

# **Carew Manor, Beddington**

**A report on historical and archaeological investigations of  
the house and moat, 1979-2014**

**Volume 2: the moat**

**John Phillips and Nicholas Burnett**

Carshalton & District History & Archaeology Society  
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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.*

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# 1 THE MOAT AND MOAT ISLAND

The Tudor house stood on a large rectangular moat island which was surrounded by a substantial flint and mortar wall faced with squared stone blocks. When the moat was filled in the eighteenth century a culvert was laid along the south and west arms close to the moat island wall. This collected water from culverts running from the garden and various house drains. The garden culverts have been described elsewhere and will not be included here.<sup>1</sup>

## 1.1 Documentary evidence for the moat

The earliest reference to the moat is in the household accounts for the period 1 November to 20 December 1560, which include a payment ‘to ij men for serchyng the ij slewcis to the mote for ij days at viijd ye day the pece ijs viijd’.<sup>2</sup> There are a number of other scattered references in the accounts and inventories surviving from the second half of the sixteenth century and also from Francis Carew's probate inventory of 1611 but they do not give any further structural detail. In the mid-seventeenth century the house was leased to the Earl of Warwick for a number of years, and an account survives for repairs including a substantial amount of work on the moat.<sup>3</sup> Between the 25 March and 27 May 1650 between two and four men at a time were paid for a total of 100.5 days bailing and scouring the moat at 15d per day. A pound was paid for a week's work bargaining for stone and 832ft of it was bought for £52. Lighterage cost £2 10s; 14 days work unloading cost £2 2s and the transport of 12 loads of stone from London cost £4 16s. Masons were paid £52 for cutting and squaring 804ft of stone, and a team of between three and five masons were paid £20 3s for a total of 142 man-days which were presumably spent laying it. Lime, sand and 7 bushels of tarris were bought, together with 96lb of iron to ‘hould the stones in that houlde the draw bridge up’. Some parts of the moat wall appear to have been of brick, as two bricklayers were paid for 22 man-days and 1000 bricks were bought for them. They were assisted by three labourers who were paid for a total of 28 man-days. The ratio of labour to bricks suggests that this was largely repointing. A carpenter was paid for 6.5 days making a new drawbridge, and scaffolding for the masons.

Archaeological evidence suggests that the moat existed for another half century or more but there are no known later documentary references.

## 1.2 The features in the culverts

In 1979 the then Sutton and District Water Company dug a water main trench roughly parallel to the east side of the house and about 17.5m from it. The trench broke into the east end of a large culvert which had been laid in the former south moat. The area around the water main was then recorded by Clive Orton. A surviving entrance manhole was found and in the following months the whole length of the culvert was explored in some detail and the main features were identified, measured and given numbers prefixed with ‘F’. The work was done under difficult conditions and the longer measurements should be taken as approximate.<sup>4</sup> The main moat culvert and the features relating to the house are described below. Several side drains enter the culvert from the garden and one flowed from it west into the park. These are described in John Phillips and Nicholas Burnett *The garden at Carew Manor, Beddington: an*

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<sup>1</sup> Phillips and Burnett 2008 p. 8-23.

<sup>2</sup> Surrey History Centre 281/4/1 p. 1.

<sup>3</sup> Surrey History Centre 2152/1.

<sup>4</sup> They were measured with a tape in dark muddy conditions often above water and are probably accurate to about 0.25m.

*interim report on investigations 1979-2005.* The drains below the former kitchen are described in volume 1 section 6.4.

### 1.2.1 The main moat culvert

The main culvert was generally a two-brick-thick arch 2.7m wide and about 1.27m high. At the entrance manhole F0 (see figures 1 and 2) the gravel floor was at 30.26m OD and under normal conditions water level is at about the same height. The floor rises slightly to east so that it is generally dry. In the opposite, western, direction the floor drops slowly and becomes muddier. It deepens considerably before the southwest corner so that this end and the western arm have a floor of water-covered mud.

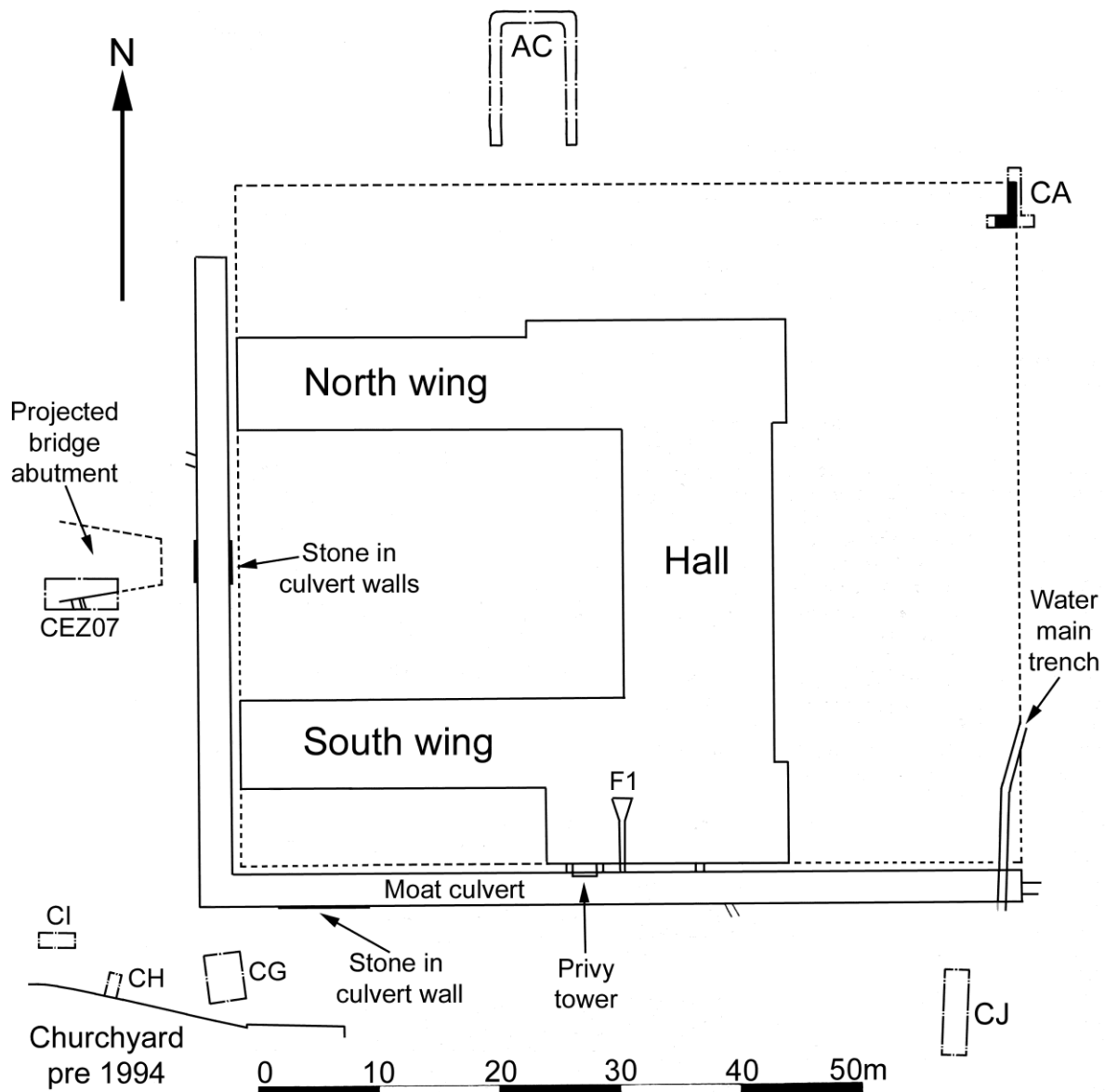


Figure 1. The moat culvert and trenches around the former moat.

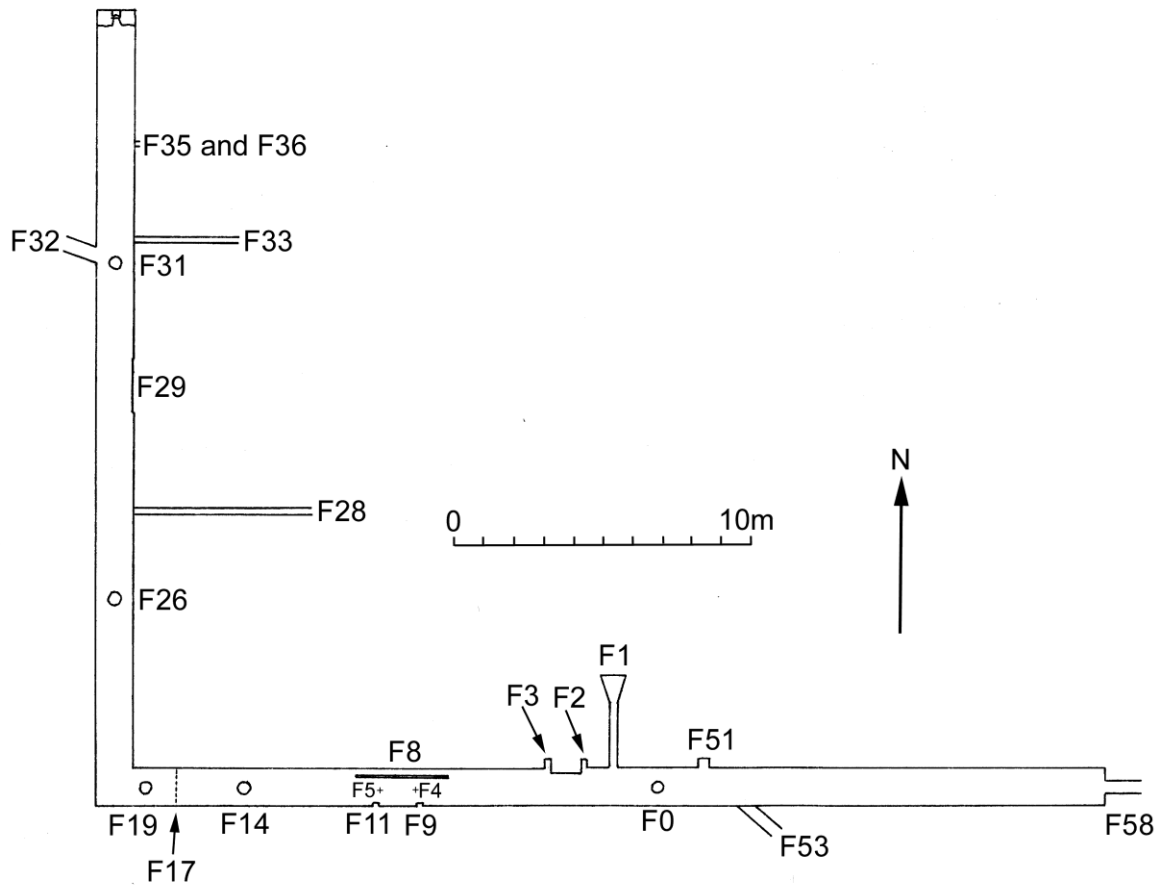


Figure 2. Key features in the culvert.

### 1.2.2 The southern arm of the culvert

The distances to the various features were measured from the centre of the entrance manhole F0 to the centre of the feature unless otherwise stated. The following description starts at the east end. A number of obviously modern drain pipes have been omitted.

#### **F58 30.17m**

Wall closing the east end of the culvert. A drain F58 enters the culvert through the wall (figures 3 and 4). There is a 'beach' of gravel which extends along the culvert for a few metres from this wall. It is almost certainly material deposited when the water changed speed on entering the larger culvert.

#### **F57 28.96m**

The Sutton and District Water Company pipe crosses the culvert. This was laid in 1979 and led to the discovery of the culvert. The section was recorded by Clive Orton (figures 3 and 4). The culvert arch was one-brick-stretcher thick and had an internal width of about 2.7m. The trench cut through the stone facing of the moat island wall and passed into a substantial foundation. The report says that:

This consisted of a lower layer of flint, chalk and stone blocks set in a soft creamy mortar, and an upper layer of flints set in a very hard off-white mortar. The total thickness was at least one metre (over 3ft) but the water main trench did not reach the

bottom of the foundation. The southern edge which was parallel to the culvert and about 0.4m (1ft 4in) from it, was revetted with large blocks of faced stone, probably Reigate stone ... The water main trench cut through this foundation raft at a slight angle, and emerged from the eastern edge, which was followed to a point about 20m (22 yards) north of the southern edge. Part of the eastern edge had been patched with brick, of the same sort as used for the culvert.<sup>5</sup>

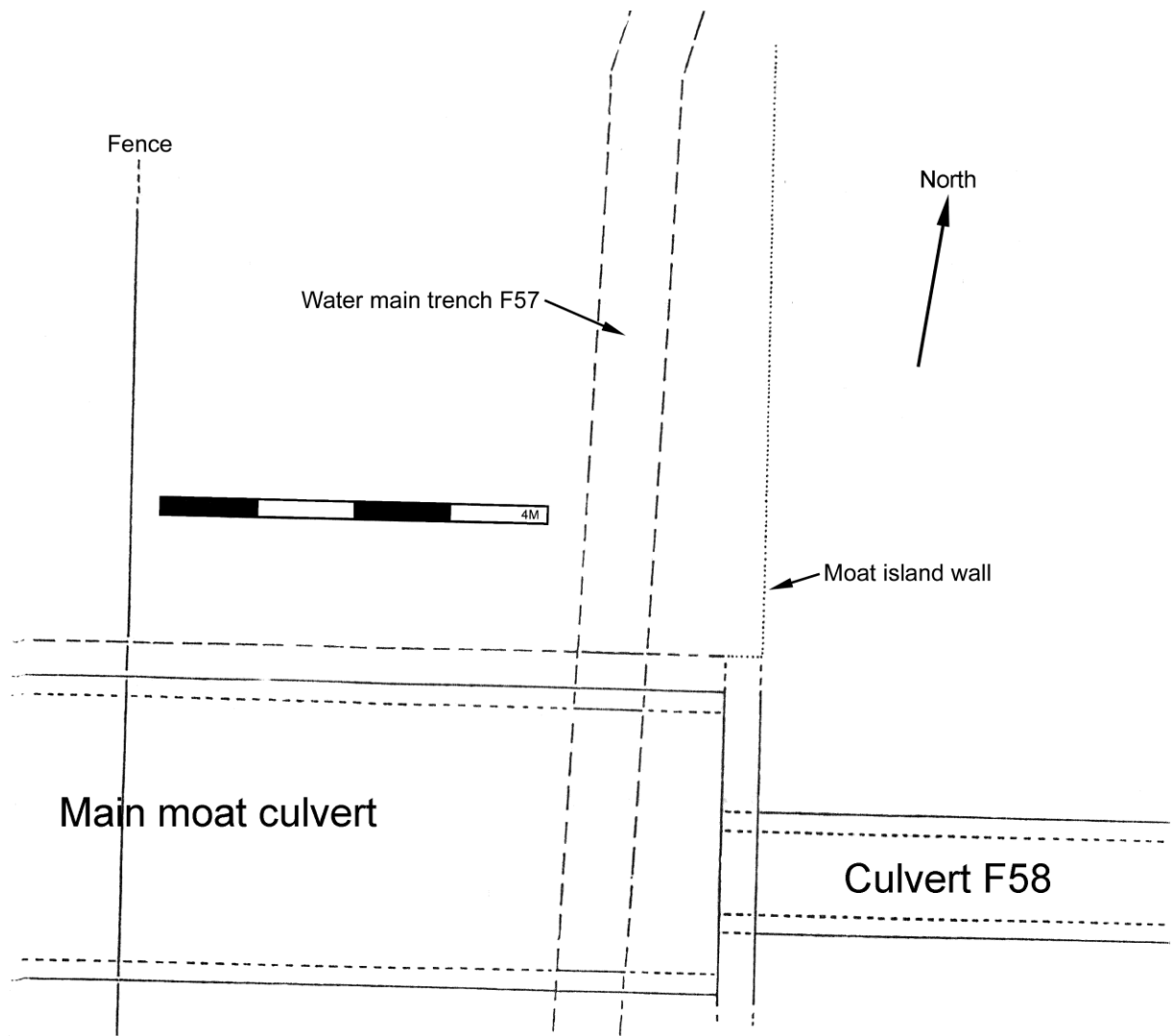


Figure 3. The moat culvert where the water-main F57 crosses from a drawing by Clive Orton.

<sup>5</sup> Clive Orton. Interim report on the discoveries at Carew Manor, Beddington. Typescript. Copy in Sutton Local Studies Collection.

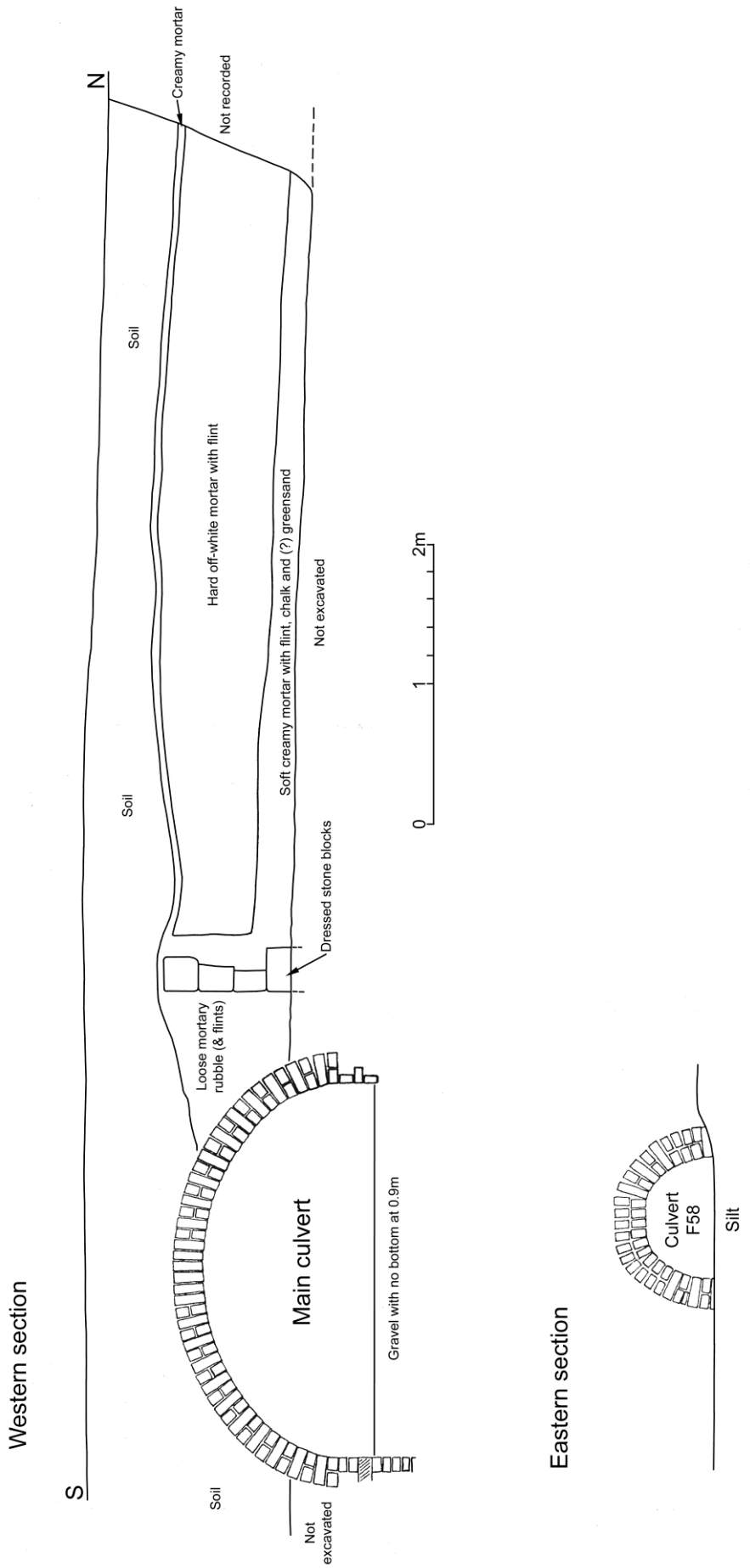


Figure 4. The section through the culvert and moat island exposed by the watermain trench. And the section of culvert F58. From a drawing by Clive Orton.

**F56 20.24m**

A rough hole in the brickwork in the north side of the arch near the top.

**F55 15.75m**

A rough opening has been knocked through the top of the arch. It is about 0.6m long and 0.5m wide.<sup>6</sup> It is blocked by a stone slab which rests directly on top of the brick vault.

**F53A**

A blocked culvert enters on the south side. The west side of the blocking is 1.14m east of the east side of F53. The blocking is 0.85m wide and it rises 0.6m above the culvert floor. The arch is not an even shape as the curve is much steeper on the west side suggesting that the side culvert approaches from the southeast.

**F53 5.94m**

Side drain F53 enters in the south side of the culvert. The side culvert enters the main culvert over a 'weir'. The top of this is formed by a course of headers which continues as a soldier course along the culvert wall in both directions.

**F51 3.2m** (Measured to the west edge of the feature).

A square shaft rises from the north side of the culvert. The north wall (which is part of the side of the moat island) exactly underlies the wall of the house. It is of stone blocks with brick above (see volume 1 section 6.4.1).

**F0 Base for measurements**

This is a near-circular manhole 0.81m long by 0.79m wide where it penetrates the culvert arch. It widens where it passes upwards through the brickwork of the arch and a short distance above that it becomes a straight shaft. There is a metal manhole cover at the top. The centre of the manhole is 11.65m from the southeast corner of the house.<sup>7</sup>

**F1 2.94m**

A drain enters the north side of the culvert at floor level as described in volume 1 section 6.4.2.

**F2 and F3 5m to east side of tower.**

Two niches in the north side of the culvert wall. Their back wall is of Reigate stone which must have been the inner side of the moat island. The west side of F2 and the east side of F3 are partly made of Reigate stone and were clearly the sides of a projection forward from the moat island wall. This was about 2.06m long and stood out about 0.6m. There was clearly an opening on the side of the projection in F3 and there may also have been one in F2. They appear to be the base of a privy tower which is close to the privies shown on Colen Campbell's plan at the west end of the kitchen block (see volume 1 section 6.4)

**F4 and F5 (about 8.2m and 9.3m)**

Rough holes cut through the roof and sides of the culvert blocked by slabs of stone - perhaps York stone. The *Sutton Journal* dated Wednesday afternoon 17 May 1865 reported a fire in the 'end rooms of the south wing, the portion of the house nearest the church'.<sup>8</sup> This was said

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<sup>6</sup> 'Long' is always along the length of the main culverts while 'wide' is across the width at right angles.

<sup>7</sup> Measured parallel to the house wall.

<sup>8</sup> Front page.

to have started about 4am on Thursday last (i.e. the 11th). The reporter who claimed to have been on the scene about 10am says:

Strolling around the southern side of the building we discovered that the communication between the stream in front, and that behind the house is by a subterranean aqueduct running close to the foundations of the mansion on that side. The book was running bright and bubbling and was only visible at the spot where the thick brickwork by which its whole course for several hundred yards is bridged over and concealed, had been broken up ...

It would appear that they broke into the culvert to get water for firefighting and that this is the origin of F4 and F5. Manholes F14 and F19 were perhaps too near the fire for safety.

**F14 27.91m**

A manhole which is circular where it passes through the culvert arch. On the underside of the arch it is 0.83m long by 0.93m wide. The shaft widens as it passes through the brickwork of the arch. Above this there is a short section 0.93m square. The south west and north sides of this are of brick while the east side is of brick flint and mortar. Above this the manhole is blocked with flat stone slabs.

The distance from the crown of the culvert arch to the slabs is 0.42m. It was 0.97m from the crown of the arch to water level.

**F17 32.41m**

Here the crown of the arch drops in height by one stretcher or 0.22m with the low side to the west. The width of the tunnel does not change significantly.

**F18 32.56m measured to the west edge**

Opening in the centre of the roof about 6in square lined with tiles.

**F19 34.09m**

A manhole 0.81m in diameter. It has clearly been knocked through the roof and its width is more or less the same all the way up. It is blocked by a stone slab.

The end wall being the west wall of the western arm of the culvert. This is 37.84m from F0.

### **1.2.3 The western arm of the culvert**

The distances along the western culvert are measured from the inner corner of the bend where the north wall of the south culvert meets the east wall of the west one.

**F20 0.71m**

A box tile drain enters the top of the arch on the east side.

**F22 4.87m**

A minor collapse of the roof in the centre of the vault.

**F23 4.95m**

A brick or tile lined drain enters near the top of the arch on the west side.

**F24**

A block of carved stone probably the head of a Tudor style window. It adjoins F23 on the north side and forms the beginning of a course of stone which runs along just west of the crown of the arch for some distance.

**F25 7.31m**

Brick or tile lined-shaft roughly 15cm square enters near the top of the arch on the west side.

**F26 11.4m**

A circular manhole. It is about 0.86m wide where it cuts the culvert arch and widens a little upwards. The top is blocked by stone slabs 1.19m above the underside of the crown of the culvert arch and 2.23m above water level.

**F28 17.29m**

A small arched culvert enters on the east side well above water level. It runs back into the moat island more-or-less at right angles to the main culvert. It is 0.45m wide and 0.63m high. There is a beam across the top of the arch about 6.5m in from the culvert. From the beginning until close to the beam the culvert sides are of rubble stone with some brick and the roof is arched with brick headers. Further in, both roof and sides appear to be of brick. Comparison of the measurements with a modern plan of the house suggests that this drain runs under the court yard close to the north side of the south wing.

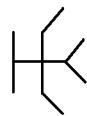
**F29**

An area of stonework projects slightly from the east wall of the culvert. The projection begins at 24.08m and ends at 27.73m giving a width of 3.65m. There is a matching course of stone on the opposite side of the culvert but this does not project from the wall.

One of the blocks on the east (?) side has a mason's mark so:



Two of the blocks on the east (?) side near the north end have the mason's marks so:



These remains more or less in the centre of the west front of the house and are interpreted as bridge abutments (see section 9.2).

**F31 34.24m**

A manhole knocked through the culvert arch and clearly a later insertion. It is 0.81m in diameter. Above the culvert arch it is made of yellow stock brick. It is 2.1m from the sandstone slabs which block the top of the shaft to water level.

**F32 34.44m**

A large side drain runs from the west side of the culvert. It presumably once carried water from the culvert into the west lake but now continues down the line of the former lake and empties into the Wandle. It is initially 1.22m wide. The arch has clearly been knocked through the side of the culvert. At first it is made of yellow stock bricks and runs at a slight



angle to the culvert. After a short distance it turns nearer to west and is made of red brick. The stock brick appears to be a later repair or modification.

**F33 35.03m**

A drain enters on the east side well above water level. It comes through a small irregular hole 0.35m wide. It is difficult to see far up the drain. At first the sides are of rough rubbly stone and the roof is arched with brick stretchers. After a short distance there is a section of roof made with several flat stone slabs. Beyond these the drain has a brick vault and the sides may also be brick. There is a stone slab on the floor near the beginning. The measurements suggest that the drain runs under the courtyard close to the north wing.

**F35 and F36 (42.09m to the south edge of F35).**

Two drains enter through the east wall of the culvert one above the other.

The lower drain F35 is 8in (0.2m) high and 1ft 2in (0.35m) wide and is close to water level. When first found it was blocked by silt which contained a great deal of broken glass and many other finds. There is a mason's mark on a stone block below F35 so:



At the top there was a white layer about half an inch thick. Below this there was a thick layer of brown silt. The finds were noticeably concentrated towards the bottom of the lower layer although some came from the white layer. The finds included creamware no earlier than the late eighteenth century.

**F37 48.46 m**

A drain enters high up on the east side of the arch. It was knocked through the arch and was similar to F33 and F28.

**F39, F40 and F41**

The end wall F41 is 51.2m from the corner. It is made of hard yellow stock brick quite different from the red brick of the culvert arch. The wall rests on a massive block of rather soft mortar (F39) which projects about 0.91 to 1.22m forward from the wall and it is about 0.3m to 0.45m thick. In the centre of the culvert the block has been cut or worn away so that one edge of the block is only about 0.4m from the wall.

A manhole (F39) 0.56m square rises from the end of the culvert. The north wall of the manhole is formed by the end wall of the culvert. The other sides of the manhole are also of yellow stock brick.

A large modern drain pipe (F40) enters the culvert on the west side just in front of the end wall. It is immediately above the large mortar foundation block.

A brick header, which was located on the east side of the end wall immediately below the culvert arch, was removed. This showed that the wall is about 0.23m thick (the length of the brick) and seems to be backed by soil.

## **2 A CONTRACTOR'S TRENCH IN THE NORTH MOAT, 1983 (AC)**

### **2.1 The investigation**

In the summer of 1983 the northern end of the old laundry on the north side of the house was demolished because the walls were subsiding. It was to be rebuilt so the contractors dug a deep trench along the line of the walls to make a secure foundation. This was trench AC as shown in figures 5 and 6.

The trench was first examined briefly on the morning of 12 October 1983, Barry Weston made several visits in the following days and we made a more detailed survey on Sunday 16 October 1983 when the section shown in figure 9 was made. Barry Weston and John Phillips watched work Monday 17th and Barry made several visit later in the week. When we inspected the site on Sunday 23 October we found the bottom filled with concrete, and no further work was done.

The trench had a U-shaped plan as shown in figure 6. The western and eastern arms which ran north-south and formed the sides of the U were about 11.5m long, while the northern arm which forms the bottom of the U was about 7.5m long. The maximum depth was about 2m. A brick culvert ran approximately east-west across the site. Its north wall formed the south side of the north trench.

The eastern side of the west trench was cleaned and examined in detail. The upper parts of the eastern trench were concealed by shoring but the section along the west side was examined and drawn, though not to scale. A short piece of the north side of the northern arms was also measured but the rest was subject to only cursory examination.

### **2.2 The east side of the west trench**

This is shown in figure 9. The earliest deposit [AC18] consisted of green silty sand which contained many fine roots but was not humified. Above this there was oily smelly gravel [AC17] with both angular and rounded flints. The brick walls of the culvert [AC19] rested on layer [AC15] which was of gravel and was probably continuous with [AC17] although this was not proven. The deposits to the north of the culvert had been removed by the north arm of the contractor's trench. To the south the gravel was covered with dark smelly silt which contained many disarticulated horse bones. Layers [AC1] to [AC10], which must have been deposited after the culvert was constructed, were mostly of soil, sand and rubble.

Layer [AC1] with much brick, chalk, tile and flint was obviously deposited against the wall of the culvert. Layer [AC2] was of fine brown sandy earth with a few pieces of flint and chalk and a number of large animal bones. Layer [AC3] was green and sandy with a few tiny pieces of flint and chalk. Layer [AC4] was of brown sandy earth similar to [AC2], but slightly darker and coarser. Layer [AC5] was very thin and consisted of coarse brown earth with lumps of chalk and flint. Layer [AC6] was green and sandy mottled with orange clay with few inclusions. Layer [AC7] was a lens of black earth with no visible inclusions. Layer [AC8] was of fine brown earth with a few pieces of chalk and flint. Layer [AC9] was of rubble and mortar with red and yellow brick, handmade roof tile, flint and chalk. Layer [AC10] consisted of soil with a good deal of chalk, brick, flint and tile with a clear turf line at the top. Layer [AC11] was the concrete floor of the laundry and rubble from its demolition.

The sequence in and above the culvert differs. We have already suggested that the gravel on which the walls rested [AC15] was the same as layer [AC17]. Within the culvert the lowest

layer [AC14] was of fine dark brown silt which must have been deposited when the culvert was in use. It was covered with brick, mortar and brown sand which were probably the remains of the culvert roof. Layer [AC13] was the fill of a trench which was apparently dug to destroy the culvert. The relation between layer [AC13] and layers [AC9], [AC10] and [AC11] was not established.

### 2.3 The east and north trenches

Large parts of the side of the east trench were hidden by shoring. Figure 10 shows the bottom of the west side with the main characteristics of the deposits.

A short section of a rough brick wall or foundation was exposed near the south end of the east trench in the position shown in figures 7 and 8. One brick had a length of 230mm and another a height of 70mm. One had a rounded frog 52mm wide and 14mm deep. The top of the structure was 0.1m below the tarmac and it had a height of 0.7m.

In the north trench only one section in the centre of the north side was measured as shown in figure 11.

### 2.4 The culvert

This is shown in 6, 9 and 12. The internal width was 0.47m. The north and south walls were of brick a stretcher (223mm to 225mm) thick and 0.4m to 0.42m high. The top of the vault had been destroyed but it appears to have been more or less circular and was made of a single thickness of stretchers. The bonding of the brick could only be fully seen on the exterior of the north wall which was exposed on the south side of the north trench. There the courses were from top to bottom:

- Headers
- Stretchers
- Headers
- Stretchers
- Soldier course – or in other places 2 layers of headers

The south wall of the culvert could only be seen where its ends were exposed in the east and west trenches where the bricks were laid in English bond.

A few of the bricks were measured:

| Length mm | Height mm | Width mm         |
|-----------|-----------|------------------|
| 230       | 63        |                  |
| 234       | 64        |                  |
| 233       | 63        |                  |
|           | 63        | 103              |
|           | 66        | 108              |
| 221       | 62        | 104 <sup>9</sup> |

The walls rested on flint gravel [AC15].

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<sup>9</sup> This brick was kept as a sample as its fabric and finish were typical.

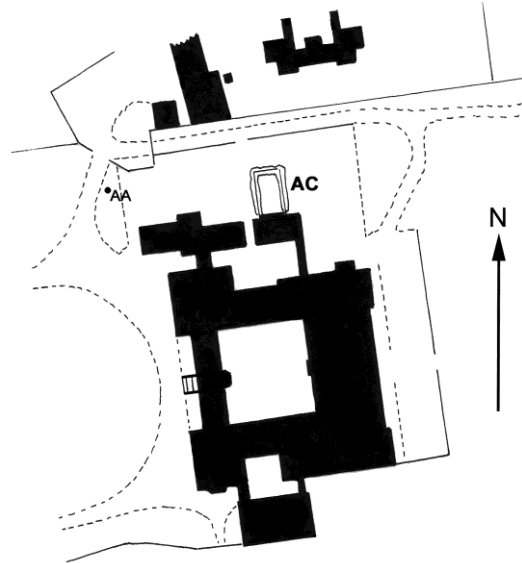


Figure 5. The location of trench AC.

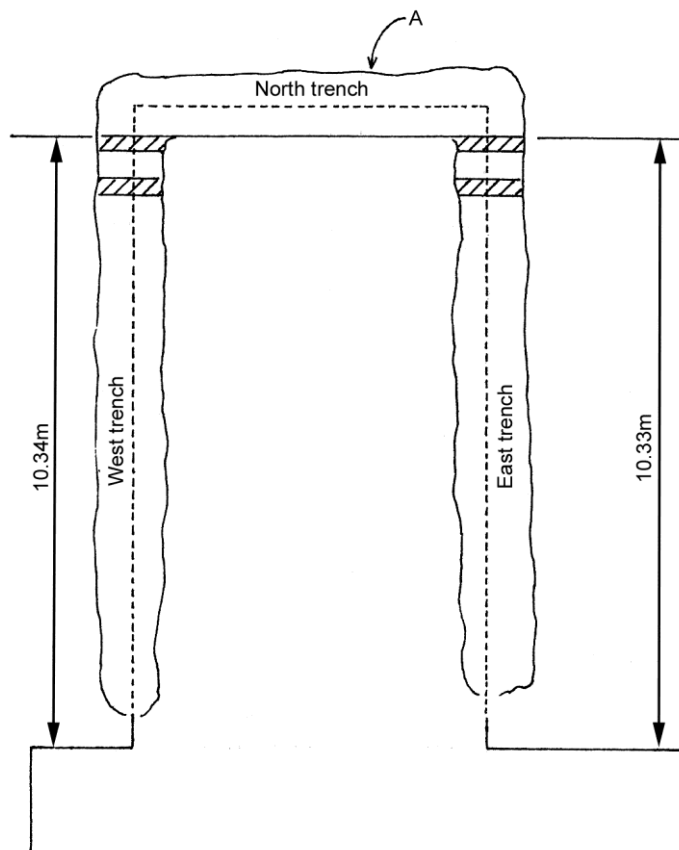


Figure 6. Sketch plan of trench AC with the culvert cross hatched.

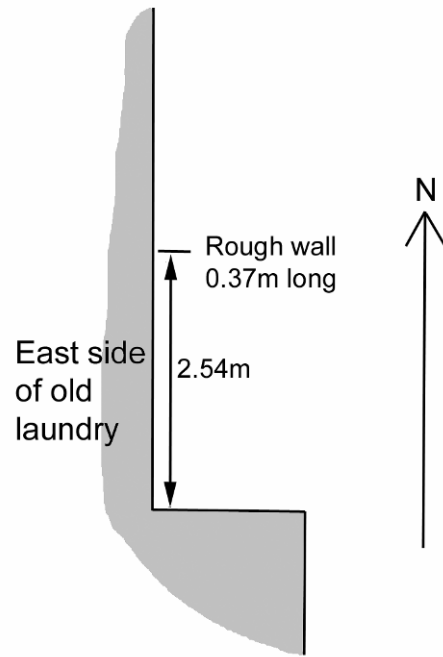


Figure 7. Location of a rough wall at the south end of the east arm of trench AC.



Figure 8. The rough wall at the south end of the east arm of trench AC.

Approx 32.35 m OD

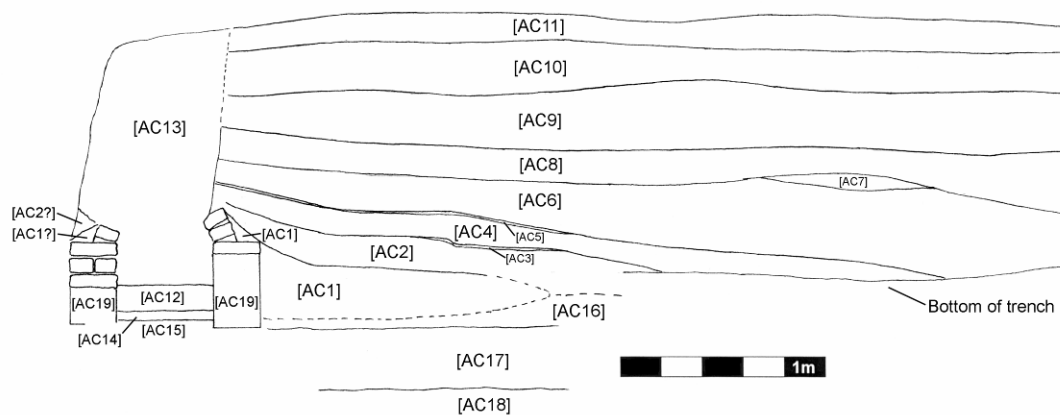


Figure 9. Section of the east side of the west arm of trench AC, north end.

- [AC1] Brown earth with much brick, chalk, tile and flint.
- [AC2] Fine brown sandy earth with a few pieces of flint and chalk and large animal bones.
- [AC3] Thin green sandy layer containing a few tiny pieces of flint and chalk.
- [AC4] Similar to 2 but slightly darker and coarser with some flint, chalk and pebbles.
- [AC5] Very thin layer of coarse brown earth with many inclusions, lump of chalk, fine chalk, flint and pebbles.
- [AC6] Green sandy mottled with orange clay. Few inclusions mainly pebbles.
- [AC7] Lens of black earth with no visible inclusions.
- [AC8] Fine brown earth with a few pieces of chalk, pebble and flint.
- [AC9] Rubble and mortar, red and yellow brick, hand made tile flint and chalk.
- [AC10] Soil with a good deal of chalk, brick, flint, tile and pebble. There is a clear turf line at the top of the layer.
- [AC11] Concrete floor and rubble from the demolition of the laundry.
- [AC12] Red brick with mortar and brown sand from the demolition of the culvert vault.
- [AC13] Earth with much rubble.
- [AC14] Fine dark brown silt – very sticky.
- [AC15] Flints in a matrix of grey/orange silty sand. Some of the flints are angular with rounded edges, others are fully rounded pebbles.
- [AC16] Dark smelly silt with many horse bones in it.
- [AC17] Gravel – angular and rounded flints – oily and smelly.
- [AC18] Green silty sand with many fine roots. Little humification.
- [AC19] Brickwork of the culvert.

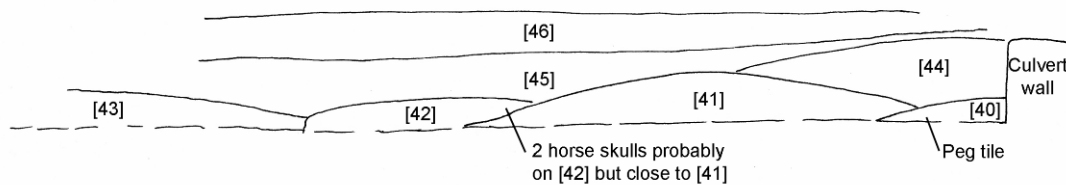


Figure 10. Sketch of the bottom of the west side of the east arm of trench AC.

- [AC40] Gravel?
- [AC41] Orange river gravel.
- [AC42] Humic – peaty.
- [AC43] Dark brown earth, pebbles, flint. Brick, tile.
- [AC44] Chalk – brick.
- [AC45] Brown soil.
- [AC46] Green / yellow.

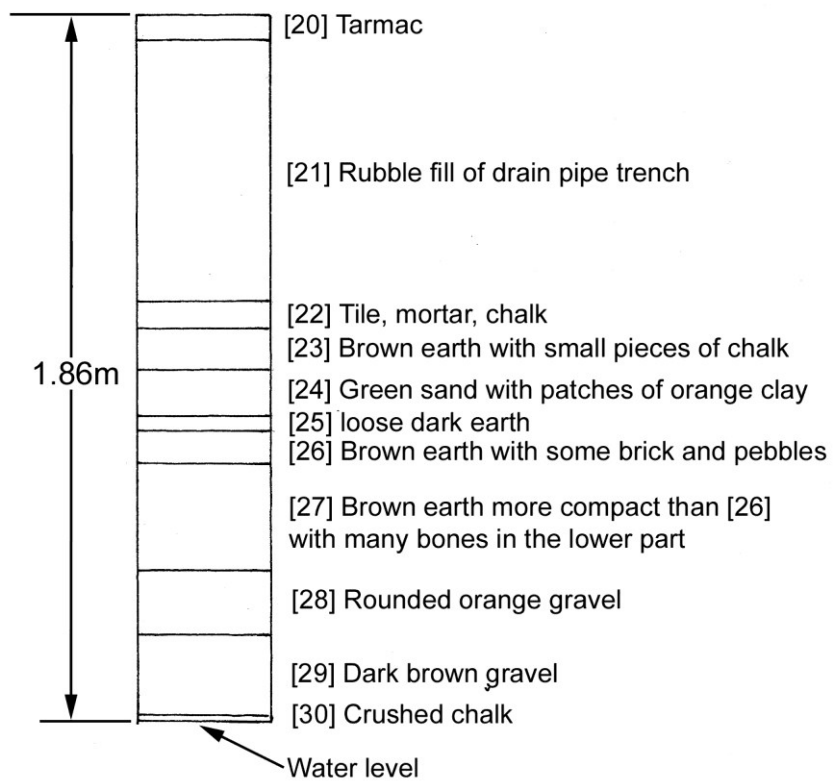


Figure 11. Sketch section of the layers on the north side of the north arm of trench AC at about A on figure 6.



Figure 12. The west end of the culvert in trench AC.





Figure 13. Bones in the north arm of trench AC.

## 2.5 Historical evidence

The Beddington and Bandon enclosure award map of 1820 shows the area around trench AC as open ground with a few scattered trees. It was also open ground on the tithe award of 1840.

The first edition 25 inch Ordnance Survey map of 1868 shows a long east-west aligned building to the north of the house. The laundry whose foundations were dug out to make AC did not exist at this date.

A board from the cladding around a water tank in the roof of the laundry had 'A C GOSLIN WEST STREET CARSHALTON AUGUST 1886' pencilled on it.

By 1897, when the second edition 25 inch Ordnance Survey map was made, the long east-west aligned building had been split into two. The western half had been extended westwards. The eastern part had become the southern part of the laundry and the northward extension had built. It was the foundations of this that were excavated. It appears that they were constructed between 1868 and 1897, most probably in 1886.



## 2.6 Discussion

The lowest layer [AC18] was only seen in the western trench. It consisted of green silty sand which may well have been the natural base of the Thanet beds.

In the west trench this sand was overlaid by dark brown oily, smelly gravel [AC17] which was, in turn, covered with dark smelly silt. This must represent the bed of a watercourse which was at least 8m wide and is likely to have flowed from east to west. The south end of the trench, which was not necessarily the south side of the watercourse, was 14m from the north wall of the house shown on Colen Campbell's plan of 1717.

The size of the gravel in layer [AC17] suggests that at times there was a considerable flow of water through it, and this, combined with the width, suggest that it once carried a substantial part of the flow of the Wandle. The overlying silt layer [AC16] was so fine that the water must have been either still or very slow-flowing. There was therefore a change in flow in the channel's life which was presumably connected with the dam retaining water in the moat.

Several large blocks of chalk were found in the bottom of the north channel close to section A in figure 2. They were in a group close together and the tops were more or less at the same level below the base of the culvert wall. They seem to be a rather unlikely natural feature, but they could not be examined in detail, and their significance is unknown.

In the next phase the watercourse was drained and a small brick culvert was constructed running east to west across the site. Several layers of soil, rubble and gravel were then dumped in the bottom of the watercourse. These included layer [AC1] in the west trench, layers [AC41] to [AC44] in the east trench and layer [AC28] in the north. The whole area was then covered with several layers of brown soil.<sup>10</sup> These were covered a green layer with patches of yellow<sup>11</sup> and then with a layer of brown earth.<sup>12</sup>

Five more or less complete horse skulls, parts of several others, and many large bones were found in the bottom of the trenches. Where they were recorded in situ they came from the lower part of the watercourse fill (layer [AC2] in the west trench, layer [AC27] in the north and [AC42] in the south). Judging by their colour some bones also came from the silts of the watercourse. The disarticulated remains of several dead horses appear to have been dumped when the channel was being filled.

