Finds <54> <99> and <121> are clear instances. There is also evidence of deep saw cuts on several pieces including <27> and <52>.

The material has two types of rubbed surface, one very smooth and the other with distinct striations about 0.5mm across as if sand or some other coarse abrasive had been used. There are numerous small pieces of brick which look like rubbers, suggesting that at least part of the work was done using brick on brick. Some of the most obvious examples are finds <28>, <29> and <78>. The hone stones were presumably used for sharpening tools.

It is obvious to connect the waste with the construction of the Orangery immediately south of the site which was erected between 1717 and 1721. The north wall of the building still stands and has rubbed brick on the pilasters, the heads of the blind decorative arches and around a door in the east end of the wall.[64] The south side of the building was demolished in the eighteenth century. It is said to have contained sash windows and is obviously likely to have been decorated with rubbed brick but there is no known record of it.

Several pieces of brick can be matched with the mouldings on the Orangery including:

<21> A roll moulding which is similar to the *astragal* on the pilasters on the Orangery although the match is not exact.

<75> Possibly cut for the neck and cavetto on the capitals.

<82> which could be a failed rough-out for the *guttae* above the door.

<34> and <120> which are wedge-shaped. These may be connected with the 'key stones' on the blind arches along the north side of the wall although <34> tapered in two directions and may have been a rubber.

<16>, <71> and <89> have curved surfaces 160mm in diameter. This matches the mouldings on the pilaster capitals and cornice of the Orangery.

Several pieces of cut brick cannot be matched with the Orangery including finds:

<14>, <53>, <57>, <58>, <111>, 112 and <113> which are cut at an angle of between 70 and 75 degrees

<52> and <53> which have a blunt point. It is, however, possible that these were off-cuts and the point is an accidental by-product.

<54> which has a rough concave cut about 50mm in diameter.

<14>, <53>, <57>, <58>, <111>, <112> and <113> which have curved surfaces 70 to 75mm in diameter.

The unmatched material may be connected with the lost south side of the building.

[64] Details of the structure appear in Phillips 2013.

14.8 Roof tile

14.8.1 Roman tile

Layer [CE9]
- Roman tile? 13g.

Layer [CE12]
- 40mm thick. 123g.
- Edge. 16mm. 56g.
- 32mm thick. 26g.
- 16mm thick. 30g.
- Surviving thickness 14mm. Keying on remaining side. 10g.
- Overfired, about 20mm thick. 73g.

Layer [CE18]
- Tile. Roman? 12 pieces, 76g.
- Roman tile? Yellow body.10g.

Layer [CF11]
- Angle from a tegula. 82g.
- Large flake with ridges for keying. Mortar or limescale on surface and fracture. 92g.
- Ridges for keying. Mortar on surface and fracture. 30g.
- Thick tile with mortar on surface and fracture.

Layer [CK2]
- Fragment of Roman imbrex in micaceous fabric, grey core, red margins, yellow-red surfaces. 91g.

Layer [CK3]
- Curved tile 18mm thick. Reduced core with two differing zones of oxidisation. Smooth slightly 'soapy' fracture. Roman? 102g.

Layer [CK8]
- Soft 'soapy' roof tile 17mm thick. Possibly Roman. 17g.
- Thick tile probably Roman. 39g.
- Scrap of tile, possibly Roman. 2g.

14.8.2 Peg tile

Peg tile is not included in this catalogue unless it had some special feature.

Layer [CK7]
- Peg tile. Full width 158mm. Top missing surviving length 172mm, thickness 15mm. Bottom 60mm covered with patchy brown glaze. Traces of mortar on upper part of glazed side and the reverse side. 661g.

Layer [CK14]
- Peg tile with splashes of glaze on one side. 66g.
- Peg tile. Pale soft body with splashes of clear glaze on one side. 60g.

Trench CK contained an unusually large proportion of soft underfired peg tile:

	Hard		Soft	
	Number	**Weight (g)**	**Number**	**Weight (g)**
[CK2]	33	798	1	11
[CK3]	307	11,236	27	935
[CK4], [CK5], [CK6]	70	3,306	4	99
[CK7]	79	4,147	16	1,642
[CK8]	41	1,882	7	179
[CK9]	51	3,241	14	861
[CK 10]	28	2,240	3	279
[CK11]	3	186	0	0
[CK12]	1	2	0	0
[CK14]	1	213	0	0
[CK15]	1	5	1	4

The significance of the soft tiles is unclear.

A number of roof tiles from layer [CF4] that were allocated special numbers but have no special feature:

Find no.	Weight (g)	Notes
<4>	20	Kept
<5>	29	
<9>	45	
<10>	73	
<11>	33	
<22>	62	
<25>	33	
<26>	148	Corner with square peg hole
<32>	47	
<35>	99	Probably pan tile
<36>	60	
<37>	324	Corner cut off at 45 degrees. Moulded not a fracture. Pan tile?
<41>	28	
<45>	30	Corner. Half a round hole.
<46>	10	
<47>	20	

14.8.3 Pan tile

Layer	Pieces	Weight (g)	
[CF1]	1	32	
[CF4]	5	1,093	All clearly pan tile.
[CL4]	1	61	

14.9 Floor and wall tile and paving bricks

Layer [CL2]
- Modern white wall tile. 9g.