The dating evidence for the filling of the watercourse was scanty as there were few stratified finds. The key items were:

- <33> An L25 pipe bowl marked WR. This came from [AC29] the gravel at the bottom of the north side of the north trench. If so, the gravel was moved by water in or after the early eighteenth century. These pipes are strongly associated with the construction of the early eighteenth century garden.<sup>13</sup>
- <17> The base of a large glass wine bottle. This almost certainly came from [AC16] or [AC17] – the silts at the bottom of the watercourse or the underlying gravel. Comparison with the examples in Dumbrell 1983 suggests a date after c.1725-30 with the range running into the second half of the century.

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<sup>10</sup> Layers [AC2], [AC3], [AC4] and [AC5] in the west trench; [AC27], [AC26] and [AC25] in the north and [AC45] in the east.

<sup>11</sup> Layers [AC6], [AC24] and [AC46].

<sup>12</sup> Layers [AC8] and [AC23].

<sup>13</sup> Phillips and Burnett 2008 p. 148-9.

<1> A drug jar with pale blue tin-glaze which came from the south end of east trench close to the bottom.

These finds, combined with the absence of later material from layer [AC8] or below, suggest that the watercourse was filled in the second or perhaps the third quarter of the eighteenth century. The wine bottle tends to suggest that the work was not done by the Nicholas Carew, 1st Baronet, who died in 1727. The trustees of his will or his son the 2nd baronet who controlled the house from 1741-1762 seem more likely.

The rubble layer [AC9] probably dates from the remodelling of the house between 1859 and 1865. The first edition 25 inch Ordnance Survey map shows that the area was open ground in 1868 after the house had been converted into an orphanage. The laundry was probably built in 1886 – the year pencilled on the boards in the roof.

### **3 TRENCH AA NORTHWEST OF THE HOUSE**

The north wall of the former laundry had been showing signs of instability which was initially attributed to the collapse of an underlying drain so the London Borough of Sutton Technical Services Department made a number of exploratory trenches. Some of these were close to the wall of the former laundry while others followed the line of a westward running drain. Trench AA was one of the latter. It was near the northwest corner of the house as shown in figure 14. The archaeological investigation of it took place on 14 February 1982 and it had been dug in the preceding week or so.

The east side of the trench is shown in figure 15. The main feature was a wall (figures 16 and 17) which ran more or less east-west across the trench 85 degrees from magnetic north. It was largely of mortared chalk and flint rubble. Some fragments of soft red brick were included but there were no whole ones in situ. A thin 'Tudor' style brick of similar fabric was found in the workmen's tip. The west end of the wall was 0.7m thick at the base. There was a 0.1m offset on the north side so the upper part was only 0.6m thick. In the centre of the trench the wall was destroyed to the level of the offset. At the west end it stood higher but the presence or absence of the offset was not determined. The maximum exposed length was 1.73m.

The trench had a very irregular plan. It extended about 0.5m to the north of the wall and about 0.88 m to the south. On the north side there was soft grey sandy mortar which contained many fragments of brick and flint. On the south side there was brown sand which contained pieces of flint, brick and bone as well as some lumps of brown soil. The top of both these deposits was level with the top of the wall. Above them there was a layer of brown soil which had a good deal of rubble in its lower part and was about 0.36m thick.

There was an earthenware drain pipe running roughly east-west across the bottom of the trench to the south of the wall. At the east end it was 0.3m from the wall; at the west, where the wall had been cut back to accommodate it there was a gap of 10cm. The middle of the pipe had been broken by the workmen to allow them to put in dye to trace the flow. When we arrived it was raining and water was flowing out of the break. It was draining away rapidly: the hole was not filling.

There were no stratified finds. There is nothing marked in this location on the 1820 enclosure award map, or on later maps, so the wall must have been demolished before this. The bricks in the wall were probably thin, so they presumably sixteenth or seventeenth century although they could of course have been reused.

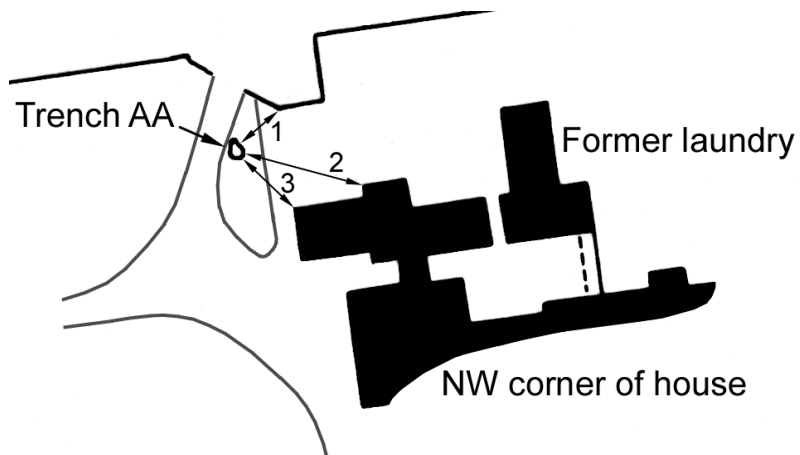


Figure 14. The location of trench AA. The measurements from the trench to the building were:

- 1. 7.1m
- 2. 15.73m
- 3. 9.2m

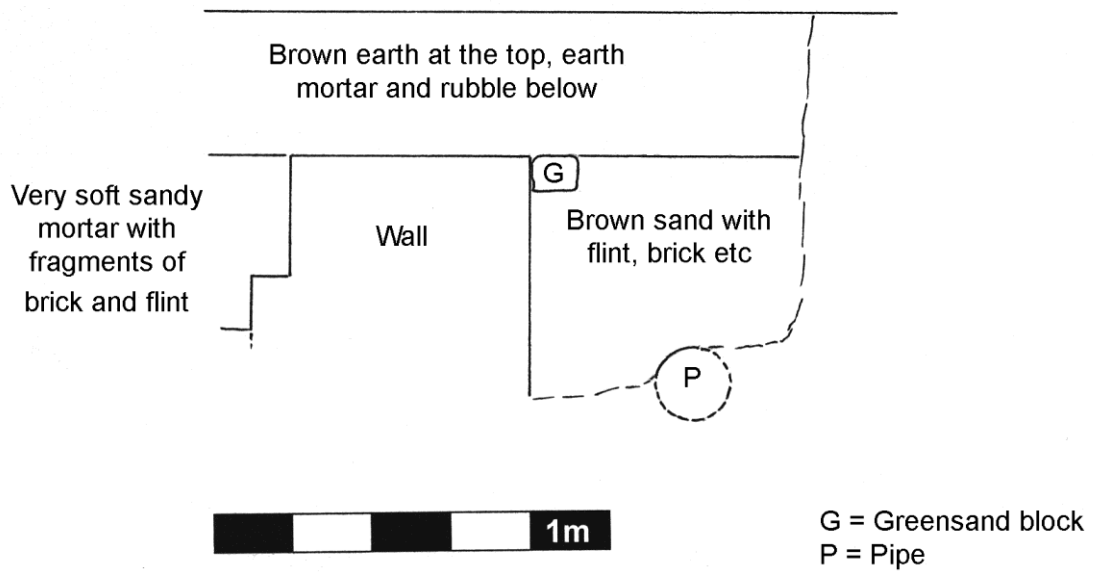


Figure 15. Section of the wall in trench AA looking east.



Figure 16. Trench AA looking east.



Figure 17. Trench AA looking west.

#### 4 TRENCH AK NORTH OF THE HOUSE

On 4 February 1990 a small contractor's trench was dug to the north of the former laundry building. It exposed a small part of a foundation (figure 18). The significance of the foundation is unclear although it may possibly have been part of the outer wall of the north arm of the moat.

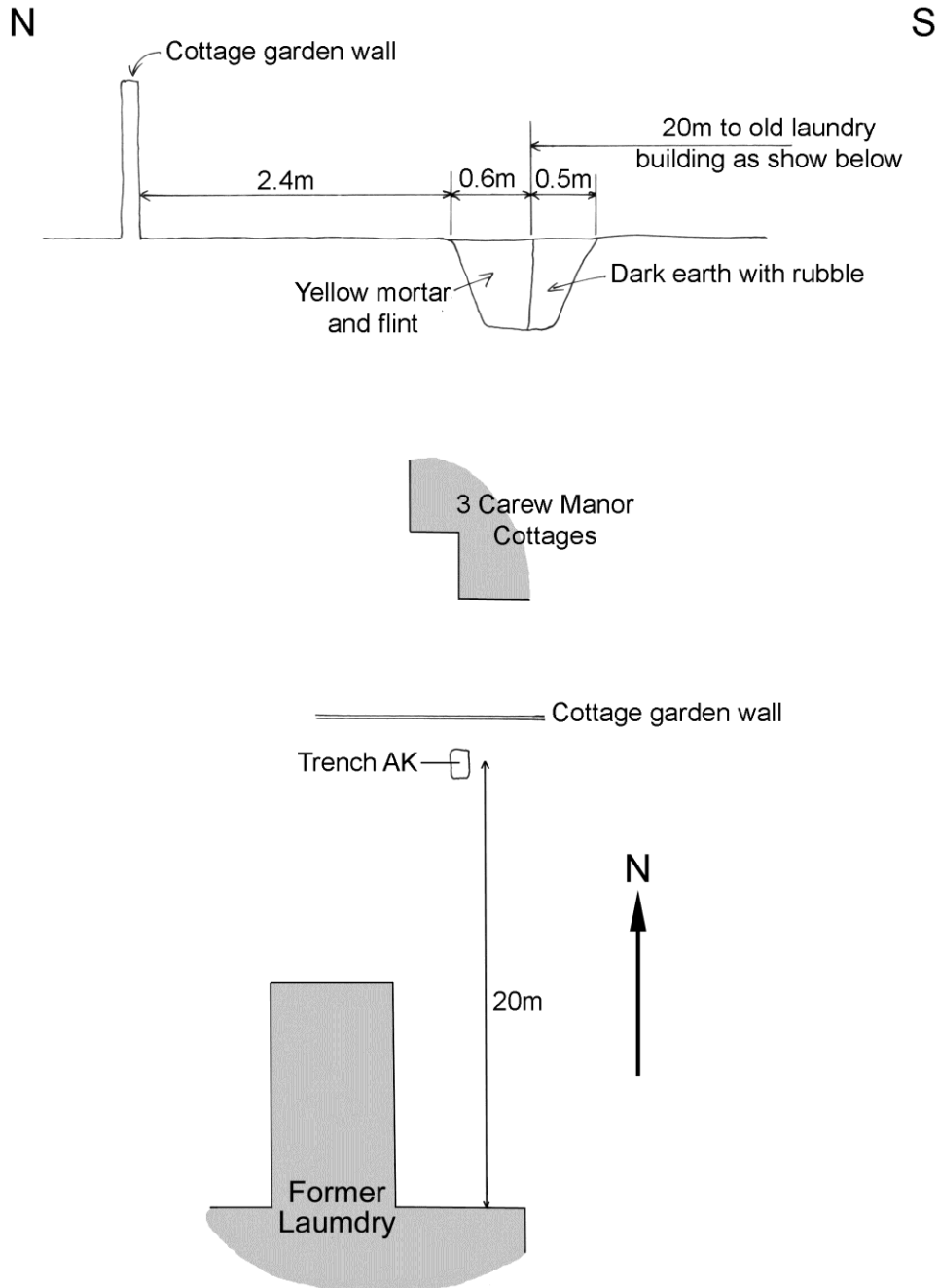


Figure 18. Location and sketch section of trench AK.

## 5 EXCAVATION AT THE NORTHEAST CORNER OF THE MOAT, 1988

*Trenches CA, CB and CC.*

### 5.1 The excavation

Trenches CA, CB and CC consisted of a small trench with two small extensions which uncovered the wall at the northeast corner of the moat island in 1988. The layout of the trenches is shown in figure 19. The first trench opened was CA. This was initially 3m east-west by 1m north-south and was laid across the projected line of the moat wall. It was excavated with trowels and small tools from the bottom of the turf. The trench was found to cover the full width of the moat wall but the east face was only just in the excavation. The trench was therefore extended eastwards by 1m to allow the excavation of a small section of the moat fill. This consisted of loose rubble, which meant that the sides of the trench extension were unstable and could not be cut to a vertical face. The upper part of the trench was widened on the north side so that it sloped and was more stable. The moat fill was explored until a sand layer was encountered at a depth of 1.63m. By this point the trench was filling with water, and baling was necessary. There was quite a strong inflow through the sand and it was judged too dangerous to go any deeper. A small hole was then dug down the face of the moat wall to locate the bottom, but the result of this was inconclusive.

When the eastern or outer edge of the moat wall had been located trench CB was started to try to locate the northeast corner of the moat island. The trench was dug in stages. The first part was 1m square, and was located at the northern end of CB. Work in it stopped when an old electricity cable was encountered at a depth of 0.28m. Area CC was then opened to the north of CB. Layer [CC1] and the upper part of [CC2] were excavated with a mattock, but trowels and small tools were used below this. When area CC was below the level of the moat wall top in CA, work was resumed in CB and the trench was extended to the northern edge of CA and excavated to the top of the moat wall with a mattock. Trench CC was also continued downwards to sample the deposits in the north arm of the moat.

The heights in the upper part of CA were recorded by measuring to the baulk with a tape. After this all heights were levelled to a temporary bench mark which was later levelled to the bench mark on the Canon Bridges Bridge in Beddington Park.<sup>14</sup> The north pointers on the drawings have not been surveyed, and should be taken as a general indication of the position of OS grid north.

### 5.2 The Stratigraphy

#### 5.2.1 The Moat Wall

A substantial wall ran across trench CA on a line parallel to the east front of the house (figures 30 to 36). The east face of the wall was 19.24m east of the east end of the north wing. The eastern side of this wall was exposed in area CB and CC where it continued to a corner 3.72m from the south side of trench CA. At the corner the wall turned through a right angle and then ran into the baulk following a line roughly parallel to the north side of the house as shown on figure 19. The wall was of flint which was mostly bonded with grey mortar, although creamy mortar had been used in places. The east and north sides were faced with squared stone blocks bedded in mortar, with a few flints and pieces of tile used to pack gaps.

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<sup>14</sup> TQ29426543.

The top of the wall was a rough demolition surface. The full width of the wall was only exposed in trench CA (figure 26). Here the top was about 1.94m wide, but the western side curved inwards as it went down, so that the wall was only about 1.8m thick 0.14m below the top. About 0.5m from the top the wall thickened again to about 1.86m.

The eastern face of the wall is shown in figure 30. The facing was only exposed in depth in trench CA. Here there were at least six courses of squared stone blocks with a total height of 1.61m. The bottom of the sixth course was not fully exposed, and its position was determined by feeling and measuring down a narrow water-filled hole. It was not possible to determine with certainty whether there was a seventh course below. The courses varied in thickness and were, from top to bottom, approximately 0.22m, 0.2m, 0.26m, 0.28m, 0.3m and 0.24m thick. There were at least two kinds of stone, one of which was Reigate stone, while the other was a hard, pale grey, lime-bound sandstone, probably Kentish rag stone. There were four types of finish on the blocks:

- I Very neatly finished with five or six lines of rectangular punch marks forming a horizontal band across the middle. Above and below the band the blocks were dressed with shallow vertical grooves and in some cases there was a band of horizontal grooving on one end. The blocks carried the masons' marks shown in figure 31. All the blocks appeared to be of Kentish rag stone.
- II With a smooth finish probably all of Reigate stone.
- III With rough vertical fluting which looked like chemical weathering but must have been the result of dressing. The corner of one block was recessed, and this area was rough and undressed. These blocks appeared to be of some kind of limestone.
- IV A block dressed more or less smooth but had been left with a slightly undulating surface rather like adzed wood. The stone was not identified but likely to be Reigate stone.

The distribution of these blocks appears in figure 31. There is no obvious pattern except that type I is confined to the upper two courses and that the lower blocks are mostly of type II and of Reigate stone. This is soft, porous, and easily damaged by frost. It would presumably be very vulnerable if it was used just above water level where it would be soaked and exposed to the cold. However, blocks of this type appear in all the courses except the top one.

Only two blocks were uncovered on the north face of the wall. These were both of type I and both had masons' marks.

Two pieces of soft, rather shaley grey slate were found mortared onto the top of the wall-facing near the northeast corner in the positions shown in figure 25. One of these was kept as a sample, and measures approximately 125mm by 60mm by 7mm. A similar, smaller, piece of slate (100mm by 60mm by 6-7mm) was found in layer [CB1] above the top of the moat wall.

A short section of the western or inner face of the wall was exposed in trench CA. It was of rough flint and mortar, and curved outwards towards the top as shown in figure 26. This suggests that it had been built against the side of a trench. There was creamy-yellowish mortar under the overhanging part of the wall, but the significance of this is unknown.

### **5.2.2 Layers to the west of the moat wall**

Two layers [CA16] and [CA17] butted up against the west side of the wall. Both were older than the wall as it projected over layer [CA16], which in turn overlay [CA17] (figures 26 and 37).

Layer [CA17] consisted of patchy orange and grey sand with many small flint pebbles (up to about 5cm) and some areas of iron-staining. About 8cm of this layer was removed, but the

excavation ended before the bottom was reached. There were no finds. It was overlaid by [CA16] which was about 0.46m thick. The lower part of this was mostly sand with some sub-angular and rounded flints and a few lumps of earth. It became more stony upwards until it consisted of chalk, earth and flint in a sand matrix, with a few more sandy patches. The layer was almost sterile. The only finds were a small piece of bone and a tiny scrap of red ceramic, probably tile. These, and the earth inclusions, suggest that the layer was dumped fill. Layer [CA17] was separated from [CA16] by a marked increase in the quantity of flint pebbles, but was otherwise of rather similar character. It is possible that the two layers were the result of one dumping episode.

### **5.2.3 Layers to the north and east of the moat wall**

The layers which filled the moat to the north and east of the wall were split into two stratigraphic sequences in the excavation because a baulk was left to support an old electricity cable at the corner of the moat wall. The two sequences, one in areas CA and CB and the other in area CC, will be described separately and the relationship between them will then be discussed.

### **5.2.4 The stratigraphy to the east of the wall in CA and CB**

The sequence in this area was only examined in depth in trench CA, which went down to about 1.3m below the top of the moat wall with a small hole by the wall going down to 1.62m. In most of CB the trench was only taken down to 0.27m below the wall top as shown in figure 28. The lowest layer excavated in the two areas was [CA15]. This consisted of slightly smelly grey sand of mixed size which contained bits of twig, small bits of wood, snail shells, bone, small stones and small pieces of brick. The sand was waterlogged and there was steady seepage from it into the trench, so that baling was necessary. The top of the layer was at 30.44m O.D. and was 1.23m below the top of the moat wall. The bottom of the layer was not reached.

Layer [CA15] was overlaid by [CA14] which consisted of brown earthy mud. The thickness of this deposit was very variable, as the mud had been pressed up between the loose rubble blocks of the overlying layer [CA13]. The latter consisted of flints, some of which were mortared together, large lumps of chalk, lumps of clay, and pockets of broken ceramic building material, which were all stained dark brown, presumably by iron deposition at the water table. Part of a bulbous stoneware pot was found in it. Layer [CA13] was overlaid by [CA11] which consisted of the same sort of material but was not iron-stained. Most of the layer was loosely packed chalk and flint rubble, with some brown earth. There were some dark patinated flints, pieces of Reigate stone, and lumps of brick and mortar including several chunks of mortared brickwork. The finds consisted of some pieces of Cheam white ware and part of a tin-glazed floor tile of late seventeenth century date. The layer extended upwards to the moat wall top as shown in figure 26.

In trench CB the top of layer [CA11] started to slope down northwards 1.35m north of the south side of CA. From this point it was overlaid by [CA12] which thickened northwards with its top just below the top of the moat wall. Layer [CA12] consisted of greenish sand which contained a few pieces of tile, mortar, charcoal and cinder.

### **5.2.5 The stratigraphy to the north of the wall in CC**

During the excavation of this area there was some over-digging along the northern face of the moat wall where the trench was taken down through several layers without a proper record. This over-dug section has been treated as an arbitrary layer [CC9] which almost certainly included parts of several stratigraphic layers (figure 28).



The oldest layer in this area was [CC8] which was only exposed in a small patch in the southeast corner of the trench. It consisted of soil and possibly some demolition rubble. Only a small volume of the layer was excavated, and the bottom was not seen. Layer [CC8] was overlaid by layer [CC5] which was about 0.06m thick and consisted of medium-brown sandy soil with a few chalk flecks, 1% green sand patches, 5% small-to-medium stones, 1% brick, and a little mortar. The finds consisted of several pieces of roof tile, some brick fragments, three small pieces of grey slate, and a bone. The layer was only fully recorded at the northern end of the trench but it almost certainly continued southwards into [CC9].

Layer [CC5] was overlain by layer [CC7] which consisted of brown sandy soil with 10% chalk flecks. It contained pieces of tile, brick, stone and mortar, together with some bone and shell, and two pieces of wine bottle and a piece of flat glass. There was also a piece of white marble slab, with a polished surface. The southern part of this layer fell within [CC9] but the sections show that this layer dipped markedly to the north and west (see figure 28).

Layer [CC7] was overlain by [CC6] which was largely of green sand with some mortar flecks and pieces of tile. The top of this layer also dipped towards the northwest, but much less steeply than layer [CC7], so that layer [CC6] was very thin close to the moat wall but thickened to about 0.26m in the northwest corner of the trench. The boundary between layers [CC6] and [CC7] was not very clear close to the moat wall but the continuation of [CC6] certainly extended over the top of the wall.

### **5.2.6 The relationship between the sequences in areas CB and CC**

The sequence in area CC was separated from CA and CB by a small baulk which was left to support an old electricity cable. This prevented the investigation of the stratigraphic relationship between layer [CA12] and the deposits in area CC. Layer [CA12] was predominantly of green sand and was therefore similar in character to layer [CC6]. The latter layer was not recorded in plan close to the moat wall, but the sections (figure 28) suggest that [CC6] was separated from [CA12] by the earth layer [CC7]. It therefore seems likely that [CA12] dips to the north and passes under the deposits recorded in CC.

### **5.2.7 The layers above the moat wall**

These were only examined in detail in area CA. At the eastern end of the trench the top of the moat fill [CA11] was at about the same level as the top of the moat wall. A layer of loose creamy mortar [CA9] lay on top of the eastern side of the moat wall. It was separated from the top of the moat fill [CA11] by a narrow strip of earth which penetrated down the face of the moat wall and tapered away to a point about 0.26m below the top of the facing (figures 25, 26 and 27).

At the west end of the trench layer [CA16], which lay to the west of the moat wall, was overlain by [CA8] which was patchy in nature, some parts being green sand and some parts chalk, flint and earth. Layer [CA8] was overlain by [CA20], which consisted of chalk and flint with a small amount of earth and a little mortar, particularly in the lower part of the layer. There were also a few pieces of tile. The section (figure 26) shows that there was a good deal of inter-penetration between [CA8] and [CA20] so that they were really one patchy layer which was mainly of flint and earth at the top and mainly sand below. Layer [CA8] / [CA20] extended over the top of the moat wall and thinned eastwards, and tapered away to nothing 1.07m from the western end of the trench so that it overlapped the western edge of the wall by 0.33m.

The creamy mortar layer [CA9] (figure 24) and the chalk, flint and earth layer [CA20] were covered by layer [CA5] (figures 22 and 23) which also rested directly on the centre of the moat wall. Layer [CA5] consisted of light brown sandy earth which contained chalk, flint and rubble, particularly at the eastern end of the trench. There were a large number of finds including pieces

of tile, clay pipes, pottery, wine bottles, brick, coal cinder and Reigate stone. The majority of the dateable finds were of the late seventeenth or early eighteenth century and there was nothing which must have been later than about 1750, so that it seems likely that the layer was deposited at some time in the period 1700 to 1750.

Two shallow depressions, about 2 to 3cm deep, ran across the top of layer [CA5] in a north-south direction as shown in figure 21. The filling of the western depression was treated as layer [CA6], while the eastern one was layer [CA7]. These layers were of brown earth which was identical with the overlying layer [CA4] and probably part of it. The depressions may have been bedding trenches.

Layer [CA4] covered the whole area of trench CA and rested on [CA5] and the moat fill [CA11] (figure 20). It consisted of brown earth mottled with small sandy patches and was about 0.06m thick. It contained flint and chalk, and many finds including Reigate and other stone, brick, mortar, tile, coal, nails, oyster shell, pottery, wine bottle and bone. The pottery was of mixed date but none appears to be later than the mid-eighteenth century.

Layer [CA4] was covered by two deposits. The first of these was [CA2] which filled the western most 1.06m of the trench, while the second [CA3] filled the eastern end. Both were of brown earth with chalk, flint, brick and tile. Layer [CA2] appeared to have less of these inclusions, but at the time of the excavation it is doubtful if there was a real stratigraphic distinction between the deposits. However, layer [CA3] contained pottery, clay pipe and non-local stone, none of which need be later than the eighteenth century, while [CA2] contained a good deal of obviously modern material. Both [CA2] and [CA3] were overlain by [CA1] which was about 0.08m thick and extended up to the base of the turf. It consisted of dark brown earth with many finds, including a plastic comb and other items made after 1945.

In area CC the upper layers were numbered 1 to 4 from the surface downwards. Layer [CC1] and the upper part of layer [CC2] were removed with a mattock, but below this the area was dug with small tools. Layer [CC4] consisted of brown soil which contained some sand and chalk. The finds included some cinder, roof tile and flecks of brick. This was overlain by [CC3] which consisted of brown soil with less sand than [CC4]. There were a few flints, some tile, coal, oyster shell, a small piece of clear glass, and a bird bone. Layer [CC3] was overlain by [CC2] which was, in turn, overlaid by [CC1]. Both [CC2] and [CC1] consisted of brown soil.

The upper layers in area CB were removed with a mattock without detailed recording.

### **5.3 Discussion**

The moat wall appears to have been constructed in a trench cut through or into the side of a previously existing deposit of flinty sand (layers [CA16] and [CA17]). The only finds from this deposit were scraps of bone and tile which are of no value for dating. The wall appears to be too thick to have been built simply to face the island, and it seems likely that it was originally fairly tall.

The facing of the wall consisted of a mixture of blocks of Reigate stone and Kentish rag stone. The blocks finished with rough vertical fluting may have been a third type of stone. The various kinds of stone were not confined to particular courses. Several types of stone exist in the sections of moat wall which are visible in the culvert which was laid in the moat around the south and west sides of the house. Reigate stone and Kentish rag are both present, and at least some blocks of the latter carry the mason's marks seen in the excavation (figure 31). There are three possible explanations for this mixture of stone:

1. Several types of stone were brought onto the site to construct the wall.

2. The wall consisted of a mixture of new stone of one type, and old stone of other types, which had been salvaged from earlier buildings.
3. That there was originally one type of stone, but repairs were carried out with other types.

The marked difference in finish between the different types of stone, and the fact that the masons' marks are confined to one type, tend to weigh against explanation 1. The Warwick Accounts show that 832ft of stone from London was brought onto the site in 1650 for repairs.<sup>15</sup> This is unlikely to have been Reigate stone as there would be no point in carrying it to London and back, but it could easily have been Kentish rag shipped to London from the Medway. The dressing of the rag blocks with a fluted border and a band of punch marks in the centre is hard to parallel in medieval building. It is, however, reminiscent of classical rustication, where there is a neatly dressed border and rough punched centre. A poorly executed 'classical' finish would not be out of place in the mid-seventeenth century.

Part or all of 22 facing-blocks were exposed in the trench. Of these 10 were Reigate, 8 were Kentish rag, 3 had a fluted finish, and one was of another type (figure 13). More of the wall top was exposed, and as the rag was concentrated in this area the sample is almost certainly heavily biased, but it is in any case too small to be representative of the moat wall as a whole. The moat island appears to have been about 65m from east to west and 56.4m from north to south. If the section of facing exposed in the excavation is representative, the wall would be at least 1.61m high and the total area of the face would be 390m<sup>3</sup>. There was presumably a large amount of stone in the outer face of the wall. The Kentish rag bought in 1650 would only amount to about 20% of the island wall and the percentage would be much smaller if there was a large volume of stone on the counterscarp side. There has been no block-by-block survey of the stone in the culvert, but we have the impression that the proportion of Kentish rag is at least 20%. The Warwick accounts show that some parts of the moat wall were of brick. The use of only 1,000 bricks in 50 man-days suggests repointing with some cutting out and replacement.

In the excavated area the eastern arm of the moat was filled with rubble. The top of this fill sloped down northwards from a point 1.35m south of the corner of the island and the rubble was overlaid by the earth and green sand fill of the northern moat. The eastern arm was thus filled before the northern one. The finds suggest that both fillings date from the first half of the eighteenth century.

The finds suggest that the soil layers [CA5], [CA4] and [CA3] above the moat wall also date from the first half of the eighteenth century. It is possible that layers above them [CA1] and [CA2] represent a further heightening of the soil level at some point after the mid-eighteenth century, but it seems equally likely that these also date from the early eighteenth century and that the more modern finds in them have worked down through worm action or gardening. The shallow cuts in the top of layer [CA5] may well be the truncated bottoms of bedding trenches which have survived below cultivation depth.

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<sup>15</sup> Surrey History Centre 2152/1.

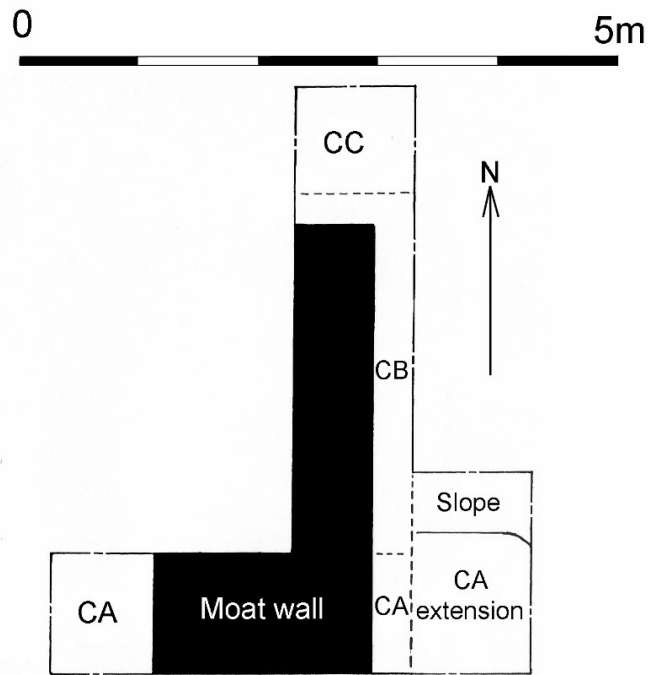


Figure 19. The three areas in which the trench was excavated.

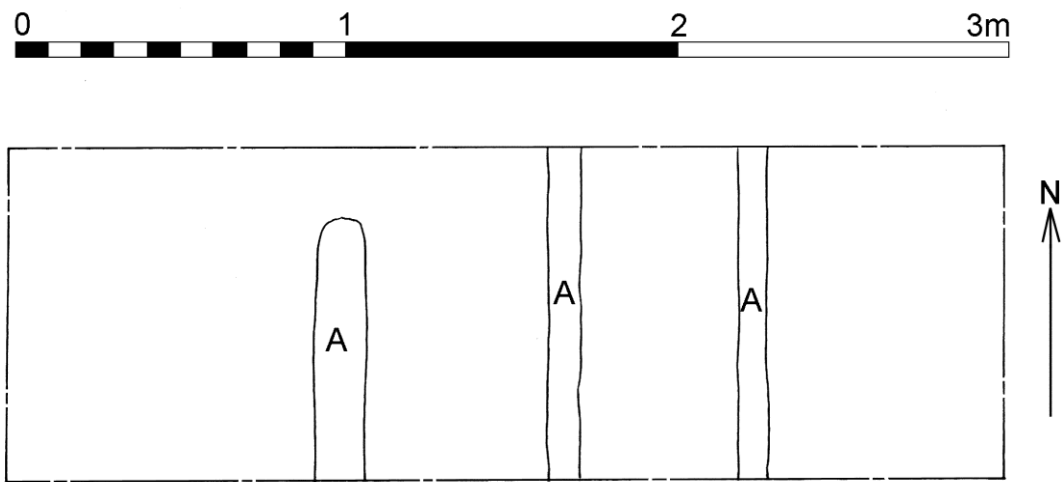


Figure 20. The top of layer [CA4]. The bands marked A were lighter but ill defined.

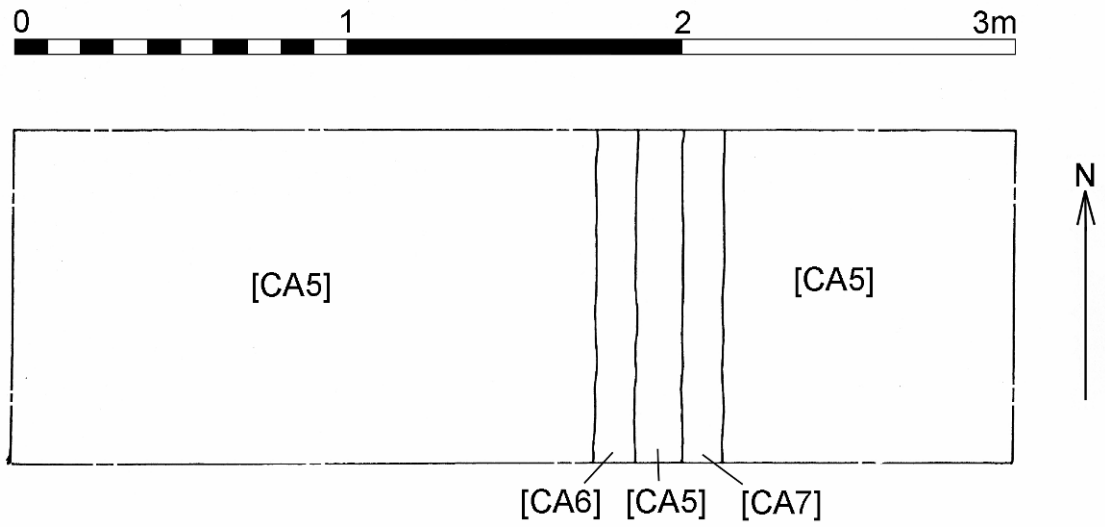


Figure 21. The tops of layers [CA5], [CA6] and [CA7].

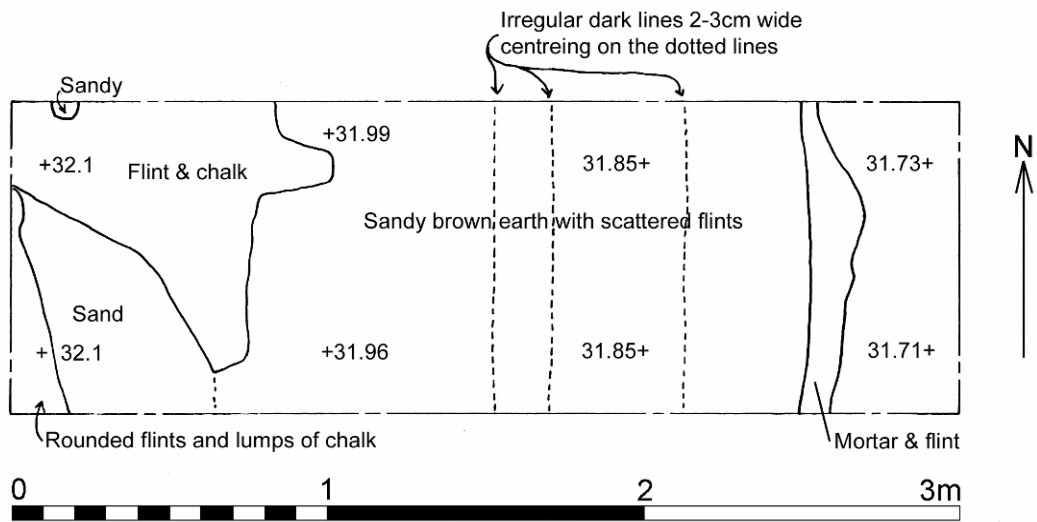


Figure 22. Layer [CA5] at the bottom of the first spit.

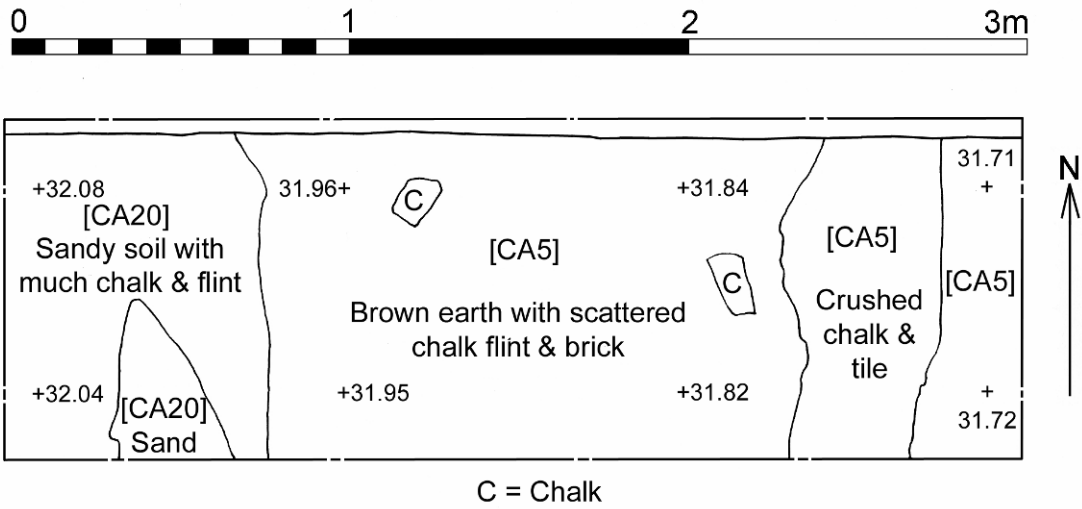


Figure 23. The top of layer [CA20] with layer [CA5] at the bottom of the second spit.

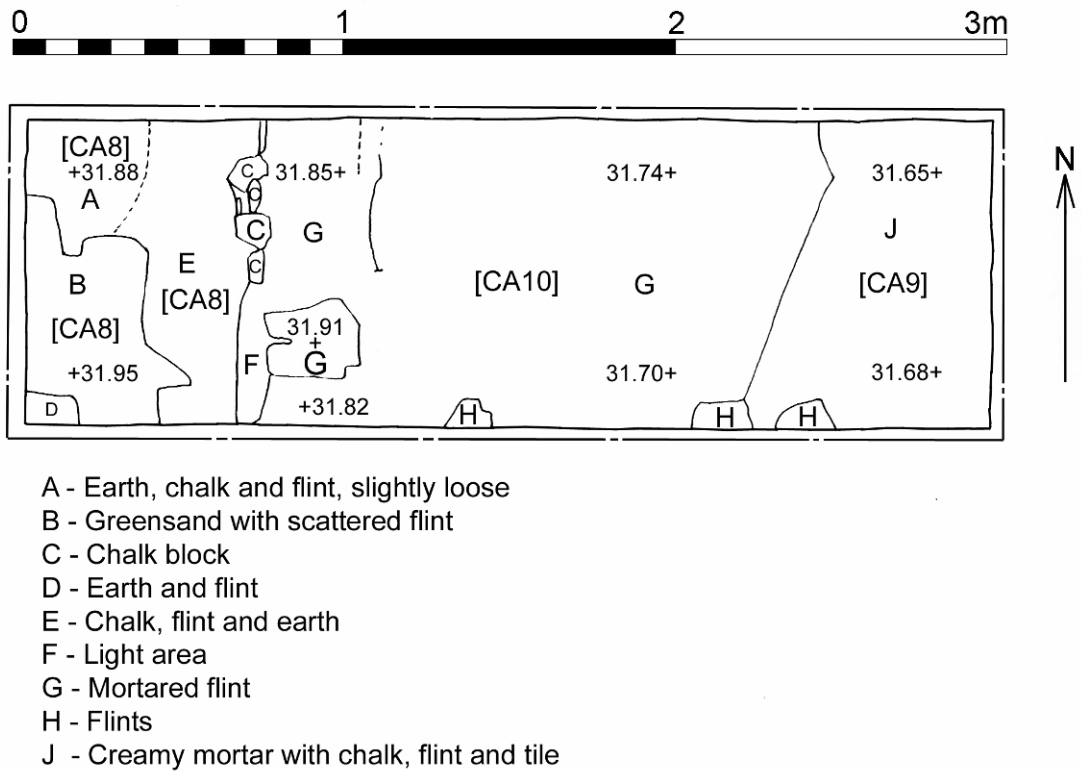


Figure 24. Part of the moat wall top [CA10] with the tops of [CA8] and [CA9].

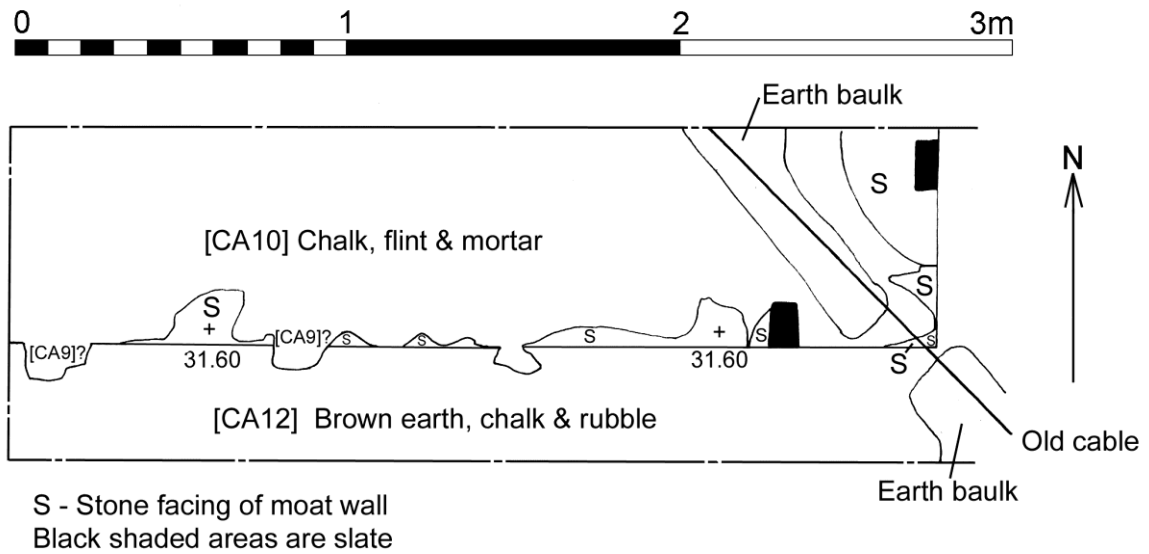


Figure 25. The moat wall top in areas CC and CB

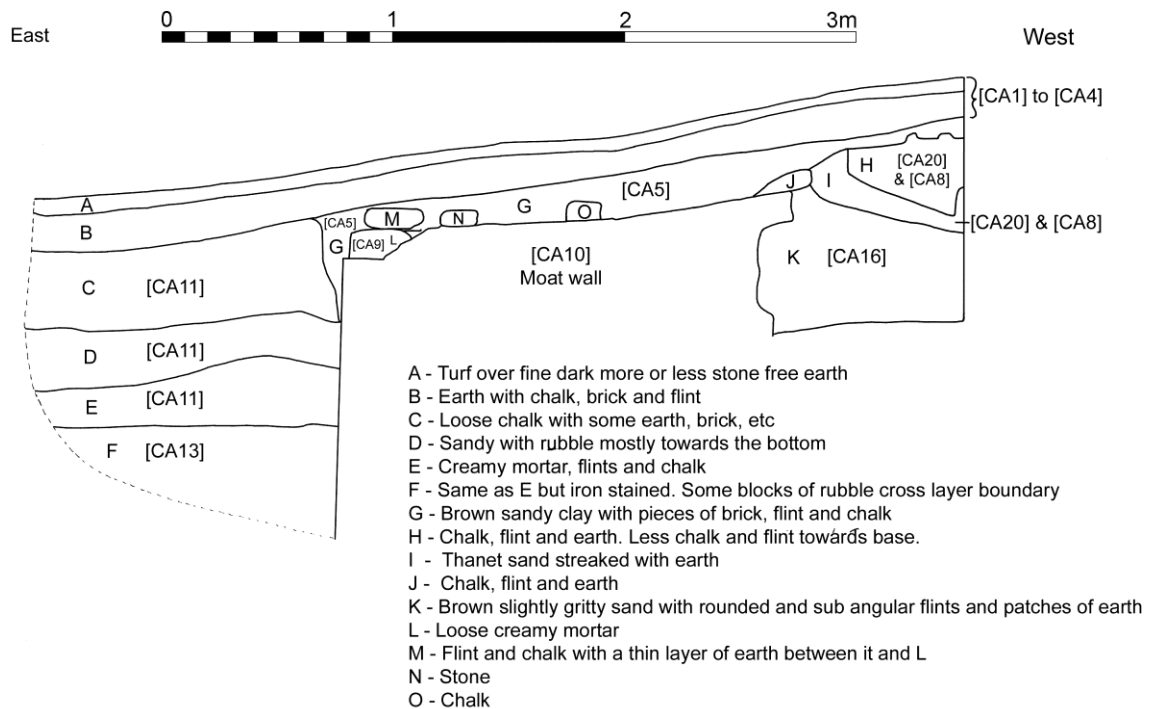


Figure 26. The south side of trench CA.



Figure 27. The south side of trench CA where the east side of the moat wall enters the section.