Layer [CL3]
- Machine-made with pale brown mottled decoration. 3 pieces one inscribed '…IELD / …LAND / 00'. 33g. Modern.

Layer [CL4]
- White wall tile. 4g. Modern.

14.10 Mortar

Layer [CD4]
- Hard pale brown slightly pink mortar with scraps of flint and CBM. About 25mm thick. Flat surface with slight fragmentary lip on one side. Other side has lath impression 11mm wide. 56g.

Layer [CE2] above drawing 2
- Very hard fine grey mortar. 2 pieces, 167g.

Layer [CE3]
- Fine hard grey cement. 4 pieces, 22g.
- White mortar with scrap of CBM. 2g.

Layer [CE4] robber trench
- Pale grey mortar. 3 scraps, 7g.

Layer [CE5]
- Pale grey mortar with scrap of brick. 4g.

Layer [CE7]
- White chalky mortar with grey spots. 1 piece, 3g.

Layer [CE9]
- Triangular slab of very fine hard medium grey cement. Thickness 10mm. Contact surfaces possibly with tiles. Two edges at an angle of about 60 degrees. 10g.
- Mortar? A scrap. 2g.

Layer [CE18]
- Grey. 2 scraps, 2g.
- Pinkish. 1 scrap. 1g.

Layer [CF1]
- Concrete. 2 pieces, 113g. Modern.
- Soft pale grey mortar, 2 pieces, 44g.
- Grey mortar with scraps of coal. 3 pieces, 10g.
- Pink mortar or base coat plaster. Hard probably with Portland cement. 8g.

- Soft pale brown cement. Possibly based on Parker's Roman cement. 7 pieces, 106g.

Layer [CF2]
- Coarse pale brown mortar. 2 pieces, 9g.
- Fine pale yellow mortar. 6g,.
- Coarse pale yellow mortar. 14g.
- Grey concrete. 12g.

Layer [CF5]
- Pale grey mortar with some chalk. 36g.

Layer [CF6]
- Pale grey chalky mortar. 13 pieces, 75g.

Layer [CF7]
- Grey chalky mortar. 3 pieces, 23g.

Layer [CF10] spit 1
- Soft grey mortar. 5 pieces, 10g.

Layer [CK1]
- Hard probably containing Portland cement. 4 pieces, 27g.

Layer [CK3]
- Pale grey mortar. 3 scraps, 6g.

Layer [CK7]
- White mortar with scraps of chalk and sharp angular flint. 229g.

Layer [CL3]
- Breeze block. 12g.
- Yellow mortar. 10g.

Layer [CL6]
- Breeze block. 107g.

Layer [CL7]
- Hard concrete with brick crushed on the surface. 759g. Modern.

14.11 Stone

Layer [CD1]
- Portland stone. Edge of block. 38g.
- Iron stone. Part of a pebble. 6g.
- Slate with squares scored on 1 side. 3g.
- Slate pencils, 2 joining pieces, 4g.
- Slate 10mm wide by 30mm long with bevelled edges on the long sides. Up to 3mm thick. 2g
- Grey slate. 7g.

Layer [CD2]

- Slate pencils. 4 pieces of which 2 join, 8g.
- Grey slate with scored lines. 1g.
- Purple slate. 3 pieces, 11g.
- Grey slate. 3 pieces, 2g.
- Flint cortex? 8g.

Layer [CD3]

- Reigate stone. 4 scraps, 5g.
- Ironstone. 30g.
- Ironstone cobble. 341g.
- Burnt flint. 1 piece, 121g.

Layer [CD3] high risk of contamination

- Chalk rubble, 3 pieces. 68g.

Layer [CD5]

- Chalk rubble. 14g.

Layer [CD6]

- Chalk rubble. 9g.

Layer [CD7]

- Chalk rubble. 5g.

Layer [CE1]

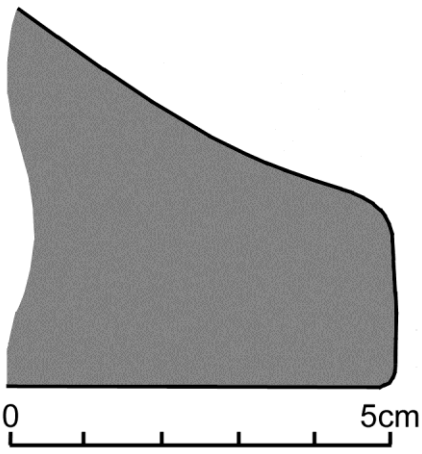
- Reigate stone rubble. 26g.

Layer [CE2]

- Purple slate, 7 pieces, 182g.
- Grey slate. 3g.
- Reigate stone with 1 smooth face. 2 pieces, 55 and 59g.
- Fissile fossiliferous light grey-brown limestone. 91g

Layer [CE3]

<8> Portland stone. Part of the edge of the base of an urn are similar object with a diameter of about 516mm. Drawing shows the section of the edge. 369g.



- Chisel-shaped end of hone stone. Pale grey brown slightly pinkish sandstone. Width 43mm. Maximum thickness 22mm. 3 joining pieces, 95g.
- Reigate stone rubble. 4 pieces, 96g.

- Grey slate. 14 pieces, 331g.
- Burnt flint. 2 pieces, 31g.

Layer [CE4]
Purple slate. 2 pieces, 108g.

Layer [CE4] robber trench
- Burnt flint. 23g.

Layer [CE7]
- Chalk rubble with mortar and lime scale. 1 piece, 362g.
- Burnt flint. 2 pieces, 18g.
- Grey slate. 8g.

Layer [CE9]
- Reigate stone 1g.
- Reigate stone. Edge of roughly-shaped block. 48g.
- Reigate stone. Small area of heavily burnt surface. 26g.
- Reigate stone. Scrap of possible surface. 11g.
- Burnt flint. 4 pieces, 35g.
- Tufa nodule. 5g.
- Tufa scrap. 2g.

Layer [CE10]
- Chalk rubble. 57g.
- Chalk rubble with mortar and lime scale. 10g.

Layer [CE11]
- Chalk rubble. 1g.
- Reigate stone. 2g.
- Burnt flint. 2 pieces, 13g.
- Iron stone. 66g.

Layer [CE12]
- Tufa 2 pebbles and a scrap. 8g.
- Tufa pebbles, 6 pieces, 52g.
- Iron stone. 3g.
- Dark brown sandstone possibly ironstone. 17g.
- Burnt flint. 6 pieces, 167g.
- Two flint flakes. 7g.

Layer [CE17]
- Tufa. 3 scraps, 6g.
- Flint fossil? 5g.

Layer [CE18]
<2> Pink, hard silica-bound sandstone. 9g.
- Burnt flint. 6 pieces, 118g.
- Flint pebbles with scraps of limescale or mortar. 2 pieces, 33g.
- Flint pebble with scrap of rust. 9g.

- Flint flakes, 4 pieces, 10g.
- Tufa pebbles and scarps. 10 pieces, 10g.

Layer [CF1]
- Purple slate. 5 pieces, 54g.

Layer [CF2]
- Purple slate. 3 pieces, 54g.
- Grey slate 2 pieces, 20g.
- Slate pencil. 9 pieces, 20g.
- Reigate with scraps of flat surface. 4 pieces, 25g.
- York stone. 11g.
- Burnt flint. 28g.

Layer [CF3]
- End of hone of pale brown sandstone. End rounded. 89g.
- Centre of hone of pale brown sandstone. 84g.
- End from pale brown sandstone hone. Square end. 14g.
- Hone. Part. Redish sandstone. 30g.
- Reigate stone. A scrap smooth on both sides. 5g.

Layer [CF4]
- Grey slate, 2 pieces, 1g.
- Brown sandstone. 8g.

Layer [CF5]
<125> Flint scraper. Unusual triangular form. Probably Mesolithic. 28g.
- Reigate stone. One flat surface. 2 pieces. 19g.
- Reigate stone rubble. 6 pieces, 59g.
- Calcite probably from a natural vein in chalk. Both sides very smooth. 1g.

Layer [CF6]
- Reigate stone rubble. 34g.
- Reigate stone with one surface, 33g.
- Burnt flint. 68g.

Layer [CF7]
- Reigate stone rubble. 18g.

Layers [CF8] or [CF9] from mini section on east side of trench
<129> Pale brown siliceous ‘tufa’. 69g.
- Corner of a chalk block. 120g.
- Sharp angular flint with traces of mortar. Cast of a fossil. 160g.

Layer [CF10] spit 1.
- Flint cortex. 12g.
- Reigate stone. 1 slightly burnt surface. 647g.
- Reigate stone with burnt surface. 42g.
- Reigate stone scraps. 5 pieces, 43g.

- Chalk rubble. 14 pieces, 380g.
- Burnt flint. 3 pieces, 71g.
- Rounded flint with mortar. 53g.

Layer [CF10] spit 2
- Reigate stone rubble. 12 pieces, 670g.
- Chalk, 2 pieces, 23g.

Layer [CF10] from cleaning surface of [CF12]
- Reigate stone rubble. 3 pieces, 193g.

Layer [CF11]
- Reigate rubble. 5 pieces, 66g.
- Reigate stone with doubtful surface. 24g.
- Burnt flint. 2 pieces, 183g.
- Flint cortex. 14g.

Layer [CF12]
<62> Reigate stone. Edge of block with 1 smooth and rough surfaces. Corners rounded. Some iron stain. Height 190mm. 3.21kg.
- Reigate stone with a smoothed surface. 3 pieces, 65g.

Layer [CF14]
- Iron stone. 6g.
- Reigate stone with 1 smoothed surface. 33g.

Layer [CK1]
- Purple slate. 1 piece, 2g.
- Grey slate. 1 piece, 1g.