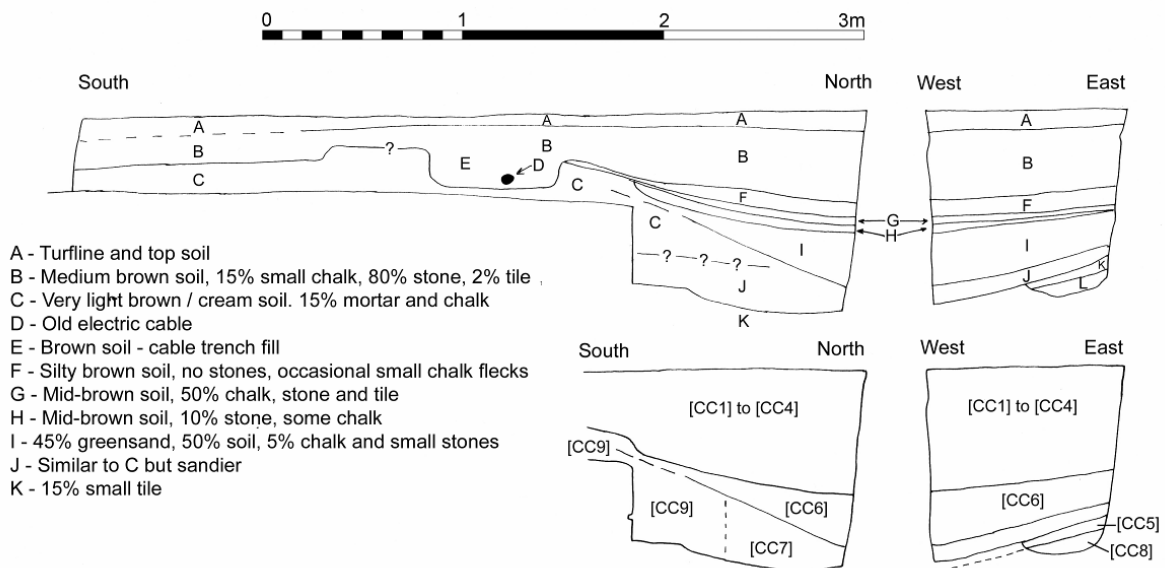


Figure 28. The west and north sides of CC and CB with the layers and the contexts in which they were excavated.



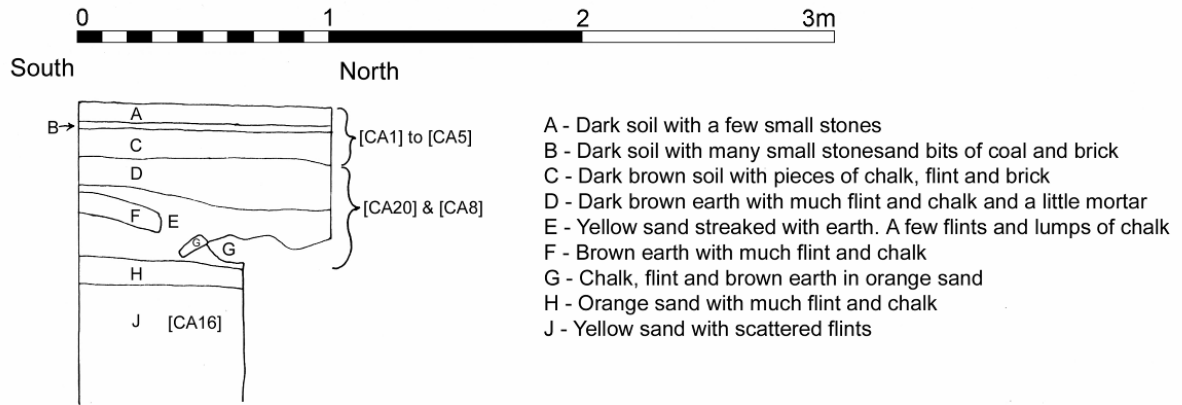


Figure 29. The west end of trench CA.

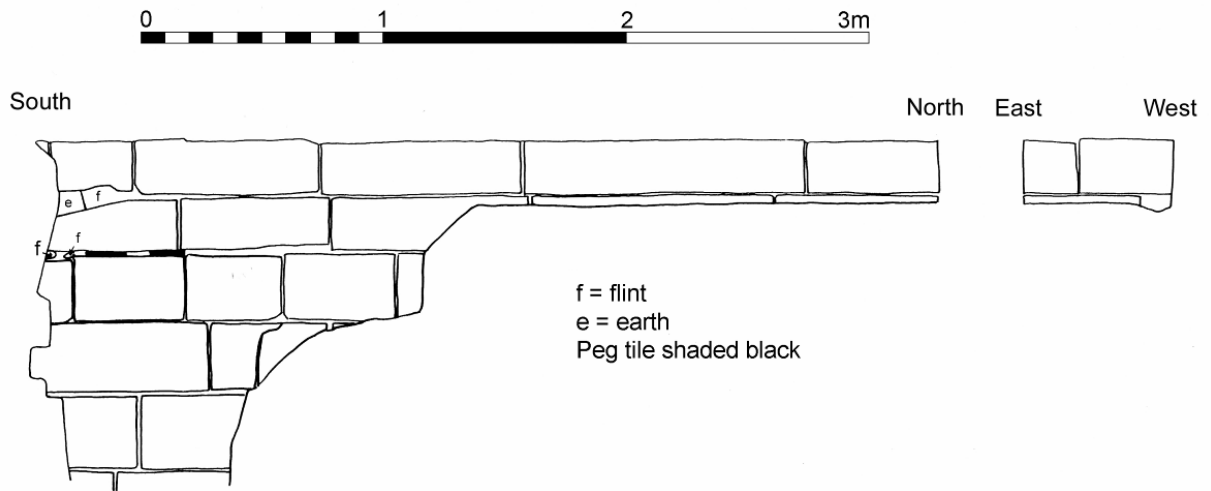


Figure 30. The moat wall.

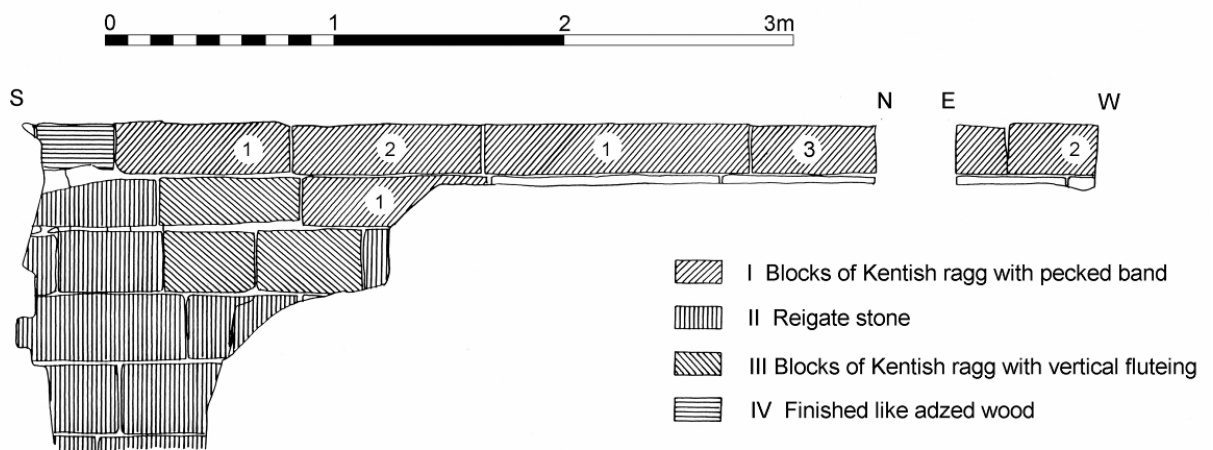


Figure 31. The moat wall showing the different types of blocks and the masons' marks which are detailed below.

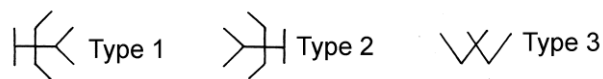




Figure 32. The top of the moat wall.



Figure 33. The moat wall in CA, looking southwest.



Figure 34. The top of the moat wall in trench CA.





Figure 35. The outer face of the moat wall in trench CA.



Figure 36. The inner face of the moat wall in CA.





Figure 37. The fill behind the moat wall at the south end of CA.

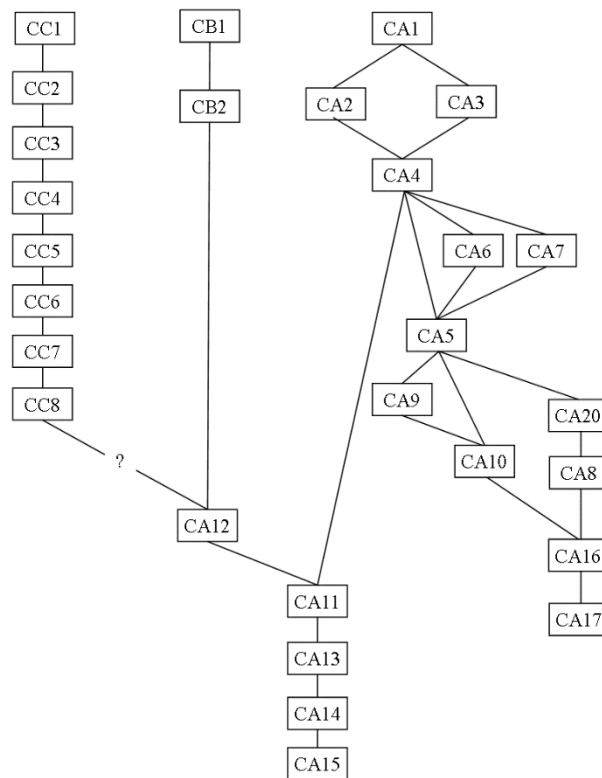


Figure 38. The site matrix.

## 6 EXCAVATIONS IN THE SOUTHWEST CORNER OF THE MOAT, 1992

*Trenches CG, CH and CI.*

### 6.1 Purpose of the excavation

This excavation was undertaken as a planning evaluation on the site of an extension to St. Mary's Church, Beddington. The extension, which is to the north of the chancel, is largely within the limits of the churchyard, but a small part projected into the grounds of Carew Manor School. The excavation was concerned with this area within the school grounds and sought to elucidate the nature of the deposits on the site and to find the position of the outer edge of the former moat around Carew Manor. It was carried out between 22 February and 9 March 1992. A watching brief was also undertaken when the extension was constructed in 1994.

### 6.2 The stratigraphy of trench CG

Trench CG was initially 4m long from north to south by 3m from east to west as shown in figure 39. The turf was removed, the trench was cleaned, and the resulting surface was treated as the top of layer [CG1]. This was quite thin and contained plastic, a sixpence dated 1932 and other modern items. It was removed by trowel. It rested on [CG2] which consisted of small rounded and angular flint gravel in brown earth with some chalk, brick and tile and a good deal of purple and grey slate. After [CG2] had been removed the trench was in the state shown in figure 40. The trench was covered by a layer of small rounded and angular gravel in an orange matrix (Layers [CG3], [CG5], [CG7] and [CG9]). This was cut by three features, [CG4], [CG6] and [CG8].

Feature [CG4] was excavated by trowel supplemented with some light mattocking. It consisted of light grey-brown mortary material which contained a fair amount of chalk and flint with a scatter of brick, tile, and Reigate stone. At a depth of about 0.2m the deposit became very rubbly with blocks of chalk and Reigate stone, brick, tile, and large flint. The trench contained a brown stoneware drainpipe about 0.25m in diameter, the top of which was between 32.05m OD and 32.15m OD about 1.3m below the surface. The layer contained few recent items apart from the pipe which obviously dated from the late nineteenth or twentieth century.

Layer [CG6] consisted of broken mortar with a little brown earth and a good deal of chalk, flint and some rubble including tile and large lumps of brick. The layer filled a trench which contained a metal pipe or cable about 55mm in diameter.

The third feature [CG8] was not excavated. The top of the layer consisted of flint, mortar and rubble in an earth matrix. The position and shape of the feature was consistent with a modern service trench.

These modern service trenches meant that it was impossible to excavate the whole area of CG and from this point the excavation was confined to the northeast corner where layer [CG3] is shown in figure 40.

On excavation layer [CG3] consisted of small rounded and angular gravel in an orange matrix. There was a small amount of brick, tile and Reigate stone with a little slate and glass. The layer contained two pieces of eighteenth or nineteenth century pottery, brick, roof tile, mortar, nails, flat glass, stone, slate, modern bottle glass and a modern buckle finished with metal foil. The deposit appeared to be a gravelled track or drive and the buckle suggests that it was recent.

Layer [CG3] was underlain by layer [CG10] which consisted of broken chalk with a little flint in a sparse orange matrix. There were few finds, the only one of any dating significance being a piece of pipe stem.

On the eastern edge of the trench there was a cut in [CG10] which was filled by layer [CG11] as shown in figure 41. This consisted of brown topsoil-like earth with some powdery mortar towards the bottom. There was a good deal of rubble some of which appeared to be nineteenth century but there were no closely datable finds. The layer was underlain by the lower courses of a brick wall which ran more or less north-south and was exposed in the side of the trench (figure 46). The bottom of the brickwork was about 32.17m OD. Below this there was a substantial foundation of brick, chalk, Reigate stone and a little flint, all bonded with much mortar. The bottom of this was not seen but was below 31.97m OD.

Layer [CG10] was underlain by layers [CG12] and [CG13]. Layer [CG12] occupied the north end of the trench as shown in figure 42. It consisted of crushed mortar and brown earth with much roof tile but did not contain any closely datable finds.

Layer [CG13], which underlay both [CG10] and [CG12], covered most of the excavated area apart from a more or less circular area [CG14] in the centre shown in figure 43. The layer consisted of solid unbroken mortar which contained some broken brick. The latest datable finds were a sherd of butter pot of seventeenth or eighteenth century date and a piece of early eighteenth century stoneware.

Layer [CG13] was underlain by [CG14] and [CG15] as shown on figure 44. Layer [CG14] consisted of greenish sandy earth with a good deal of chalk and flint, some brick and lumps of mortar and a little Reigate stone. There was some pipe stem and part of a glass handle.<sup>16</sup>

Layer [CG14] butted up sideways against layer [CG15] which occupied the north end of the trench and consisted of solid unbroken mortar with a few pieces of rubble but no closely datable finds.

Layers [CG14] and [CG15] were underlain by layer [CG16] which consisted of green-grey sand with flecks of chalk, brick, mortar, Reigate stone and some cinder. There was some brick and Reigate stone rubble but no closely datable finds.

Layer [CG16] was underlain by [CG17] This also consisted of green-grey sand but it was much more compact than the overlying layer which peeled away cleanly when trowelled. The area in the north-east corner of the trench was an exception, as the deposit there, was softer and the boundary between it and the overlying layer was hard to define (figure 45). The hard area appeared to have been heavily compacted and had probably been used as a path. The layer lacked closely datable finds the latest item being a pipe stem. The excavation was stopped before the base of [CG17] was reached.

### **6.3 The stratigraphy of trench CH**

Trench CH was 2m long by 1m wide and was dug down the outside of the churchyard wall in the position shown in figure 39. The main purpose of trench CH was to examine the foundations of the churchyard wall and to test the theory that it rested directly on the moat wall. It was mostly excavated with a mattock.

Layer [CH1] which lay directly under the turf consisted of dark-brown topsoil. The latest objects in the layer were a piece of modern glass and a lump of cast iron pipe.

Layer [CH1] was underlain by layer [CH2] which was lighter brown with patches of green sand and Reigate stone. The distinction between the two layers was arbitrary and the finds were not fully separated. There were some large flints at the north end of [CH2].

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<sup>16</sup> Find <36>.

Layer [CH2] was underlain by layer [CH3] although the distinction between this and the overlying layer was again largely arbitrary. It was lighter brown and more sandy than [CH2]. The layer contained some Reigate stone and large angular flint. The layer contained a piece of tin-glazed pottery and four pieces of pipe stem.

[CH3] was underlain by [CH4] which consisted of brown earth with much small broken chalk, pockets of brown sand, and a large lump of orange mortar. A stoneware drainpipe with a diameter of about 0.17m was found in the south end of the trench 0.91m below the grass. The pipe trench was visible in the section but was not detected in the excavation as the trench was dug rapidly with a mattock. This also meant that the four layers recorded were not closely related to the stratigraphy shown in the sections.

## **6.4 The moat wall in CH**

Trench CH explored the foundations of the churchyard wall to a depth of 1.84m. The churchyard wall was about 1.96m high and was made of mortared knapped flint, with a line of brick 1.6m above ground level. The wall overhung its foundation by 0.02 to 0.05m as shown in figures 49 and 50. The upper part of this consisted of flint, some of which had been napped, and mortar. Below this the wall consisted of blocks of Reigate stone, some areas of Reigate rubble and flint, and three or perhaps four, blocks of Kentish rag (figures 48 to 50). The wall continued below the bottom of the trench to an unknown depth.

## **6.5 The stratigraphy of trench CI**

This trench was 3m long by 1m wide and was aligned east to west in an attempt to locate the western edge of the moat. Layer [CI1], immediately under the turf, consisted of dark fine topsoil. It was underlain by [CI2] which consisted of brown earth with a good deal of small rounded flint gravel. The layer contained part of a nineteenth century pottery doll, a scrap of clear flat glass and a slate pencil point. It was underlain by large tightly packed flint cobbles [CI3] which had knapped tops and were bedded in greyish sand [CI4] which was streaked with earth filled worm holes (figure 52). The layer contained three pieces of pipe stem.

Layer [CI4] was underlain by [CI5] which consisted of light brown sandy earth with much brick, flint, tile, chalk and Reigate stone. The layer contained two pipe stems and some pieces of wine bottle.

Layer [CI5] was underlain by [CI6], the distinction between the two being rather arbitrary although [CI6] consisted largely of rubble in a sandy matrix. The latest datable finds consisted of several pieces of early to mid-seventeenth century stoneware bottle sherds, pieces of wine bottle, and some pan-tile.

At the west end of the trench layer [CI6] was underlain by dark-brown soil layer [CI7] which contained much sub-angular gravel ranging down in size from 0.1m. On the west side the top of this was at about 31.65m OD. It sloped down eastwards so the top was at 31.65m OD 1.44m from the west end of the trench. At this point the layer seemed to drop vertically but the excavation was stopped. Layer [CI7] was not seen in the western end of the trench where the excavation ended in layer [CI6] (figures 51, 53 and 54).

## **6.6 The watching brief**

This was undertaken in 1994 while the contractors were erecting the church extension.

### 6.6.1 The service trench from Church Road to the extension

The contractors dug a deep service trench which ran roughly parallel to the north wall of the churchyard from Church Road to the extension. It was excavated from west to east on the line shown in figure 55. It was dug in short sections and was soon backfilled so that only short lengths were open and visible at any one time. Some sections were dug and filled between visits so it was impossible to record a continuous section. Notes were made at six points (figure 55):

I. This section was about 3m long and the western edge was 4.8m from the wall along the side of Church Road. Below the grass there was a layer of dark-brown topsoil about 0.8m thick which became more flinty towards the bottom. Below this there was crushed chalk with some flint in it. The bottom of the trench was 1.5m below the surface.

II. This section was about 7.5m long and the western edge was about 19m from the Church Road wall. Below the grass there was sandy soil to a depth of 0.7m. This was underlain by gravel in dark earth which extended down to 1m below the surface. Below this there was broken chalk in white chalk silt. The trench was about 1.3m deep.

III. This section was on the site of two manholes which were adjacent to the western end of the Church 30.3m and 32.3m east of the Church Road wall. The west side of the western pit had the following section:

- 0m Sandy topsoil.
- 0.3m Darker brown soil with some flint
- 0.8m Gravel.
- 1.25m Top of concrete foundation for manhole.

The east side of the western pit had the following section:

- 0m Sandy topsoil.
- 0.3m Gravel and mortar in light earth.
- 0.55m Dark-brown soil with some flint.
- 1.0m Flint in dark earth.
- 1.2m Top of concrete foundation for manhole.

There was chalky material on the adjacent spoil heap.

An examination of the tip suggested that the soil to the west of this section was clean with almost no finds.

IV. This section ran from opposite the buttress at the west end of the outer north aisle to opposite the buttress at the centre of the aisle, a length of about 10m. The west end was about 38m east of Church Road. It was inspected from outside the contractors site fence so the bottom of the trench could not be seen and observation conditions were particularly poor. The only obvious feature was a patch of gravel about 0.3m below the surface. The east side of this was about 1m east of the buttress at the western end of the outer north aisle. The surviving length of gravel was short and it is unclear how far west it had originally extended as the section was cut by a gas main trench. The gravel appeared to be about 0.2m to 0.25m thick and may possibly have been the foundation of a path.

V. This section seen in the south side of the trench about 47.5m east of Church Road opposite the west side of the central buttress of the outer north aisle. It was measured as follows:

- [DF1] 0m Dark-brown topsoil.
- [DF2] 0.15m Light brown sandy soil with some flint and a little brick.



|       |       |  |
|-------|-------|--|
| [DF3] | 0.6m  | Mortary rubble in light brown earth.                                     |
| [DF4] | 0.7m  | Dark-brown earth becoming very gravelly towards the bottom of the layer. |
| [DF5] | 1.37m | Chalk mud.   |
|       | 1.4m  | Trench bottom.   |

Layer [DF2] continued to both east and west. The mortary layer [DF3] extended about 0.4m west of the measured section. The top of layer [DF4] appeared to dip slightly to the east.

The opposite section on the north side of the trench had been heavily disturbed by a gas pipe trench.

VI. This section was about 58.2m east of Church Road on the north side of a pit for a manhole which is about 1.5m north-east of the buttress at the north-east corner of the outer north aisle. This was on the line of the moat edge exposed in trench CI which had been dug about 1.6m to the north. The section contained a clear eastward dipping boundary with rubble above and black flinty soil below. The latter (context [DE1]) contained a pocket of orange sand, some flat peg tile, a piece of grey foam-like slag and a pig tooth. The layer therefore appeared to be dump rather than natural.

### 6.6.2 The moat wall in the extension foundation trench

The upper part of the moat wall was demolished when the foundation trench for the church extension was dug. However, a section of the wall exposed on the east side of the trench was photographed. The section was located at the junction of four walls:

- The moat wall and the north wall of the churchyard which rest rested on it.
- The eastern wall of the churchyard.
- The wall which formerly ran from the northeast corner of the churchyard to the south wing of the house, the foundations of which were exposed in the east side of trench CG.
- The wall which formerly ran from the northeast corner of the Churchyard eastwards to the school gymnasium.

The remains of all four walls were present in the side of the trench and are shown in figure 56 and on the interpretation drawing figure 57 where the key areas are labelled A to H. The original face of the chalk and flint moat wall (H) appeared to have been removed and replaced with brick (shown in black on the figure 57). The upper part of the wall (G) was also a replacement, or addition, as the mortar in it was darker than that in H. The brick extended above the top of the original moat wall (H) and appeared to have been contemporary with G. The addition to the moat wall was overlain by another mass of brick (D) which was the foundation of the southward running wall along the east side of the churchyard. Area E to the north of the brick facing of the moat wall consisted of chalk and mortar, with some flint, and occasional pieces of brick. This appears to have been the foundation of the wall that formerly ran northwards to the south wing of the house. This was overlaid by a mass of brick (C) which appears to have been the base of the wall. The wall foundation E was separated from the facing of the moat wall by (F) which appears to consist of sand or grey/brown mortar with flint and rubble. This was probably part of the original moat fill left when the northward running wall was constructed. There was a marked break between the foundation of the wall running to the south wing and the east wall of the churchyard. The latter projected over the foundation of the former and also projected beyond the face of the moat wall which suggests that churchyard wall postdates the filling of the moat. The boundary of the churchyard is likely to be of considerable antiquity and the brick wall presumably replaced some earlier structure.

The moat wall was 0.65m thick where the top was exposed in the foundation trench 1m west of the west side of the former organ pump house in the northeast corner of the churchyard.

### 6.6.3 The moat fill

Part of the foundation of the wall which connected the northeast corner of the churchyard to the south wing was removed when the extension foundation trench was dug. The wall ran across the top of the moat fill. The deposits to the west of the wall were investigated in trench CG and are described in detail above. They consisted, for the most part, of a series of layers of rubble underlain by sand. The upper part of deposits to the east of the wall, which were exposed in the foundation trench to a depth of about 0.9m consisted of light brown sandy earth. This appeared to rest on green sand with flint and Reigate stone, although this deposit was only exposed in the centre of the section. The trench penetrated to a maximum depth of 1.1m. The wall therefore formed a boundary between two different types of moat fill. This is odd as the north-south running wall does not quite reach the southern edge of the moat suggesting that it was not a retaining wall.

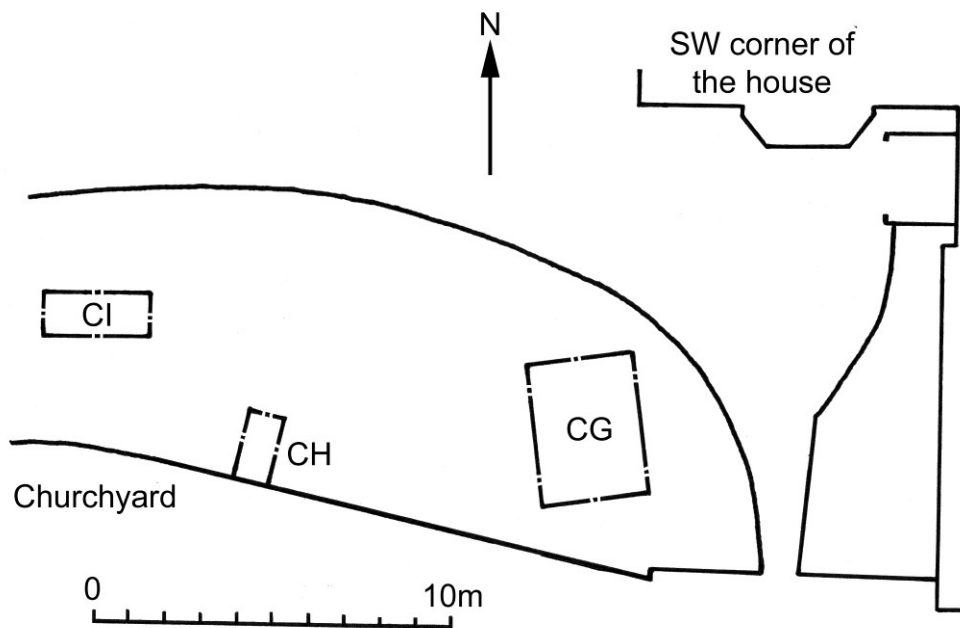


Figure. 39. The location of trenches CG, CH and CI.

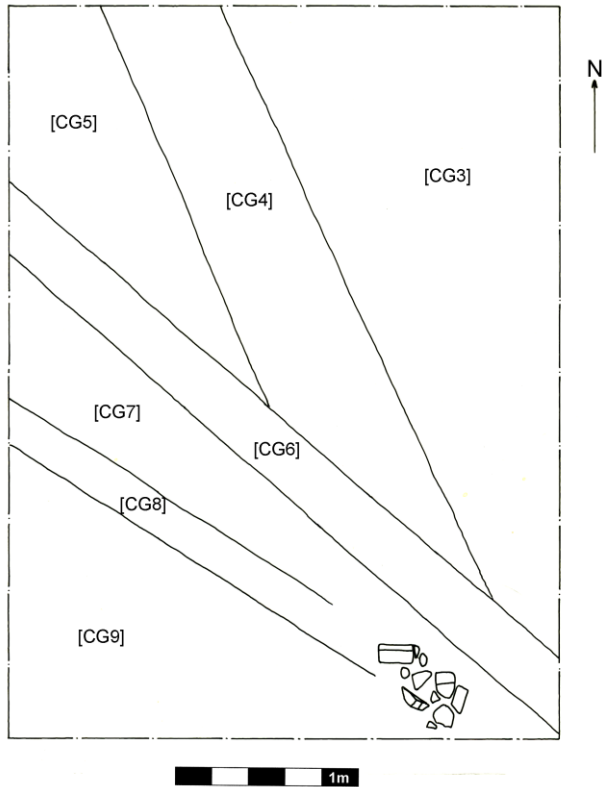


Figure 40. Trench CG showing the tops of layers [CG3], [CG4], [CG5], [CG6], [CG7], [CG8] and [CG9]. 22 January 1992.

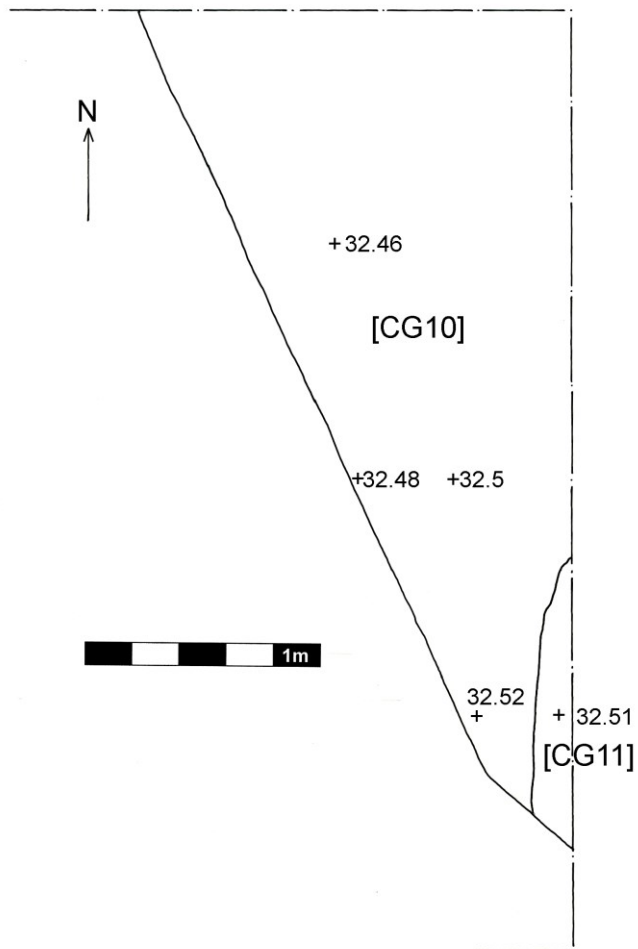


Figure 41. Trench CG showing the top of layer [CG10]. 26 February 1992.

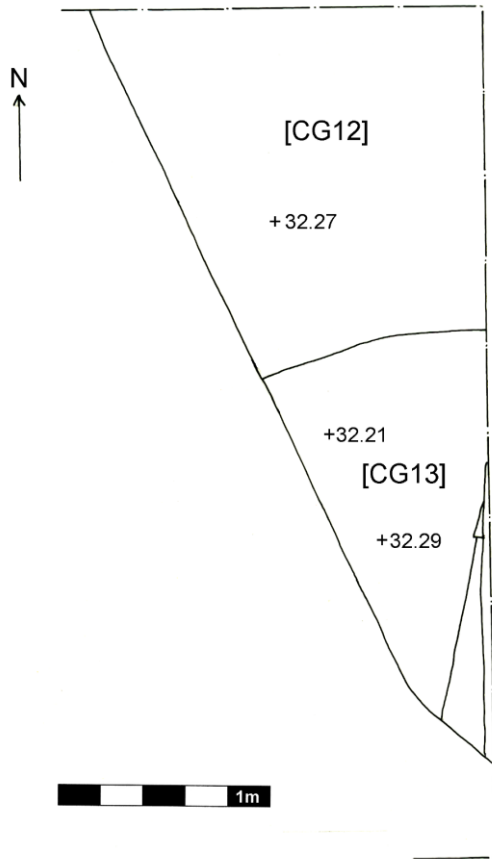


Figure 42. Trench CG showing the top of layer [CG13]. Also shows part of [CG14].

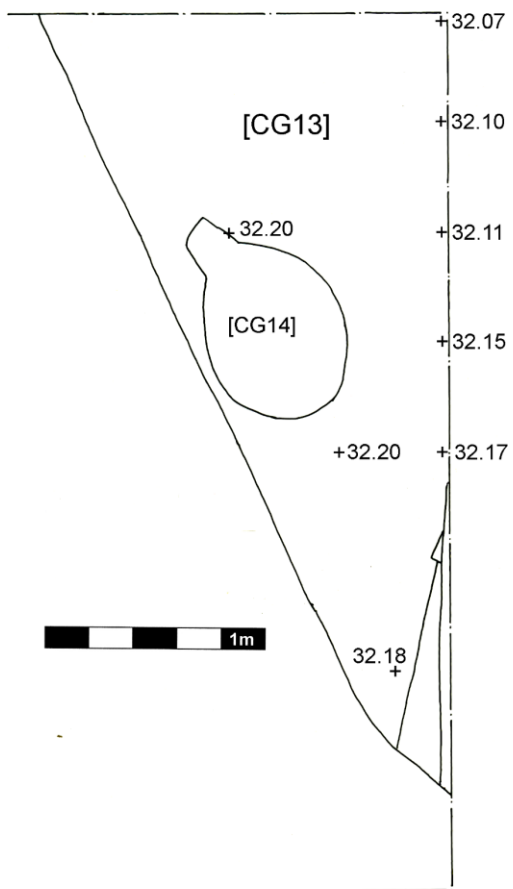


Figure 43. Trench CG showing layers [CG12] and [CG13].

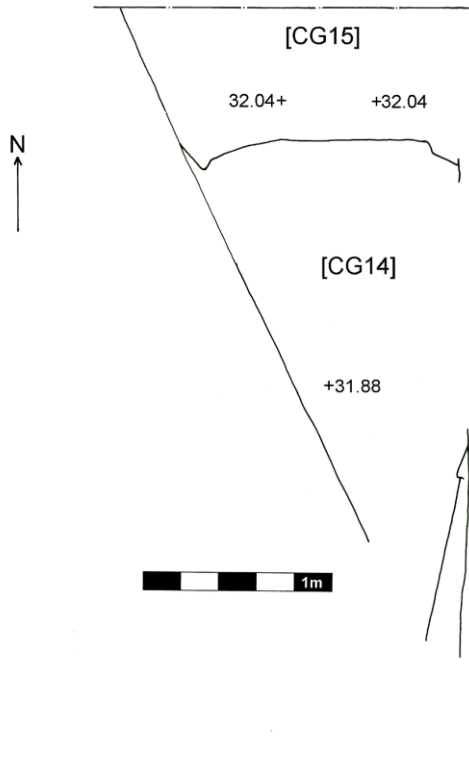


Figure 44. Trench CG showing the top of layer [CG15]. Also shows [CG14]. 28 February 1992.

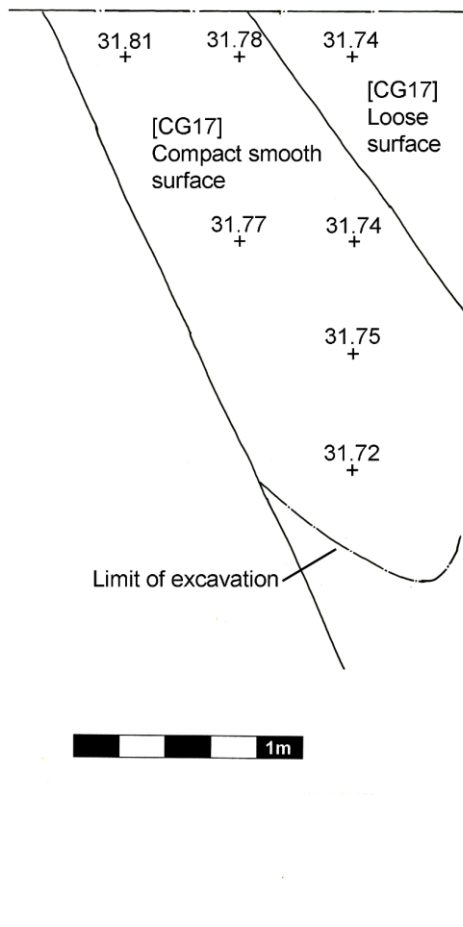


Figure 45. Trench CG showing the top of layer [CG17]. 1 March 1992.

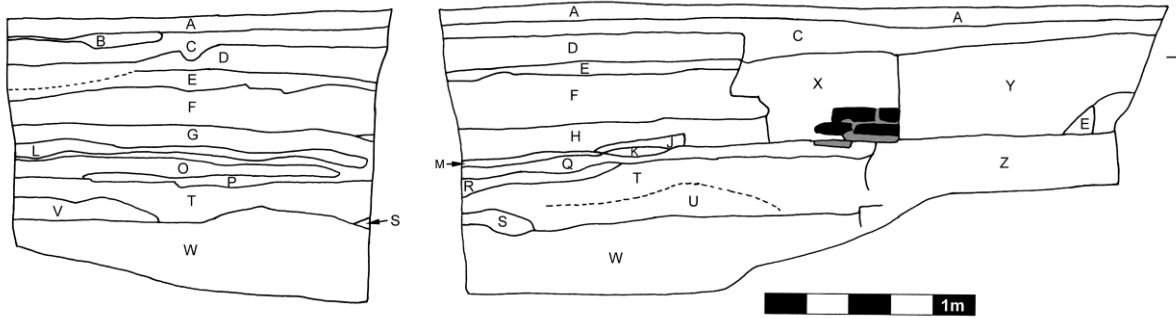


Figure 46. The north (left) and east sides of trench CG. Black is brick, grey mortar.

- A Fine dark brown top soil.
- B Brown earth with much chalk, flint and small rubble.
- C Brown earth with chalk, flint and small rubble but less than B.
- D Small gravel in brown earth matrix.
- E Gravel, mostly small and rounded in an orange matrix.
- F Broken chalk in an orange matrix.
- G Crushed mortar with brick and tile.
- H Light brown sandy earth with much small chalk. Wide scatter of broken and crushed brick at the base.
- J Sandy with chalk and brick. Darker than H. Possibly contains ash.
- K Fine crushed brick.
- L Dark earthy with much charcoal and a little brick, over burnt brick and chalk.
- M Hard grey mortar in situ.
- N Mortar in situ with much crushed brick in it.
- O Grey sand with pieces of Reigate stone, chalk and a little brick.
- P Sandy mortar, hard in some places and soft in others. The boundary with O is ill defined.
- Q Densely packed hard grey sand.
- R Brown sand with much broken brick.
- S Mortar and scraps of brick. Very loose.
- T Light brown sandy earth with much small chalk. Wide scatter of broken and crushed brick.
- U Similar to T but lighter more sandy and with much less brick.
- V Rubble. Mortar, flint, brick, and chalk.
- W Grey green sand with a thin scatter of flint, chalk, tile and brick.
- X Light brown soil with much flint chalk and brick.
- Y Brown soil with a wide scatter of mostly small rubble and flint.
- Z Foundation of brick, chalk Reigate stone, a little flint and much bonding mortar.

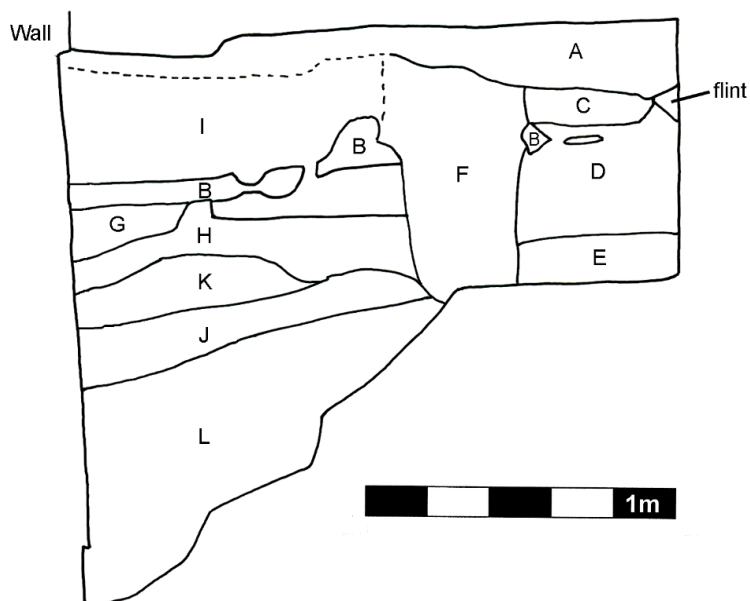


Figure 47. Trench CH, the west side. 27 February 1992.

- A Dark brown top soil with a few small stones, tile scraps etc.
- B Crushed Reigate stone.
- C dark brown soil with more flint than A.
- D Mottled patchy mixture of brown soil and yellow / green sand. Many small chalk flecks. A scatter of larger chalk, flint and tile.
- E Grey green sand with a few pieces of chalk, flint and Reigate stone.
- F Grey brown sand with some orange sand towards the top. Patches of dark brown soil particularly towards the base. Some flint, Reigate stone and chalk.
- G Light brown sandy. Small patches of orange sand, scraps of chalk, some tile.
- H Grey brown sand with much broken chalk and a scatter of flint.
- I Brown slightly reddish soil with a scatter of brick, tile and chalk.
- J Mottled orange grey sand with a wide scatter of chalk.
- K Patchy sand and brown earth with some chalk flint and brick.
- L Grey sand with a scatter of tile and chalk.

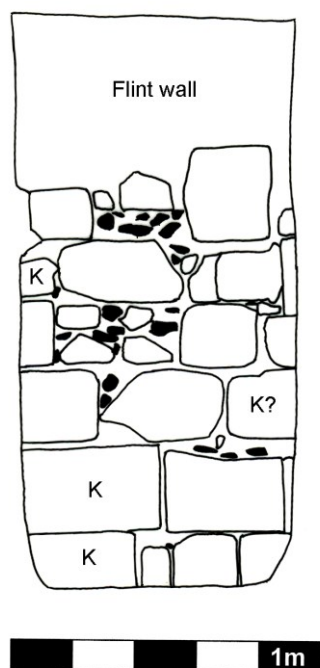


Figure 48. The lower part of the Churchyard wall which formed the south side of trench CH. Flint is shaded black. Other stones are Reigate unless marked K for Kentish rag stone. 25 February 1992.





Figure 49. The moat wall in trench CH.



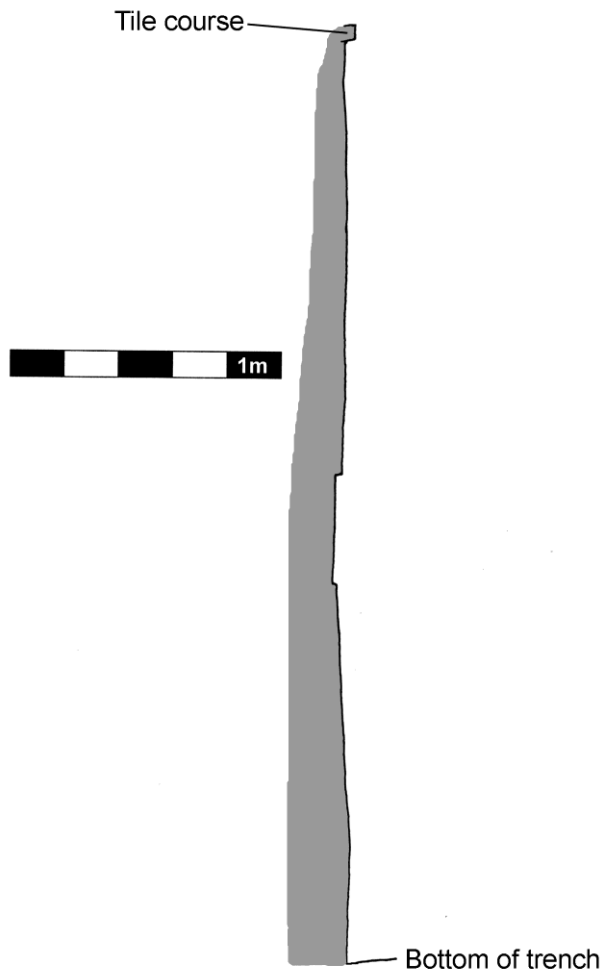


Figure 50. Profile of the north side of the churchyard wall at the south end of trench CH.

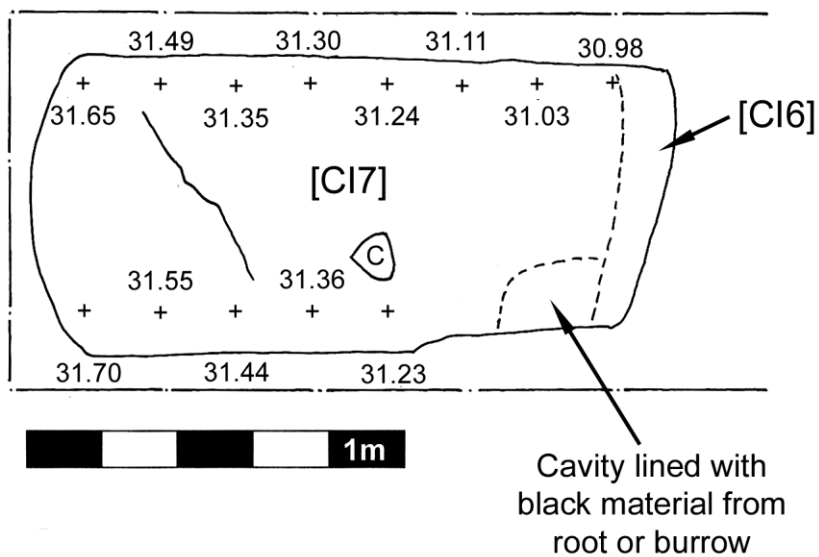


Figure 51. Trench CI showing the top of layer [CI7]. 9 March 1992.

- A Dark charcoal like line, probably a decayed root.
- C Chalk.



Figure 52. Top of cobbled surface [CI3] looking east.