Layer [CK2]
<36> Heavy dark red stone (haematite?) with black shiny deposit on the surface (tar?). Traces of mortar or lime scale on the surface. 228g.
- Burnt flint. 3 pieces, 29g.
- Grey slate. 12 pieces, 151g.

Layer [CK3]
Reigate stone
- Rubble. 22g.

Flint
- Burnt. 12g

Conglomerate
- Round flint pebbles to 30mm in a orange sandy-clay matrix. 230g.

Tufa
- White, knobbly. 115g.

Layer [CK4], [CK5] and [CK6]
Reigate stone
- Rubble, 2 pieces, 243g.

Unknown

- Corner of a large very roughly shaped block. About the colour of Reigate stone but much harder and heavier. 2,505g
- Fossiliferous hard grey slightly green stone. 2 pieces of rubble, 198g.

Layer [CK7]

Reigate stone.

- 1 edge. 28g.
- Rubble. 18g.

Layer [CK8]

<1> Rim of a mortar of hard white to light grey tufa-like limestone. Triangular lug the exterior. Internal diameter about 280mm. external diameter about 360mm. 1,311g.

Reigate stone.

- Edge if a neatly squared block with chisel marks on both faces. 835g.
- Edge of block with deep chisel cuts on one face, Faces deeply burnt. 826g.
- Reigate stone rubble. 11 pieces some rounded. 253g.
- Heavily burnt surface. 2 pieces, 8g.
- Burnt. 2 pieces, 11g.

Tufa?

- 1 piece, 4g.

Unknown

- Chalk pebble with brown laminated surface coating 1 to 3mm thick. 2 joining pieces, 4g.
- White to light grey hard fissile limestone with dark grains. 55g.

Layer [CK9]

Reigate stone

- Rubble. 14 pieces, 1098g.
- One heavily burnt surface. 29g.
- One burnt surface. 131g.
- Rubble with burnt areas. 2 pieces, 132g.

Flint

- Burnt. 4 pieces 2 of which join. 145g.
- Flake of white to light grey limestone. 2g.

Layer [CK11]

Reigate stone

- Block 45 to 63mm thick. Top worn smooth possibly from a floor. Underside has chisel marks. One smooth edge with tool marks bevelled at an angle of 99 degrees to the underside. Another rough edge. 1,140g.
- Corner of block? 315g.
- Rubble. 3 piece, 520g.
- One rough slightly burnt face. 435g.

Chalk

- Rubble with marks from a coomb chisel (?). 1 piece, 211g.

Unknown

- White to light grey hard fissile limestone. Slightly reflective fracture with dark grains. Some lime scale on the surface. 2 joining pieces, 790g.

Layer [CK14]
Reigate stone
- Corner of a block with chiselled surfaces. One face burnt. 925g.

Layer [CK16]
- Burnt flint. 2 joining pieces, 9g.

Layer [CL2]
- Slate pencil. 5g.

Layer [CL3]
- Portland stone. One smooth face with part of a cut slot. 38g.
- White fossiliferous, fissile limestone slab about 27mm thick. 173g.
- Burnt flint. 2g.

Layer [CL4]
- Reigate stone rubble. 3 pieces, 253g.
- Grey slate. 2 pieces, 6g.

Layer [CL5]
- Burnt flint. 14g.

Layer [CL13]
- Reigate stone rubble. 127g.
- Burnt flint. 4g.
- Ferrous conglomerate. 16g.

14.12 Coal, coal shale and cinder

	Coal		Shale		Cinder	
Context	Pieces	Weight (g)	Pieces	Weight (g)	Pieces	Weight (g)
[CD2]	36	92	2	7	74	114
[CD3]	1	1				
[CD3] (1)					2	2
[CD5]	2	1				
[CE3]	2	3				
[CE4] (2)	1	1			1	1
[CE5]					1	1
[CE9]					1	1
[CF1]	1	10			86	794
[CF2]	7	19	10	58	30	317
[CF3]					1	1
[CF4]	2	1			2	2
[CF5]	3	6	1	4		
[CF6]					3	4
[CF7]	1	10				
[CF10 spit 1	1	2				
[CK1]					2	15

	Coal		Shale		Cinder	
Context	Pieces	Weight (g)	Pieces	Weight (g)	Pieces	Weight (g)
[CK2]			5	20	3	21
[CK3]	1	2			1	2
[CL4]					5	70
[CL5]	1	2			7	204

(1) High risk of contamination.
(2) Layer [CE4] robber trench

14.13 Slag

Layer [CE2]
- Drip of glassy slag or cinder. 5g.

Layer [CE9]
- Dark red slag. Magnetic, probably iron slag. 5g.
- Glassy bubbly slag with a patch of red ceramic. Magnetic. From a bloomery? 11g.

Layer [CE12]
- Grey slag or possibly volcanic ash. 21 pieces, 32g.

Layer [CF6]
<126> Bubbly pale grey slag with glassy patches. 74g.
<127> Bubbly pale grey slag with smooth white surface layer. 7g.