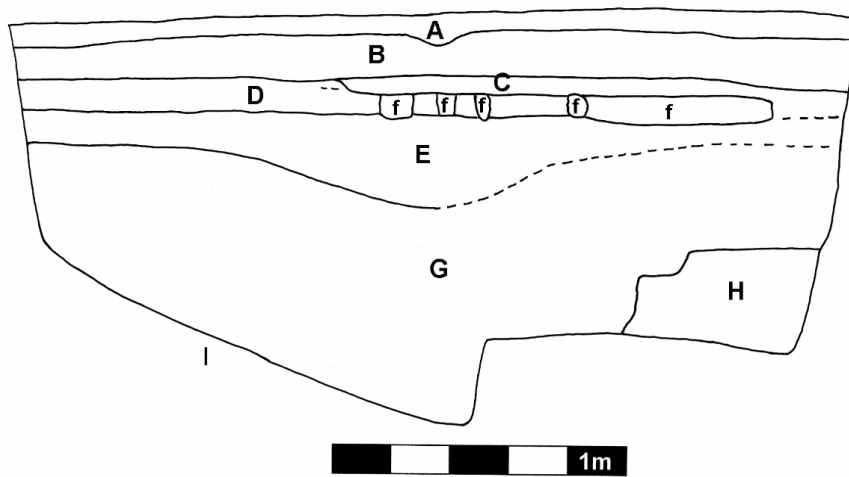


Figure 53. Trench CI, the north side. 9 March 1992.

- A Dark brown fine top soil.
- B Gravel in sparse earth matrix.
- C Yellow sand.
- D Light brown sand with much rubble.
- E Fine earth
- F Flint
- G Dirty sand with flint impressions



Figure 54. The top of [CI7] looking west. This is interpreted as the outer bank of the moat.

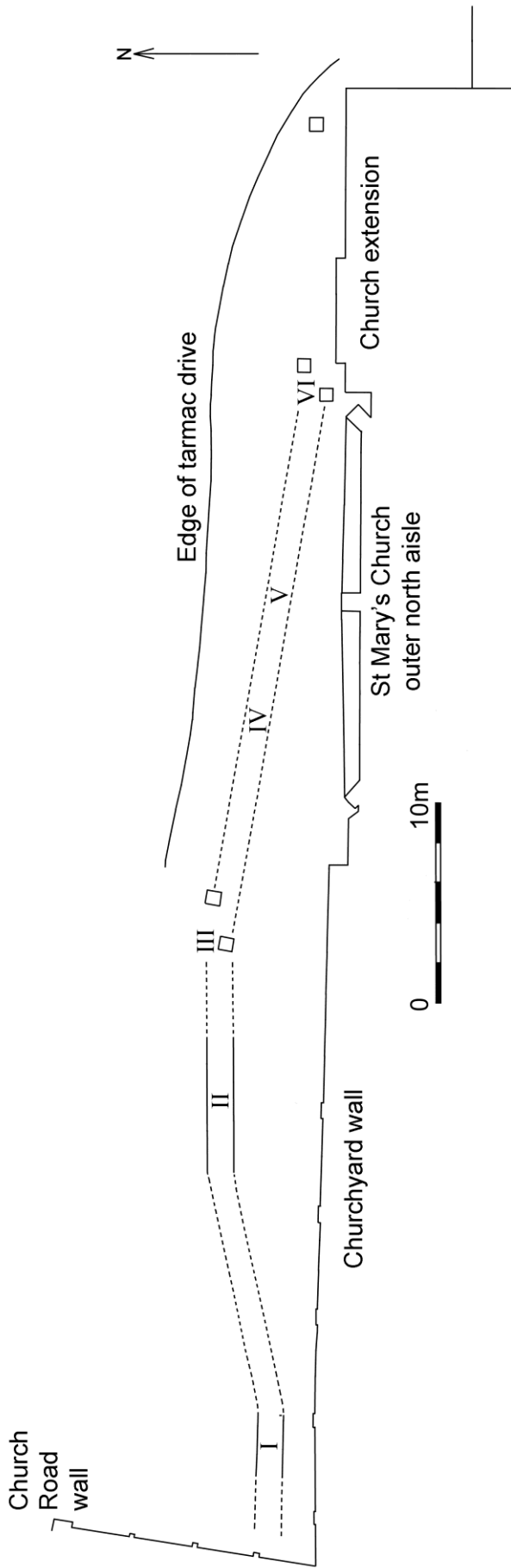


Figure 55. Plan of the contractor's trench excavated in 1994.



Figure 56. Section of the moat wall exposed in the foundation trench for the church extension. Looking east with the school gymnasium in the background. (For interpretation see figure 57).

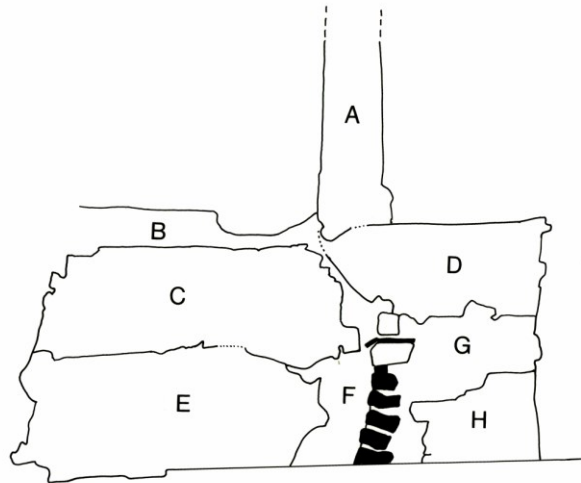


Figure 57. Interpretation of figure 56.

- Black. Brick facing if the former moat wall.
- A End of the wall between the northeast corner of the churchyard and the gymnasium.
- B Top soil.
- C Foundation of the wall which formerly ran from the northeast corner of the churchyard northwards to the house.
- D Foundation of the east wall of the churchyard.
- E This might be the lower part foundation C but the depth seems excessive. This might be explained by the wall crossing the fill of the moat fill.
- F Moat fill?
- G Repair or addition to the south wall of the moat.
- H Original part of the south wall of the moat.





Figure 58. The stone and mortar foundation of the churchyard (moat) wall below the brick foundation of the wall connecting the churchyard to the south wing. Looking north.

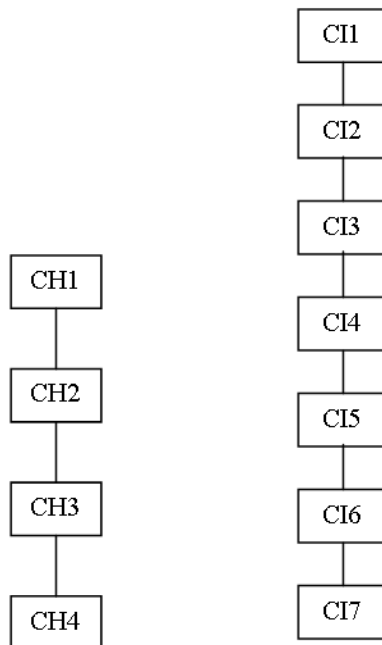
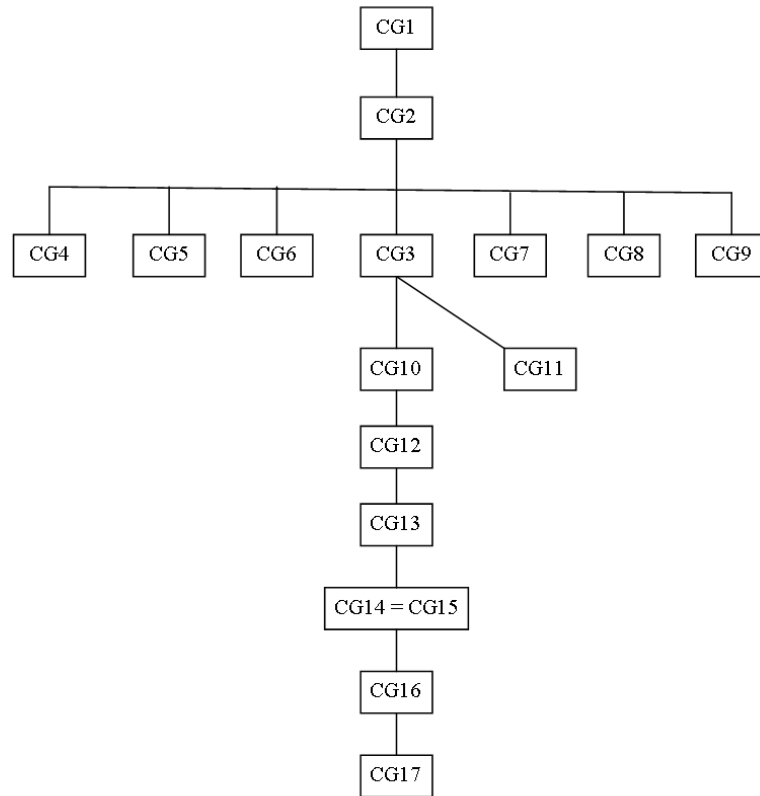


Figure 59. Matrices for trenches CG, CH and CI.

## 6.7 The significance of the finds from [CI5] and [CI6]

Layer [CI5] and [CI6] were identical except that [CI6] contained more rubble. They were essentially one deposit of dumped material. None of the finds need be later than the early eighteenth century, and they were probably discarded when the house was modernised by Nicholas Carew, 1st Baronet, at some time between 1707 and 1727. The material therefore contains clues to the state of the house before the early-eighteenth century building work.

### 6.7.1 The Stone

This is described in volume 1 section 13.1.4.

### 6.7.2 The Roof Tiles

The layers contained a large quantity of flat roof tile which may be debris from the demolition of a Tudor west wing or from re-roofing other parts of the house. Layer [CI5] contained a piece of tile with dark-brown iron glaze on the top. This is probably part of a crest tile similar to the fragment found in layer [CH3]. A drawing of the south-east corner of the house by John Buckler, dated 1827, shows crest tiles on the south wing (volume 1 figure 58). The Nash prints of the east and west sides of the house around 1830 also show crest tiles on both the south wing and the hall.

There were also several pieces of curved tile which were probably pan tile. A number of pieces of pan tile were found in trench CJ which cut into the fill of the east end of the south moat, and in layer [CF4], which largely consisted of brick from the construction of the Orangery wall. On average these are noticeably thicker than the material from CI:

| Thickness (mm) | [CI5/6] | [CF4] | [CJ9] |
|----------------|---------|-------|-------|
| 12             |         |       | 1     |
| 13             | 5       |       |       |
| 14             | 3       | 1     | 1     |
| 15             | 2       | 3     | 2     |
| 16             |         | 3     | 6     |
| 17             |         |       | 1     |

### 6.7.3 The green and yellow floor tiles

Layer [CI6] contained a 152 pieces of green- or yellow-glazed floor tile which are described in detail in section 12.9. The tiles had an orange-red body, were about 24mm to 26mm thick, and were probably more or less square with sides of about 183mm to 186mm at the top. The edges were slightly bevelled. The upper surface was covered with white slip which served as a foundation for either green or yellow lead glaze. There was one piece that had definitely been covered with both green and yellow glaze and 3 more doubtful cases. Most of pieces were either all green (66 cases) or all yellow (74 cases) so it seems likely that the mixed glaze was unintentional. The ratio of green to yellow pieces is close enough to 50% to suggest that the tiles were originally laid in a chequer pattern. Green and yellow tiles were reused on the floor of cellar 7 although these are different as they lack the white slip. Elizabeth Eames dated the cellar tiles to about 1500 and suggested that they were of Flemish origin, and it seems likely that the tiles from [CI6] are of similar date and provenance.<sup>17</sup> Imported tiles probably formed the floor of a major room, such as the great hall, or great chamber, although they were used in the Bishop's mint at Trondheim in Norway.<sup>18</sup> In the 1530s green and yellow 'Flanders' tiles were also used to cover

<sup>17</sup> Elizabeth Eames personal comment.

<sup>18</sup> McLees 1994.



the hearths in front of the chimneys in the Queen's suite at Greenwich. These cost 3s 4d the hundred.<sup>19</sup>

The wear on 78 pieces of the tile was examined by placing a 1cm grid on the top of the tile and counting the number of intersections which retained glaze or had worn through to the slip or body. The original colour of the tile could be determined in 74 cases. A total of 1,475 points were counted on green tiles and 1497 on yellow which again suggests that the tiles were evenly divided between the two colours. A total of 3,169 points were examined and at 36% of these both slip and glaze had worn off showing that they were in very poor condition when they were discarded. The yellow tiles had about 38% of their surface worn through to the body compared with 26% for the green. The reason for this is unclear. If the tiles were laid in a chequer pattern the different colours would presumably be subjected to the same degree of wear and the difference tends to suggest that some areas of the floor were green and some yellow. If this was the case it seems unlikely that the material found in the trench would have an even split between the colours. The wear difference could be explained if the yellow tiles were softer than the green ones but this seems rather unlikely as the only apparent difference was the colour of the glaze.

## 6.8 Maps and prints

Several maps and prints throw light on the site of the excavation:

- A print by Malcolm dated 1797 shows the southwest corner of the house from within the churchyard. The north wall of the churchyard wall appears to be about the modern height. At the eastern end the wall rose and there is a door which looks similar to the one demolished to make way for the extension. The top of a wall can be seen running from the southwest corner of the house towards the corner of the graveyard (see volume 1 figure 56).
- The Beddington and Bandon enclosure award map of 1820 shows that the churchyard wall had the same alignment as in 1992. A wall is shown connecting the northeast corner of the churchyard to the southwest corner of the house. The driveways are marked, but the site of the excavation is close to lettering and it is not clear if the drive extended over the excavated areas (figure 60).
- A print by Joseph Nash, made between 1828 and 1834, when Benjamin Hallowell Carew occupied the house, shows the church and the west front of the house. The churchyard wall appears to be higher than the modern one and to rise less at the door. A wall with four buttresses is shown running from the corner of the graveyard to the south side of the house close to the west corner (figure 61).
- The Beddington tithe award map of 1840 shows the churchyard and the wall linking it to the house. Several driveways are marked on the map but none is shown near the excavations (figure 60).
- A photograph which shows the church and the west front of the house before the latter was remodelled in the 1860s. This shows the graveyard wall at about its modern height. The site of the door is shaded by a tree, and is not clearly visible, but the wall running from the churchyard to the house is visible (figure 62).
- The first edition 25-inch Ordnance Survey map of 1868 shows the wall linking the churchyard and house. A building is shown on the site of the former organ pump house in the northeast corner of the churchyard. A drive is shown running over the site of trench CG (figure 60).

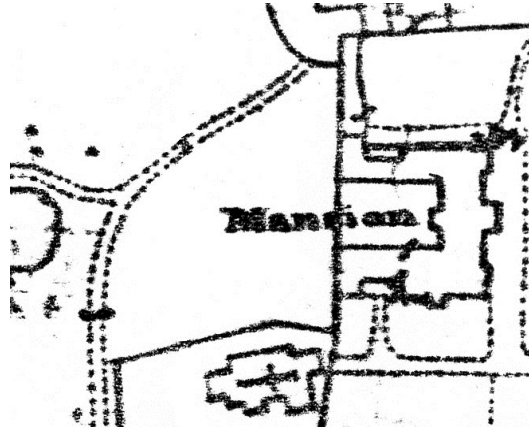
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<sup>19</sup> HKW vol. IV part 2, p. 104-5.

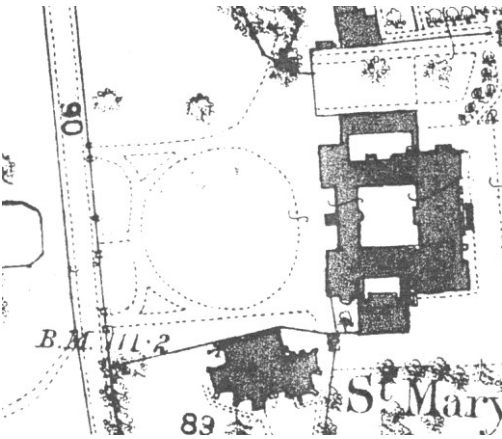
- The second edition 25-inch Ordnance Survey map of 1897 does not show the wall linking the house and churchyard. A drive is shown on the site of trench CG.



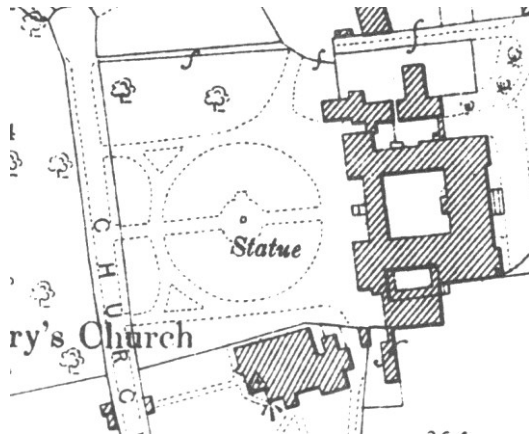
The enclosure award map, 1820.



The tithe award map, 1840.



The Ordnance Survey map, 1868,



The Ordnance Survey map, 1896.

Figure 60. Map of the house, west lawn and church, 1820-1896.



Figure 61. The west front of the house by John Nash about 1830.

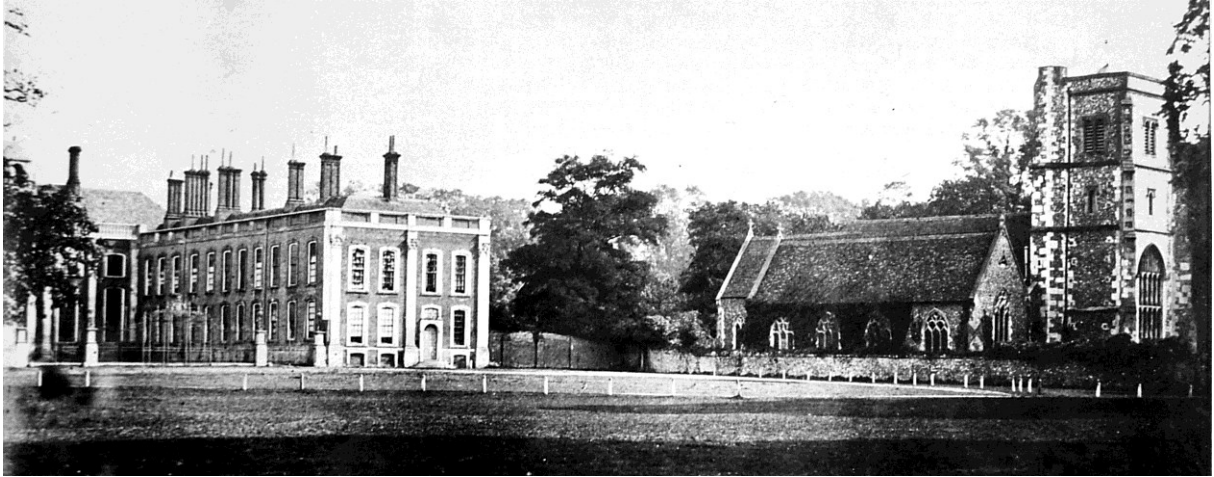


Figure 62. The south wing of the house and the church from a photo taken about 1860.

## 6.9 Discussion of trenches CG, CH and CI

### 6.9.1 The form and date of the moat.

The western bank of the moat was almost certainly represented by the top of layer [CI7] which dipped eastwards to a depth of about 31.65m OD and then appears to have dropped abruptly to an unknown depth. The drop was not fully excavated but it seems likely that it was the site of a low timber revetment which may well have lined the outer edge of the moat at water-level.

The squared stone blocks under the churchyard wall are similar to the stonework of the inner face of the moat island and they almost certainly formed the outer face of the moat. The plan of the graveyard strongly suggests that the north-east corner was cut away to create the moat. The outer bank was probably walled at this point to limit the amount of ground taken. Trench CH followed the wall to a depth of 1.86m below the grass (30.51m OD). When the moat was filled a culvert was laid along the south and west sides of the island. At the southwest corner of the house the floor of this is at about 29.8m OD so the churchyard moat wall may extend downwards for another 0.7m. If so it would have retained around 2.5m of soil which presumably accounts for its thickness of 0.65m.

If this interpretation is correct the west moat was about 15m wide at water-level and it narrowed to a minimum of 11m as it passed between the churchyard and the northwest corner of the house.

### 6.9.2 The evidence for an earlier moat.

The deposit that formed the west side of the moat was investigated as layer [CI7] in the excavation and as layer [DE1] in the watching brief. Layer [CI7] contained some peg tile, two pieces of probable Roman tile, some pieces of Reigate stone, a piece of light grey stone, fragments of bone and charcoal, a piece of light grey pumice-like slag, and a piece of London-type ware of late thirteenth or fourteenth century date. Layer [DE1] contained a pig tooth and a further piece of light grey pumice-like slag. These finds imply that the layers were fill rather than natural and the lack of later material suggests that the deposit might date from the fourteenth century. This suggests that the west bank of the moat was created by partly filling some earlier feature.

### **6.9.3 The alterations to the outer moat wall.**

The foundation trench for the east wall of the Church extension cut through the outer moat wall and showed that, at this point, it was faced with brick. This had a fairly smooth finish and appeared to be eighteenth century rather than Tudor so it was presumably a repair. It might have been part of the repairs done for the Earl of Warwick in the mid-seventeenth century but the bricks are probably later.

### **6.9.4 The moat fill.**

All three trenches were dug into the moat fill. The lowest deposit excavated was layer [CG17] which consisted of grey-green sand. Part of the surface was compacted and appeared to have formed a narrow path aligned roughly southeast to northwest. The layer was not humified and it seems likely that the path was created by workers walking across the top of the fill. This surface was between 31.74 and 31.81m OD which is close to the height of a marked break in the fill at the base of layer [CJ9] in trench CJ at the eastern end of the south moat. It seems likely that the moat was partly filled, and then used as a working surface when remodelling the house around 1710 to 1712.

The surface seen in CG was not clearly seen in trench CH although it may be represented by the boundary between layers J and L in figure 47. It was not present in trench CI.

The deposits above the break in trench CG (layers [CG12] to [CG16]) consisted of a series of layers of sand, mortar and building rubble with a total thickness of about 0.48m. It seems likely that this represent debris from refacing of the house about 1710-12. There were very few datable finds in the fill and nothing found there need be later than the early eighteenth century.

### **6.9.5 The relationship between the moat fill and the overlying walls.**

The relationship between the four walls which met at the northeast corner of the churchyard has already been discussed in section 6.6.2. The extension foundation trench showed that the wall which connected the corner of the churchyard to the south wing of the house marked a boundary in at least the upper part of the moat fill: to the west the fill consisted of layers of sand, mortar and rubble, while to the east it was of light brown sandy earth. This suggests that the wall was contemporary with the moat fill and therefore probably built around 1710 to 1712. The enclosure award map of 1820, and the tithe award map of 1840, both suggest that the wall connected to the southwest corner of the south wing. However, the first edition Ordnance Survey of 1868, which is a better map, shows it joining the wing a little east of the corner. The wall runs across the top of the south arm of the moat culvert. There is a bonding break in the culvert brickwork about 0.5m east of the corner of the wing, and therefore at or close to the position of the wall.<sup>20</sup> At the bonding break the culvert arch drops in height by 0.23m the roof being lower to the west. It is possible that the break marks the boundary between two phases in the construction of the culvert, and if this was so, it might account for the difference in fill between the west and east sides of the wall. A survey made on 3 November 1991 found that culvert manhole cover was at 32.93m OD and that water-level in the culvert was 2.73m below this at 30.2m OD. The culvert arch is around 1m high leaving a gap of about 1.7m between it and ground level which was more than the depth of the wall foundation exposed in CG (see figure 56).

### **6.9.6 The date of the churchyard wall and the door in it.**

The foundation of the extension cut through the churchyard wall at its junction with the walls running north to the house and east towards the school gymnasium. The west wall of the

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<sup>20</sup> The break is 1.67m east of the entrance manhole near the southwest corner of the house.

churchyard appeared to consist of eighteenth century rather than Tudor brick. It projected a short distance north of the former moat wall suggesting that its exact line had been lost before the wall was erected.

A print by Malcolm which is dated 1797 shows a door in the churchyard wall similar to the one demolished in 1994. The churchyard wall was presumably the responsibility of the Church rather than the Carews so the building work on it may not be connected with developments in the house. Some sort of wall or fence must have been erected when the moat was filled, but this may not have been the wall and door standing at the time of the investigation; these could have been erected in the mid- or late eighteenth century. The churchyard wall adjacent to the door had been repointed with Portland cement and may have undergone more extensive recent repairs. That the wall and the gate may also have been repaired or altered when the organ pump house was erected in the corner of the churchyard in second half of the nineteenth century.

### **6.9.7 Later developments north of the churchyard wall.**

In trench CI the upper moat fill consisted of brown sandy earth with a good deal of rubble. This was overlaid by a surface of large flint cobbles with knapped tops which were bedded in greyish sand [CI3]. They were extremely tightly packed and must have formed a high quality carriage way to the house. There was no evidence for the development of a soil below the flints and it seems likely that they were laid directly on the moat fill as part of the early-eighteenth century remodelling of the house and grounds. The drive can probably be equated with that shown on the enclosure award map of 1820. It was overlaid by brown earth which contained nineteenth century and later finds. This was probably deposited between 1820 and the tithe award map of 1840 as the latter shows the drive had been grassed over. It appears to have remained in that condition until the excavation.

The layers of rubble and mortar in trench CG were overlaid by layer [CG11], which consisted of brown earth with a good deal of rubble. The layer contained a few pieces of cindery fabric brick which dates from the eighteenth or nineteenth centuries. This was overlaid by [CG10] which was largely of broken chalk, and this was in turn covered by [CG3] which consisted of small rounded and angular gravel in an orange matrix. This appeared to be a gravelled path or drive, and the chalk was presumably laid as a foundation for it. The gravel contained a number of nineteenth and twentieth century finds. It may have been laid when the house was converted into an orphanage in 1860-65, as a drive in this position first appears here on the 25 inch Ordnance Survey map of 1868. If so the finds suggest were several repairs. The brown earth layer [CG11] may then be the truncated base of the soil which covered area between the filling of the moat and the laying of the path.

In trench CH the moat fill was overlaid by brown soil and it seems likely that this was put in place in the early eighteenth century and remained until the excavation.

## 7 EXCAVATION IN THE SOUTHEAST CORNER OF THE MOAT, 1992

### 7.1 Location of the site

The trench was 8m long from north to south by 2m wide from east to west. It was located on the east lawn in the position shown in figure 63.<sup>21</sup> It was adjacent to the school playground which lies to the south of the house. The south end of the trench was 9m south of the inner side of the former south moat.

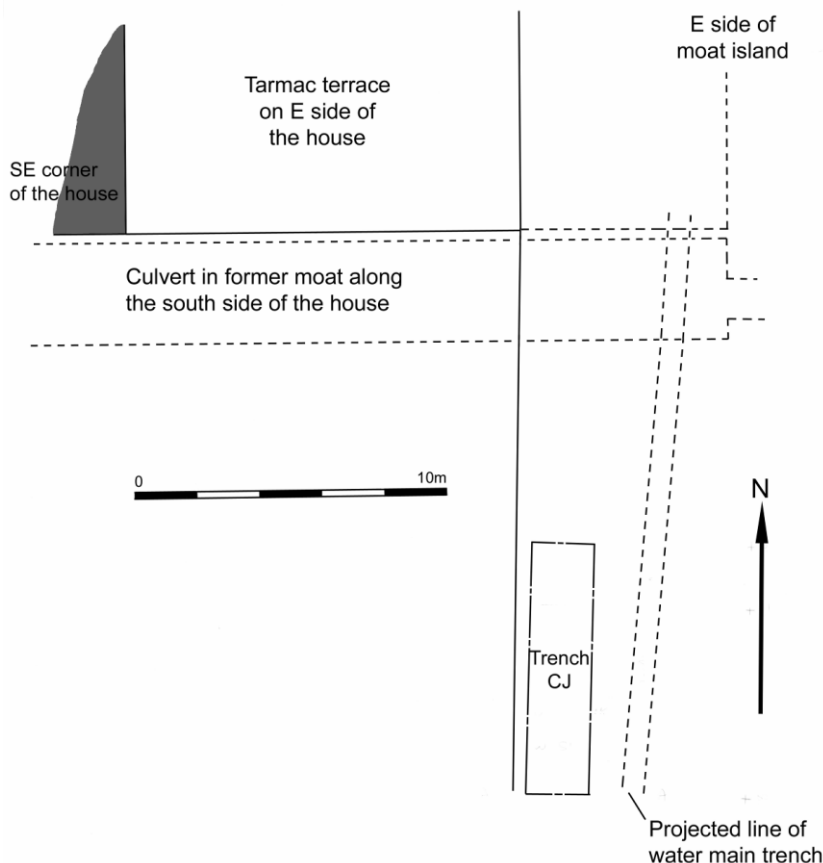


Figure 63. The location of trench CJ.

### 7.2 Purpose of the excavation

Trench CJ was intended to locate the southern edge of the former moat, to check the filling date and to see whether it contained demolition debris from the pre-eighteenth century garden.

### 7.3 The stratigraphy

The turf was removed and the trench was cleaned to produce the top of layer [CJ1]. This consisted of brown top soil with some flints and finds including plastic and other modern material. The deposit was underlain by five layers [CJ2], [CJ3], [CJ4], [CJ5] and [CJ6] the tops of which are shown in figure 64.

<sup>21</sup> TQ 29656527.

Layers [CJ3] and [CJ5] were very similar and consisted of orange sand with a good deal of small flint gravel. Both layers were only about 0.01m thick, and both formed strips about 0.5m to 0.7m wide aligned east - west across the trench. There were no finds from either layer.

When layers [CJ3] and [CJ5] had been removed it was found that layers [CJ2], [CJ4] and [CJ6] were identical and, from this point they were treated as one layer, [CJ2]. It consisted of small and medium sized flint with a good deal of rubble in a matrix of brown top soil. There were a number of large lumps of concrete from a path or similar surface. There were a large number of finds including much modern material including plastic, salt-glazed drain pipe, tarmac and a glass marble.

Layer [CJ2] was underlain by layer [CJ7] which also covered the whole area of the trench. It consisted of fine brown top soil with a few pieces of brick and tile. The bases of four wooden posts were found which formed an irregular line close to the west side of the trench.

Post 1 was 3.13m from the north side of the trench and 0.2m from the west. The top of the surviving remains was at 32.52m OD and the bottom at 32.40m OD. It consisted of a round log 0.1m in diameter which had been packed round with some chalk and large and small flint and a piece of white brick which probably came from Clack's works on the sand hills nearby. A double loop of iron wire was found in the soil close to the post.

Post 2 was 4.78m from the north side of the trench and 0.08m from the west. The top of the surviving remains was at 32.47m OD. It was 0.05m in diameter, and penetrated into the sandy layer [CJ9] which underlay [CJ7]. There was a scatter of flint and tile around it.

Post 3 was 5.47m from the north side of the trench and 0.3m from the west. The top of the surviving remains was at 32.39m OD. The post was 0.05m in diameter and had a brick placed on end to the east of it and flint to the south.

Post 4 was 7.09m from the north side of the trench and 0.33m from the west. The top of the surviving remains was at 32.34m OD. Little of the post survived but there had been a piece of tile against its north side and brick to the east and northeast.

The posts had presumably been inserted into pits but these could not be traced. The survival of the wood in well aerated soil, and the presence of the probable Clack's brick, suggests that they were comparatively recent. This was supported by the finds from the layer that the posts were inserted into [CJ7] which contained modern glass and plastic.

Layer [CJ7] was underlain by layer [CJ8] which occupied the northern end of the trench, and [CJ9] which filled the southern end as shown on figure 65.

Layer [CJ8] consisted of brown soil with chalk and flint up to 0.1m in size as well as a scatter of tile and Reigate stone. There was no clearly traceable boundary between layers [CJ7] and [CJ8] but [CJ8] lacked modern finds and did appear to be a separate and older deposit, a view which is supported by the section drawings (figures 67 and 68).

Layer [CJ9] which occupied the southern and central parts of the trench had an average thickness of about 0.4m. It consisted of light sandy earth which rapidly became less humified so that after 0.05m to 0.1m it was almost pure orange sand. The upper part of the layer contained a little tile, brick and bone. In the lower part there was a concentration of large disarticulated bone including a walrus skull, on the west side of the trench about 2m from the south end.

Layer [CJ9] was underlain by [CJ10] which consisted of broken tile in a sparse matrix of crushed mortar and earth. Part of this layer was excavated as [CJ9]. The top of [CJ10] was very uneven – the broken tile appeared to have been tipped in irregular mounds and then covered over with the



sand. The tile layer [CJ10] tapered away to the south. On the east side of the trench it ended about 1.8m from the south end of the trench while on the west side it was 1.2m from the end. It also tapered out at the north end and did not reach the edge of [CJ8]. It rested on Layer [CJ11] which, to the north and south of the tile, also underlay [CJ9].

Layer [CJ11] consisted of dark brown earth and will be discussed in more detail below.

The relationship between layers [CJ8], and the sequence of layers [CJ9], [CJ10] and [CJ11] is problematic. The boundary between them was almost vertical and one had probably filled a pit cut into the other. Attempts to resolve the relationship in plan, during the course of the excavation were unsuccessful and the two sections are inconsistent. The western one (figure 67, 69 and 70) was ambiguous as the cut line was wavy. On the eastern side (figure 68, 71 and 72) the cut line dipped to the south suggesting that the sandy deposit [CJ9] and the layers below it were later.

Unfortunately these layers contained few closely datable finds. Layer [CJ8] contained redwares of eighteenth century or later date, some pieces of wine bottle and pipe stem and an L25 bowl of 1700-70. The lack of transfer-printed ware suggests that the deposit was sealed before about 1800 but any date within the eighteenth century or perhaps the early-nineteenth century would be possible.

Layer [CJ9] contained a piece of pottery of which belongs to the second half of the eighteenth or the early nineteenth century and a base angle sherd <1> found in the section of the tile deposit excavated as [CJ9] must be of similar date. The remaining finds including a piece of porcelain, border ware, post-medieval redware, brick, including shaped brick, pan tile, stone, glass and other material which need not be later than the early eighteenth century although much of the material would be current to the end of the century, and, in some cases beyond. Layer [CJ9] therefore contains two items which are significantly later than those in [CJ8], and it seems likely that the latter is earlier in date although the quantity of finds is too small for a firm conclusion.

After the sand layer [CJ9] and the tile layer [CJ10] had been removed the trench was in the state shown in figure 66. At the northern end the bottom of [CJ8] had not been reached and excavation there did not proceed further. To the south of this the bottom of the trench was formed by [CJ11] which was between 31.71m and 32.14m OD. There was a very well defined stratigraphic break between this and [CJ9] and [CJ10] which overlay it.

At this point the trench was narrowed for safety reasons and work was restricted to an area 4.2m from north to south by 1m east to west, which was excavated into the top of [CJ11] as shown on figure 66.

Layer [CJ11] consisted of dark brown earth which lightened towards the south end of the trench. It contained a piece of post-medieval redware, two pieces of pipe stem, some rubble including a piece of pan tile, none of which are closely datable.

Layer [CJ11] was underlain by layer [CJ12] which consisted of flint, chalk, tile, mortar and brick in brown earth. The latest finds consisted of post-medieval redwares, tin-glaze, pipe stems and a piece of wine bottle.

Layer [CJ12] was underlain by layer [CJ13] which occupied the whole width of the narrow inner trench. This consisted of light brown earth with chalk brick and other rubble, and, although it was less common than in [CJ12] the boundary between the two layers was unclear and rather arbitrary.

Layer [CJ13] was underlain by layer [CJ14], the boundary between the two being arbitrary rather than stratigraphic. Layer [CJ14] consisted of brown sandy earth which became darker and softer towards the north end of the trench (figure 80). There was a scatter of small chalk, brick flint and



some charcoal, and, at the north end of the trench there was a concentration of coal, coal-ash and charcoal about 0.01m to 1.02m thick at the bottom of the layer. A northward-dipping tip line, shown in figures 73 and 74, was excavated as part of the layer instead of being treated as a boundary. This tip line was evident on the top of the layer and appears as B in figure 75. The latest datable finds were four pieces of pipe stem and a L20 bowl of c1680-1710.

Layer [CJ14] was underlain by layers [CJ15], [CJ16] and [CJ17] the tops of which are shown in figure 76. Layer [CJ16] was the northward dipping tip line mentioned above. It consisted of a layer of brick rubble with some flint, chalk, mortar and soil, which varied in thickness but did not exceed 0.12m. The amount of larger rubble increased noticeably with depth.

Layer [CJ17], which was below and to the south of the tip line, consisted of brown sandy earth with a scatter of flint.

Layer [CJ15] overlay and was north of the tip line. The southern end of the layer was sandy brown soil which gradually changed laterally into dark damp sandy slightly sticky grey-brown earth at the north end of the trench. There was no clear boundary and the difference was probably the result of dampness and oxygen deficiency rather than a change in the composition of the deposit. There was a scatter of small chalk, tile and mortar with occasional larger pieces together with a few small patches of small (2mm) brown sandy gravel. There was also a larger pocket of brown sandy gravel on the east side of the trench.

The finds from these three layers were probably not well separated so there is a high risk of cross-contamination. Layer [CJ15] contained two tiny flakes of tin-glazed pottery with blue, green, and white decoration; two pieces of pipe stem and an L25 pipe bowl of c1700-70 marked W?. Layer [CJ17] produced a piece of redware of uncertain date.

About 0.6m was excavated from these layers without encountering the base of them. The size of the trench was then reduced and the excavation was confined to an area 1.4m from north to south by 0.9m east to west at the north end of the inner trench (figures 73 and 74). The top of this area was treated as layer [CJ18] for administrative convenience, but, when the excavation was completed an examination of the sections showed that the top of [CJ18] lay just above a stratigraphic boundary that was not detected during excavation. Almost all the material excavated as [CJ18] came from below this boundary but there is probably some contamination from the overlying layer [CJ15]. Below the stratigraphic boundary layer [CJ18] consisted of fine silt which was brown at the top but became darker with depth so that the lower part of the deposit was dark brown or dark grey. The layer contained very few datable finds. The latest finds were a Tudor pot-herd and two pipe stems with bores of 3mm and 4mm so probably of seventeenth century date.

Layer [CJ18] was underlain by layer [CJ19] which consisted of gravel of mixed shape and size in a dark earthy matrix which quickly lightened with depth (figure 81). It was exposed in an area 1.36m from north to south by 0.84m from east to west. The northwest edge of the exposure was at 30.43m OD and was 13m south of the moat island wall. The gravel rose to 30.61m OD at the southwest end of the exposure. A small part of [CJ19] was excavated but worked stopped at 30.69m OD before the base of the layer was encountered.

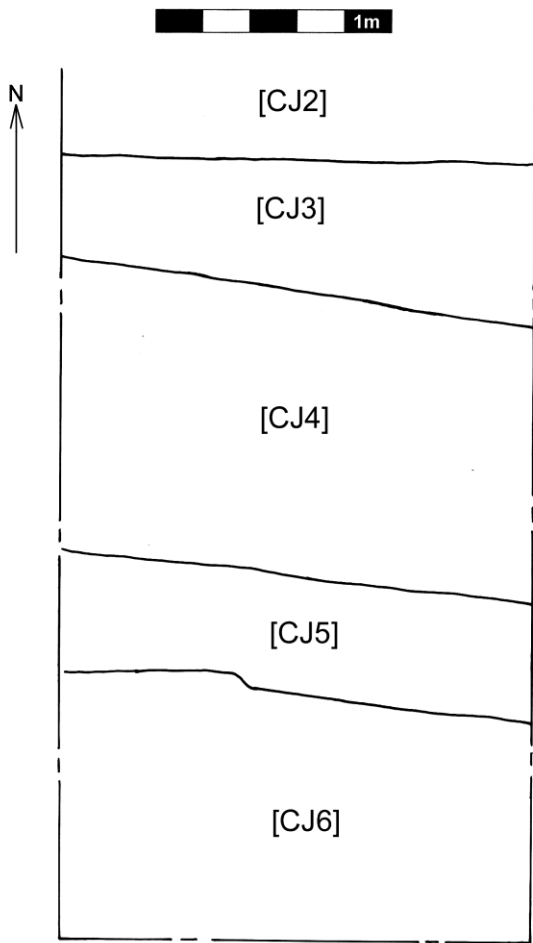


Figure 64. The tops of layers [CJ2], [CJ3], [CJ4], [CJ5] and [CJ6].

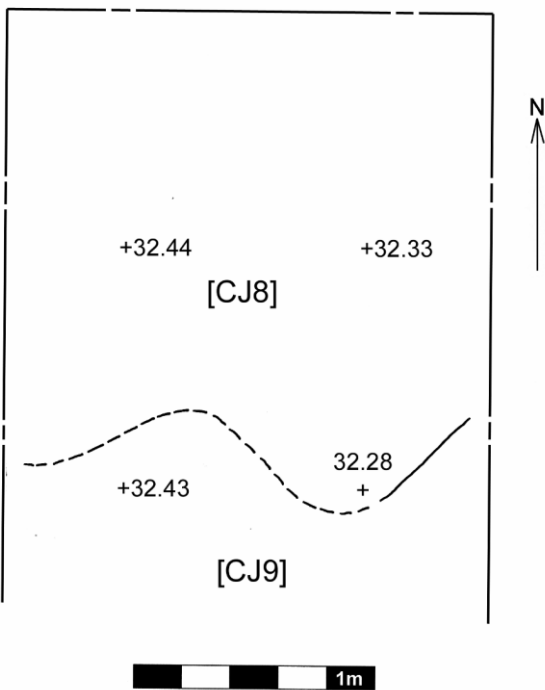


Figure 65. The north end of the trench with the boundary between [CJ8] and [CJ9].

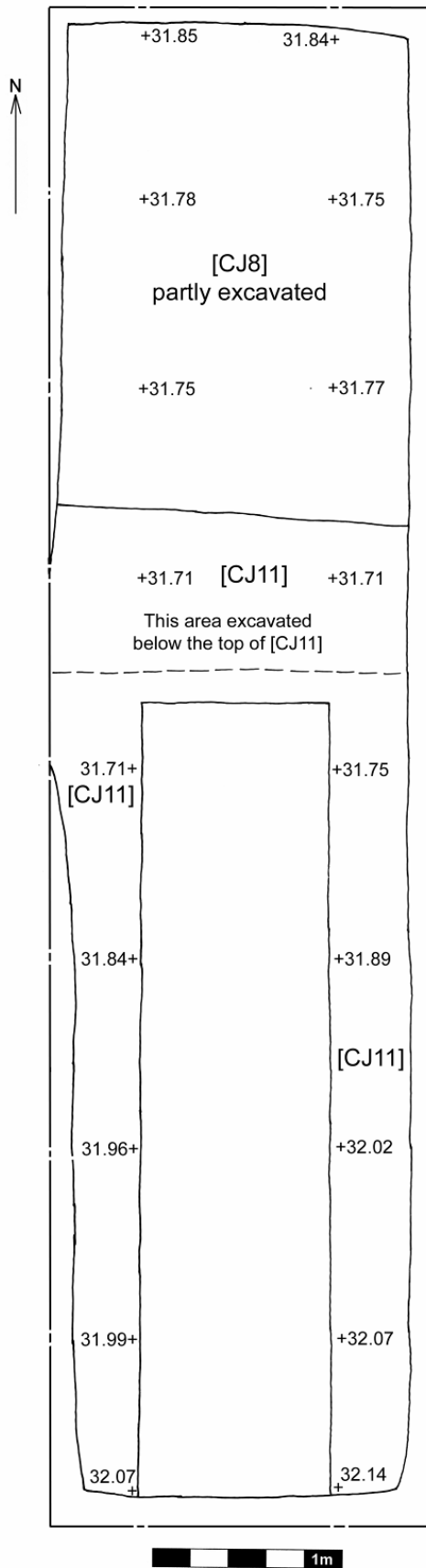


Figure 66. The top of [CJ11] with the inner trench.

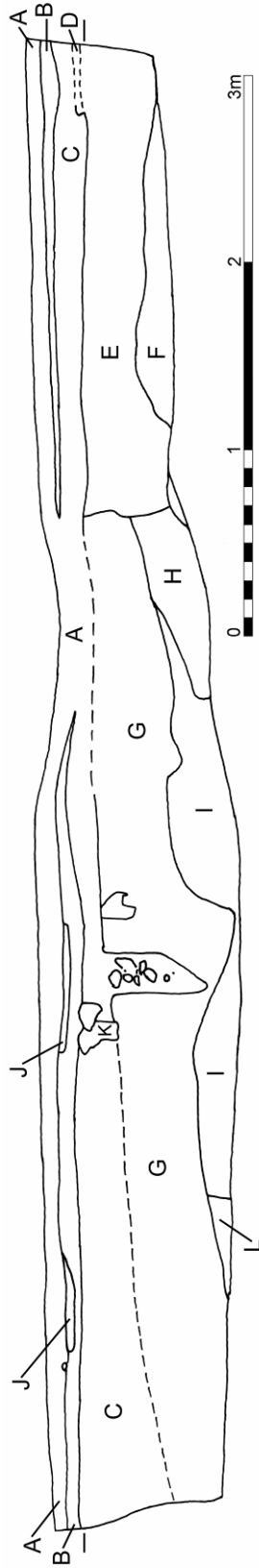


Figure 67. The west side of the main trench (CJ).

- A. Fine silt and dark soil
- B. Small stone in a matrix of dark soil.
- C. Fine dark soil with occasional flint chalk and tile.
- D. Small rounded and angular flint pebbles in dark soil.
- E. Light brown earth with a wide scatter of brick, chalk, tile and Reigate stone.
- F. Grey sand mottled with earth. Scraps of brick, chalk and flint.
- G. Orange sand streaked with earth from above. It merges into the layer above without a clear boundary. Occasional tile.
- H. Stiff grey-brown earth with occasional small pieces of chalk, flecks of charcoal and one or two scraps of CBM.
- I. Broken tile in crushed mortar and a little sand.
- J. Small orange flint gravel in orange sand.
- K. Brick and flint impression.
- L. Tile in yellow sand matrix.

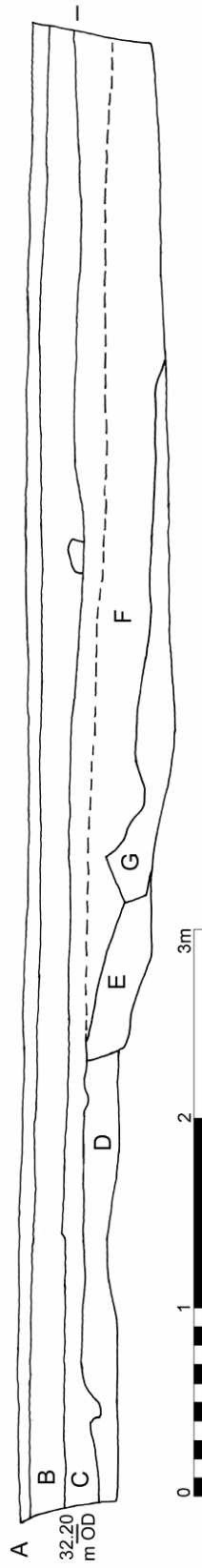


Figure 68. The east side of the main trench (CJ).