Layers [CF8] or [CF9] from mini-section on east side of trench
<130> Rough slag with stone inclusion. 98g.

Layer [CF10]
<132> Fine white mortar with glass waste (?) one side and the fracture and the cast of a shell (?) on the other side. Probably grotto decoration. 2 joining pieces, 6g.

Layer [CF10] spit 1
<131> Glass waste? 5g.

14.14 Iron

Layer [CD1]
- Two iron bars joined by a brass hinge. Tubular brass fittings at the end with an in internal diameter of 8mm. Looks like a drawing instrument but the tubes are at the wrong angle. Length of the arms from centre of the hinge 94mm. 76g.

Layer [CD2]
- Nail square section. Length 32mm.
- Rust. 9 scraps.

Layer [CD3]

- Part of a horse shoe. 2 pieces.
- Rust, 2 scraps.

Layer [CD3] (slightly doubtful)

- Iron strip about 11mm wide by 95mm long. 4mm thick. In several pieces.

Layer [CD4]

- Lump of curved iron possibly a pipe. Length 80mm. Diameter approximately 50mm of which we have about 20%.

Layer [CE2]

- Window stay with spiral end. Fixing holes counter-sunk. 2 parts. 265mm.
- Cast iron pipe or gutter.
- Iron bar 11mm by 6mm with ends bent over to form a shallow U. Length 125mm. Ends project 10 and 13mm. Perhaps a tie for masonry.
- Strip of wrought iron. 32mm wide. About 7mm thick at one end tapering away at the other. Half of a 15mm diameter hole at the thick end. 135mm long.
- Round iron bar with chisel-like end. Hole pierced through the non-blade end when hot. Diameter of bar 13mm. Width of blade 18.5mm. Hole 8mm across.
- Iron pin 7mm diameter with an eye at one end. Length 112mm.
- Rectangular nail with round head. Length 105mm.
- Curved rough iron bar or staple. Length 112mm. Width between points 65mm.
- Part of the folded metal rim of a tin. 19th or 20th century.
- Rectangular nails. Surviving lengths 104, 115, 104, 107, 49 and 30mm.
- Nails, probably round. Surviving lengths 46, 48, 45 and 41mm.
- Four-strand wire rope. 3 lengths.
- Thin iron wire. 3 pieces.
- Wire. 14 small pieces.
- Several (3 or 4) pieces of wire twisted together to form a "rope".
- A square nail 79mm long.

Layer [CE3]

- Small scrap of rusted iron.
- 6 nails.
- Rectangular-section nail 107mm long.
- A piece of iron wire about 3mm thick. 146mm long. Bent.
- Iron wire. 2 pieces.
- A piece of cast (?) iron 116mm long.
- Strip of sheet iron 37mm wide. Greatest surviving length 65mm.
- Scrap of iron 39mm long.
- Piece of wire about 4mm thick with 4 thinner pieces of wire wrapped around it.
- Metal disc about 17mm diameter. Apparently a wire ring with a thin sheet of metal over it. Part of a button? 19th or 20th century.

Layer [CE4]

- Bent iron strap. 38mm wide. Surviving length about 300mm.
- Two pieces of twisted iron wire. Lengths 110 and 125mm.
- Nail. Shape uncertain. Surviving length 64mm.
- Scraps of iron wire.

Layer [CE4] (Below the wall at the west end of the trench)

- Iron. 2 scraps.
- Nails. 2 heavily rusted.

Layer [CE5]

- Very rusted iron - mostly nails. 22 pieces.
- Iron spike - square section 125mm long.
- Very rusted iron - probably mostly nails. 10 pieces.
- Piece of wire 42mm long and 3mm diameter.
- Case and hasp of a padlock with rotating plate to cover keyhole. 19th or 20th century.

Layers [CE5] and [CE6]

- Curved iron bracket. One end has leaf-shaped point with 2 fixing holes. Other end broken. Length 239mm.
- Nail. Shape uncertain. Surviving length 58mm.
- Scraps of rust.

Layer [CE7]

- Sheet iron. 35 pieces.
- 16 nails.
- Rust. 6 scraps.

Layer [CE8]

- Iron. 5 scraps.

Layer [CE9]

- Piece of very rusted iron with flints adhering.
- Rusty iron - probably nails. 4 pieces.
- A flat-headed nail or stud. Head 16mm dia. Length 22mm.

Layer [CE11]

- Rusted iron with flint attached. 2 scraps.

Layer [CE12]

- Heavily rusted iron. 2 scraps.
- Rusty iron - probably nails. 2 pieces one of which has a scrap of bone attached, the other flints.

Layer [CE13]

- A wedge-like lump of iron.

Layer [CE18]

- Heavily rusted piece of iron about 110mm long.
- Rusty iron with flint adhering - probably nails. 2 pieces.
- A flint pebble with rust adhering.

Layer [CF1]

- Bomb shrapnel? 23mm thick. 103g.
- Iron wire, 3 pieces.
- Nail, square. 35mm long.

Layer [CF2]

- Hasp from a hasp and staple. Folded over.
- Wedge-shaped with screw on the base. Base 11.5mm square. Overall length 26mm of which threaded section is 8mm.
- Two pieces of wire twisted together. 46mm long.
- Rectangular nails. Surviving lengths 45, 21 and 19mm.
- Rectangular nail. Total length 39mm. Bent over at 24mm.
- Rust, 10 scraps.

Layer [CF3]

- Nails. Square. Surviving lengths 24, 23, 25, 29, 29, 31, 31, 42, 52 (bent) and 59 (bent).
- Square nail. Length 102mm roved over 69mm from the head.
- Part of hook. Ring at the top probably missing. Surviving height 82mm. Hook rises about 15mm on the inside.

Layer [CF4]

- Rectangular nails. Surviving lengths 75, 70, 64, 55, 49, 51, 44, 41 and 37mm.
- Rectangular nail 71mm long. Bent at 41mm.
- Nail with soft red brick attached. Apparently driven into the brick. Rectangular with large head. Length 89mm.

- Rectangular nail with scraps of soft red brick attached. Surviving lengths 64 and 66mm.
- Rectangular nail with scraps of soft red brick attached. Surviving lengths 48 and 54mm. Bent.
- Scraps of nail with brick attached. In some cases the nail has clearly been driven into the brick. 27 pieces.
- Nails. 5 scraps.

Layer [CF5]

- Rectangular nails. Surviving lengths 39 and 37mm.
- Wire 170mm long. Bent.
- Wire 89mm.
- Rust. 3 scraps.

Layer [CF6]

- Sheet iron. A scrap.
- Rectangular nail. Surviving length 48mm.
- Rust. A scrap.

Layer [CF7]

- Spike with a pin at right-angles probably to support a hinge. Spike length 90mm. Hinge pin survives to 40mm above the spike.
- Square nails. Lengths 25, 29, 33, 33, 40 (tip bent), 42, 54, 56 (bent), 57 (bent) and 81mm.

Layers [CF8] or [CF9] from mini section on east side of trench

- Rust 3 scraps.

Layer [CF10] spit 1

- Rectangular nails. Surviving lengths 81, 77, 72, 71, 64, 67, 61 and 44mm.
- Rectangular nail with twisted point. Surviving length 63mm.
- Rust scraps, 32.

Layer [CK8]

- Iron hinge?
- Nails, Shape uncertain. Length 38mm. Bent.
- Nails, rectangular lengths 30 and 37mm.
- Nail. Thick, rectangular. Length 40mm.
- Nails. Uncertain shape. Lengths 20, 24 and 35mm.
- Nail. Thick. Square? Length 39mm.
- Lumps of rust. 3 one of which stuck to a stone.

Layer [CK9]

- Nails. Rectangular. Lengths 27, 29 and 39mm.
- Nail. Shape uncertain. Length 25mm. Clenched over at 12mm.
- Part of a nail? 44 long, 8 wide. Rectangular.
- Nail? 45 long, shape uncertain.
- Nails. Shape uncertain. Lengths 25 and 30mm.
- Rectangular iron bar 11 wide and 45 long. Thickness unclear
- Lump of rust attached to a flint.
- Rust, 6 scraps.

Layer [CK11]

- Nails. Square. Lengths 32, 37, 45 and 70mm.
- Nail. Rectangular. Length 34mm.
- Iron, 2 fragments.

Layer [CK12]

- Nail. Length 36mm, section uncertain.

Layer [CK14]
- Large square section nail? 50mm long.

Layer [CK15]
- Nails. Shape uncertain. Lengths 49 and 63mm.

Layer [CL2]
- Square nail. Surviving length 41mm

Layer [CL3]
- Sheet iron. 3 pieces.

Layer [CL5]
- Galvanised iron wire. 1 piece.
- Heavily rusted nail. Surviving length 44mm
- Scrap of rust.

Layer [CL8]
- Nail. Surviving length 38mm.
- Rust, 6 scraps.

Layer [CL9]
- Rust. 7 scraps.

Layer [CL13]
- Rust. 1 scrap.

14.15 Non-ferrous metal

Layer [CE2]
- Bass finial nob. Broken at the base. Greatest diameter 33mm. Perhaps from a bed. 58g.
- A thin nail like strip of metal 90mm long, about 5mm wide with a 12mm wide "head" at one end - perhaps some sort of plant tie.

Layer [CE3]
- Copper single strand electrical wire with fragments of insulation. 5g.

Layer [CE5]
- Rust. 1 piece.

Layer [CE7]
<5> Thin sheet copper 17mm by 14mm. Triangular hole off centre and part of holes at two corners. Slightly bent. 1g.

Layer [CF2]

<124> Scrap of a lead token or seal. 1g.

- Metal clasp for a purse, Both sides. 12g.
- Metal trimming, 3 pieces, 1g.
- Chain probably for a sink plug. 8 figure 8 links. Length 140mm. 14g.
- Metal cap covering the end of a wood rod. Length 22mm. 1g.
- Wire. 2g.
- Thin washer of stud head in the shape of a flower. 1g.