- A. Fine dark brown top soil.
- B. Dark brown soil with much flint and rubble including tile, brick, chalk and Reigate stone.
- C. Dark brown soil.
- D. Grey sand with a good deal of chalk up to 3 cm across. Scatter of flint tile and mortar.
- E. Brown earth slightly lighter than C. Scatter of small chalk and occasional tile.
- F. Yellow sand. The boundary with C worm streaked and rather arbitrary.
- G. Broken tile in fine broken mortar.





Figure 69. The boundary between layers [CJ8], [CJ9], [CJ10] and [CJ11] in the western side of the trench.



Figure 70. West side of the trench CJ looking northwest.





Figure 71. The east side of the northern part of trench CJ. Looking NE.



Figure 72. The east side of the trench CJ showing the boundary between layers [CJ8], [CJ9], [CJ10] and [CJ11].

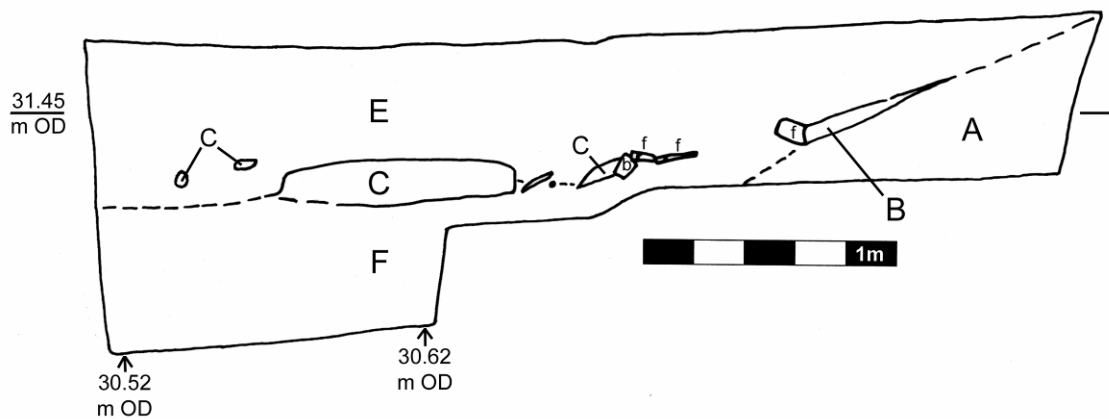


Figure 73. The east side of the inner trench in CJ.

- A Brown earth with a scatter of flint, brick and chalk particularly towards the top.
- B Brick and mortar mostly crushed.
- C Orange sand and small flint gravel with a little brick and mortar.
- E Brown sandy earth with a thin scatter of tile flint and chalk particularly along the top.
- F Matrix very similar to E but slightly more sandy. Lightly mottled with iron stain. Occasional flints and snail shells.
- b Brick.
- f Flint.

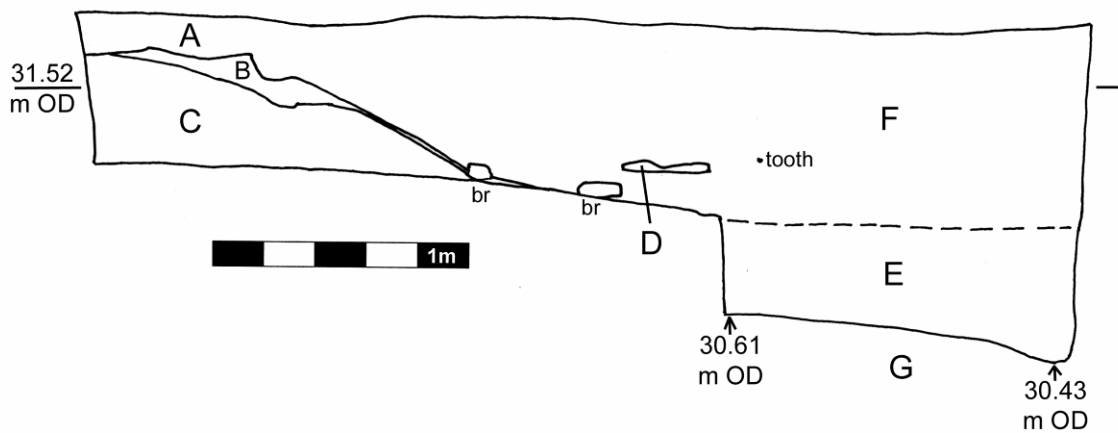


Figure 74. The west side of the inner trench in CJ.

- A Brown soil with a scatter of flint, brick, tile and chalk.
- B Brick with much crushed brick and mortar.
- C Brown sandy earth with occasional flints.
- D Small flint gravel in orange sand.
- E Fine, silty, grey becoming darker towards the base where it becomes brown, reduced and in places smelly.
- F Grey sand with a scatter of brick, flint, chalk and tile.
- G Gravel of mixed shape and size.

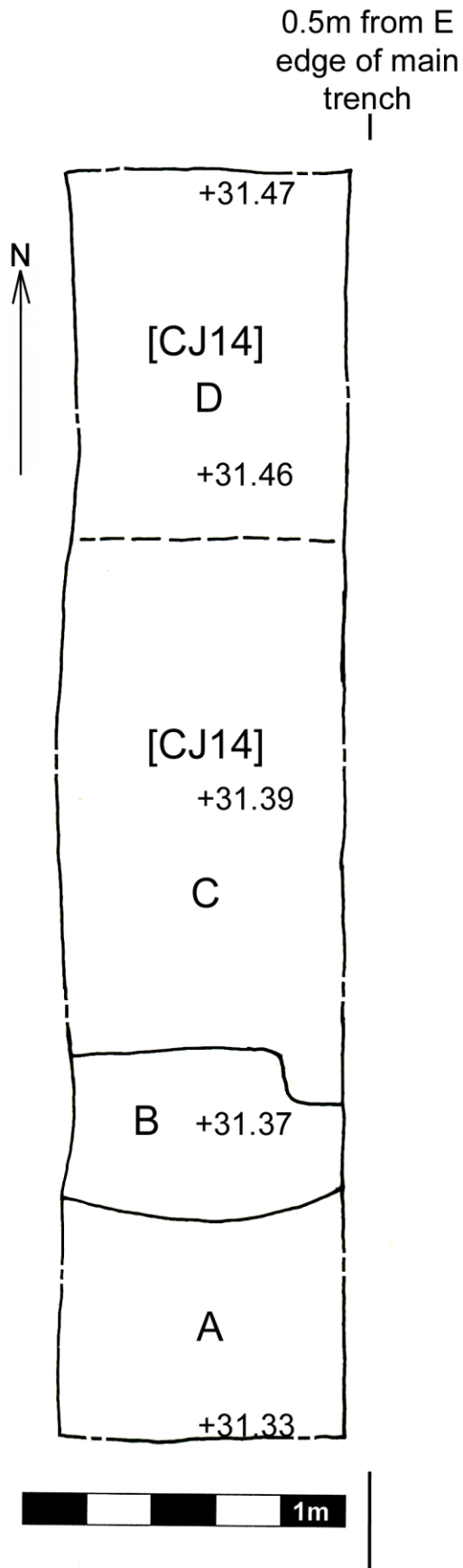


Figure 75. The inner trench in CJ with the top of arbitrary layer [CJ14].

- A. Brown sandy but compact and fairly hard soil with a scatter of large flint and chalk.
- B. Brick and mortar with some flint and chalk.
- C. Brown sandy soil very similar to A with a scatter of small pieces of chalk, brick and charcoal.
- D. Darker and softer than C with inclusions similar to C. The transition between the two is gradual and indistinct.

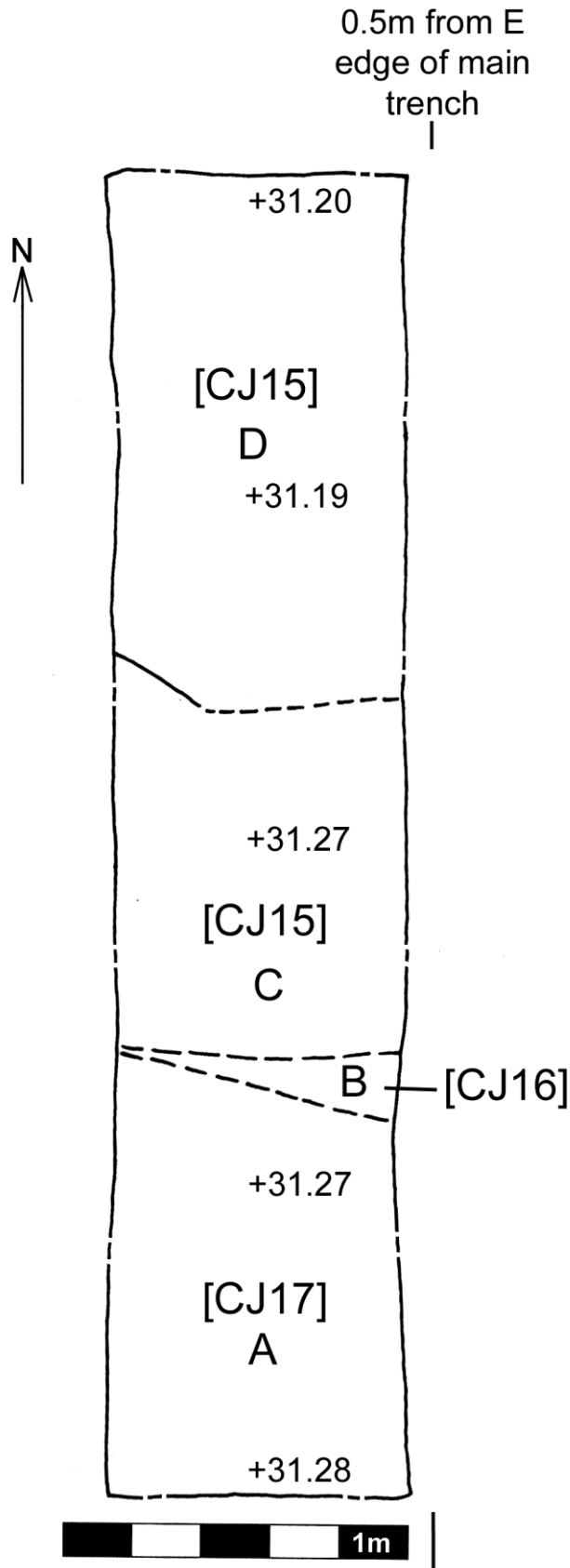


Figure 76. The inner trench in CJ with the tops of layers [CJ15], [CJ16] and [CJ17].

- A. Brown sandy earth with a scatter of large flint and small chalk.
- B. Brown earth with much brick, some mortar, flint and chalk.
- C. Brown sandy earth very similar to A with a scatter of small pieces of mortar, chalk, charcoal and a few patches small orange gravel.
- D. Dark soft brown earth with a scatter of small brick, chalk, charcoal (more than C) and small patches of orange sandy gravel.



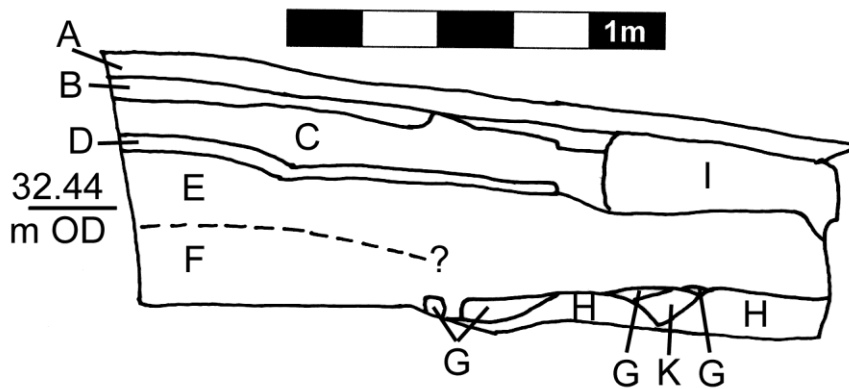


Figure 77. The north end of the main trench (CJ).

- A Fine dark brown top soil.
- B Small flints in dark brown earth.
- C Fine dark brown earth with occasional flints.
- D Small flint and a few pieces of brick in dark brown earth.
- E Brown soil lighter than C or D with a few pieces of chalk and tile.
- F Similar to E but slightly lighter and less humified. More chalk. The boundary between E and F indistinct.
- G Small flints in an orange matrix.
- H Grey sand with patches of orange. Scatter of small flint and chalk.
- I Brown earth with flint and a lump of tarmac.
- K Lump of brick surrounded by brown earth.
- L Similar to I but with much more chalk including one 10cm piece.

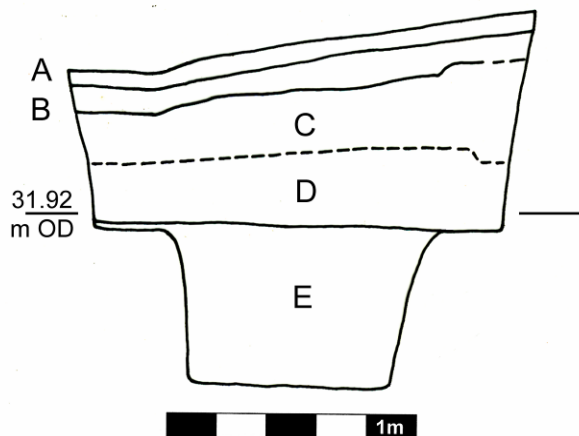


Figure 78. The south end of trench CJ.

- A Fine dark brown top soil.
- B Small flint, larger flint, tile, tarmac, nine metal pipes and stoneware drain pipe in dark brown earth.
- C Dark brown soil with occasional chalk flint and brick.
- D Yellow sand streaked with earth.
- E Brown earth with a scatter of flint, chalk, brick and tile.



Figure 79. South end of trench CJ.



Figure 80. Top of [CJ14] looking north.





Figure 81. The top of layer [CJ19]. The scale is against the north end of the small inner trench.

## 7.4 Documentary and map evidence

The site of the excavation appears on two nineteenth century views and on a series of maps, the earliest of which is the Beddington and Bandon enclosure award of 1820. This shows a path along the east and south sides of the house and another continuing westwards from the one that ran along the south side of the Orangery wall. The path across the east front of the house appears to be a little narrower than the present tarmaced terrace. The site of the excavation is shown as open ground. The next piece of evidence is a drawing of the southeast corner of the house by John Buckler dated 1827 (volume 1 figure 58).<sup>22</sup> This suggests that the ground rose gently towards the house. Various plant beds and possible paths are shown but these are difficult to reconcile with the 1820 map. The second view is a lithograph of the east front of the house by Joseph Nash which was probably made in the 1830s. This shows a level area along the south side of the house and the ground then appears to slope downward to the south. The level area appears to be about the same width as the projection of the kitchen block, that is, about 8.6m. The northern edge of trench CJ was 9m south of the southeast corner of the house so the trench lay just beyond the level area.

The layout of paths around the house had been changed by 1840 when the tithe award map was made. The terrace on the east side of the house is shown at or near its present width. A track is shown running from the south end of the terrace to meet the track which ran east-west to the

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<sup>22</sup> BL Add 36388 f. 213.

south of the Orangery wall. The edge of this would presumably have been immediately east of the excavation under the modern tarmaced playground.

The first edition Ordnance Survey map of 1868 shows that the whole area to the south of the house and the west of the excavation had been surfaced almost certainly to make a playground for the orphans as the area was later used for this.

## 7.5 Discussion

The finds and stratigraphy suggest that the excavated layers can be divided into five groups:

- I. The gravel layer [CJ19] at the bottom of the trench which did not contain any finds and is probably natural.
- II. Layer [CJ18], which contained two seventeenth century pipe stems, is probably the silt which had accumulated at the bottom of the moat. It presumably postdates the documented cleaning in 1650. The lack of eighteenth century finds suggests that filling took place soon after Nicholas Carew came of age in 1707.
- III. Layers [CJ11] to [CJ17] contained early eighteenth century finds but did not include any items that need be later than this. These layers appear to be the initial early eighteenth century filling of the moat.
- IV. Layers [CJ9] and [CJ10] which contained two items of mid-eighteenth century or later date but lacked modern material. They were separated from the underlying layers by an exceptionally clear stratigraphic break at a height of around 31.75m OD. This is close to the height of the break in the fill in trench CG at the southwest corner of the moat which was interpreted as a working surface during the reconstruction of the house around 1710-12 (section 6.9.4)
- V. Layers [CJ1] to [CJ7] which contained modern material including plastic.

The placing of [CJ8] within this structure is rather problematic. The layer did not contain any finds that need be later than the early eighteenth century, but was at the same height as the layers in group IV which contained finds of mid-eighteenth century date. Layer [CJ8] was separated from the layers of group IV by a near-vertical cut which can clearly be seen on figures 67 and 69. On the eastern side of the trench the layers of group IV slightly overlapped [CJ8] suggesting that the latter was the older deposit. However, this was not repeated on the west side of the trench where [CJ8] at least partly overlapped group IV and the stratigraphy cannot, therefore, be used to establish firm relative dates.

This significance of the vertical cut is unclear. It is possible that [CJ8] is the fill of a large pit which was cut into the group IV deposits. It is difficult to imagine why such a pit should have been dug and it would also mean that [CJ8] was later, possibly substantially later, than the layers of group IV, making the absence of later eighteenth or nineteenth century finds in it rather surprising. Another possible explanation is that the vertical cut marks the site of a robbed out terrace wall that ran from east to west along the south side of the house. The Nash view of the east front of the house shows that there was a level area along the south side of the house and that the ground then sloped downwards to the south. The level area appears to have been about 8.6m wide (see above) while the vertical cut was 11.5m from the house. The cut would therefore be part way down the slope shown in the Nash drawing which would be fairly consistent with a slighted terrace, the upper part having been demolished to fill the lower part. The main difficulty with this interpretation is the lack of any remains of a terrace wall. It is possible that the lower part of the foundations lay below the excavated area as the 'wall' would have been outside the deep inner trench. However, it seems likely that if a terrace wall had been slighted at least part of

the rubble would have been left at the foot of it where the deposit of roof tile was found. If a terrace did exist it must have been demolished before the Buckler drawing of 1827. An obvious occasion would be the alterations to the south wing which was carried out between 1792 and 1827.<sup>23</sup> The association with rebuilding work would fit well with the tile deposit [CJ10] at the base of group IV and the date would be reasonably consistent with the finds as group IV did not contain any transfer-printed ware. Neither explanation of the vertical cut is entirely satisfactory.

The gravel layer [CJ19] appears to have formed the bottom of the moat. In the small area in which it was exposed (1.3m by 0.8m) it dipped from 30.61m OD to 30.43m OD at the northwest edge where it was 13m south of the moat island wall. Top of the gravel in the southern arm of the moat culvert below entrance manhole F0 is at 30.26m OD so it seems likely that the moat deepened slightly as it approached the island.

## 8 A WATERCOURSE TO THE NORTH OF THE HOUSE

### 8.1 Location

The trench was located behind number 3 Carew Manor Cottages. This is an east-west aligned row of three cottages immediately north of Carew Manor School and east of the southern end of Beddington Park Cottages. Number 3 is at the west end of the range.

The trench was initially about 0.7m north-south by 0.9m east-west. It narrowed with depth.

The southern edge was 3.9m from the north wall of the cottages as shown in figure 82.

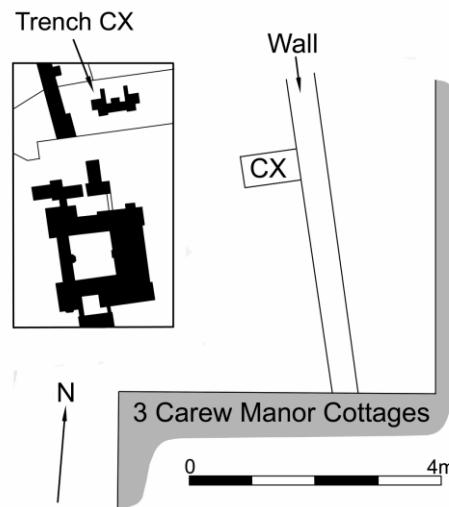


Figure 82. The location of trench CX.

### 8.2 Reason for excavation

On Thursday 15 January one of the authors was invited to inspect an east-west running foundation behind 3 Carew Manor Cottages. This had been uncovered during an investigation of subsidence. The foundation could be identified with a wall shown on the 1820 Beddington and Bandon enclosure award map which also showed a north-south aligned watercourse immediately west of it. It was clear that the site was going to be disturbed when the house was underpinned so the trench was dug on the west side of the foundation to locate the watercourse and check the depth and nature of the associated deposits.

<sup>23</sup> See volume 1 pages 119-20.

### 8.3 The Stratigraphy

The builders had cleared the soil from the top of the wall and had also removed some of the bricks with their mini-digger. However, they had not removed much, or any, soil from the area west of the foundation so the excavation started at or near ground level at 31.57m OD.

Layer [CX1] consisted of soil with a large amount of rubble including brick, mortar, tile and a little Reigate stone. It rested on layer [CX2].

Layer [CX2] consisted of sticky brown soil with small broken rubble including brick and mortar. It rested on layer [CX3].

Layer [CX3] consisted of sticky soil with about 60% crushed mortar, chalk and flint and a little coarse red brick. It rested on layer [CX4].

Layer [CX4] consisted of sticky brown soil with mortar. It may have been the same layer as [CX3] as a result of slight under-digging. Layer [CX4] rested on [CX5].

Layer [CX5] consisted of moderately sticky dark brown soil. It was not as sticky as [CX4]. It contained flecks of chalk and mortar together with occasional bits of brick, mortar and burnt flint. There were also some charcoal flecks. The layer was probably the artefact of a digging mistake and consisted of the bottom of layer [CX5] and the top of [CX6] and [CX7].

Layer [CX6] filled a cut next to the wall. It consisted of large brick rubble and some mortar in sticky soil. The layer became more gravelly with depth and the pieces of brick and mortar became small. The cut between layers [CX6] and [CX7] sloped slightly so that [CX6] lapped over [CX7]. The base of [CX6] rested on [CX8].

Layer [CX7] to the west of [CX6] consisted of dark brown soil with a scatter of flint and rubble. It became stickier with depth and flintier at the base. It rested on [CX8] and may have been slightly over-dug into it.

Layer [CX8] occupied the whole area of the trench. It consisted of brown sticky soil with a scatter of flint and brick. Layer [CX8] rested on layer [CX9].

Layer [CX9] consisted of rounded, sub-angular and angular gravel in dark sticky soil although it was not sticky enough to roll into a ball easily. It contained some brick and tile including large pieces. Layer [CX9] rested on [CX10] at the east end of the trench and [CX11] at the west end.

Layer [CX10] consisted of consisted of 80% mortar with some flint in a dark brown clayey matrix. There was some brick including large pieces with coarse red fabric. The layer appeared to be the fill of the wall construction trench.

Layer [CX11] consisted of gravel of mixed shape and size up to 50mm. The gravel was bigger towards the bottom of the layer suggesting that it is water laid. Layer [CX11] rested on [CX12].

Layer [CX12] consisted of smelly black peat with scraps of twig and a piece of round wood. This extended over the whole area of the trench. It rested on [CX13].

Layer [CX13] consisted of very smelly fine yellow silt with many roots. It rested on layer [CX14].

Layer [CX14] consisted of gravel of mixed shape and size in muddy grey sand. It rested on layer [CX15].

Layer [CX15] rested on brown peat. This was only excavated in a small area close to the wall. It was soon flooded so observation was difficult. It appeared to be a thin layer underlain by gravel [CX16].

Layer [CX16] consisted of water-logged gravel. The lower part of the trench flooded when this was cut into so it could not be properly investigated. The excavation ended at this point.

## 8.4 The wall

The wall was made of coarse red bricks with shallow frogs. The upper part had been removed by the workmen and, at the time of the investigation, the top by the trench was at 31.24m OD. Here it was 0.46m wide. Within the trench there was an offset 0.58m below the top at 30.66m OD. The wall rested on the top of gravel layer [CX14] at 30.15m OD so the surviving height was 1.09m.

## 8.5 Map evidence

The Beddington and Bandon enclosure award map of 1820 shows a wall on or close to the line of the foundation. There is a north-south aligned watercourse just west of the wall. The watercourse ends against a small building on the south side of what is now the front garden wall of the cottage.

The tithe award map of 1840 shows the wall but the watercourse and the associated building had disappeared. The first edition 25 inch Ordnance Survey map of 1868 shows a similar layout.

## 8.6 Discussion

The earliest deposits in the trench were the gravel layer [CX16] and the overlying brown peat [CX15]. The investigation of these was hindered by flooding and the confined space so it is not clear whether they were part of the channel sequence or much older natural.

They were overlaid by four layers [CX11], [CX12], [CX13] and [CX14] which appear to represent a sequence of water-laid deposits presumably formed in the channel shown on the 1820 map. From top to bottom these deposits were:

- [CX11] Gravel
- [CX12] Black peat with scraps of twig
- [CX13] Yellow silt with many roots
- [CX14] Gravel

They suggest a series of changes in flow regime. The first deposit [CX14] must have deposited by fairly fast-flowing water. The yellow silt implies a low speed while the peat suggests stagnation. The change from silt to peat may also suggest a reduction in the oxygen content of the water. The upper gravel [CX11] implies a return to more rapid flow.

The lower gravel contained an L25 pipe bowl which dates from the early eighteenth century while the peat [CX12] contained the base of a white chamber pot or bowl probably of late-eighteenth century date.

This would be consistent with the gravel [CX14] forming during, or soon after, the remodelling of the garden by Nicholas Carew, first Baronet, between 1707 and 1727. The silt and peat would then have been deposited in the eighteenth century.

The return of more rapid flow would then belong the period before the channel was filled. The maps show that this took place between 1820 and 1840.

Which way was the channel flowing? It must originally have joined the northern arm of the moat around the house. The northern edge of the foundation trench for the former laundry was 32.5m south of CX. The bottom of the laundry trench was gravel which was overlaid by fine dark silt and then by several layers of dumped fill (see section 2). The top of the gravel was estimated to be at about 30.67m OD but this figure is suspect as it is not consistent with other heights of the moat floor:<sup>24</sup>

| Height m OD | Place   |
|-------------|---|
| 30.43       | Bottom of the SE corner of the moat in trench CJ (lowest point).  |
| 30.26       | Floor of the moat culvert by the entrance manhole F0 on the south side of the house.  |
| 29.96       | Lowest point of moat wall reached in CA at the northeast corner of the moat island. (The bottom was not reached because the trench was flooding). |

The bottom of the lower gravel layer [CX14] was at 29.81m OD while the top was at 30.04m OD<sup>25</sup> while the upper layer [CX11] was at 30.69 m OD. If the bottom of the gravel layer [CX14] represents the original channel floor it appears to be at about the same height as the bottom of the moat. The water level in the moat must have been above the moat floor in trench CJ at 30.43m OD and also above the top of the silt at 30.95m OD. There is no guide to the original water height in CX so the flow could have been either way: northwards out of the moat or southwards into it.

The silt sequence in the laundry trench differs for the sequence in CX. In the moat the gravel was overlaid by dark silt, in CX it was overlaid by light silt. Both suggest a low water speed but CX appears to have been cleaner. This suggests that the CX flow ran to the moat rather than from it.

The latest object in the laundry foundation trench silt was the base of a wine bottle with a date range of about 1725-30 into the mid-eighteenth century. This suggests that the north arm of the moat was still open when Nicholas Carew, 1st Baronet, died in 1727 and it may have remained open until his son came of age in 1741.

When the moat was filled an east-west aligned culvert was laid. This was seen in the laundry foundation trench and in the flood alleviation work further east on the edge of the present river. The culvert was a brick structure. In the laundry trench it was 0.47m wide and the side walls rested on the top of the gravel. Deposits in it consisted of a thin layer of fine dark brown sticky silt.<sup>26</sup>

There was no sign of a turning or branch towards the CX watercourse.

Peat layer in CX would be consistent with stagnation so it is possible that the channel was cut off from the moat and carried no more than local drainage.

The upper gravel layer [CX11] implies a return to a reasonable flow. This was presumably around 1820 when the channel was shown on the enclosure award map. The map shows the channel ending or starting against a small building just south of the excavation. It was presumably connected to a culvert but it is not obvious where the culvert went. There is no sign of a connection to the culvert seen in the laundry trench. The only other possibility is a connection to the main moat culvert which runs across the west front of the main house. The

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<sup>24</sup> When the laundry trench was investigated a level was not available. Tape measurements were made to ground level but this was difficult to do accurately. The ground may also have subsequently been compacted by lorries.

<sup>25</sup> There were two levels on the top of [CX14]: 30.03m OD at the west end and 30.049 m OD at the east.

<sup>26</sup> Layer [AC14].



north end of this is blocked by a yellow stock brick wall at the north-east corner of the house. Its route north of this is unknown.

The cut for the construction of the wall is problematic. It first appeared at about 31.1m OD about 0.14m below the wall top. The wall could have been built from this level or the upper part of the cut could have been truncated by cultivation of the garden. The former is more likely as the deposits above the cut contained a great deal of rubble and may well have been dumped.<sup>27</sup> Below this layer [CX6] next to the wall was clearly the fill of cut into [CX7]. However, the cut could not be traced in the underling deposits [CX8] and [CX9] but it then reappeared. Layer [CX10] represented its fill. It went down through [CX11] and end as a scoop into the top of yellow silt layer [CX13].

It is possible that the cut was missed when [CX8] and [CX9] were excavated as the working space was confined making observation difficult. It is also possible that the wall was originally constructed in a trench dug from the top of [CX11]. The soil was then raised a further shallow cut made, although this seems unlikely.

There was an offset on the wall was at 30.66m OD just above the top of the channel gravel [CX11] which was at 30.69m OD.

The use of coarse red bricks with shallow frogs would be consistent with a nineteenth century date.<sup>28</sup>

The Cottages were erected for the Orphanage and completed in 1877.<sup>29</sup>

## **9 EXCAVATION OF THE BRIDGE ABUTMENTS, 2007**

### **9.1 The research aims**

This trench was intended to examine the suspected abutment of a former bridge across the west moat on the centre line of the house. Prior to the excavation there were two reasons for thinking that there had been a bridge on the site. The first was two areas of stone in the sides of western arm of the moat culvert which are on the centreline of the house (see section 1.2.3 feature F29). On the east side a stone abutment which projects slightly from brick work of the culvert. The abutment is about 3.65m wide. There is a matching course of stone on the opposite side of the culvert but this does not project from the wall. The southern edge is 24.08m from the inner corner of the bend at the junction of the western and southern arms of the culvert at the southwest corner of the house. The inner side of the culvert arch is about 0.6m from the face of the moat island wall.<sup>30</sup> This suggests that the southern edge of the abutment is about 24.2m from the southwest corner of the moat island and the centre about 26.12m. This is about 6.37m south of the projected centre of the west side of the island.

The second is a burn mark which appears in on the lawn in front of the house most summers (figures 83 and 84). The mark varies in size to some extent according to the dryness of the soil but the core area where the composition of the grass is permanently altered is about 4.4m east-west by 2.6m north-south. The east edge is 4.7m from the edge of the tarmac drive and 11.35m from the centre of the house steps. This core area does not exactly coincide with the area of highest resistivity readings on a survey made in February 1991.

The excavation was designed to answer the following specific questions:

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<sup>27</sup> Layers [CX1] to [CX5].

<sup>28</sup> Personal comment by Andrew Skelton based on observations in Carshalton.

<sup>29</sup> Phillips 2015 p. 78.

<sup>30</sup> This can be seen at several points in the southern arm of the culvert. See section 1.2.2.

1. Is the suspected structure the drawbridge abutment or is it some other feature such as a nineteenth century cess pit or an eighteenth century statue base?
2. If it was a bridge abutment were there several phases of construction? If so what date were they?
3. Was there any evidence for a change of ground level while the bridge was still in use? This would have implications for the sequence of developments on the west lawn.
4. What was the gradient of the bridge? Did it rise towards the house and if so by how much?
5. To look for dating information in the moat fill.

## 9.2 The location of trench CEZ07

The trench was on the lawn on the west side of the main house (figure 84). It was 6m long east-west by 2.5m north-south. The northeast corner of the trench was 11m west of the bottom of the steps up to the main door in the centre of the west front.<sup>31</sup> The north edge was 0.8m south of the centre line of the steps.<sup>32</sup>



Figure 83. An aerial photo of the west lawn in the 1980s showing the burn mark at 'M'.

<sup>31</sup> The edge of the stone in the centre of the steps.

<sup>32</sup> The corner pins defined a grid 6 m by 3 m. The northern pins were 0.46 m south of the centre line of the steps.

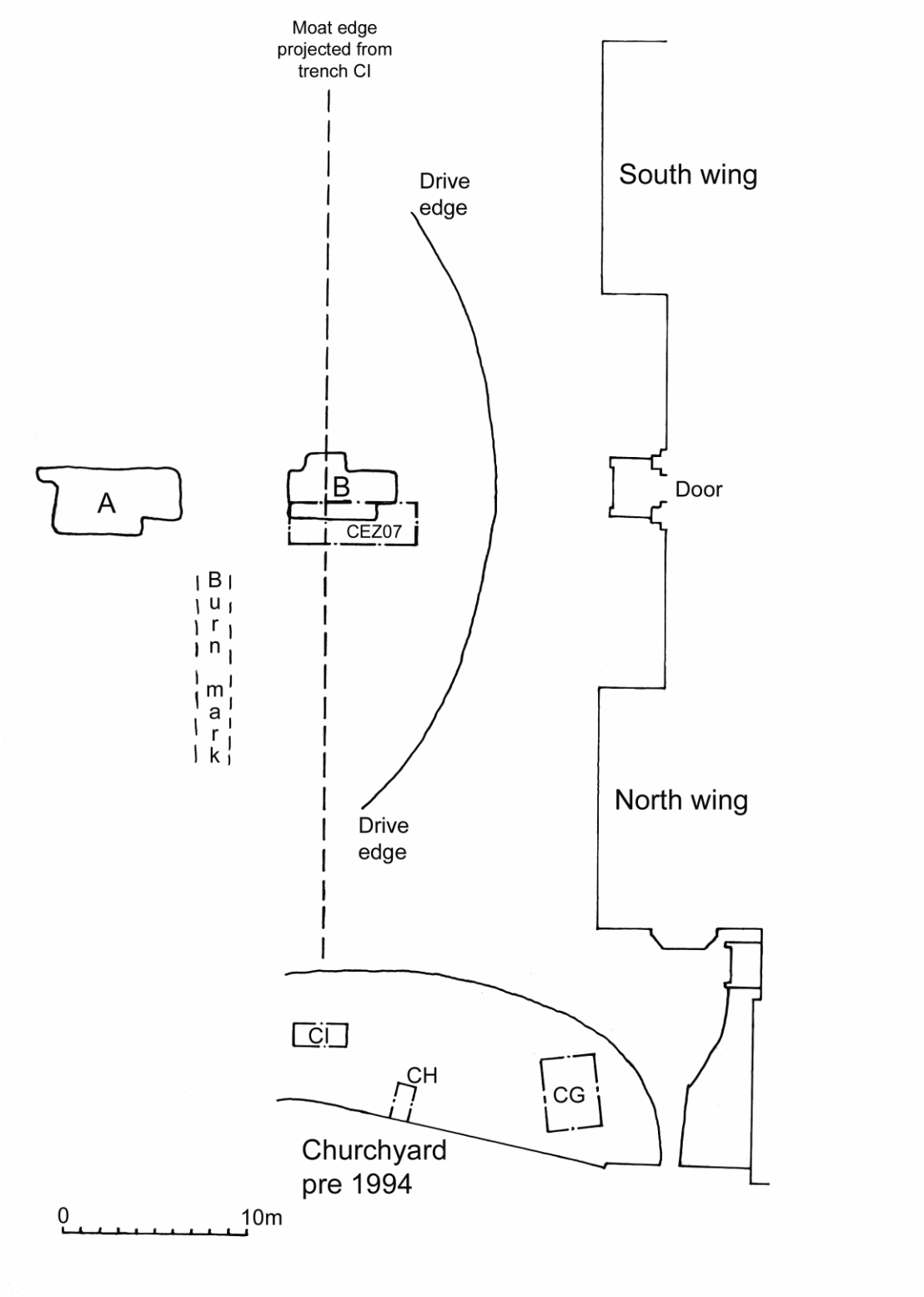


Figure 84. Plan of the site showing the three trenches excavated in 1992; the outer edge of the moat extrapolated from trench CI; two burn marks on the lawn labelled A and B, and trench CEZ07.

## 9.3 Stratigraphy and structures

### 9.3.1 The deposits in the upper part of the trench

The turf rested on layer [CEZ1] which consisted of loose fine dark brown soil with a few flint pebbles and scraps of ceramic building material. This covered the entire trench.

Layer [CEZ1] rested on layers [CEZ2] and [CEZ3]. Layer [CEZ2] occupied the north side of the trench as shown in figure 86. It consisted of flint gravel mostly 2 to 3cm in size with a few larger cobbles some of which projected from the surface. At the west end it was fairly loose and in a matrix of brown soil while the east end was in a more compact matrix of orange sandy clay. It seems likely that this was the foundation of the drive shown on the 1896 and 1913 Ordnance Survey maps. The protruding stones suggest that some of the surface had been removed.

Layer [CEZ3] consisted of moderately compact dark brown soil with some flint of mixed size and shape, a little ceramic building material, chalk, mortar and non-local stone.

Two more or less parallel bands of chalk pebbles [CEZ8] and [CEZ9] were found in the southeast corner of the trench within layer [CEZ3] (figure 85). The northernmost band [CEZ8] consisted of small chalk in a very sparse matrix of dark brown soil. The deposit was about 1m long, 7.5cm wide and 1.5cm deep. The southern band [CEZ9] was slightly longer but thinner and less well defined. They were about 0.2m apart at the west end narrowing to 0.1m at the east. The soil between the two bands was more stone-free than elsewhere.

When layers [CEZ2] and [CEZ3] had been removed the trench was in the state shown in figure 87. The west end of the trench was occupied by [CEZ4] which underlay [CEZ2] and [CEZ3]. It consisted of medium brown flinty earth which became more flinty westwards so that the west end was small loose gravel. The deposit contained a little ceramic building material, a few oyster shells and occasional pieces of Reigate stone. Layer [CEZ6] on the north side of the trench towards the centre (figure 87) consisted of angular and rounded flints in a matrix of loose crushed chalky mortar. The deposit graded laterally into [CEZ10] so the edge was ill defined. Layer [CEZ7] occupied the southeast part of the trench (figure 87). It consisted of a layer of mortar about 1cm thick which contained a few pieces of oolitic limestone. An east-west aligned ridge ran across the centre of the east end of the trench as shown on figure 87. It had a height of about 0.07m at the east end and tailed away in the middle of the trench.

Layer [CEZ5] in the extreme northeast corner of the trench below [CEZ2] consisted of soft light brown mortar with fine chalk flecks. There were some large flints up to 25cm across embedded in the mortar and projecting from it. The flints were sub-angular although one had sharp fracture. There were a few pieces of chalk up to 5cm across. The mortar was 2 to 3cm thick on the south side of the deposit and thinned northwards. It may have been the same as [CEZ7].

Layer [CEZ10] consisted of fine medium brown soil which was just sticky enough to form a ball. It was sometimes gritty and contained angular flint and a little ceramic building material. It passed under the mortar layer [CEZ7] and extended to the southern edge of the trench.<sup>33</sup>

There were two cuts into [CEZ10]. One [CEZ16] was partly exposed in the southeast corner of the trench (figure 88). The excavated part was more or less rectangular, about 1.44m north to south by 0.44m east to west and 0.07m deep. The sides sloped with a sharp break at the top

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<sup>33</sup> On the south side of the trench it was excavated as [CEZ17].

and a rounded one at the bottom. The base sloped slightly down to the west. It was filled by layer [CEZ15] which consisted of firm medium-brown greyish sandy silt with some pebbles mostly rounded but some angular. The layer contained two pieces of worked oolitic limestone. The bottom of the cut was formed by orange gravel layer [CEZ35].

The other cut [CEZ12] straddled the south side of the trench further west (figure 88). The exposed part was more or less rectangular about 0.8m north to south by 0.33m east to west and about 0.09m deep. The sides sloped and curved round to a more-or-less flat bottom. It was filled by layer [CEZ11] which consisted of broken oolitic limestone with a little dark brown soil, occasional flints and traces of mortar and charcoal. The limestone included many shaped fragments, mostly sawn mason's off-cuts. This was covered by the thin mortar layer [CEZ7].

At the eastern end of the trench [CEZ7] and [CEZ10] rested on a band of orange gravel [CEZ35]. In the southeast corner of the trench this rested on cobbled surface [CEZ18]. This consisted of rounded and sub-angular flints with some sharp fractures in a matrix of orange brown earth (figures 89 to 92). Most cobbles were about 7 to 8cm across but a few were larger up to 18cm. The cobbles were 2 to 3cm below the top of the abutment [CEZ23] and they curved upwards against the edge of it [CEZ23] and at the east end of the trench lapped over it. The cobbles ended in a straight edge 3.05m from the east end which was probably the original extent as there was no evidence of truncation by a cut.

The northern part of layers [CEZ6] and [CEZ10] rested on the bridge abutment [CEZ23] which is described in section 9.3.2.

The cobbled surface [CEZ18] was left *in situ* but the excavation by the western edge suggested that it rested on [CEZ19].

The northern part of layer [CEZ4] in the northwest corner of the trench rested on layers [CEZ28], [CEZ29] and [CEZ25] which appear to have formed a western continuation of the abutment [CEZ23].

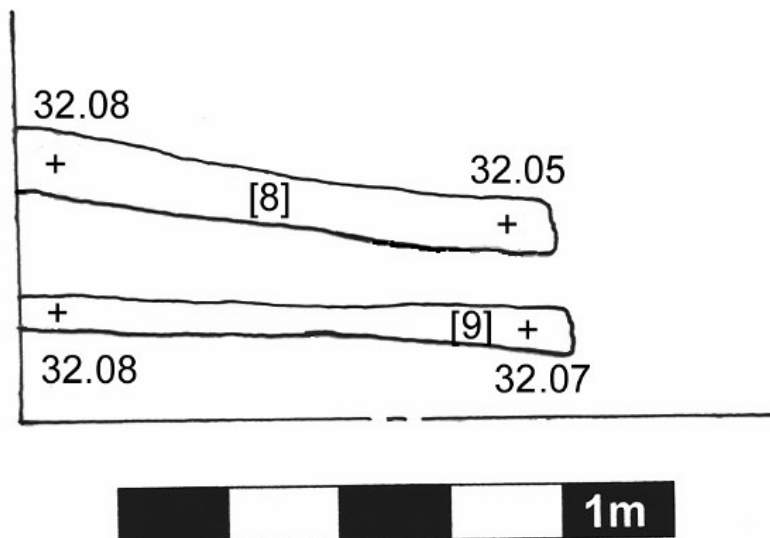


Figure 85. The tops of chaly bands [CEZ8] and [CEZ9] in the southwest corner of the trench.

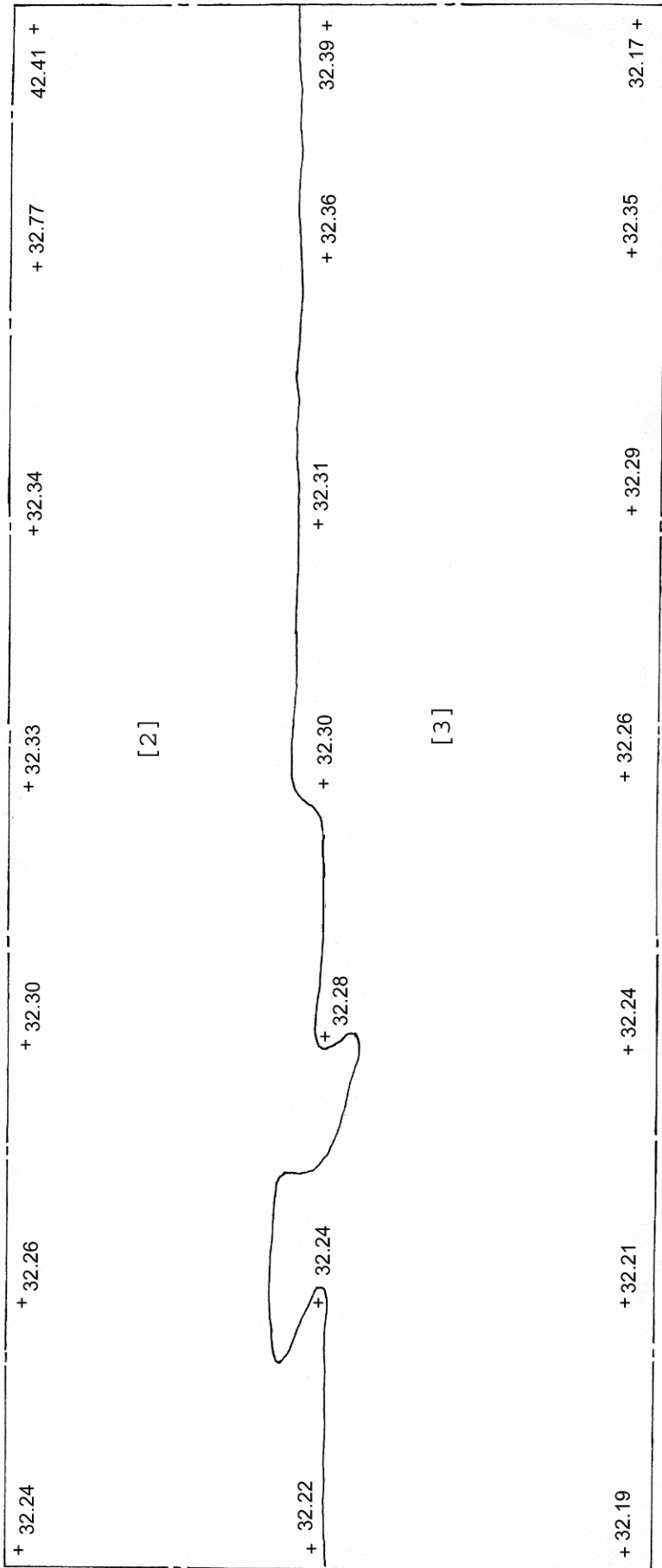


Figure 86. The tops of layers [CEZ2] and [CEZ3].



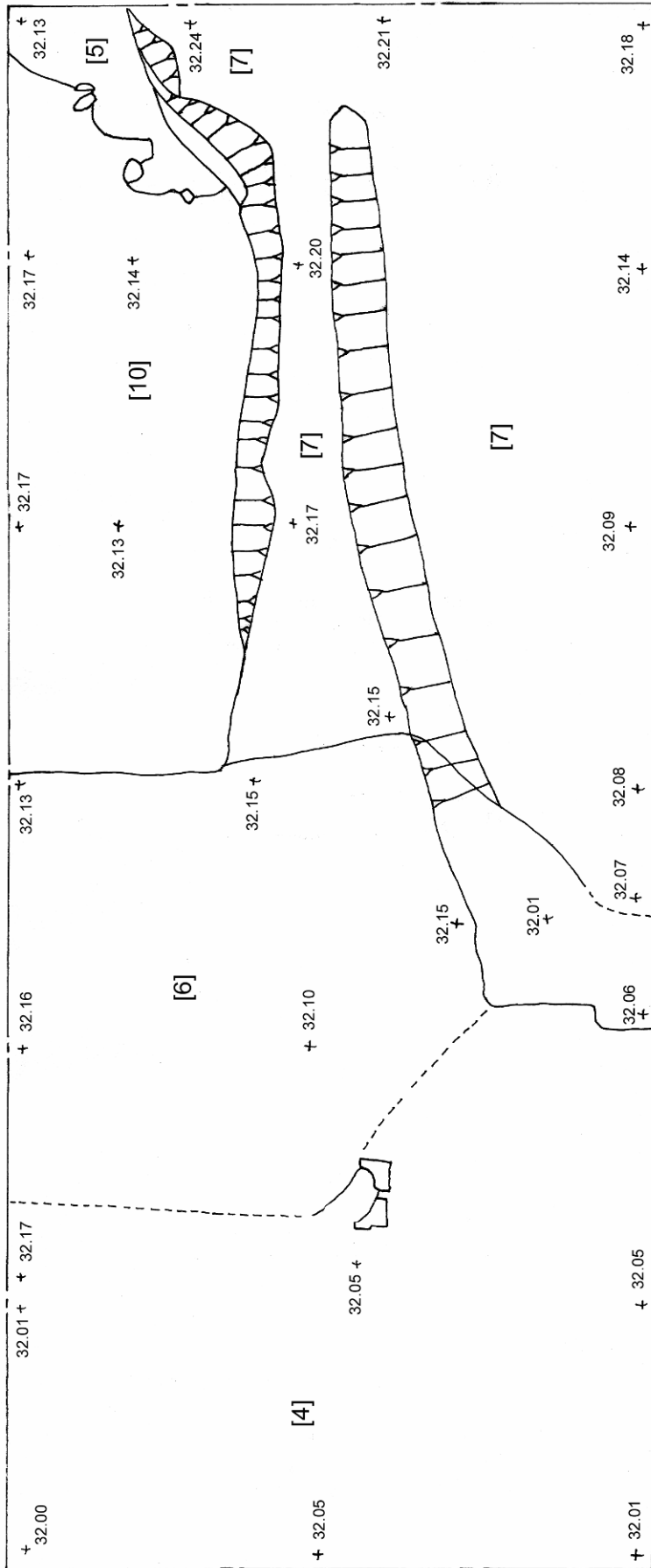


Figure 87. The deposits above the bridge abutment in trench CEZ. North at the top.

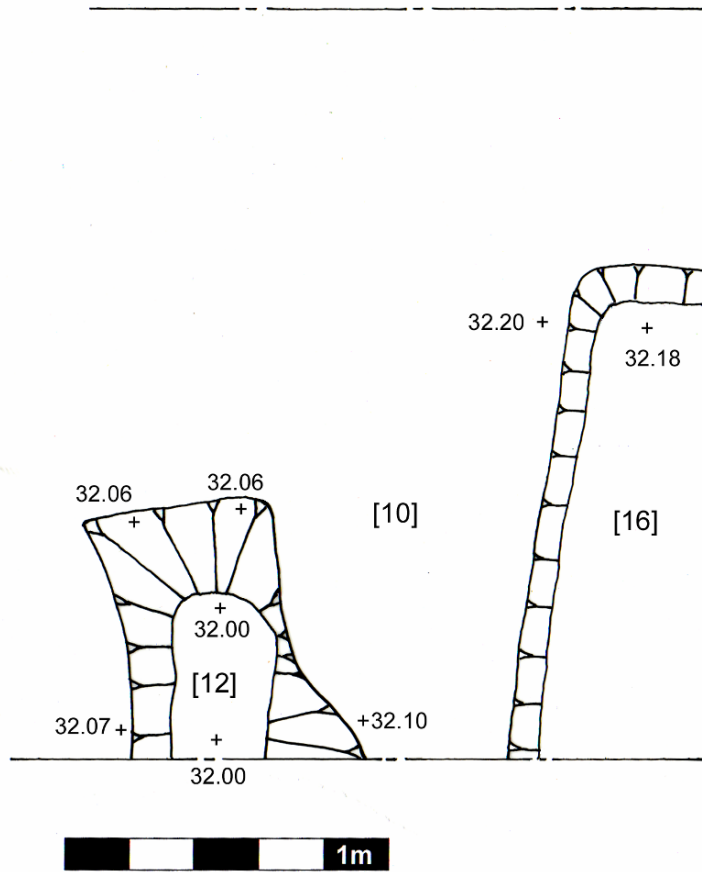


Figure 88. Cuts [CEZ12] and [CEZ16] in the southeast corner of the trench.



Figure 89. The cobbled surface [CEZ18] looking west.





Figure 90. The cobbled surface [CEZ18] lapping over the eastern edge of the abutment.

### **9.3.2 The eastern end of the bridge abutment [CEZ23]**

This structure had a core of flint and mortar (figures 91, 92 and 95). The south side was faced with roughly squared stone blocks aligned at 100 degrees from magnetic north whilst the west end appeared to butt up against [CEZ33] although the relationship is uncertain as the deposits were not excavated. The north and east sides lay outside the trench.

The abutment core consisted of white chalky mortar and rounded and sub-angular flint up to 16cm across with many sharp fractures. The top of the core was more or less horizontal but uneven at about 32.09m OD. It may have been a cut surface left after the reduction of a higher structure. The south side (figures 93 and 94) was only excavated in a small section towards the west end of the trench. Here there were five courses of blocks with a total height of 1.26m. There was a sixth block below this which projected outwards producing a 9cm wide offset. The blocks were Reigate stone except for one which was probably Kentish rag. They were roughly finished – probably with a fairly narrow chisel and often had rounded and irregular corners. A search was made for mason’s marks but none were found.

A second wall [CEZ24] projected from the south face of the abutment and was clearly bonded into it (see section 9.3.5 below).







Figure 92. The bridge abutment in trench CEZ looking northeast.

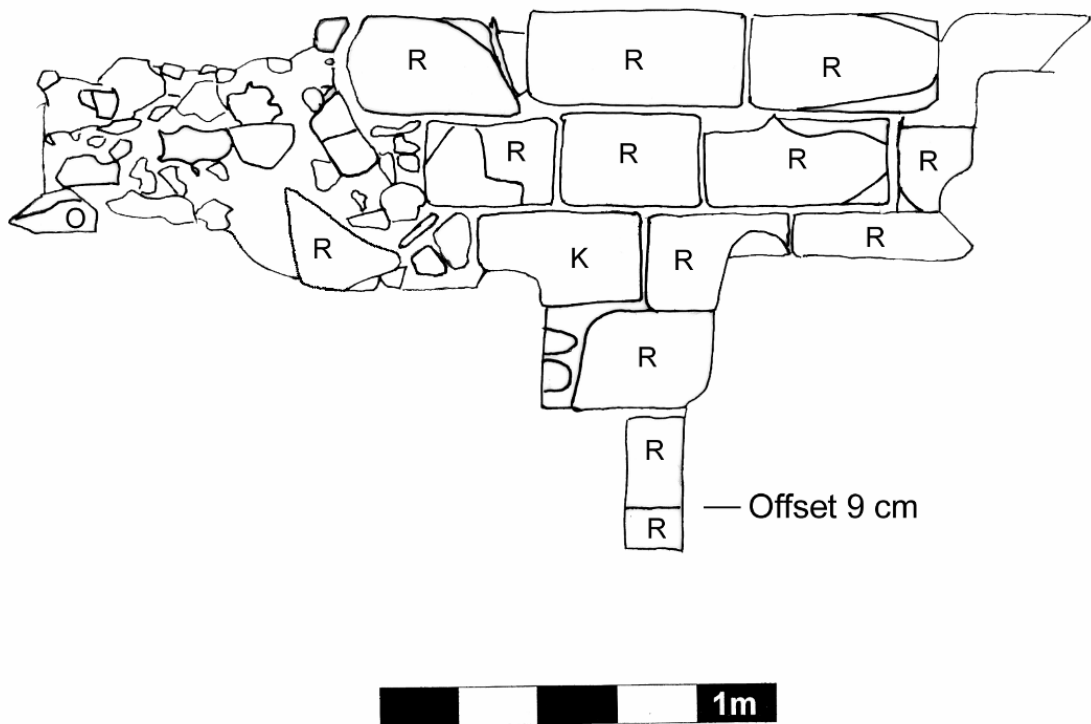


Figure 93. The south side of the abutment in trench CEZ. R = Reigate stone, O = oolitic limestone, K = probable Kentish rag stone.





Figure 94. The stone blocks on the side of the abutment in trench CEZ.



Figure 95. The roughly constructed western end of the abutment in trench CEZ. Looking north.





Figure 96. The wall [CEZ33] with [CEZ23] the right and the top of the southward running wall [CEZ24] just visible bottom right.

### 9.3.3 The western end of the bridge abutment

The mortar core and stone facing blocks of [CEZ23] ended about 1.25m from the western edge of trench. The facing blocks butted against [CEZ33], which was largely of flint and mortar and continued the line of the abutment westwards to the edge of the trench. The flints in [CEZ33] were randomly laid, up to 16cm across but often smaller and were often fractured as if knapped although in some cases the fractures were patinated. There were also a few pieces of pale brown oolitic limestone up to 17cm across and some Reigate stone rubble. One piece of oolitic limestone was smoothed and probably reused. The structure was bonded with soft grey mortar and looked rather roughly made.

A line of angular chalk rubble in a sparse matrix of brown earth [CEZ28] ran east-west along the top edge of the western end of the rough abutment [CEZ33]. It contained a few angular and rounded flints up to 8cm across (figures 91 and 95). The deposit was about 0.33m wide and about 1.2m long. It was interpreted as the footings of a wall. It was left in situ so the relationship to the facing wall [CEZ33] could not be fully examined.

The area to the north of the chalk wall [CEZ28] and west of the flint, mortar and stone abutment [CEZ23] was filled by layers [CEZ29] and [CEZ34] (figure 91). Layer [CEZ29] occupied most of the area. It consisted of sub-angular and sharp flints up to 14cm across in a matrix of brown sandy earth. The tops of the flints formed a more or less level surface which may have been cobbling. Layer [CEZ34] occupied a small area between [CEZ29] and the abutment [CEZ23]. It consisted of a mixture of medium brown soil and off-white to pale

brown crushed and broken mortar. There were about 10% angular and sub-angular flints. Both deposits were left in situ.

Layer [CEZ25] filled the northwest corner of the trench to the west of [CEZ29] and to the north of the chalk 'foundation' [CEZ28]. It consisted of moderately compact mid-greyish brown clayey sand with about 10% flint of mixed size and shape up to 20cm.

Layer [CEZ25] rested on layer [CEZ27] which consisted of loose broken chalk up to 7cm in size but mostly smaller. There was a little flint up to 8cm across and a piece of peg tile.

A small sondage was dug into [CEZ27] to examine the underlying deposits. Layer [CEZ27] rested on layer [CEZ30] which consisted of moderately compact dark greyish brown silty sand with small to medium sized flints. It was about 0.09m deep.

Layer [CEZ30] rested on layer [CEZ31] which consisted of moderately compact greenish brown clayey sand. There were a few pieces of flint none larger than 10cm and occasional pieces of chalk. It was 0.11m thick.

Layer [CEZ31] rested on layer [CEZ32] which consisted of large chalk and flint in a sparse matrix. The sondage ended in this deposit at 31.51m OD.

### **9.3.4 The deposits to the south of the abutment**

A small area was excavated down the face of the abutment on the south side of the trench towards the west end. Here layer [CEZ19] (top on figure 97) was overlaid by [CEZ6], [CEZ10] and possibly [CEZ4]. It consisted of loose silty sand with a small amount of ceramic building material, flint, chalk and oolitic limestone. The deposit passed under the cobbled surface [CEZ18].

Layer [CEZ19] rested on layer [CEZ20] which consisted of pockets of flint in a matrix of pale brown mortar and earth with pockets of brown earth. There was a little ceramic building material.

Layer [CEZ20] rested on layer [CEZ21], a very loose mixture of crushed and small broken brick and mortar with a little sandy soil. This rested on layers [CEZ22] and the top of wall [CEZ24] which ran south from the side of the abutment as described in section 9.3.5.

Layer [CEZ22] was examined in a sondage dug in the corner formed by the abutment [CEZ23] and the wall [CEZ24]. The layer consisted of loose flint and mortar. The flint was mostly sharp up to 22cm in size. There was a little Reigate stone.

Layer [CEZ22] rested on layer [CEZ26] which consisted of loose fine dark brown silt with small flints. There were numerous finds including a piece of post-medieval redware, a piece of tin-glaze, pipe stem and a scrap of bowl, Reigate stone, pale brown oolitic limestone, scraps of coal and mortar, nails, a piece of lead window came, bone and numerous oyster shells. The only closely datable object was the base of a glass wine bottle of about 1675-90. The top of the silt was at 31.11m OD and excavation ended in the deposit at 31.38m OD.

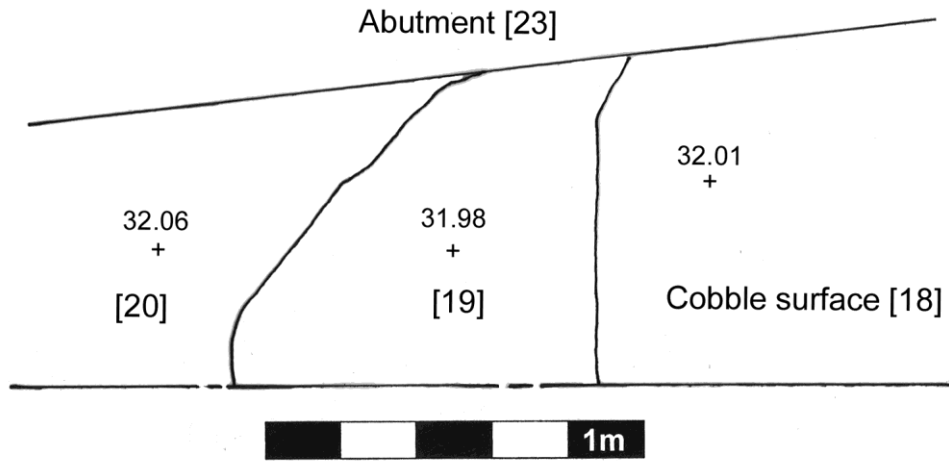


Figure 97. The top of layers [CEZ19] and [CEZ20] to the west of the cobble surface.

**CEZ07 site matrix**

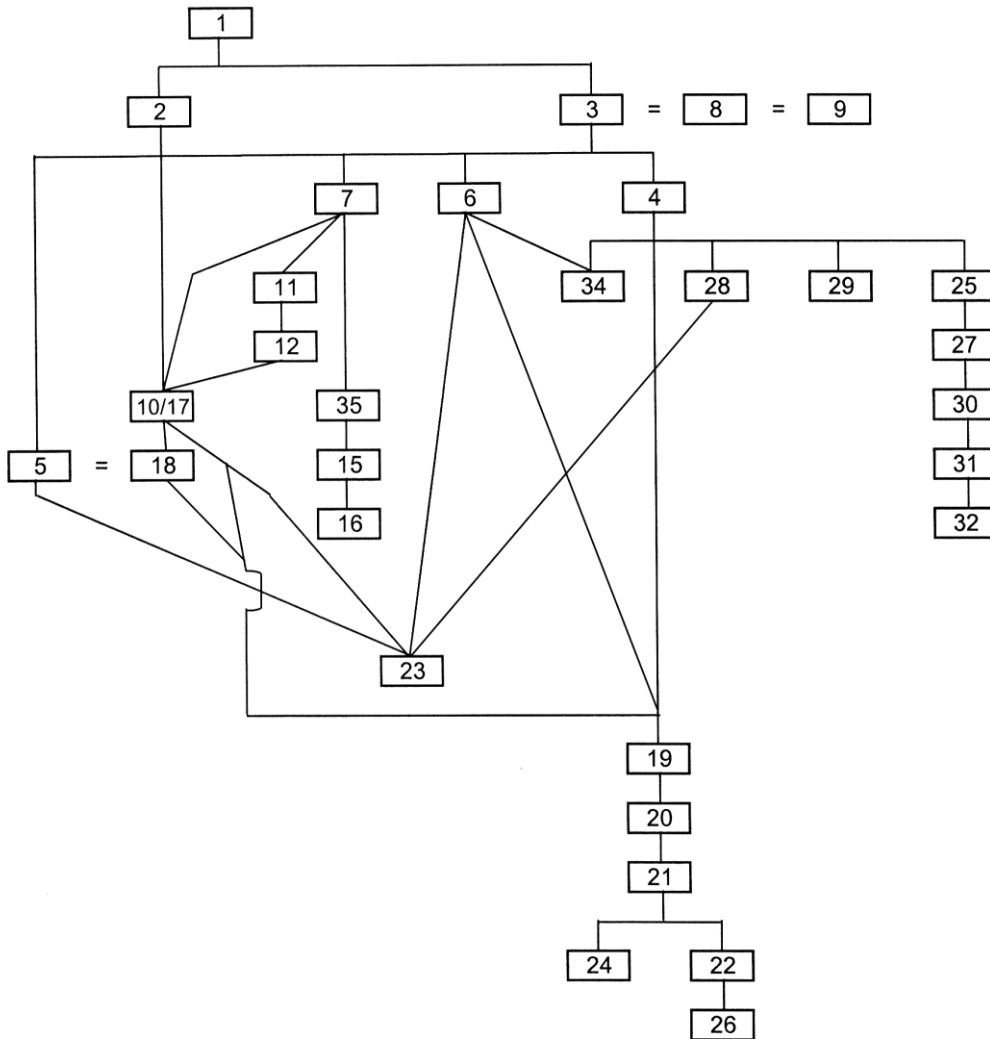


Figure 98. The site matrix for [CEZ07].

### 9.3.5 The moat wall [CEZ24]

A wall projected from the south side of the abutment (figures 91 and 99 to 102). The top courses were at 31.4m OD 0.66m below the top of the adjacent bridge abutment. The top of the wall had an east-west width of 0.63m. The top course ended 0.56m south of the moat wall but the lower courses ran into the section continued southwards for an unknown distance.

The top course consisted of reused dressed stone blocks with a core of chalk and mortar lumps bonded with mortar. Block 1 on the east side (figure 99) was of coarse pale brown oolitic limestone 0.48m long by 0.145m wide. The west side was smoothed into a shallow hollow curve suggesting that it may once have been a door threshold. The upper side was smoothed while the east side was squared up but uneven. The north and south end were smoothed. Block 2 was of soft brown sandstone (possibly Reigate) which was roughly dressed but not smoothed. It was 5cm wide, 6.5cm or more high and 21cm or more long. Block 3 was probably Reigate. It was part of a moulding had two faces at about right angles but the corner was missing. The minimum height and width was 9.5cm and 22cm. Block 4 was a detached part of block 3.<sup>34</sup>

The east face of the wall was excavated to a depth of 0.6m. The top course was formed by oolitic limestone block 1 already referred to. It had a height of 0.26m. The bottom of it was firmly mortared to a course of knapped flints about 5cm across and set in mortar. This flint work turned at right angles and continued into the third course of the abutment stonework (figure 100).<sup>35</sup> The south end of the flint course rested on a block of Reigate stone about 24cm thick while the north side rested on flints in sand. This course stepped out 17cm at the side of the abutment widening to 20cm at the south end over a distance of 0.4m. The flints were set more or less flush with the face of the wall but had not been knapped. This flint work passed below the fourth course of the main bridge abutment (figures 101 and 102).<sup>36</sup>

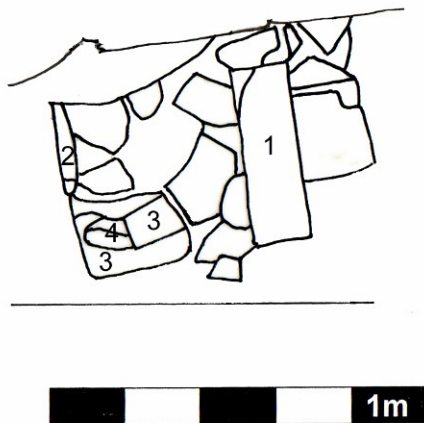


Figure 99. The moat wall top [CEZ24] with the numbers of the worked blocks.

<sup>34</sup> These blocks were left in situ.

<sup>35</sup> The courses are numbered from the top.

<sup>36</sup> The east face of block 1 was 166 degrees from magnetic north. The east face of the Reigate block in the third course was at 152 degrees from magnetic north.





Figure 100. The junction between the moat wall [CEZ24] on the left and abutment [CEZ23] in the background.



Figure 101. The south side of the moat wall [CEZ24] showing the flint bonded into the abutment wall [CEZ23].





Figure 102. Looking down on the offset on the south side of the moat wall [CEZ24]. The abutment [CEZ23] on the right.

## 9.4 Discussion

The bridge abutment was the earliest structure exposed. It falls into two clear sections: the roughly-built part at the west end and the ashlar-faced eastern end. The eastern end overstepped the western end showing that it is later.

The east end of the abutment was solidly built with a flint and mortar core faced with roughly-squared Reigate stone blocks. Six courses of blocks were exposed but the bottom of the structure was not reached. The edge of the abutment was not at right angles to the house. As only one side of the structure was exposed this is open to two interpretations: that the abutment approached the house at an angle or that it tapered towards the bridge. The second of these seems more likely although the arrangement is unusual. Moat bridge abutments are straight and are no wider than they need be to minimise their value to anyone assaulting the gate. If the abutment is reconstructed on the assumption that it is symmetrical about the centre line of the abutments seen in the moat culvert (see section 9.1 above) and that it tapered to the same width of 3.65m it would have had a length of about 8.4m and would have been 6.6m wide at the landward end. The gap spanned by the bridge would have been about 6m (figure 103). The stonework seen in the west side of the moat culvert would have been about half-way across. A big solid abutment like this seems designed to carry the thrust of a stone or brick arch although there are documentary references to a draw bridge in the mid-seventeenth century (section 1.1).

The western end [CEZ33] was much more roughly constructed from flint and mortar with a few pieces of Reigate and pale brown oolitic limestone. There was a line of chalk rubble along the top of the wall which may have been a foundation. Layer [CEZ29] on the top of the



abutment to the north of this consisted of a fairly level layer of knapped flint which may well have been the surface of the road approaching the bridge. The small sondage dug into layer [CEZ27] at the western end of the abutment exposed several layers of flint in sandy clay and a deposit of chalk and flint. These can be seen as the dump forming the core of the bridge approach.

The Reigate stone blocks in the abutment are very similar to those in the moat island wall. The latter also included many blocks of Kentish rag stone with distinctive tooling and masons' marks. The abutment had one possible block of Kentish rag which lacked both the tool marks and masons' marks. However, the Kentish rag stone in the moat island may be a mid-seventeenth century repair and its absence for the short exposed section of the abutment may simply be chance. On stylistic grounds the stone-faced section of the abutment is therefore likely to be the same date as the moat island wall. The sondage into the fill of the rough section of the abutment did not produce any datable finds. The only other guide to the date of the abutment is the presence of oolitic limestone in the rough section. Taynton stone from the upper Thames Valley was used at Merton Abbey around 1200.<sup>37</sup> Although it is unlikely to have been used at Beddington this early, its presence is clearly of little value for dating.

The abutment is not in the centre of the moat island, instead it is offset to the south respecting the position of the existing house. The earliest firmly datable part of this is the great hall roof of about 1500 although there may be older fragments in the existing building. We do not know how the fourteenth century house sat on the island so we cannot draw any dating conclusions from the position of the bridge.

The stone-faced abutment overstepped the more roughly constructed abutment to the west so it must have been later. The wall [CEZ24] running south from the abutment is very clearly bonded into the ashlar and is almost certainly the same date. It is likely that this is outer retaining wall of the moat. If so, the wall retaining the rough section would be largely buried in the moat bank and would be unnecessary. This suggests that the rough section of the abutment is earlier and that the moat may have been narrowed at some point. The fill behind the moat wall was loose rubble, possibly the fill of the cellar of a building which stood at the side of the moat. On this interpretation the moat wall [CEZ24] would provide the foundation of the east side of the building and the line of chalk rubble [CEZ28] on the abutment top the west side. These issues cannot be resolved without further excavation.

If the structure was the foundation of a tower it could be interpreted as part of a barbican protecting the outer end of the bridge. The chalk foundation [CEZ28] on the southwest end of the abutment could also be part of it. However, a barbican seems out of proportion to the other defences although it may have been more impressive than functional.

There are other possibilities. Elizabethan and Jacobean houses often had showy gates at the entrance to the forecourt sometimes with a banqueting house above them.<sup>38</sup> However, these are usually at the outer edge of the court and I do not know of an example at the end of a moat bridge. However, structures in this position would have been very unlikely to survive as they would be difficult to reconcile with later fashions.

The top of the stone-faced abutment was at about 32.09m OD. If the top of layer [CEZ29] is correctly interpreted as a cobble surface of the road the abutment must be standing to the height of the carriageway.

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<sup>37</sup> Samuel 2007 p. 178.

<sup>38</sup> Henderson 2005 p. 48-62

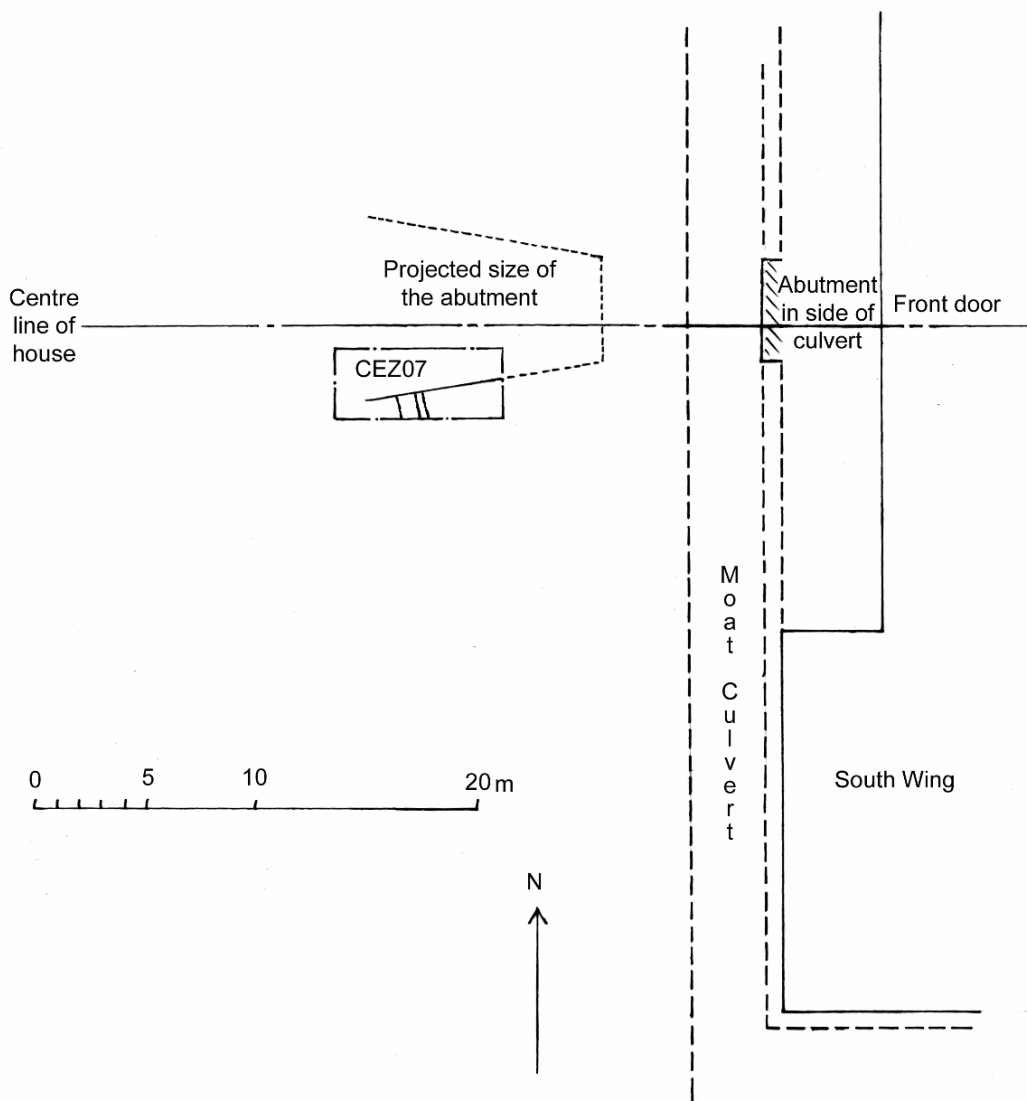


Figure 103. Plan of the bridge abutment extrapolated from the excavation and the features in the moat culvert.

The original height of the courtyard at the inner end of the bridge is unknown. Late-eighteenth and early-nineteenth century prints suggest that the ground level in the court between the house wings was somewhere near the level of the tarmac by the present front steps – about 33m OD.

The Tudor cellars at the low (southern) end of the hall had semi-basement windows on the east side which would suggest that the ground level was above their floor which was around 31.91m OD.<sup>39</sup> A soakaway pit dug in 1991 into the terrace on the east side of the great hall showed that the tarmac rested on about 0.4 m of gravel which rested on the moat island fill. The tarmac was at 33.2m OD so the top of the moat island fill was at about 32.80m. The courtyard on the other side of the hall may have been at about this height, suggesting that the bridge sloped upwards as it approached the house.

<sup>39</sup> The height of the floor of cellar 8 at the southeast corner of the building. The floor of one of the service block cellars is somewhat lower.

If the southward-running wall [CEZ24] retained the outer bank, the moat was about 14m wide. This is consistent with the moat edge seen further south in trench CI where the western arm of the moat was about 15m wide at water level and the upper part of the outside bank was an earth slope. The moat may have narrowed as it approached the bridge, or structure [CEZ24] may have been the foundation of some sort of building or tower against the south side of the bridge abutment.

The earliest deposit to the south of the abutment [CEZ23] and east of the retaining wall [CEZ24] consisted of fine loose dark brown silt [CEZ26] which contained numerous finds. The only closely datable object was the base of a glass wine bottle of about 1675-90 but there was nothing which need be later than the early eighteenth century. This may have been the upper part of the silt in the moat. However, the top of the deposit was at 31.11m OD which is higher than the other moat silt deposits:

| Height<br>m OD | Place   |
|----------------|---|
| 30.95          | At the south east corner of the moat (trench CJ)  |
| 30.84          | In the north arm of the moat in the contractor's trench for the reconstruction of the former laundry (trench AC). |
| 30.34          | At the northeast corner of moat island in trench CA.  |

Layer [CEZ26] was overlaid by a sequence of three deposits which consisted of varying amounts of flint, mortar, soil and crushed brick in a soil or mortar.<sup>40</sup> They were covered by [CEZ19] which consisted of silty sand with small amount of ceramic building material, flint chalk and limestone. This appears to be a sequence of dumping which marked the filling of the moat, with [CEZ19] as a finishing soil layer at the top. There were few closely datable finds none of which need be later than the early eighteenth century.

Deposit [CEZ19] appeared to pass under the cobbled surface [CEZ18] which occupied the southeast corner of the trench. The surface is likely to have been part of a drive or hard standing in front of the house. A cobbled surface found in trench CG was interpreted as the northern most of the two approach drives to the house. Like [CEZ18] this rested directly on the top of the moat fill. However, the construction was very different. The surface in CG consisted of elongated flints which were set in sand and very tightly packed. The tops had been knapped off to produce a level surface. The surface [CEZ18] was not nearly so well made, as it consisted of rounded flint cobbles probably set in sandy soil.

It seems likely that the two surfaces were of the same date as they both rested directly on the moat fill. The difference in construction could be explained if the knapped section was the main drive and the rounded cobbles subsidiary hard standing.

The cobbles of surface [CEZ18] lapped over the edge of the abutment [CEZ23] and clearly originally extended across it where they were bedded in mortar layer [CEZ5]. The cobbles to the south of the abutment rested on fill, which appeared to have subsided leaving an edge along the side of the abutment where the cobbles would be easily dislodged.

The cobble surface, the abutment and the moat fill were covered with layers [CEZ4], [CEZ6], [CEZ10] and [CEZ35] which together formed a patchwork of soil, flint and gravel which probably been dumped as levelling-up. Layer [CEZ35] may be the western edge of a gravel drive. This covering is likely to have been done when the park was brought up to the front of the house before 1792 when the first print of the west front was made. There were no closely

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<sup>40</sup> [CEZ20], [CEZ21] and [CEZ22].

datable finds from the four deposits, the most useful item being a plain copper button which could have been made at any time in the middle to late eighteenth or nineteenth centuries.<sup>41</sup>

There were two cuts in the top of [CEZ10]. One [CEZ12] was largely filled with sawn offcuts of coarse white oolitic limestone – evidently masons’ waste [CEZ11]. The other cut [CEZ16] in the southeast corner of the trench was filled with greyish sandy silt [CEZ15].

The stone deposit [CEZ11] was covered with a thin layer of mortar. It seems likely that this was connected with the remodelling of the house for the Orphanage in the 1860s. If so the masons’ waste is probably from the same episode. The mortar layer did not extend into the southeast corner of the trench and it may have been removed by cut [CEZ12], which would then be from 1860s or later.

Above this the deposits divide into two. Layer [CEZ2] in the northern half of the trench consisted of flint and gravel which is likely to have been the foundation of the axial drive shown on the Ordnance Survey maps of 1896 and 1913. A number of large projecting flints suggested that the surface of the drive had been slighted. The soil layer [CEZ3] to the south was presumably for the lawn.

These two deposits were covered by a layer of top soil which must have been placed when the track was covered over. This had happened by 1933.

## **10 SOAKAWAYS TO THE EAST OF THE HOUSE**

### **10.1.1 Trench AL**

In May 1990 contractors dug a pit for a soakaway into the fill of the moat island beneath the terrace on the east side of the houses (figure 104). The main trench was about 1.9m by 1.4m and 1.48m deep, and there was also a shallow trench connecting the main trench to a fall pipe. Nine layers were visible in the sides of the main trench as shown in figures 105 to 108. They were, from top to bottom:

[AL1] Tarmac.

[AL2] Small angular and rounded gravel in brown sand. This merged downwards into [AL3].

[AL3] Small angular and rounded gravel in orange sand.

[AL4] Brown sand and small gravel with some larger rounded and sub-angular flints. A few pieces of roof tile towards the bottom of the layer.

[AL5] Brown sandy earth with rounded and sub-angular flint cobbles.

[AL6] Grey-brown sand with some iron stain possibly redeposited Thanet sand.

[AL7] Chalk and flint in grey sand.

[AL8] Flint in dark grey sand, darker than [AL7]. This layer was only seen on the east side of the trench where it merged sideways into layer [AL9] (figure 105).

[AL9] Dark stiff sandy earth with rounded and sub-angular flint. A small bone and a scrap of coal shale or some similar material was found in this layer.

A narrow trial hole was dug in the centre of the trench to try to locate natural. This was taken down to about 30.97m OD, 0.84m below the bottom of the main trench without reaching the base of layer [AL9].

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<sup>41</sup> The button was from [CEZ10].

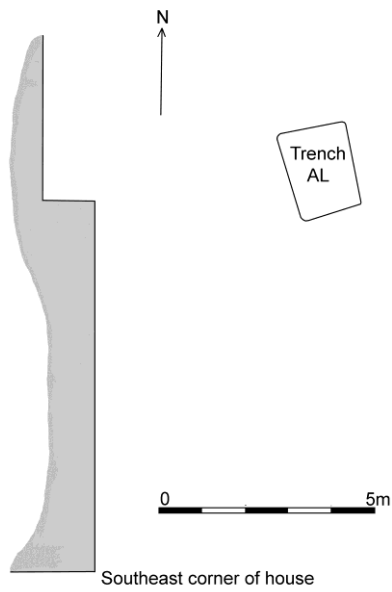


Figure 104. The location of trench AL.

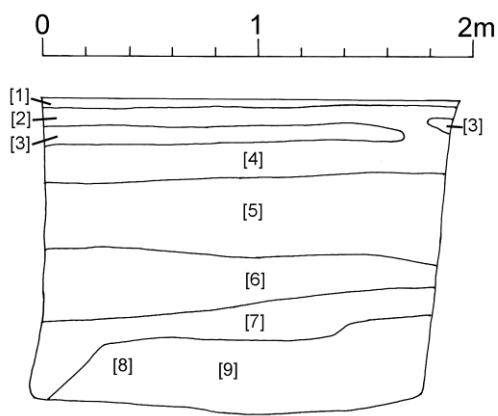


Figure 105. Trench AL east side.

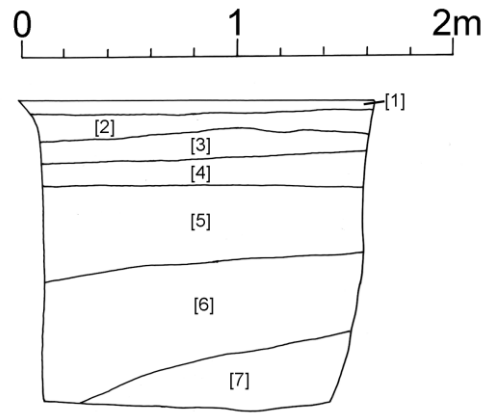


Figure 106. Trench AL north side.

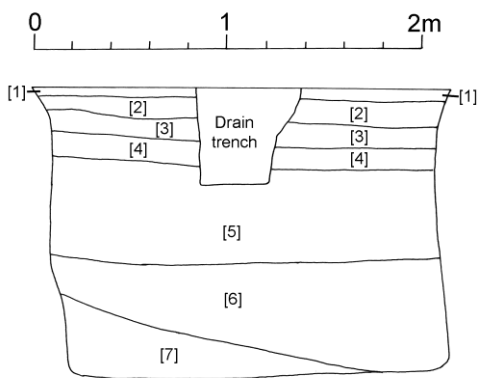


Figure 107. Trench AL west side.

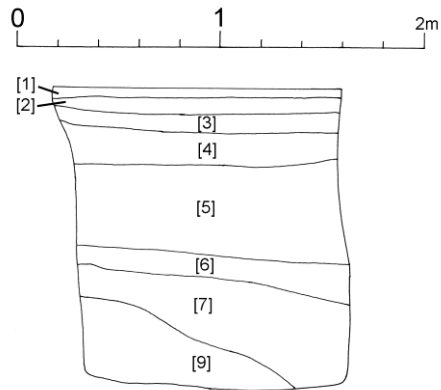


Figure 108. Trench AL south side.



### 10.1.2 Discussion of trench AL

The upper layers [AL2], [AL3] and [AL4], which consisted of small gravel in brown or orange sand, appear to have formed the surface of the terrace before the tarmac was laid. The variations between the layers are presumably the result of successive resurfacings. There was nothing to suggest when the first surface was laid.

The lower layers [AL5] to [AL9] appear to have been dumped to raise the level of the moat island. The layers dipped towards the west which suggests that they may have been deposited from the east which was the side nearest to the moat.

The trial hole showed that layer [AL9] extended down to 30.97m OD, 2.23m below the terrace. This is 0.63m above the silt which was found in the bed of the moat at the northeast corner of the island.<sup>42</sup> It is also below the lawn to the east of the house (around 31.79 m OD) but is above the park to the north of the former west lake (30.48 m OD) which is fairly representative of the riverside ground level to the west of the house.

It therefore appears that the moat was constructed by raising an island in an area of low-lying ground rather than by digging a ditch around the site.

### 10.1.3 Trench DF

This was a contractor's trench dug to make a soak-away in the slope of the south end of the terrace in 1995. It was not recorded and is only known from a photograph. This shows that below a fairly thin layer of top soil the slope is of dumped sand. The photograph shows the trench to a depth of about 1m, perhaps rather more. The centre of the soak-away manhole is 15.16m south and 9.2m east of the southeast corner of the house.



Figure 109. Trench DF looking north.

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<sup>42</sup> At the northeast corner of the moat island the top of the silt layer [CA15] was at 30.34m OD.

## **11 SUMMARY OF THE MOAT AND DRAINS**

### **11.1 The form of the moat**

The moat island was rectangular, about 56.4m from north to south by 65m from east to west. It was lined by a perimeter wall 1.94m thick, the lower parts of which consisted of flint and mortar faced on the outside with blocks of Reigate stone and Kentish rag. A small section of the inner face of this wall is can be seen in cellar 8 at the southeast corner of the house. Here the lower part is flint and mortar while the upper part is flint bonded largely with earth. We do not know the original height of the wall. The substantial foundations may have been designed to retain the side of the moat island but it is also likely that they supported a fairly high curtain wall. There is the remains of a small flow-through privy tower on the south side, but there is no evidence for projecting gate or corner towers.

The bridge abutment on the outer side of the moat was a substantial stone-faced structure probably about 8.4m long with width tapering from 6.6m to 3.65m at the bridge, which would have had a span of about 6m apparently with an intermediate pier. The moat appears to have been about 14m wide at the bridge and about 15m wide further south where the outer edge was exposed in trench CI.

There are two pieces of evidence for the moat water level. The base of a flow-through privy tower, which originally projected from the south side of the moat island, survives in the main moat culvert. The top of the eastern opening of this is at 30.76m OD and moat water level would need to be below this to prevent floating filth being trapped inside. The second piece of evidence is the height of the silt in trench CJ as the water level would need to be above this for deposition to take place. The top of this was at 30.95m OD, about 0.2m above top of the privy tower opening.

This contradiction could be resolved if the privy tower went out of use and moat water level had subsequently been raised. The Campbell plan of the house, which was published in 1717, shows four privies next to the tower in a block of building tucked in the corner formed by the kitchen and the south wing. The outside of the block can be seen on the 1827 Buckler drawing with chimneys which appear to be late Elizabethan or Jacobean. It is therefore likely that the privies have had a long history but their presence on the Campbell plan suggests that they were still in use after the house had been remodelled and the moat filled.

On the face of it the moat and perimeter wall was a formidable fortification, but it had major weaknesses. There were no projecting corner towers to cover the face of the wall and if the upper part was flint and earth it would probably not withstand bombardment. The fortifications would no doubt have looked impressive. They would have kept out thieves and rebellious peasants but would not offer much defence against a well equipped army. The moat at Carew Manor should therefore seen as the defence for a substantial fortified manor house rather than a castle.

### **11.2 The position of the house on the moat island**

The hall block and the north and south wings do not occupy the whole of the moat island and they are off-centre to the south and west. There was a gap of about 11.75m between the north side of the north wing and the north edge of the moat island and a similar 20.44m wide gap on the east side.<sup>43</sup> It is possible that there were narrow courtyards in these areas with ranges of

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<sup>43</sup> Measured from the northeast corner of the house to the projected edge of the north moat and from the east side of the hall to the edge of the moat island.

buildings along the edges of the moat island. There was no structural evidence for this in trench CA at the northwest corner of the island but the moat island wall was probably demolished to a point well below the surface of the island.

There was no sign of foundations in the soakaway pit which was dug into the top of the island to the east of the house.<sup>44</sup> This tends to suggest that there was not a structure on the east side of the island but the evidence is too slight to be conclusive.

There has been no archaeological excavation into the north side of the island and no observed contractor's trenches.

### **11.3 The date and context of the moat island**

The rectangular moat island appears to have been of uniform construction and was probably the product of a single building episode with later repairs. The large size of the island, the substantial stone-faced perimeter wall and the wide moat suggest that the house was also a substantial structure. It seems unlikely that any of the pre-Carew owners would have been able to build on this scale.