Layer [CF4]

<123> Mass of lead with two sockets on one side. Other side has three tool cuts. 58g.

Small brass keyhole plate. Width 31mm. 1g.

- Thimble with band of leaves around the rim. 3g.
- Part of bone and brass blade sheath from a small penknife (?). 3 joining pieces, 3g.
- Lead. 3 scraps, 15g.

Layer [CF10] spit 1

- Lead off-cut. Creamy white deposit on surface and cuts. 41g.

CF Unstratified

- Lead ball with a shiny pale brown coating which covers some indentations. Flat area on one sides. 12mm diameter. 10g.

Layer [CK1]

- Three-strand brass picture wire. About 680mm long. 6g.

Layer [CK2]

- Foil milk bottle top.
- Foil wrapper.
- Two non-ferrous (brass?) straps riveted together through a sheet of iron which has largely rusted. One end of the straps rounded the other broken. Maximum surviving length 70mm, width 8mm. 5g.

Layer [CK9]

- Thin copper sheet, a scrap about 25 by 13mm.

Layer [CL3]

- Mortar (?) – copper green colour. 1g.

Layer [CL4]

- Zinc sheet with crudely punched hole and part of another. 12g.

Layer [CL6]

- Copper wire – probably from electrical cable. 3 pieces, 8g.

14.16 Bone

Context	Pieces	Weight (g)	Notes
[CD1]	4	24	
[CD2]	5	31	
[CD5]	4	8	
[CE2]	2	5	
[CE3]	8	133	One cut through.
[CE4]	1	1	Robber trench
[CE4]	1	1	
[CE4] robber trench.	3	4	
[CE5]	3	30	
[CE5] & [CE6]	2	4	
[CE7]	12	123	
[CE8]	22	184	
[CE9]	50	152	
[CE11]	22	20	
[CE12]	62	248	
[CE17]	4	21	
[CE18]	70	97	
[CE19]			
[CE20]	1	1	
CE Top of gravel at N end	3	8	
CE Cleaning N face of wall	1	22	
[CF1]	4	55	
[CF2]	5	108	Large bone sawn at both ends.
[CF3]	7	41	
[CF4]	19	157	
[CF5]	17	215	
[CF6]	16	101	
[CF7]	13	304	
[CF8] or [CF9][65]	6	61	
[CF10]	2	3	
[CF10] spit 2	25	169	
[CF11]	43	414	
[CF12]	11	447	
[CF14]	5	44	
[CK2]	9	101	
[CK3]	63	307	
[CK4], [CK5] & [CK6]	6	196	
[CK7]	18	103	
[CK8]	31	645	
[CK9]	33	278	
[CK10]	27	350	
[CK11]	10	108	

[65] From mini-section on the east side of the trench.

Context	Pieces	Weight (g)	Notes
[CK13]	2	14	
[CK14]	7	42	
[CK16]	2	3	
[CL4]	3	80	Including <7>.
[CL8]	3	17	
[CL9]	2	15	
[CL10]	1	1	Looks mineralised.
[CL11]	5	1	
[CL14]	1	13	

Not included in the above:

Layer [CE4] (below wall at west end of trench).
- Tooth. Sheep? 2g

Layer [CE5]
- Cattle premolar. 8g.

Layer [CE7]
- Broken tooth. Cattle? 12g.

Layer [CE9]
- Teeth, sheep. 3, 8g.
- Cattle molar. 35g.
- Broken tooth. Cattle. 13g.
- Cattle premolar. 5g.
- Horse molar? 3 joining pieces, 26g.

Layer [CE11]
- Cattle molar. 24g.

Layer [CE12]
<1> Antler. Red deer? 4 joining pieces, 66g.
- Tooth. Red deer? 5g.
- Pig lower incisor. 1g.
- Sheep. 3 teeth, 13g.
- Pig tooth.2g.
- Pig front tooth? 2g.
- Curved canine tooth. Pig? 1g.
- Small incisor. 1g.
- Tooth. 1 piece. 1g.

Layer [CE13]
- Pig tooth. 3g.

Layer [CE18]
- Pig incisor. 2g.
- Pig teeth. 14g.

- Tooth. 3 scraps. 1g.
- Incisor. Cattle or deer? 1g.
- Tooth. Part. 5g.
- Sheep tooth. 2, 10g,
- Part of tooth. Sheep? 1g.
- Small incisor. 1g.

Layer [CF3]
- Dog claw? A fragment. 1g.

Layer [CF4]
- Antler with saw cut. 48g.

Layer [CF5]
- Fossilised tooth? 12g.

Layer [CF7]
- Tooth sheep/goat. 3g.

Layer [CF10]
- Bone largely covered with lime scale. 3g.

Layer [CF10] spit 1
- Tooth Cattle molar? 15g.
- Piece of jaw with two teeth. Pig? 11g.
- Cattle molar?18g.

Layer [CF10] spit 2
- Sheep tooth. 1 and part of another. 10g.
- Tooth. Cattle? 12g.
- Tooth. Part, possibly cattle. 6g.