Wide moats were used to enclose a number of large houses and castles built in southeast England in the second half of the fourteenth century. The most obvious of these is Bodiam which was built for Sir Edward Dalyngrigge and licensed in 1385. Dalyngrigge had fought in France under Sir Robert Knowles and may have made a good deal of money. After his return he became a knight in the Royal household and he married an heiress of the Wardeux family. He was a knight of the shire in ten parliaments between 1379 and 1388. It is hard to assess his wealth but Bodiam is an impressive castle and it seems a rather ambitious project for a man who was not an aristocrat. It has round corner towers and at the narrowest point the moat was about 24m wide (ignoring the towers) while, on the north side, it widened to about 62m to allow space for the elaborate series of barbicans and bridges which protected the main gate. The hall and lodgings were built around the wall leaving a courtyard in the centre.<sup>45</sup>

The castle at Shirburn in Oxfordshire is similar to Bodiam with round corner towers and wide moat. It was built for Lord Lisle and licensed in 1377. The house appears to have been arranged around a courtyard but the arrangement is unclear as the building was greatly altered in the eighteenth century and has never been studied in detail.<sup>46</sup>

Sterborough Castle near Lingfield, Surrey, appears to have rounded towers at the corners of a large and rather irregular island in a wide moat. A licence to crenellate was granted in 1341.<sup>47</sup>

Other moated sites, such as Scotney Castle in Kent, were more irregular. This occupied two islands in a wide moat or small lake up to 33.5m across. The inner ward was protected by round corner towers. It was bisected by the hall so the house was not arranged around a single courtyard. The defences were probably built Roger Ashburnham about 1376-80. Ashburnham was active in local administration as a commissioner for the walls and dikes on Romney Marsh and a Conservator of the Peace in Kent and Sussex with Sir John de Etchingham and Sir Edward Dallingridge of Bodiam. He is probably more accurately seen as a member of the gentry rather than a courtier.<sup>48</sup>

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<sup>44</sup> See section 10.

<sup>45</sup> Turner 1986, Martin 1973, Emery 2006 p. 317-8.

<sup>46</sup> Emery 2006 p. 153-157.

<sup>47</sup> Emery 2006 p. 410-412.

<sup>48</sup> National Trust 1995, Emery 2006 p. 404-6.

There is no evidence for corner towers at Beddington, which would have considerably weakened the defences although the defect is not without precedent. Amberley Castle was an undefended house belonging to the Bishops of Chichester. It was converted to a castle by the construction of a rectangular curtain wall and towered gate by Bishop Rede under a licence to crenellate granted in 1377. Work was still in progress in 1382. The north and south perimeter walls are 85m and 93m long while the east and west ones are 54m and 36m. Many of the service buildings were arranged around the walls but the hall stood in the centre of the enclosure separating an inner and outer court. The site is on a hill top preventing the construction of a wet moat. The north side is protected by a low cliff but the other sides are exposed and the absence of corner towers is surprising.<sup>49</sup>

Penshurst in Kent was another house fortified in the late fourteenth century. The hall was constructed in the middle of the century for the London merchant Sir John de Pulteney who obtained a licence to crenellate, although it appears to have been open and undefended. In 1392, the then owner, Sir John Deveraux, obtained another licence to crenellate which gave specific permission to erect a stone perimeter wall. This enclosed an area about 110m by 80m with rectangular towers at the corners and midpoints of the walls, one of which has survived.<sup>50</sup>

The Beddington moat fits comfortably into a mid- to late-fourteenth century context. Many large houses were fortified at this time and, where circumstances permitted, wide moats were popular. The defences at Beddington appear to have been relatively weak but this is true of other sites.<sup>51</sup> There has been a debate – particularly concerning Bodiam – as to whether the walls, towers and moats were primarily military.<sup>52</sup> However, this debate seems removed from the likely reality of the situation. Emery has suggested that many of the fortifications were built in response to the threat of French raids in the 1370s, and the Peasants Revolt of 1381 must also have generated a great deal of fear among the elite. Fortifications were desirable but they also looked impressive: defence and status could be served by the same structures.

The castles described above have two basic types of plan. In one design the hall and the ancillary rooms were arranged around the walls leaving a courtyard in the centre in the manner of Bodiam and Wressell, while in the other there was a free-standing hall surrounded by a perimeter wall in the manner of Amberley and Penshurst. The evidence for the layout of the buildings at Beddington is limited and it is not possible to say which plan was followed. However, the features the drain F1 suggest that the moat island was a remodelling of an earlier house, so parts of pre-existing buildings could have been incorporated in the late-fourteenth century structure.

## 11.4 The moat filling sequence

Several pieces of evidence suggest that the moat was filled in stages, but it is not easy to establish the sequence.

The moat would fit uneasily with the baroque facing of the house which appears to have been carried out by the first baronet around 1710-12.<sup>53</sup> It is therefore likely that at least the western and eastern arms, which crossed the front and the back of the house, were filled by that date. The finds from trenches CG, CH and CI in the southwest corner of the moat fill were consistent with this, as the fill included rubble which probably came from the re-modelling of

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<sup>49</sup> Peckham 1921, Emery 2006 p. 297-300.

<sup>50</sup> Emery 2006 p. 386-394.

<sup>51</sup> For example Peckham 1921 and Hussey 1887 draw attention to the weakness of Amberley and Scotney Castles and suggest that they were intended to resist bands of marauders rather than a major military assault.

<sup>52</sup> See Emery 2006 p. 317-9 for a summary and references.

<sup>53</sup> See volume 1 section 2.9.

the house and there were no finds which need be later than the beginning of the eighteenth century.

The filling dates of the north and south arms of the moat are more problematic. The eastern end of the south arm of the main moat culvert butts up against a wall which appears to retain the fill of the east moat. The existence of this wall suggests that the eastern arm of the moat was filled before the southern one. The bonding break in the vault of the south moat culvert close to the southwest corner of the house may mark a building break between the south and west moat culverts. The south culvert has a gravel bed which includes a good deal of pottery and other material. The majority of it consists of red wares, border wares, tin-glaze and Chinese porcelain of early-eighteenth century date. However, there was some material which certainly dated from the late-eighteenth or early nineteenth century including pieces of cream ware and a Wedgwood tea pot. This material could have been dumped into the culvert through one of several manholes, but it seems more likely that it was thrown into an open channel from the adjacent kitchen. If so, the south moat culvert may have been an open channel until the late eighteenth or early nineteenth century. It is possible that this channel was narrower and only occupied the north side of the original moat. This would explain why the southern end of the foundation connecting the south wing to the corner of the churchyard does not appear to have been a retaining wall.

The finds from the contractor's trench AC in the north moat fill included a mallet-type wine bottle, which would suggest a filling date in the second or third quarters of the eighteenth century. The channel appears to have undergone a change of flow regime from running water depositing gravel to a still one depositing fine dark silt. The gravel contained an L25 pipe bowl marked WR suggesting that the fast water flow continued into the early eighteenth century and that the dark silt is later. The brown sand in trench CA at the northeast corner of the moat island was probably deposited when there was rapid water flow through the north moat. There was some mud over the sand, but it was not dark and smelly so it was probably not the same deposit as the mud in trench AC. It seems likely that fill of the east arm of the moat extended beyond the northeast corner of the island and that the mud seen in trench AC was later: the north arm may also have been narrowed before it was finally filled.



## 12 APPENDICES

### 12.1 Pottery

#### Trench AC Unstratified

##### Roman

<16> Unglazed buff body with small dark grits. 3mm thick. Roman?

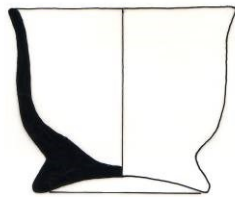
##### Stoneware

<19> Part of side and base angle of a stoneware jar. Uneven brown glaze on the outside. Thin light brown wash on the inside.

<30> Base of stoneware jar. Grey body with uneven brown glaze on the outside and thin brown wash on the inside. Base diameter 75mm. 19th century.

##### Tin-glaze

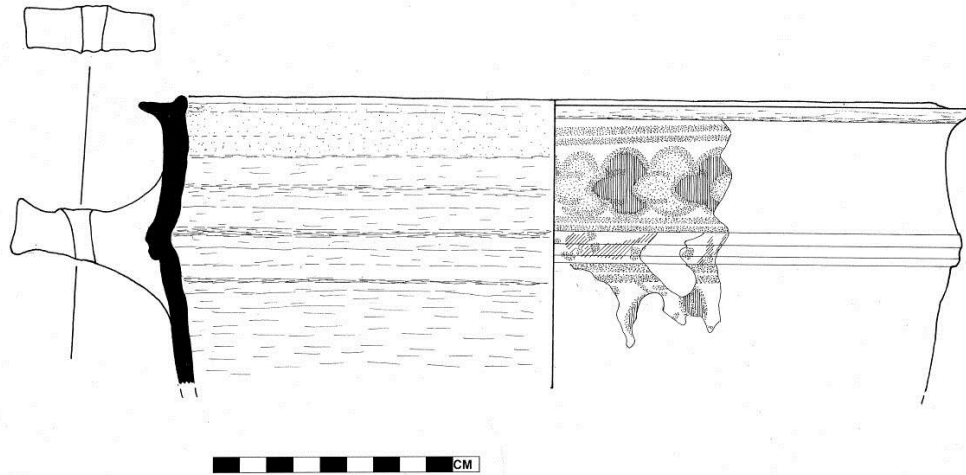
<1> Tin-glazed drug jar with thick light grey-blue glaze. Height 43mm. Rim diameter 53mm. Base diameter 41mm. From the south end of the east trench, probably near the bottom. Late-17th or early-18th century.



- <3> Rim sherd from tin-glazed chamber pot. Light brown body 4.8mm thick, slightly reduced to grey in places. Grey blue glaze. About 1700.
- <7> Five sherds from a tin-glazed plate. Blue and white one side, white on the other. White has a bluish tinge. Possibly the same plate as <25>.
- <25> Tin-glaze plate. Blue and white on one side, white on the other. The white has a bluish tinge. Possibly part of <7>. Early 18th century.
- <41> Sherd from the side of a tin-glazed hanging flower pot. Blue yellow and green glaze on the exterior. First published in Orton 1984. An analysis by Michael Hughes has shown that this was made in Antwerp.<sup>54</sup> This was an early north European centre for the production of tin-glaze. The town suffered heavily in the Dutch revolt. It was sacked and severely damaged in 1576 and besieged 1584-5.<sup>55</sup> The city surrendered and remained part of the Spanish south Netherlands – the future Belgium. However, the Dutch blockaded the river Scheldt, which was Antwerp's route to the sea, and the city was displaced by Amsterdam as the great commercial centre of the Low Countries. The pot is therefore more likely to have been made in the third quarter of the sixteenth century rather than the fourth.

<sup>54</sup> Hughes 2013.

<sup>55</sup> Parker 1985 p. 178, 214-5 and 239.



Porcelain

- <6> Base of a Chinese porcelain bowl. Light blue glaze. Makers (?) mark on the inside in the centre of the bottom. 18th or 19th century.
- <8> Base sherd from a porcelain cup or small bowl with white glaze on both sides. About 1.5mm thick.

Staffordshire

- <11> Base sherd from earthenware jar (?). Buff body. Dark brown glaze on side and interior. Side about 4.5mm thick. Base about 4.25mm thick. From the south end of the west trench almost certainly from the silt or gravel layers at the bottom of the trench. Staffordshire late-17th or 18th century.
- <37> White body with white glaze on both sides. Curves sharply at one corner. 7mm thick.
- <39> Curved light brown body with very light grey-blue glaze on both sides. Glaze has tiny spots including several blue ones. 5mm thick.
- <40> Yellow brown body. Pink glaze on one side. Spots of pink and blue glaze on the other. 4mm thick.

## **Layer [CA2]**

### Medieval

- Reduced body with shell? Inner side light brown oxidised? Before 1250.

### Post-medieval redware

- Brick-red body with thin opaque light brown glaze on the inner side. Tudor?

### Staffordshire

- Flat, 5mm thick. Buff body with very dark brown glaze on one side, about 0.5mm thick. Staffordshire 1670 or later.

## **Layer [CA3]**

### Stoneware

- Stoneware. Piece of jug handle. English?

### Post-medieval redware

- Orange body 5-6mm thick. Brown (transparent?) glaze on both sides. Late 17th- or 18th century.

## **Layer [CA4]**

### Tin-glaze

- Rim of tin-glazed drug jar. Light brown body. White glaze on interior with slight purplish tinge. White exterior with 2 horizontal purple stripes, one about 3mm wide; top of rim unglazed. 17th century.
- Scrap. Body 3.5-4mm thick. Dark blue glaze on both sides. White decoration on one side.

### Stoneware

- Dark brown with relief decoration, probably part of a medallion. German. 17th century.

### Post-medieval redware

- Red body slightly reduced towards the interior side. Patchy green-brown glaze on interior. Thin dark red surface on exterior with small splashes of glaze. Cooking pot or chamber pot. Late 16th or 17th century.
- Part of the base and corner of the side of a large bowl with base 12-14mm thick. Body mostly reduced, but red where oxidised near surface. Dark brown glaze on both sides. 17th or 18th century.
- Red earthenware body 3mm thick - transparent brown glaze with dark spots on interior - greyish exterior. 18th century.
- Pottery? Rough orange body 2mm thick - tiny red inclusions.

## **Layer [CA5] first spit**

### Medieval

- 4mm thick. Oxidised red on one face, the core reduced and other side sooted. Gritty with large quartz inclusion. Before 1250.
- 5mm thick. Orange body.

## **Layer [CA5] second spit**

### Stoneware

- Dark mottled glaze on one side. Dark spots in the body. Possibly Fulham, if so after 1680.

### Post-medieval redware

- Red body with orange glaze with dark spots on one side thin dark surface on the other side. Fine post-medieval redware. Late 17th or 18th century.

### **Layer [CA5] third spit**

#### Tin-glaze

- Pale brown body 4mm thick. Dark blue glaze on both sides, with white lines painted over the blue on one side. English. Late 17th or early 18th century.

### **Layer [CA5]**

#### Medieval

- Shell-tempered with no sand. 6mm thick. Red oxidised surface with reduced core. Several dark flakes in the body 3-4mm wide and 0.5mm thick. 11th or 12th century.

### **Layer [CA11]**

#### Medieval

- Surrey white ware. Rim of cooking pot. Light brown body with a few splashes of glaze on it. Probably Cheam.
- Surrey white ware. Two joining pieces. Fabric similar to the above.

### **Layer [CA21]**

#### Post-medieval redware

- Side of flower pot - slight reducing in core in one place. 8-9mm thick.

#### Tin-glaze

- Part of base with ring foot luted on with glaze. Blue decoration on inner surface. c.1640-c.1680.

#### Staffordshire marbled ware

- Buff body 6mm thick. Glossy dark brown glaze with darker streaks in it on both sides. Late 17th or early 18th century.

### **Layer [CB1]**

#### Medieval

- Surrey white ware? Grey body 4mm thick. Uneven green glaze on exterior with traces of brown. Scrap of combed decoration on exterior. Source uncertain.

#### Border ware

- Piece of handle from a small cup. Light brown glaze with dark spots; looks rather like stoneware but body is light buff earthenware. 17th century.

#### Stoneware

- Rim of tankard. Uneven grey brown-glaze on both sides. Incised line around top of rim on exterior. Bulge on one side for a handle? English, 18th century.
- Medium-brown mottled exterior with slightly lighter smooth brown interior. 3mm thick. 2 joining pieces.

#### Post-medieval redware

- Fairly fine red body 11mm thick. Transparent brown glaze on top. Very thin purplish surface on bottom. 18th century.
- Rim from heavy bowl. Red body with reduced core covered with dark brown transparent glaze.
- Rim of flower pot. Brick red body, 3mm thick. No glaze.

#### Modern

- White 4.5mm thick. Dark blue glaze on both sides with low relief design on interior; appears white through glaze. 19th century.
- White plate with part of foot. 4mm thick. Dark blue glaze on both sides. 19th century.
- White. 3 rim sherds. Modern.

### Layer [CG1]

Post-medieval redware

- Flowerpot, 1 piece.

### Layer [CG3]

Post-medieval redware

- Clear glaze on one side, but not on the other. 10mm thick. 18th or 19th century.
- Rim sherd. Clear glaze on both sides. 18th or 19th century.

### Layer [CG4]

Post-medieval redware

- Brown glaze with dark streaks on the interior. Interior partially glazed and partially covered with a thin dark wash? 4mm thick. 18th or 19th century.

Stoneware

- Grey. Plain salt-glazed exterior. Light brown wash on the interior. Two raised bands on the exterior. 18th century or later.
- Stoneware or near-stoneware. Grey body 5mm thick. Dark brown exterior. Light wash on the interior.
- Grey body which is darker on the outer side. 5mm thick. 17th or 18th century.

Uncertain

- Red with reduced core. 5mm thick. Cement or similar material on the surface.

### Layer [CG13]

Stoneware

- Near-stoneware. Brown exterior, dark red interior. 5mm to 7mm thick. Butter pot? 17th or 18th century. Mortar on the surface and the fracture.
- Rim sherd from straight-sided stoneware mug. Impressed line round the exterior of the rim. Dark-brown exterior. Tip of the rim is light. Upper 13mm of interior dark brown but light brown below this. Early 18th century.

Palissy-like ware

- <11> Tiny fragment. White body with a few small grains of clear quartz. Curved rim-like shape with fine lines on the top. Base trimmed with knife. Green lead glaze with traces of yellow on both top and bottom. Glaze applied directly to the clay. The pattern on the top is similar to the lizard's tails on Palissy ware dishes such as the examples illustrated on pages 99, 115, and 118 of Amico 1996. Height 9mm. Length 16mm.





### Layer [CG14]

Surrey white ware

- Patchy green glaze on the exterior, unglazed interior. 4 to 6mm thick. 13th or 14th century.

### Layer [CH1]

Post-medieval redware

- Rim sherd. Clear glaze inside and out. 18th century.

White salt-glazed stoneware

- Rim sherd from a plate? White slightly grey body with glaze on both sides. c.1720 to c.1760.

Porcelain

- <42> Base of tea bowl. Hand-painted blue decoration. Parts of three roundels on the exterior and crudely painted foliage. Roundel in the centre of the foot ring with leaf-like figure in it. Interior has painted plant spray in the base.



### Layer [CH3]

Tin-glaze

- Slightly yellow body with off-white glaze on both sides.

### Layer [CH4]

Surrey white ware

- Two joining sherds. Area of brown slip on the exterior with a few splashes of glaze. Unglazed interior. Similar to Cheam kiln one? Second half of the 14th century.

Stoneware

- Jug sherd. Grey body with white interior. Grey exterior with some light brown spots. 17th century.

### Layer [CI2]

Modern

- Lower leg and foot from a pottery doll. Toe broken off. 19th century.

### Layer [CI4]

Stoneware

- Grey body with white interior. Brown exterior, one part darker than the other. 16th century? Body similar to sherd from [CH4].

### **Layer [CI5]**

Surrey white ware

- Two joining sherds from a jug handle. Cheam. 15th century.
- Unglazed sherd 3mm thick. Cheam.

Tudor green

- Three small sherds. Very fine white body 2.5mm thick. Green glaze on the exterior. May be French rather than Tudor green. 14th century or later.

Stoneware

- Light grey body with darker core. Brown glaze on the exterior. 16th century?

Uncertain

- Brick-red sandy body. Splashes of clear glaze on the interior.

### **Layer [CI6]**

Stoneware

- Jug sherd with part of a medallion or coat of arms. Grey body. Brown exterior. Light brown wash on the interior. Early- to mid-17th century.
- Three joining sherds from the base of a poorly fired jug. Pink body. Side and part of base grey. Early to mid-17th century.

### **Layer [CI7]**

Medieval

- London ware? Grey body with oxidised interior. Part of the exterior covered with thick white slip and the whole exterior then covered with green glaze. Late 13th or 14th century.

### **Layer [CJ1]**

Transfer-printed ware

- Sherd from the side of a plate but excluding the rim. White glaze on both sides. On the inside there is part of a brown roundel consisting of an outer circle of rope-like decoration and an inner circle of dots and dashes. Between the two circles there is part of an inscription 'ROYAL FEM'. In the centre of there is a figure in a long gown - presumably an orphan girl. A rectangular label below the figure is inscribed 'INCORPORATED A.D. 1800'. The roundel has a diameter of about 37mm. The plate was presumably made for the Royal Female Orphan Asylum.

### **Layer [CJ2]**

Surrey White ware

- Off white. 4.5 to 5mm thick. Cheam ware?

Tudor Green

- Rim sherd. Green glaze on interior and exterior.

Post-medieval redware

- Base angle of a flower pot. Base about 60mm diameter. Side 6mm thick.

Porcelain

- Base angle sherd from a small bowl? Undecorated.

Modern

- Sherd from a straight-sided jar with a fluted exterior. White glaze on both sides.
- Two joining sherds from the base of a cup or small bowl. Part of a makers mark on the bottom. White glaze on both sides.
- Flake. White glaze on one side. Other side missing.

### Layer [CJ7]

#### Roman

- Fine body, part oxidised part reduced. Thin black slip on exterior and interior. Possibly Roman colour coated ware.

#### Post-medieval redware

- Wall sherd from a flower pot? 7mm thick red body with thin darker slip on the exterior.
- Probably flower pot. No glaze. 4 to 4.5mm thick.
- Base angle sherd. Red body. Damaged clear glaze on the interior. Darker red slip on the exterior with a splash of clear glaze. Late 17th century.
- Red body 6mm thick. Glaze on one side. Traces of darker red slip on the other. Late 17th century.

#### Stoneware

- Grey. Grey mottling on exterior, light brown wash on the interior. 3.5 to 6mm thick. 17th century.
- Pale brown body. White glaze on the interior, light brown exterior. 19th century.
- Rim sherd from small pot. Grey body with clear glaze inside and out. 19th century.
- Grey body 11mm thick. Brown glaze on exterior light brown wash on the interior. 18th century or later – possibly modern drain pipe.

### Layer [CJ8]

#### Stoneware

- Grey body with light brown glaze on both sides. Sherd from a mug. Raeren? Late-15th or 16th century.

#### Post-medieval redware

- Red body, core reduced in places. Brown-red glaze on the both sides. 5 to 6mm thick. Possibly Tudor.
- Clear glaze on exterior with a few dark spots and streaks. Uneven glaze on the interior. 4.5 to 5mm thick. 18th century or later.
- Dark slip on one side with tiny area of glaze. 4mm thick. 18th century or later.
- Dark red body with reduced core. Grey slip (?) on both sides. Tiny spot of glaze on the interior. 5 to 7mm thick. Tudor or later. Two joining sherds.

### Layer [CJ9]

#### Border ware

- Rim sherd from a Pearce 1992 type 2 chamber pot. The rim form is close to 334 (p. 70). Red body. Clear glaze with dark brown spots on the interior and exterior. Middle to late 17th century.
- Wall sherd from a large bowl with part of rim? Red body with slightly reduced core. 10mm thick. Yellow-green glaze on the interior and exterior. Tudor or later.

#### Post-medieval redware

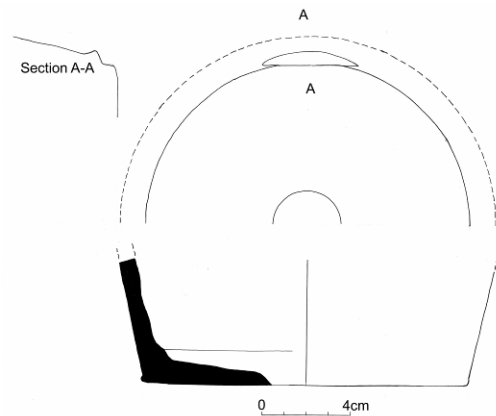
<35> Rim and side sherd from a bowl. Clear glaze on the interior and splash of glaze on the exterior. 17th or 18th century.

<32> Two joining rim sherds from a large plant pot. Red body with dark surface inside and out. Rim 220mm diameter.



<31> Rim sherd from a large plant pot. Red body with dark surface.

<30> Two joining sherds forming about half the base and the lower sides of a large flower pot. Red body with dark surface inside and out. Base about 140mm diameter. Large drainage hole in the centre of the base about 30mm diameter. Indentation on the outside of the base angle possibly where the pot pressed against a plank while still soft. A 10mm flint inclusion.



<33> Rim sherd from a plant pot. 200mm diameter rim. Red body with dark surface.



- Wall sherd from flower pot. Red, 6 to 10mm thick, with thin darker slip on the exterior. Trace of dark brown glaze on the interior. Finger prints on exterior.
  - Red body 4 to 6mm thick. Thin even dark surface on the exterior and interior. Tudor?
  - Red body 4 to 5mm thick. Thin even dark surface on the exterior. Similar slip on the interior but streaky perhaps through wiping while the pot was turning. Tudor?
- <36> Rim sherd. Pale red. Unglazed. Body 6.5mm thick. Form unclear. May be Roman.
- Clear glaze on both sides with a few faint dark streaks. 5 to 6mm thick. 18th century or possibly later.
  - Wall sherd and junction with base angle. 6mm thick. Two drops of whitish glaze have run down the exterior and one of clear glaze down the interior. Flower pot? 17th century?
  - Base of a large jar? Base diameter about 270mm. Red ware with slight reduction in the core. Yellow-brown glaze on the interior and side but not on the base except around the edge. Minimum thickness of base and side 9mm. Woolwich? Late-17th or 18th century.

#### White salt-glazed stoneware

<1> Base angle sherd probably from a small bowl. White salt-glazed stoneware. Staffordshire. Mid-18th century.

#### Tin-glaze?

- Curved flake about 2mm thick. Pale blue glaze on the exterior. Hand painted blue and white decoration on the interior. Mid-18th to early 19th century.

#### Porcelain

<2> White to pale grey body. Rim turns down at an angle of 134 degrees. Hole 2.5mm diameter through body below rim made before firing. Diameter about 80mm.



## Uncertain

- Flower pot wall sherd? Pink with traces of a thin slightly darker slip on the exterior. 10 to 11mm thick. Part of a hole about 12mm diameter.

## Layer [CJ11]

### Post-medieval redwares

- Clear glaze on the interior with a few dark spots. Brown (?) glaze on the exterior. 5.5 to 6mm thick.

## Layer [CJ12]

### Roman

- Alice Holt storage jar. Two joining sherds. Light grey body with slightly darker grey surfaces. 10 to 17mm thick.
- White to pale pink. Possibly a scrap of Roman tile.

### Medieval

- Gritty, reduced core, dark grey brown surfaces. Probably medieval.
- Gritty, reduced core, dark grey brown surface on one side, sooted on the other. Probably medieval.

### Surrey White wares

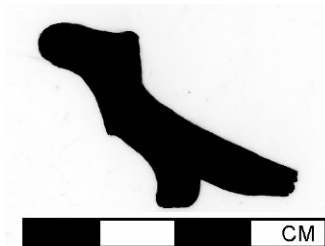
- Fine off-white body 3 to 4mm thick. Patchy yellow glaze on the exterior. Unglazed interior. Cheam.
- Part of a boss pressed out from the inside. White slightly gritty body. 4mm thick. Kingston.
- Rim sherd. Jug? Patch of yellow glaze on the exterior. 14th century.
- Off-white. 3.5mm thick. No glaze.

### Tudor Green

- Tiny scrap. 1.5 to 2.5mm thick. Green glaze on one side, yellow on the other.

### Post-medieval redware

<34> Rim and side sherd from a large platter. Clear glaze on interior with light brown patches and darker spots. A few splashes of glaze on the base. Diameter uncertain. Tudor.



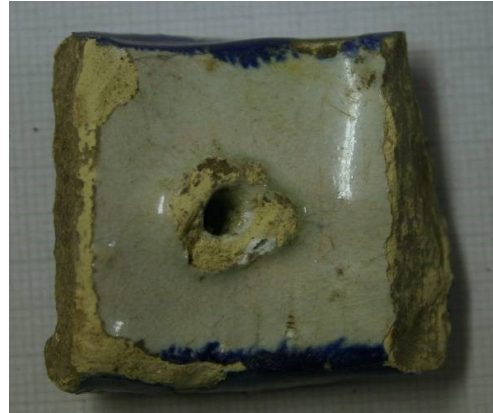
- Wall sherd. 8 to 11mm thick. Dark slip? on the exterior but not interior.

### Tin-glazed ware

<3> Tin-glaze. Triangular cross section. One side smooth and slightly concave, possibly a contact surface with the outside of a large diameter bowl or flower pot. The other surfaces partly broken but retain patches of yellow and blue glaze. Possibly a cordon applied to the side of a large diameter pot. Height 22mm, depth 10mm. The form is not in Britton 1987 or Tyler, Betts and Stephenson 2008.



- <4> Tin-glazed strap handle 13.5mm thick, 37mm wide. Four ribs on the top glazed white with blue in the indents. Sides blue, underside white. A 4mm hole pierced through it before being glazed. Prominent burr round the holes on both sides.



### Layer [CJ13]

Surrey white ware

- Buff, 7mm thick.
- Buff, a scrap.

Border ware

- White body 3mm thick. Yellow glaze on one surface.

Post-medieval redware

<37> Two joining sherds from the base and side of a flower pot. Red body with core reduced in the base. Dark finish on the surface except on the inside of the base which has a dark brown glaze. Part of a drainage hole through the base angle. Diameter of base between 80 and 100mm.

- Red body 5mm thick. Dark glaze on one side. The other side has some dark glaze and some dark slip. Tudor.
- Pale red body with thin red slip on both sides. 10mm thick.
- Red body 10mm thick. White slip on one side with clear glaze on it. Tudor.
- Red body with white slip on one side with clear glaze on it. Tudor.
- 

Tin-glaze

- Pale yellow body. No surfaces. Probably from tin-glaze. 5 sherds.
- Pale yellow body. One remaining surface with white tin-glaze. Two sherds.

Uncertain

- Grey gritty. 6mm thick.

### Layer [CJ14]

Medieval

- Grey. 5 to 5.5mm thick. Medieval?

### Layer [CJ15]

Tin-glaze

- Two tiny flakes of glaze with blue, green and white decoration.

**Layer [CJ17]**

Post-medieval redware

- Pale red oxidised surface. Reduced core with two oxidised stripes. 5 to 6mm thick. Mortar on the surface. Uncertain date.

**Layer [CJ18]**

Flint-tempered ware

- Reduced with slight oxidisation on one surface. Prehistoric or possibly Saxon.

Shell-tempered ware

- Base angle sherd. Reduced.

Medieval

- Reduced gritty. 4.5mm thick. Medieval.
- Oxidised red interior, reduced exterior. Medieval?

Tudor

- Reduced core with brown spotty glaze on the interior. Interior oxidised with patchy glaze. 5mm thick.

**Layer [CX2]**

Medieval

- Base angle of dish. Green glaze on interior, yellow glaze on exterior. 6g. Cheam?

Post-medieval redware

- Flower pot, 18g.

Tin-glaze

- White slightly blue glaze. 1g.

**Layer [CX3]**

Modern

- Transfer-print blue and white on one side, white on the other. 1g.
- White plate rim. 6g.

**Layer [CX4]**

Modern

- White. 2g.

**Layer [CX7]**

Border ware

- Yellow border ware rim. 6g.

Slip ware

- Staffordshire slip ware. 9g.

Modern

- Modern white pottery. 4g.

**Layer [CX8]**

Post-medieval redware

- Flower pot. 2g.

Tin-glaze

- Tin-glaze with hand-painted blue and white decoration on one side, white on the other. 1g.

### **Layer [CX9]**

Post-medieval redware

- Flower pot. 13g.

### **Layer [CX10]**

Post-medieval redware

- Red ware jug rim glaze on both sides. 7g.

Tin-glaze

- Tin-glaze. Plain white, slightly blue glaze on exterior. 6g.

### **Layer [CX12]**

Tin-glaze

- Side of large drug jar with blue and white stripes on the exterior. 2 joining pieces, 12g.

Staffordshire

- Bowl. White body with white glaze on both sides. Numerous small defects in glaze. Large part of base but no rim. Diameter of base ring about 135mm. 27 pieces, 349g. Imitation of Queen's ware? Staffordshire, late-18th century?

### **Layer [CEZ1]**

Stoneware

- Grey body with grey interior. Exterior grey mottled with brown. Probably 17th or 18th century.

Porcelain

- Sherd from a plate including the foot ring. Plain white on both sides.

Transfer-print ware

- Curved sherd with blue and white floral decoration on the outside. White interior. 19th or 20th century.

Modern

- Sherd from plate including foot ring. White body with white glaze on both sides. Late-19th or 20th century.
- Base angle from a ceramic jam jar. White body with white glaze on both sides. Late-19th or 20th century.
- Wall sherd probably near the rim. White body with white glaze on the exterior. Interior surface missing. Late 19th or 20th century.
- Scrap. White body with white glaze on both sides. Two small ridges on one side. Late-19th or 20th century.

### **Layer [CEZ2]**

Modern

- Rim sherd from a plate with white body and white glaze. The rim is decorated with a blue transfer-print roundel in the form of a belt and buckle. There is an anchor in the centre with the cable twisting in an 'S' shape around the shank. The belt is inscribed 'ADMIRALTY L ...' Late-19th or 20th century.

### **Layer [CEZ3]**

Saxon?

- Fine body 6mm thick. Reduced dark grey on one side. The other partly oxidised grey / brown. Saxon or prehistoric.

Medieval

- Dark red / brown gritty body 7mm thick. Medieval.

## Modern

- Rim sherd from a ceramic jam jar. White glaze on both sides. Late 19th or 20th century.
- Angle between rim and body of a dish. White body with white glaze on both sides. Late 19th or 20th century.
- Rim sherd from a pot. Pink glaze. Late 19th or 20th century.

## Layer [CEZ10]

### Medieval

- Red body with white slip on both sides. Uneven green glaze on one side. From a large jug. Medieval.
- Rim sherd from a cooking pot. Grey-brown body. Medieval.
- Strap handle 7mm thick by 18mm wide. Pink gritty body. Medieval.
- Grey body about 3.5mm thick. Patch of white slip on exterior. Medieval.
- Rounded rim sherd from shallow bowl. Coarse gritty grey body with red oxidised interior. Medieval.

## Layer [CEZ21]

### Uncertain

- Fine pale brown body with part of the edge of a hole about 20mm diameter. Thickens from 5 to 10mm on the edge of the hole. Possibly part of a rather roughly made flower pot. If so it might be early. 16th or 17th century?
- Scrap with buff body 4mm thick. Thick green glaze on one side. Late medieval or Tudor.

## Layer [CEZ26]

### Post-medieval redware.

- Wall sherd 7mm thick. Clear glaze on interior and a small splash on the exterior.

### Tin-glaze

- Rim sherd from a plate. Off-white glaze on top. No glaze on the underside.

## 12.2 Terracotta fragment

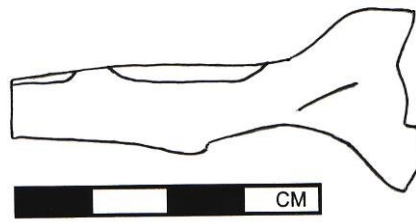
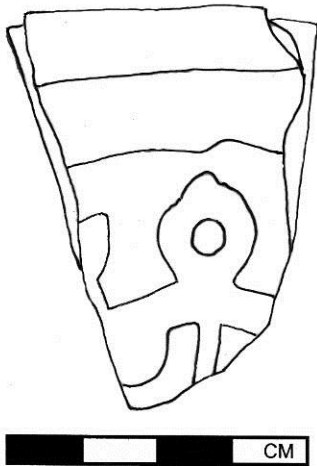
Find <5> from [CJ13]

Glazed terracotta. The body of red clay superficially similar to the local roof tiles. One side is decorated in high relief, covered with a white slip and then white or blue glaze. The back has wheel-turning marks. It appears that the main part was made by pressing the clay into a rotating mould. An extra piece of clay was then added to make the edge. The addition has score marks on the back where a finger has been run along to work the edge into place. The surviving edge is straight but the decoration appears to be a roundel. The edge has a slot-like feature 11mm wide and about 2mm deep which appears to have been designed to lock to another tile or some other object.

In places the edges of the white and blue glaze have run together showing that the white glaze is white rather than a clear glaze over the white slip. Away from the edges the blue glaze is dark, often quite thick and is clear without the traces of white which often appear in blue tin-glaze. It is, therefore, possible that the blue is a cobalt-lead glaze without tin. It seems likely that the white glaze contains tin as Rhodes 1973 says that opacifiers are the only reliable way to make white glaze. Only two are in common use: tin oxide and zirconium oxide and it seems unlikely that the latter was known in the early modern period.

Seen at 15x magnification the white glaze is very worn. The blue glaze is heavily crazed and has many small pits with jagged edges, probably where scraps of glaze have been dislodged.

There is a trace of yellow/green glaze on the edge which partly overlies the blue and may perhaps be spillage from another item.





## 12.3 Tobacco pipes

By Steve Morris

*The L numbers refer to Atkinson and Oswald 1969, the G numbers refer to Oswald 1975*

### Layer [AC29]

<33> L25 bowl marked WR. The north side of the north trench was only examined in detail in the middle. The pipe was found at the west end of the section in gravel which was similar to layer [AC29] and at about the same height, but the section was not fully cleaned so the gravel was not traced to the drawn section in the centre of the trench.

### Unstratified

<13> Junction between stem and bowl. Foot marked IG.

Pipe stem (mm):

| Find no | Length | Dia.     |                                   |
|---------|--------|----------|-----------------------------------|
| 4       | 65     | 9        | Stamped with crown                |
| 9       | 105    | 9        |                                   |
| 14      | 55     | 6.5      |                                   |
| 15      | 49     | 7        |                                   |
| 17      | 38     | 9        |                                   |
| 26      | 50     | 9        |                                   |
| 27      | 52     | 10       | Break near bowl                   |
| 28      | 36     | 7        |                                   |
| 31      | 44     | 9        | Break adjoining bowl              |
| 32      | 41     | 8-9      | Tapers                            |
| 36      |        | 9x8-10x8 | Oval, tapers, probably near bowl. |
| 38      | 39     | 5.5      |                                   |

### Layer [CA2]

○ Stem: (mm)

| Length | Dia. | Bore |               |
|--------|------|------|---------------|
| 40     | 8-7  | 3    | 17th century. |

### Layer [CA3]

○ Stem: (mm)

| Length | Dia.  | Bore |
|--------|-------|------|
| 44     | 8-7.5 | 3    |
| 50     | 8-8.5 | 3    |
| 9      | 8     | 2    |

### Layer [CA4]

○ Stem: (mm)

| Length | Dia.   | Bore |
|--------|--------|------|
| 27     | 9.5-10 | 2.5  |

**Layer [CA5] first spit**

|              |        |         |       |
|--------------|--------|---------|-------|
| ○ Stem: (mm) |        |         |       |
|              | Length | Dia.    | Bore  |
|              | 36     | 7x6-7x7 | 3-3.5 |
|              | 27     | 8       | 2     |

**Layer [CA5] second spit**

|                         |        |      |   |
|-------------------------|--------|------|---|
| ○ Stem: (mm)            |        |      |   |
|                         | Length | Dia. | Bore                                      |
|                         | 42     | 10   | 2   |
|                         |        |      | Two joining pieces broken at edge of bowl |
| ○ Stem - tiny fragment. |        |      |   |

**Layer [CA5] third spit**

|  |        |      |                             |
|--|--------|------|-----------------------------|
| ○ Part of bowl - 18th century. Form uncertain. |        |      |                             |
| ○ Part of bowl - 18th century. Form uncertain. |        |      |                             |
| ○ Stem: (mm)                                   |        |      |                             |
|  | Length | Dia. | Bore                        |
|  | 15     | 5    | 3                           |
|  | 41     | 7-5  | 2                           |
|  | 27     | 6x7  | 2                           |
|  | 61     | 8    | 2                           |
|  |        |      | Stem broken off at the bowl |

**Layer [CA21]**

|              |        |      |      |
|--------------|--------|------|------|
| ○ Stem: (mm) |        |      |      |
|              | Length | Dia. | Bore |
|              | 32     | 8    | 2    |

**Layer [CB1]**

|              |        |      |      |
|--------------|--------|------|------|
| ○ Stem: (mm) |        |      |      |
|              | Length | Dia. | Bore |
|              | 77     | 8    | 2.5  |
|              | 21     | 8    | 3.5  |
|              | 43     | 6    | 2    |

**Layer [CB2]**

|              |        |      |      |
|--------------|--------|------|------|
| ○ Stem: (mm) |        |      |      |
|              | Length | Dia. | Bore |
|              | 57     | 9    | 2    |

**Layer [CG1]**

|              |        |         |      |
|--------------|--------|---------|------|
| ○ Stem: (mm) |        |         |      |
|              | Length | Dia.    | Bore |
|              | 40     | 7.5-8.5 | 2.5  |
|              | 24     | 5.5     | 2    |
|              | 34     | 8x7     | 1.5  |

**Layer [CG2]**

<12> Bowl. Small L25. Marked WR. Large cross interior base. 5/64 bore.

| Stem: (mm) |      |      |
|------------|------|------|
| Length     | Dia. | Bore |
| 53         | 6    | 2    |
| 7          | 7    | 2    |
| 27         | 6    | 2    |
| 42         | 6x5  | 2    |
| 23         | 7    | 2    |
| 23         | 6    | 2    |
| 30         | 8x7  | 2    |
| 30         | 8x7  | 2    |
| 28         | 6    | ?    |
| 23         | 6    | 2    |
| 27         | 5    | 2    |
| 15         | 8    | 2    |

**Layer [CG4]**

| Stem: (mm) |         |      |
|------------|---------|------|
| Length     | Dia.    | Bore |
| 34         | 4x5-6x7 | 2    |
| 37         | 9       | 2    |
| 40         | 10-11   | 3    |
| 29         | 7-8x7   | 3    |
| 23         | 8       | 2    |
| 42         | 8       | 3    |
| 39         | 7-6x7   | 3    |

Rust stained

**Layer [CG6]**

| Stem: (mm) |         |      |
|------------|---------|------|
| Length     | Dia.    | Bore |
| 39         | 5-6     | 3    |
| -          | 4.5x6-7 | 2    |

**Layer [CG10]**

| Stem: (mm) |      |      |
|------------|------|------|
| Length     | Dia. | Bore |
| 46         | 9x9  | 2    |

**Layer [CG13]**

| Stem: (mm) |           |      |
|------------|-----------|------|
| Length     | Dia.      | Bore |
| 58         | 7.5x8-8   | 2.5  |
| 48         | 7x8-6x7.5 | 2.5  |
| 51         | 8x8       | 2    |

**Layer [CG14]**

| Stem: (mm) |          |      |
|------------|----------|------|
| Length     | Dia.     | Bore |
| 43         | 11x12-11 | 2    |
| 51         | 11-10    | 3    |

| Length | Dia.      | Bore |
|--------|-----------|------|
| 23     | 7         | 3    |
| 30     | 9.5       | 3    |
| 26     | 10.5-11.5 | 3    |
| 22     | 6.5-7     | 3    |
| 20     | 10        | 3.5  |

**Layer [CG17]**

- Stem: (mm)

| Length | Dia.    | Bore |
|--------|---------|------|
| 22     | 8 x 7.5 | 2    |

**Layer [CH1]**

- <9> Bowl. L.25 dated c1700-70. Foot marked W? (the right-hand letter is illegible).
- <10> Bowl. L12 except that the foot is shorter and the base is not heart-shaped. L12 is dated 1660-80. The form is also between G6 and G7 which are both dated c1640-70. There is slight traces of rouletting but no maker's marks.
- <13> Bowl. Back half. Early L25 dated c1700-70. Foot marked WR. Eight-pointed star on interior base.
- <41> Foot and back of bowl marked W and probably R. 6/64in bore. 1830-60.

- Stem: (mm)

| Length | Dia.   | Bore |
|--------|--------|------|
| 39     | 8-10x8 | 2    |
| 58     | 8x9    | 3    |
| 25     | 7      | 3    |
| 35     | 9-10   | 3    |
| 30     | 9-8x9  | 2    |
| 32     | 7x6-7  | 2    |
| 23     | 7x8    | 2    |
| 25     | 7x8    | 2    |
| 18     | 5x6    | 2    |

Two joining halves split lengthways.

**Layer [CH3]**

- Stem: (mm)

| Length | Dia.        | Bore |
|--------|-------------|------|
| 50     | 7-6.5       | 2    |
| 42     | 8x7.5-8x8.5 | 2.5  |
| 62     | 9-9x9.5     | 2    |
| 47     | 7x8-5.5x7   | 2    |

**Layer [CH4]**

- Stem: (mm)

| Length | Dia. | Bore |
|--------|------|------|
| 49     | 7-6  | 2-3  |

**Layer [CI4]**

- Stem: (mm)

| Length | Dia. | Bore |
|--------|------|------|
| 38     | 6-4  | 4-3  |
| 22     | 7    | 2    |
| 27     | 6-5  | 2    |

**Layer [CI5]**

| ○ Stem: (mm) |               |      |
|--------------|---------------|------|
| Length       | Dia.          | Bore |
| 27           | 6             | 3    |
| 22           | 9.5x8.5-9.5x9 | 2.5  |

**Layer [CJ2]**

| ○ Stems (mm): |      |      |
|---------------|------|------|
| Length        | Dia. | Bore |
| 42            | 8-7  | 2    |
| 45            | 8-7  | 3    |

**Layer [CJ7]**

<6> Bowl. Small L25. Base mark is not clear but may be WR. Small cross inside base. c1700-70.

| ○ Stems (mm): |         |      |                      |
|---------------|---------|------|----------------------|
| Length        | Dia.    | Bore |                      |
| 20            | ?       | ?    | Lengthways flake.    |
| 26            | 7-6x6   | 1.5  |                      |
| 42            | 5.5x6-7 | 3    |                      |
| 45            | 6-6.6   | 2.5  | Possible mouth piece |

**Layer [CJ8]**

○ Fragment from a bowl. Probably L25 or similar.

| ○ Stems (mm): |               |      |                   |
|---------------|---------------|------|-------------------|
| Length        | Dia.          | Bore |                   |
| 35            | 10-9.5        | 2.5  |                   |
| 51            | 10            | 2.5  |                   |
| 25            | 9x8-8.5x8     | 3    |                   |
| 39            | 8x7-7.5x6.5   | 2    |                   |
| 42            | 8-8.5         | 3    |                   |
| 30            | 8-9           | 3    |                   |
| 32            | 8.5-9         | 3    |                   |
| 19            | 9.5           | 2.5  |                   |
| 32            | 8.5           | 3    | Broken lengthways |
| 42            | 6.5x7.5-6.5x7 | 3.5  |                   |
| 29            | 6-6.5         | 2    |                   |

**Layer [CJ9]**

| ○ Stems (mm): |              |      |
|---------------|--------------|------|
| Length        | Dia.         | Bore |
| 23            | 10x9-11x10   | 2    |
| 26            | 7x7          | 4    |
| 28            | 10x9         | 2.5  |
| 33            | 7.5x7-10x8.5 | 2    |
| 35            | 9-10         | 2    |



**Layer [CJ11]**

|               |      |      |
|---------------|------|------|
| ○ Stems (mm): |      |      |
| Length        | Dia. | Bore |
| 52            | 9    | 2    |
| 51            | 7x6  | 4    |

**Layer [CJ12]**

<16> Bowl L19 / G19. Rouletting round the rear of the rim. Foot or spur missing. c 1690 – 1710.

|               |                 |      |
|---------------|-----------------|------|
| ○ Stems (mm): |                 |      |
| Length        | Dia.            | Bore |
| 42            | 7.5x8.5-8.5x9.5 | 3    |
| 24            | 8x9-7x8         | 3    |
| 66            | 9x8-8x7.5       | 3    |

**Layer [CJ13]**

<11> Bowl with broken rim. L19. Thick stem 7/64 inch bore. c 1690 - 1710.