Layer [CF10]
- Tooth? Cattle. 4 molars. 140g.

Layer [CK2]
- Boar tusk. 1g.

Layer [CK3]
- Sheep/goat? 6g.
- Sheep/goat incisor. 1g.
- Pig incisor. 2g.
- Pig canine. 5g.

Layer [CK4], [CK5], [CK6]
- Tip of a boar tusk. 1g.

Layer [CK8]

- Pig p2? With scrap of jaw bone. 3g.
- Pig premolar with scrap of jaw bone. 3g.
- Small incisor. 1g.

Layer [CK9]

<7> Incisor. Cattle? 2g.

- Pig molar m3. 3g.

Layer [CK10]

<2> Pig molar and part of jaw bone. 19g.
<3> Small pig molar. 2g.
<4> Small pig molar. 2g.
<5> Pig incisor. 1g.<8> Pig molar and scrap of jaw bone. 10g.
<6> Boar tusk Split. 2 joining parts. Point broken. Surviving length about 95mm. 11g.

Layer [CK11]

<35> Limb bone. 162g.

Layer [CK14]

- Sheep/goat? Two teeth and piece of jaw. 11g.
- Sheep/goat? 3g.
- Premolar and piece of jaw. 6g.

Unstratified

- Boar tusk very similar to that from [CK10]. Length 112mm. 12g.
- Two scraps of boar tusk. 1g.

Layer [CL4]

<7> Part of limb bone which looks mineralised. Possible scratched markings. 24g. (Included in the table above).

14.17 Shell

Oyster shells

Context	Pieces	Weight (g)
[CD4]	1	15
[CE3]	1	9
[CE4] robber trench	1	7
[CE5]	2	7
[CE7]	1? Badly broken	11
[CE8]	4	3
[CE9]	4	12
[CE12]	4	14
[CF4]	4	23
[CF5]	2	18
[CF6]	3	16
[CF7]	3	17
[CF8] and [CF9]	4	2
[CF10]	5	18
[CF10] spit 1	5	5
[CF10] surface of [CF12]	3	29
[CF11]	4	30
[CF12]	1	73
[CF14]	2	15
[CK2]	2	7
[CK3]	23	205
[CK4], [CK5] & [CK6]	5	76
[CK7]	5	26
[CK8]	15	99
[CK9]	50	356
[CK10]	22	116
[CK11	14	114
[CK13]	6	62
[CK14]	17	99
[CK15]	2	12
[CK16]	2	2

Other shells

Layer [CD2]

- Snail shell, 1 complete.

Layer [CD3]

- Small snail shells, 3 complete.

Layer [CD5]

- Snail shell, 1 fragment.

Layer [CE5]
- 3 cockle shells.

Layer CE18]
- Snail, a scrap. 1g.

Layer [CF4]
- Snail, 1 fragment.

Layer [CF5]
- Small snails, 2 fragments.

Layer [CF6]
- Snail shells. 8 largely complete and scraps of 3 others. 31g including soil fill.

Layer [CF7]
- Snails, 13 complete.
- Snails. 9 fragments.
- Snail, 1 very small.

Layer [CF8] and [CF9]
- Snails, 2 complete.
- Snails parts, 5 fragments.
- Part of very small snail.
- Blue mussel, 1 scrap. 1g.

Layer [CF10]
- Blue mussel, 2 scraps, 1g.
- Snails, 31 complete.
- Snails, 19 fragments.
- Snails, 8 very small.
- Larger snails, 4 and 1 fragment.

Layer [CF10] spit 1
- Snails. 12 complete.
- Snails. 7 fragments.

Layer [CF10] spit 2
- Small snail shell embedded in silt.
- Snails, 11 complete.
- Snail shells. 5 parts.
- Larger snail shells, 9 complete.
- Silt sample with numerous fragments of swan mussel.
- Oyster shell embedded in silt.
- Snail. 1 very small.

Later [CF10] cleaning surface of [CF12]
- Snail, 3 fragments.
- Blue mussel. 3 fragments, 1g.

Layer [CF12]
<49> Large oyster shell. 73g. (Included in the table above).

Layer [CF14]
- Mussel. 23 scraps, 5g.
- Snails, 4 complete.

Layer [CK2]
- Snail shells, 2 complete.

Layer [CK3]
- Snail shells, 1 complete and 3 scraps.

Layers [Ck4], [CK5] and [CK6]
- Snail shells, 1 complete.

Layer [CK7]
- Snail shells, 3 complete.
- Mussel shells, 2 scraps.

Layer [CK8]
- Snail shells, 5 complete.

Layer [CK9]
- Snail shell, 1 complete.
- Mussel shell, 3 pieces.

Layer [CK10]
- Snails, 2 complete.
- Mussel, 1 piece.

Layer [CK11]
- Mussel, 1 piece.

Layer [CK14]
- Mussel, 3 pieces.

Layer [CK15]
- Mussel, 1 piece.

Layer [CK16]
- Mussel. 1 piece.

Layer [CL10]
- Snail. 2g
- Mussel, a scrap. 1g

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