**Layer [CJ14]**

<8> Bowl close to L20 except that it has a spur instead of a foot. Slight rouletting. Spur is broken. c1680 - 1710.

|               |        |      |
|---------------|--------|------|
| ○ Stems (mm): |        |      |
| Length        | Dia.   | Bore |
| 62            | 10-9.5 | 2.5  |
| 60            | 9      | 3    |
| 45            | 8-8.5  | 2    |
| 55            | 8-9    | 2.5  |

**Layer [CJ15]**

<15> Bowl L25. Marked WR. Large cross inside base. 1700-70.

|               |      |      |
|---------------|------|------|
| ○ Stems (mm): |      |      |
| Length        | Dia. | Bore |
| 50            | 7    |      |
| 35            | 8    |      |

**Layer [CJ18]**

|               |      |      |
|---------------|------|------|
| ○ Stems (mm): |      |      |
| Length        | Dia. | Bore |
| 33            | 9    | 4    |
| 32            | 7    | 3    |

**Layer [CX14]**

<1> L21 clay pipe bowl with 105mm of stem. Probably marked WR although the W is smudged. Dimple of clay on the inside to restrict impact of wire. Heavy black stain on bowl and stem.

**Context [CEZ2]**

## ○ Stems (mm)

| Length | Dia mm       | Bore |              |
|--------|--------------|------|--------------|
| 44     | Oval 5 x 5.5 | 1.5  | Mouth piece. |
| 34     | 10           | 1.5  |              |
| 24     | 6            | 1.5  |              |
| 35     | 7 x 8        | 2    | Painted red. |

**Context [CEZ3]**

## ○ Stem (mm)

| Length | Dia mm | Bore    |  |
|--------|--------|---------|--|
| 13     | 9      | 2       |  |
| 40     | 9 – 10 | 3       |  |
| 65     | 7      | Unclear | Mortar on surface. Broken at junction with bowl. |

**Context [CEZ10]**

## ○ Stem (mm)

| Length | Dia mm | Bore |
|--------|--------|------|
| 20     | 8 x 9  | 2    |

**Context [CEZ21]**

## ○ Stem (mm)

| Length | Dia     | Bore |
|--------|---------|------|
| 80     | 7 – 8.5 | 3    |
| 24     | 9       | 2    |

**Context [CEZ26]**

## ○ Bowl, a scrap.

## ○ Stem (mm):

| Length | Dia.             | Bore |
|--------|------------------|------|
| 105    | 12 x 10 to 8 x 8 | 2.5  |
| 45     | 9 to 8           | 3    |
| 29     | 10               | 2.5  |
| 28     | 9.5 to 10        | 2.5  |
| 29     | 10               | 2    |
| 30     | 6                | 3    |
| 81     | 8 to 9           | 2    |
| 41     | 4.5x6.5-5.5x6.5  | 3    |
| 35     | 9.5              | 3    |
| 31     | 8x9 to 9         | 3    |

**12.4 Coins****Layer [CG1]**

- A sixpence dated 1932.

**Layer [CEZ1]**

- Penny dated 1974.

## 12.5 Glass

### Layer [AC13]?

<24> Wine bottle – part of bottom and frog.

### Layer [AC17]?

<10> Base of large wine bottle. Diameter 128mm. Frog 45mm high. From the south end of the west trench almost certainly from the silt and gravel at the bottom of the trench. Dumbrell 1983 suggests a date after 1725-30.

### AC unstratified

<12> Part of wine bottle. From the south end of the west trench almost certainly from the silt or gravel layers at the bottom of the trench.

<18> Base of a wine bottle. Diameter 89mm. Height of frog 46mm.

<20> About half of the base of a wine bottle. Strongly waisted. Diameter 90mm. Late 18th century.

<21> Wine bottle – frog and fragment of side. Frog 44mm high. 18th-cent?

<29> Sherd of green bottle near neck. 2 to 4mm thick.

<35> Curved glass. Heavily patinated.

<34> Scrap of flat glass 2mm thick.

### Layer [CA3]

- Heavily patinated - 2mm thick.

### Layer [CA4]

- Dark wine bottle, 2 scraps
- Base of an onion-type wine bottle from the junction between layers [CA4] and [CA5].
- Flat dark glass. 3mm thick.
- Dark glass wine bottle 3 to 5mm thick.

### Layer [CA5] second spit

- Dark glass wine bottle 3mm thick.

### Layer [CA5] third spit

- Dark glass wine bottle neck.
- About 2mm thick, 7 scraps.

### Layer [CA21]

- Dark brown glass, probably bottle, 3 pieces.

### Layer [CB1]

- Dark glass wine bottle, 4 pieces.
- Flat clear glass with one straight edge that is smooth and rounded - modern.
- Clear glass with milky frosting or patination - modern.
- Piece of wire reinforced window glass – modern.
- Modern plain window glass, 2 pieces.
- Part of neck of a clear glass bottle - modern.

**Layer [CB2]**

- Dark glass wine bottle, 2 pieces.

**Layer [CC3]**

- Small piece of clear glass 1mm thick.

**Layer [CC7]**

- Wine bottle, 2 pieces.
- Piece of flat glass 2mm thick.

**Layer [CG1]**

- Base angle from a clear glass bottle. Modern.
- Clear glass from a ribbed bottle. Modern.
- Clear glass bottle.
- Curved light green glass, 1 scrap.
- Clear flat glass, 13 pieces. Modern.
- Clear flat glass with patination, 1 scrap.
- Clear window glass with ribs on it. 3 pieces. Modern.

**Layer [CG2]**

- Part of base of a wine bottle.
- Dark-green, bottle? 1 piece.
- Clear, bottle? 1 piece.
- Dark-green, bottle? 1 piece.
- Light green, bottle? 1 piece.
- Green, possibly window glass. 2 pieces.
- Clear, probably window glass. 5 pieces.

**Layer [CG3]**

- Wine bottle, 1 piece.
- Clear bottle glass, heavily patinated, 1 piece.
- Green bottle glass, 1 piece. Modern.
- Flat clear glass about 1mm thick, 4 pieces.

**Layer [CG4]**

- Flat glass, 1 piece.

**Layer [CG6]**

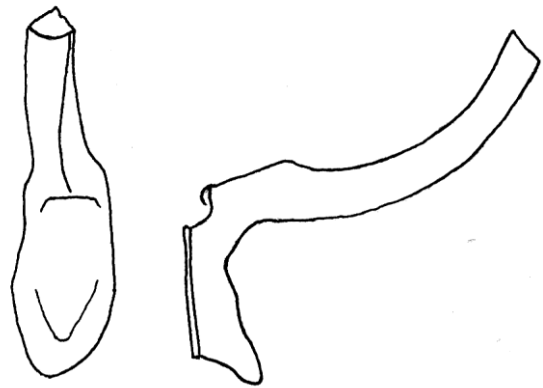
- Glass, corner of a rectangular jar? 1 scrap.
- Clear, flat, 3 pieces.
- Clear, flat with fluted surface. 1 piece, modern.
- Clear flat glass, 2 thick. 1 piece, modern.
- Clear flat glass, 3 thick. 1 piece, modern.

**Layer [CG13]**

- Flat, heavily patinated. 2 pieces.

### Layer [CG14]

<36> About half a clear glass handle attached to a small part of the wall of the vessel. The latter is under 1mm thick and has a more or less white stripe 1mm wide. The handle twists sharply away from the body. Possibly the handle of a Venetian or Venetian-style vase or ewer. See Tait 1979 illustrations 71 and 158.



### Layer [CH1]

- Clear base angle sherd, fluted on exterior. Modern.
- Side sherd from bottle.
- Heavily patinated scrap.

### Layer [CH3]

- Flat clear glass, 1.25mm thick. Modern.

### Layer [CH4]

- Dark glass, top of a wine bottle kick up. Heavily patinated.

### Layer [CI2]

- Clear, flat, a scrap. Modern.

### Layer [CI5]

- Heavily patinated fragment of wine bottle.
- Wine bottle? 2 pieces.
- 2 fragments heavily patinated.

- Flat, 2 pieces about 1.5mm thick. Heavily patinated.
- Flat clear, two pieces, heavily patinated.

**Layer [CI6]**

- Glass, 8 pieces, dark and curved, probably wine bottle.
- Flat, heavily patinated, 8 pieces.

**Layer [CJ2]**

- Glass, bottle. 2 small pieces, both patinated.
- A glass marble. Modern.
- Corrugated window glass. 1 piece. Modern.

**Layer [CJ7]**

- Clear bottle glass. 1 piece.
- Blue and white glass marble. Modern.
- Pale blue glass bead with hole for threading. 3 scraps probably from the same bead. 19th century.
- Clear glass bottle. 1 piece. Modern.
- Clear corrugated window glass. 1 piece. Modern.

**Layer [CJ8]**

- Curved glass wine bottle? Heavily patinated.
- Dark curved glass wine bottle?
- Light green curved glass (wine bottle?), heavily patinated. 1 piece.
- Curved (dark?) glass wine bottle, heavily patinated. 1 piece.
- Flat, 1.5mm thick, heavily patinated. 1 piece.

**Layer [CJ9]**

- Curved light olive green glass, 2mm thick.

**Layer [CJ12]**

- Glass, wine bottle, heavily patinated. 2 pieces.

**Layer [CJ13]**

- Glass wine bottle. 4 pieces.
- Flat, heavily patinated, 1.5mm thick.
- Flat clear, 1.25mm thick, patinated on the surface, 1 scrap.

**Layer [CJ14]**

- Tiny scrap of flat glass, about 1 thick, heavily patinated.

**Layer [CJ15]**

- Glass, green curved (bottle?). 1 piece.

**Layer [CJ18]**

- Clear, flat, 2 thick, patinated. 1 piece.

**Layer [CX3]**

- Flat window glass. 1 piece, 1g.



**Layer [CX4]**

- Flat heavily patinated window glass. 1 piece, 3g.

**Layer [CX5]**

- Sherd from pale green bottle, 22g.
- Flat glass 2 scraps, 1g.

**Layer [CX6]**

- Vessel glass, heavily patinated. 1 piece, 11g.
- Flat light green window glass. 1 piece, 2g.

**Layer [CX7]**

- Flat light green window glass. 1 piece, 1g.

**Layer [CX8]**

- Pale green vessel or bottle glass, heavily patinated. 7 pieces, 11g.
- Pale green flat window glass, 1 piece, 4g.

**Layer [CX9]**

- Flat glass clear, unpatinated. 1 piece, 1g Modern?
- Bottle glass pale green heavily patinated. 1 piece 2g.

**Layer [CX11]**

- Flat window glass, some patination. 2 scraps, 2g.
- Green bottle glass, heavily patinated. 1 piece, 3g.

**Layer [CX12]**

- Thin light green slightly curved bubbly glass, heavily patinated. 27 pieces 71g.
- Pale green bottle glass heavily patinated. 1 piece, 2g.

**Layer [CX13]**

- Flat window glass, heavily patinated. 1 piece, 1g.
- Green bottle or vessel glass, patinated. 1 piece, 3g.

**Layer [CEZ1]**

- Modern marble, 1.
- Small cylindrical clear glass bottle with screw thread for cap. Modern.
- Two pieces of flat clear window glass
- Broken dark glass rod with blob on the end.

**Layer [CEZ2]**

- Clear, flat, slightly patinated, 1mm thick.
- Clear, flat, slightly patinated, 2mm thick.
- Clear, flat, slightly patinated, 2mm thick.
- 2 pieces of clear bottle glass (modern)

**Layer [CEZ3]**

- Scrap of clear slightly green flat glass 1mm thick.
- Clear bottle glass, 3 pieces. Modern.
- Clear flat glass 1.5mm thick. Lightly patinated. 1 piece.
- Clear flat glass 1.25mm thick. Lightly patinated. 1 piece.

- Clear flat glass 1mm thick. Lightly patinated. A scrap.

**Layer [CEZ10]**

- Two joining pieces of heavily patinated curved glass 2mm thick.
- Scrap of patinated flat window glass 1mm thick.

**Layer [CEZ14]**

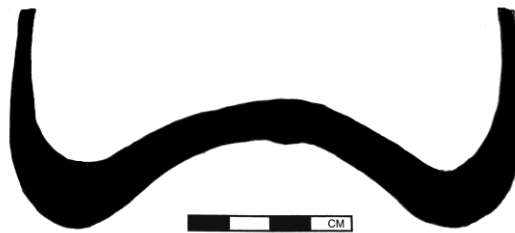
- Base angle sherd from a green more or less straight sided bottle.

**Layer [CEZ21]**

- Bottle wall sherd. Heavily patinated.

**Layer [CEZ26]**

<63> Base of a wine bottle with a maximum diameter of about 125mm. The absence of the upper part of the bottle makes dating difficult. The base is similar to item 5 in the catalogue of glass from the pit at Tunsgate Guildford. The deposit is dated to about 1702-14 while the bottle is dated to c.1675-90.<sup>56</sup> It is also similar to a number of bottles of 1680-1700 in the series of dated bottles in the report on the Nonsuch Palace finds.<sup>57</sup>



- Four scraps of heavily patinated flat glass about 1mm thick.
- Two pieces of heavily patinated flat glass 2.5mm thick.
- Three pieces of badly decayed flat glass 2mm thick.

## 12.6 Roof tile

*Roof tile is only catalogued here if they have some unusual feature. Further details can be found in the archive.*

**Layer [CG17]**

- Peg tile 13mm thick. Glazed possibly over-fired.

**Layer [CH3]**

<35> Part of a roof crest tile. Red body partly covered with dark-brown iron glaze.



<sup>56</sup> Fryer and Selley 1997.

<sup>57</sup> Biddle and Webster 2005

### Layer [CI5]

Glazed roof tile

- Curved tile. Red body 15mm thick with dark-brown iron glaze on the surface. Possibly part of a crest tile. May be related to <35> but does not join.

### Layer [CI7]

Roman tile

- Overfired almost vitrified, 32 to 34mm thick. Heavily reduced core with zones of oxidisation towards the surface. Reduced exterior.
- Some areas of the core lightly reduced. 36mm thick.

### Layer [CJ7]

- Peg tile 11mm thick. Glazed or over burnt.

### Layer [CJ9]

<9> Tile to cover a roof-valley. 12 to 13mm thick.

### Layer [CJ18]

- Scrap of red tile, possibly Roman.

### Layer [CX1]

- Roof tile with hand-moulded corner of 109 degrees. 71g.

## 12.7 Wood

*Scraps of wood and charcoal are not included.*

### Layer [CEZ20]

Pin case and pins

<3> Wooden tubular pin case with screw top which is missing. The case is 13mm diameter at the base of the screw thread, tapering to 12mm at the base. The overall length is 64mm of which the 3-turn screw thread is 5mm. The inside of the case had a diameter of 6mm. The inner end is 'U' shaped suggesting that it had been drilled with a small spoon auger. The tip of the 'U' is 5mm from the exterior end. There is sand adhering to the inside. The case contained 21 pins as follows:

| Length (mm) | Condition              |
|-------------|------------------------|
| 19          | Good                   |
| 19          | Good                   |
| 19          | Slightly corroded      |
| 19          | Head corroded          |
| 19          | Slightly corroded      |
| 19          | Good                   |
| 19          | Head slightly corroded |
| 19          | Good                   |
| 19          | Shaft corroded         |
| 19          | Shaft corroded         |
| 19          | Point corroded         |
| 19          | Good                   |
| 19          | Good                   |
| 19          | Point corroded         |

| Length (mm) | Condition               |
|-------------|-------------------------|
| 19          | Shaft slightly corroded |
| 19          | Head corroded           |
| 23          | Good                    |
| 25          | Slightly bent           |
| 25          | Shaft slightly corroded |
| 25          | Shaft slightly corroded |
| 30          | Slightly corroded       |

The case split in two and there is a further crack in the base but the wood is solid and in remarkably good condition. The pins are in generally good condition with only small areas of corrosion. The case was found in a small cavity where rubble deposit [CEZ20] rested against the side of the bridge abutment. The survival of wood and metal seems very remarkable and the only likely explanation that the deposition of the surrounding deposits meant that the cavity was both dry and well drained.<sup>58</sup>



The outside of the pin case photographed on 1mm graph paper. (Find <3> from layer [CEZ20].)



The inside of the pin case photographed on 1mm graph paper. (Find <3> from layer [CEZ20].)



The pins photographed on 1mm graph paper. (Find <3> from layer [CEZ20].)

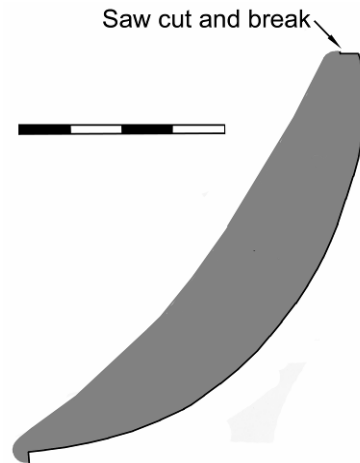
<sup>58</sup> The possibility of the find being planted was considered shortly after its discovery. The case was found by a long-standing and trustworthy member of the team. It would have been difficult to plant the object when we were off site overnight as the overlying deposit was a different colour making any filled cut easy to see.

## 12.8 Worked brick

### Layer [CJ9]

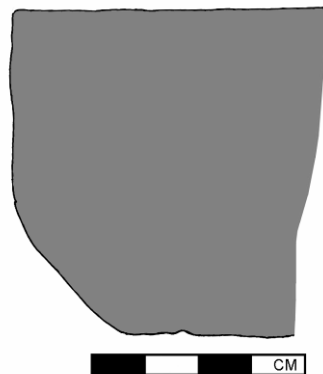
<23> Soft red brick with a smooth finish. Height 58mm tapering to 50mm. Width 105mm. The 'top' has 8mm of fine mortar on it. The bottom has striations from cutting and also has a trace of mortar on it. Possibly from the construction of the Orangery Wall. 18th century.

<41> Soft red brick with bull-nosed moulding and short vertical drop cut into the end. Shallow saw-cut at the top of the bull nose. The moulding is shown to the right. Brick thickness 63mm.



### Layer [CJ13]

<14> Overburnt with some cindery spots but fabric is of the soft red type. Height 62mm. Width possibly 100mm but both measurements rather doubtful. Smooth top with rough bottom. The end looks as if may have been cut to start to make a bull nose. Grey chalky mortar on the surface Tudor?



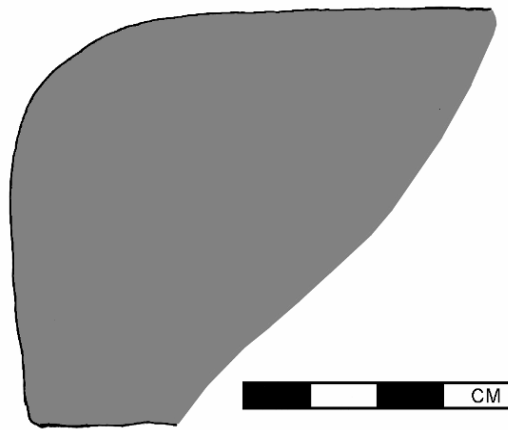
<19> Dark red somewhat overburnt brick with fairly rough surface. Height 53mm. One side cut at an angle of about 45 degrees. Mortar on the surface. Possibly Tudor.



<13> Soft red brick. Slightly overburnt with some cindery inclusions but not cindery type fabric. Smooth finish on the top. If the bottom survives, which is doubtful, it is rough and the brick is 53-58mm thick. Cut at an angle of 135 degrees (45 deg.) to top / bottom. Mortar on the surface but not on the cut or the fracture.

### Layer [CJ16]

<20> Bull-nosed brick. Rounding appears to be moulded rather than cut. Height 56mm. Rough base. Mortar on the surface and the fracture. Possibly Tudor.



<21> Overburnt chocolate-brown brick fragment with 'glaze' on it embedded in light grey mortar which has a large quantity of inclusions including:

- Red brick (to 12mm)
- Overburnt brick (to 16mm)
- Hard grey mortar (to 20mm)
- Angular flint (to 9mm)

The mortar has three more or less flat surfaces. Two of these are approximately at right angles, the third has the brick embedded in it with the glaze facing outwards and is at about 60 and 30 degrees of other surfaces. The glazed surface of the brick is smooth and may be 18th century.

## 12.9 Floor and wall tiles

### Layer [CA3]

- Floor tile. Top lead-glazed green over thin white slip. Body reduced except for a thin oxidised layer on the underside. Body has chalk and flint inclusions. Bottom has diagonal crossing incised lines. 25mm thick. 15th or 16th century.

### Layer [CA5] first spit

- Grog-tempered floor tile 21mm thick. Orange body with slightly reduced centre. Some mica inclusions. Yellowish lead glaze on top with mortar adhering to it. One edge rounded by rubbing after manufacture. 16th or 17th century.

### Layer [CA11]

- Soft light brown body with small pieces of red grog and dark inclusions of varying size. Traces of off-white purple-tinted tin-glaze on both edges but none on the top - appears to have worn off. One corner. Sides 90mm and 55mm. 12-13mm thick. Late-17th century.

### Layer [CB1]

- Floor tile. Red body 38mm thick. No sign of glaze.
- Floor tile. Red body 17mm thick at edge. 22mm thick 35mm from edge. Surviving edge 25mm long. Scraps of green lead glaze on top.



**Layer [CG2]**

- <33> Tin-glazed tile. Pale yellowish body 5mm thick. Off-white slightly purplish glaze on the surface with purple manganese decoration - part of a heraldic shield and floral design in the corner. 18th century. Photo on 1mm graph paper.



**Layer [CG4]**

- Floor tile with a red body and dark-green lead glaze. The sides are bevelled. The top is 113mm by 108mm, the bottom 100mm by 107mm. It is 22mm thick. A little mortar on the top and sides.

**Layer [CG6]**

- Pale yellowish body 8mm thick. Top edges slightly rounded and edges bevelled. Pale blue tin-glaze. Traces of white and dark chocolate brown mortar on the underside and edges. 18th century.

- <14> Pale red body 19mm thick. 1 corner. Lead glaze over patchy white slip. Pattern unclear, possibly discoloured. Mortar on the edge and base and possibly on the fracture.



**Layer [CG17]**

- <8> Corner of a red floor tile 20mm thick with dark streaks. Edge bevelled. Traces of lightly impressed decoration filled with very thin white slip and covered with lead glaze. Second half of the 14th or 15th century.



**Layer [CH1]**

- Floor tile, red brick body. Maximum thickness 30mm thinning to 22mm at the edge because of wear on the top where all the surface has gone. Some green lead glaze on the edge. Mortar on the side and the base but not on the fracture.

**Layer [CH3]**

- <21> Floor tile with red body. Maximum thickness 25mm thinning to 17mm at the corner. The edge is bevelled. Yellow lead glaze on the top with spillage down the edge. No slip. Mortar on the edge and the fracture.

**Layer [CI5]**

- Red body with some grog and clear mixing lines. Upper surface unglazed - probably intact rather than worn. Bevelled edge with white mortar on it. Thickness greater than 28mm.

**Layer [CI6]**

- <34> Tin-glazed 27mm thick. Green, blue and white tin-glaze decoration on the surface. Mortar on the underside. 16th century.



- <37> Red body 23 to 24mm thick with reduced core. Top has rather poor (smudged?) thin white slip design based on a roundel. Second half of the 14th or 15th century.



Layer [CI6] contained 152 pieces of lead-glazed floor tile. The body of these was usually orange-red although it was sometimes paler. There were often wavy stripes of lighter clay and the body often had a laminated appearance. The fabric contains darker and lighter grog in rather variable amounts. A few pieces have so much grog that the tile has a rather crumbly-looking texture. There were a number of rounded flint pebbles in the clay. The tiles were generally 24 to 26mm thick. The edges were slightly bevelled so the tiles were wider at the top than the bottom. The following full widths were preserved:

| Top (mm) | Bottom (mm) |
|----------|-------------|
| 183      | 178         |
| 184      | 178         |
| 186      | 183         |

The upper surface had been coated with a white slip which was then covered with glaze coloured as follows:

|                           |     |
|---------------------------|-----|
| Yellow                    | 74  |
| Green                     | 66  |
| Green and yellow          | 1   |
| Doubtful green and yellow | 3   |
| No glaze remaining        | 8   |
| Total                     | 152 |

The slip and glaze had sometimes spilled down the side. The upper surface of the tiles were generally very worn. The glaze was often reduced to thin patches, and sometimes much of the slip was worn off. The upper surface was generally very smooth and the wear sometimes seemed to be concentrated around the corners and edges, perhaps because the tiles were unevenly laid.

The first 50 tiles were measured in detail as follows:

| Thickness | Edges (mm) | Corners | Mortar | Slip | Glaze   | Notes  |
|-----------|------------|---------|--------|------|---------|--|
| 26        | 70 85 80   | 2       | y      | y    | yellow  |  |
| 23        | 92         | 0       | y      | y    | yellow  |  |
| 24        | 40         | 0       | y      | y    | green   |  |
| 26        | 90 12      | 1       | y      | y    | green   |  |
| 24        | 60 40      | 1       | y      | y    | green   |  |
| 24        | 62         | 0       | n      | y    | green   |  |
| -         | 45 30      | 1       | n      | y    | green   |  |
| 24        | 47 22      | 1       | n      | y    | yellow  |  |
| 23        | 25 25      | 1       | n      | y    | green   |  |
| 24        | 28 50      | 1       | y      | y    | green   |  |
| 24        | -          | 0       | n      | y    | green   |  |
| 24        | -          | 0       | n      | y    | yellow  |  |
| 24        | 35         | 0       | y      | y    | green   |  |
| 24        | 30         | 0       | y      | y    | yellow  |  |
| 24        | 48         | 0       | y      | y    | green   |  |
| 25        | 40         | 0       | y      | y    | yellow  |  |
| -         | 10 20      | .5      | y      | -    | green   | No top present   |
| 24        | 126 120    | 1       | y      | y    | green   |  |
| 25        | -          | 1       | y      | y    | ?       |  |
| 25        | 113 42     | 1       | y      | y    | green   |  |
| 22        | 47 35      | 1       | y      | n    | ?       |  |
| 23        | 45 15      | .66     | n      | y    | yellow  |  |
| 24        | 68         | 0       | y      | y    | yellow? |  |
| 24        | 25         | 0       | y      | y    | green   |  |
| 21        | 39 40      | 1       | y      | y    | green?  | Overburnt  |
| 21        | 26         | 0       | n      | ?    | yellow  | This probably had a slip which had worn off the top. There was some slip on the bottom which was heavily glazed. |
| 24        | 115 53     | 0       | y      | y    | yellow  |  |
| 22        | 55         | 0       | y      | y    | yellow  |  |
| 23        | 58 42      | 1       | y      | y    | yellow  |  |

| Thickness | Edges (mm) | Corners | Mortar | Slip | Glaze   | Notes  |
|-----------|------------|---------|--------|------|---------|--|
| 24        | 50         | 0       | y      | Y    | green   |  |
| 24        | 20         | 0       | y      | Y    | green   |  |
| 23        | 12 50      | 1       | y      | Y    | yellow  |  |
| 23        | 40         | 0       | y      | Y    | yellow  |  |
| -         | 17         | 0       | n      | Y    | yellow  |  |
| -         | 25 22      | .5      | n      | Y    | yellow? | Mortar also on the fracture.   |
| 25        | 82 85      | .5      | y      | Y    | green   |  |
| 25        | 120 46     | 1       | y      | Y    | yellow  |  |
| 26        | 65 71      | 1       | y      | Y    | yellow  |  |
| 24        | 45 45      | 1       | n      | Y    | yellow  |  |
| -         | 20 23      | .5      | y      | Y    | green   |  |
| 23        | 20         | 0       | n      | Y    | ?       |  |
| 22        | 48 40      | 1       | y      | Y    | yellow  |  |
| 25        | 73 68      | 1       | y      | Y    | yellow  |  |
| 26        | 140 62     | 1       | y      | Y    | yellow  |  |
| 25        | 47 53      | 1       | n      | Y    | yellow  |  |
| 25        | 88 80      | .66     | n      | Y    | green   |  |
| 23        |            | 2       | y      | y    | yellow  | Full width preserved. At the top 183mm, at the bottom 178mm. Mortar on the sides, bottom and fracture. |
| 25        | 62         | 0       | y      | y    | green   |  |
| 25        | 10         | 0       | Y      | y    | green   |  |
| 25        | 83         | 0       | Y      | y    | green   |  |

The remainder of the tiles were recorded more simply, except that particular attention was paid to the presence of mortar on the fractures. The tiles had been buried in a mortary layer. Only unequivocal mortar was included. Faint traces were ignored and this may have resulted in some under-counting particularly on the fractures.

| Corners | Mortar surface | Mortar fracture | Slip | Glaze   | Notes  |
|---------|----------------|-----------------|------|---------|--|
| 1       | y              | y               | y    | green   |  |
| 1       | y              | n               | y    | green   |  |
| 1       | y              | n               | y    | green   | The full width survived. At the top it was 184mm and at the bottom it was 178mm. |
| 0       | y              | y               | y    | green   |  |
| 1       | y              | n               | y    | green   |  |
| .5      | y              | n               | y    | green   |  |
| 0       | y              | n               | y    | yellow  |  |
| 0       | y              | y               | y    | yellow  |  |
| 0       | y              | n               | y    | yellow? |  |
| 0       | y              | y               | y    | green   |  |
| 1       | y              | n               | y    | yellow  |  |
| 1       | y              | n               | y    | green   |  |
| 1       | n              | n               | y    | yellow  |  |
| 1       | y              | n               | y    | yellow  |  |
| 1       | y              | n               | y    | yellow  |  |
| 0       | y              | n               | n    | ?       | Glaze probably worn off.   |
| .66     | y              | n               | y    | green   |  |

| Comers | Mortar surface | Mortar facture | Slip | Glaze          |  |
|--------|----------------|----------------|------|----------------|--|
| 1      | y              | n              | y    | green          |  |
| 0      | n              | n              | y    | green          |  |
| 0      | y              | n              | y    | green          |  |
| 0      | n              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | green          |  |
| 0      | n              | n              | y    | yellow         |  |
| 1      | y              | n              | y    | green          |  |
| 1      | y              | y              | y    | green          |  |
| 1      | y              | n              | y    | green + yellow |  |
| 0      | n              | n              | y    | green          |  |
| 1      | y              | n              | y    | yellow         |  |
| 1      | y              | n              | y    | green          |  |
| .75    | n              | n              | y    | green          |  |
| 0      | n              | n              | y    | yellow         |  |
| 1      | y              | y              | y    | yellow         |  |
| 1      | y              | n              | y    | green          |  |
| 1      | y              | n              | y    | green          |  |
| 1      | y              | n              | y    | yellow?        | With a few specks of green.                              |
| 0      | n              | n              | y    | green          |  |
| 0      | y              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | green          |  |
| 0      | y              | n              | n    | none           | Exceptionally crumbly looking fabric.                    |
| 1      | y              | y              | y    | yellow         |  |
| 1      | y              | n              | y    | yellow         |  |
| 1      | y              | n              | y    | green          |  |
| 1      | n              | n              | y    | green          |  |
| 0      | n              | n              | y    | yellow         |  |
| 1      | y              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | yellow         | Slip crazed.   |
| .5     | n              | n              | y    | yellow         |  |
| 0      | n              | n              | y    | green          |  |
| .33    | n              | n              | y    | yellow         |  |
| .5     | n              | n              | y    |                | Possibly green and yellow.                               |
| 0      | n              | n              | y    |                | Possibly green and yellow but very little glaze remains. |
| 0      | n              | n              | y    | yellow         |  |
| .25    | n              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | green          |  |
| 0      | n              | n              | y    | yellow         |  |
| 0      | n              | n              | y    | green          |  |
| 1      | y              | n              | y    | yellow         |  |
| 0      | y              | n              | y    | yellow?        |  |
| 0      | y              | n              | y    | yellow         |  |
| 0      | n              | n              | y    | green          |  |
| 0      | n              | n              | y    | ?              |  |
| 1      | y              | n              | y    | green          |  |
| 0      | y              | n              | y    | yellow         |  |
| 1      | y              | n              | y    | green          |  |

| Corners | Mortar surface | Mortar fracture | Slip | Glaze  |
|---------|----------------|-----------------|------|--------|
| 1       | n              | y               | y    | yellow |
| 0       | n              | n               | y    | green  |
| 1       | y              | n               | y    | green  |
| 0       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | green  |
| 1       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | yellow |
| 0       | n              | y               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | n              | n               | y    | green  |
| 0       | n              | n               | y    | green  |
| 0       | y              | n               | ?    | -      |
| 1       | y              | n               | ?    | Green  |
| 1       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | green  |
| 1       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | green  |
| 0       | y              | n               | y    | yellow |
| .5      | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | green  |
| 1       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | green  |
| 1       | y              | n               | y    | yellow |
| 0       | y              | n               | y    | green  |
| 0       | y              | n               | y    | yellow |
| 1       | y              | n               | y    | yellow |
| 0       | n              | n               | n    | -      |
| 0       | y              | y               | y    | yellow |
| 0       | n              | n               | y    | green  |

Also a flake with no slip or glaze.

One floor tile (not in the above list) had a full width preserved. It was 186mm wide at the top, 183mm bottom. The thickness was 23mm at the edge and 27mm in the centre. It had white slip and worn green glaze. 2 corners. Mortar on the surface but probably not on the fracture.

### **Wear on the green and yellow tiles from [CI6]**

The wear on the tiles was measured by putting each one under a sheet of clear plastic which was ruled with a 1cm grid. This was positioned more or less randomly. It was then noted whether each line intersection rested on glaze, slip, or body. Any surviving glaze was counted even if it had worn rather thin. Thin green glaze was easily seen against the white slip, the yellow less so, and it is possible that the latter has been under counted.



Pieces with green glaze:

|          | Col.  | Points | Glaze | Slip  | Body  |
|----------|-------|--------|-------|-------|-------|
| 1        | Green | 127    | 81    | 45    | 1     |
| 2        | Green | 99     | 56    | 28    | 15    |
| 5        | Green | 136    | 12    | 82    | 42    |
| 7        | Green | 71     | 39    | 23    | 9     |
| 9        | Green | 85     | 20    | 65    | 0     |
| 14       | Green | 41     | 40    | 0     | 1     |
| 16       | Green | 62     | 37    | 25    | 0     |
| 20       | Green | 5      | 4     | 1     | 0     |
| 22       | Green | 13     | 10    | 3     | 0     |
| 23       | Green | 26     | 24    | 1     | 1     |
| 24       | Green | 28     | 0     | 0     | 28    |
| 26       | Green | 88     | 6     | 20    | 62    |
| 27       | Green | 10     | 9     | 1     | 0     |
| 28       | Green | 14     | 9     | 1     | 4     |
| 33       | Green | 68     | 66    | 1     | 1     |
| 36       | Green | 16     | 16    | 0     | 0     |
| 37       | Green | 14     | 0     | 0     | 14    |
| 40       | Green | 21     | 5     | 6     | 10    |
| 42       | Green | 17     | 0     | 1     | 16    |
| 43       | Green | 24     | 16    | 4     | 4     |
| 44       | Green | 12     | 8     | 1     | 3     |
| 47       | Green | 7      | 4     | 3     | 0     |
| 51       | Green | 28     | 1     | 11    | 16    |
| 52       | Green | 22     | 2     | 17    | 3     |
| 57       | Green | 56     | 16    | 28    | 12    |
| 58       | Green | 19     | 8     | 11    | 0     |
| 59       | Green | 46     | 23    | 22    | 1     |
| 63       | Green | 10     | 4     | 6     | 0     |
| 64       | Green | 15     | 6     | 8     | 1     |
| 66       | Green | 10     | 0     | 4     | 6     |
| 68       | Green | 58     | 51    | 5     | 2     |
| 70       | Green | 43     | 41    | 2     | 0     |
| 71       | Green | 66     | 0     | 3     | 63    |
| 72       | Green | 16     | 0     | 0     | 16    |
| 74       | Green | 27     | 19    | 6     | 2     |
| 75       | Green | 4      | 4     | 0     | 0     |
| 76       | Green | 21     | 1     | 0     | 20    |
| 77       | Green | 50     | 2     | 16    | 32    |
| Totals   |       | 1475   | 640   | 450   | 385   |
| Per cent |       |        | 43.39 | 30.51 | 26.10 |

Pieces where all the glaze is lost:

|    | Col. | Points | Glaze | Slip | Body |
|----|------|--------|-------|------|------|
| 11 | None | 97     | 0     | 0    | 97   |
| 18 | None | 21     | 0     | 1    | 20   |

|    | Col. | Points | Glaze | Slip | Body |
|----|------|--------|-------|------|------|
| 34 | None | 43     | 0     | 0    | 43   |
| 48 | None | 36     | 0     | 0    | 36   |

Pieces with yellow glaze:

|                | Col.   | Points | Glaze | Slip  | Body  |
|----------------|--------|--------|-------|-------|-------|
| 3              | Yellow | 95     | 41    | 37    | 17    |
| 4              | Yellow | 130    | 27    | 47    | 56    |
| 6              | Yellow | 7      | 7     | 0     | 0     |
| 8              | Yellow | 115    | 36    | 48    | 31    |
| 10             | Yellow | 137    | 91    | 43    | 3     |
| 12             | Yellow | 131    | 1     | 3     | 127   |
| 13             | Yellow | 112    | 9     | 62    | 41    |
| 15             | Yellow | 34     | 3     | 30    | 1     |
| 17             | Yellow | 8      | 4     | 0     | 4     |
| 19             | Yellow | 35     | 4     | 19    | 12    |
| 21             | Yellow | 10     | 2     | 7     | 1     |
| 25             | Yellow | 25     | 17    | 8     | 0     |
| 29             | Yellow | 23     | 9     | 12    | 2     |
| 30             | Yellow | 14     | 5     | 5     | 4     |
| 31             | Yellow | 36     | 0     | 9     | 27    |
| 32             | Yellow | 43     | 43    | 0     | 0     |
| 35             | Yellow | 45     | 0     | 3     | 42    |
| 38             | Yellow | 20     | 0     | 0     | 20    |
| 39             | Yellow | 14     | 0     | 2     | 12    |
| 41             | Yellow | 9      | 0     | 0     | 9     |
| 45             | Yellow | 26     | 0     | 0     | 26    |
| 46             | Yellow | 18     | 5     | 3     | 10    |
| 49             | Yellow | 34     | 0     | 18    | 16    |
| 50             | Yellow | 19     | 19    | 0     | 0     |
| 53             | Yellow | 39     | 13    | 7     | 19    |
| 54             | Yellow | 11     | 8     | 0     | 3     |
| 55             | Yellow | 45     | 9     | 19    | 17    |
| 56             | Yellow | 8      | 6     | 2     | 0     |
| 60             | Yellow | 38     | 3     | 34    | 1     |
| 61             | Yellow | 59     | 26    | 27    | 6     |
| 62             | Yellow | 25     | 0     | 20    | 5     |
| 65             | Yellow | 10     | 0     | 0     | 10    |
| 67             | Yellow | 3      | 1     | 1     | 1     |
| 69             | Yellow | 61     | 5     | 27    | 29    |
| 73             | Yellow | 18     | 0     | 0     | 18    |
| 78             | Yellow | 40     | 7     | 25    | 8     |
| Totals         |        | 1497   | 401   | 518   | 578   |
| Percent        |        |        | 26.79 | 34.60 | 38.61 |
| Overall totals |        | 3169   | 1041  | 969   | 1129  |

**Layer [CJ9]**

<10> Body with white layers in it. 28mm thick. Rather sandy surface with no glaze. Not clear if it was originally glazed.

- <17> Mottled yellow and red clay with grog. 22mm thick. Top worn and without slip or glaze. Spot of glaze on the side. Bevelled edge. Mortar on the bottom.
- <18> Red body with a slightly reduced core. Dark brown glaze on the top applied directly to the body without a slip. Bevelled edge with some glaze spilled over it. 22mm thick. Traces of mortar on the side, base and fracture.
- <39> Corner of blue and white tin-glazed wall tile with flower decoration. Corner dimple. 7.5mm thick. Undercut edges. Saw mark on the back.



- Red with smooth finish. Thickness 40mm, sides greater than 140mm by 50mm. 1 corner, edges bevelled, no sign of glaze or slip.

**Layer [CX8]**

- Corner of a red floor tile thick 26mm possibly not complete. 97g.

**Layer [CX12]**

- Flake from red floor tile, 1g.

**Layer [CEZ1]**

- Piece of red floor tile at least 24mm thick. 23g.

**Layer [CEZ3]**

- Corner of a floor tile. Red body. Both top and bottom worn. Original thickness greater than 25mm. No glaze.

**Layer [CEZ10]**

- Floor tile? Red body fired to vitrification. Rough edge and top. 31mm thick.
- Seven pieces of red tile, probably thick floor tile. 108g.

**Layer [CEZ20]**

- Corner of a floor tile. Red body with bevelled edges. Top worn. Some green glaze on top and edge. Mortar on top and edges. Bottom may be worn. 20mm thick.
- Corner of a floor tile. Red groggy body with bevelled edge. Top worn. Mortar on bottom and edge. 28mm thick.

**Layer [CEZ26]**

- Corner of a floor tile. Red body with bevelled edges. Top heavily worn. Mortar on the edges. Thickness 29mm.

## 12.10 Stone

*Stone is described as rubble when there are no worked surfaces.*

*Unworked flint is not included.*

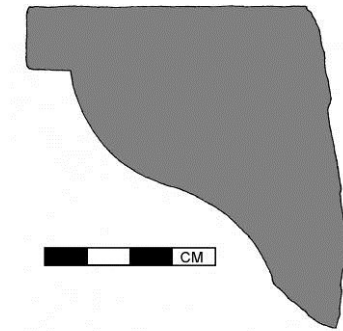
*All angles are measured within the stone.*

*The size is the longest dimension. The measurements are approximate and are rounded to 5 or 10mm.*

*Coal and coal ash are not included.*

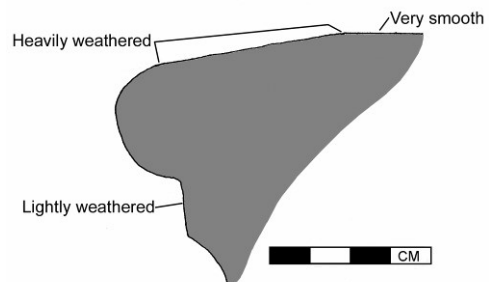
### Layer [AC22]

<2> Reigate stone with moulding possibly from a string course or window cill. Surviving height 81mm. Surviving depth 67mm. Stone block number SB 29.



### Trench AC unstratified

<22> Small piece of white to light-brown stone with a moulding. Probably part of a window ledge or string course. SB 28.



### Layer [CA1]

Slate

- Pieces of slate pencil.
- A strip of slate.

### Layer [CA3]

- Reigate stone size 70mm.
- Reigate stone - one face dressed size 30mm.
- Limestone? with small black spots.

### Layer [CA4]

- Reigate stone. 5 small pieces, one with a dressed face
- Piece of light grey limestone or sandstone slab 17mm thick. Size 71mm.
- White limestone – moulded.
- Rough limestone (?) slab approximately 13mm thick. Size 90mm.
- Scrap of limestone possibly Kentish rag?
- Limestone - piece of slab 20mm thick.
- Small piece of limestone with two dressed faces. Size 56mm.

**Layer [CA5] first spit**

- Limestone? - dressed on 1 face but not dressed flat.

**Layer [CA5] third spit**

- Reigate stone with one roughly dressed face with a size of 140mm.
- Off-white limestone from corner of a dressed block. Short section of hollow moulding in one face 18mm from corner.
- Off-white limestone with small area of dressed face with size of 33mm

**Layer [CA10]**

- Piece of grey slate found mortared on to the top of the moat wall (figure 25) approximately 90 by 125 by 7mm. It is soft and easily damaged.

**Layer [CA21]**

- Two pieces of purple slate one 3mm thick the other 2mm.

**Layer [CB1]**

- Reigate stone, 4 pieces.
- Light brown sandstone with two dressed faces.
- Grey slate 100 by 60mm approximately 6-7mm thick. Similar to the pieces used for packing on the top of the moat wall.
- Slate of similar type to the above, 7 pieces.

**Layer [CB2]**

- Reigate stone, 1 piece.
- Angular flint size 45mm embedded in chalk-spotted mortar.

**Layer [CC5]**

- Three small pieces of grey slate.

**Layer [CC7]**

- Reigate stone, 1 piece
- Tiny piece of stone, possibly Reigate.
- White marble slab. Triangular, one surface smooth probably once polished, two sides are rough breaks, another is straight, probably cut. Thickness varies from 9 to 18mm.

**Layer [CG1]**

- Reigate stone, 7 pieces.
- Kentish rag, 1 piece.
- Light grey limestone? 1 piece with small area of smooth surface.
- Grey slate, 41 pieces mostly small.
- Purple slate, 11 pieces mostly small.
- Mica, 1 piece.

**Layer [CG2]**

- Reigate stone, 19 pieces.
- Reigate stone, one surface, some mortar.
- Reigate stone from the corner of blocks, 2 pieces.
- Reigate stone, with surface, 1 piece.
- Reigate stone with 2 tool marked surfaces.

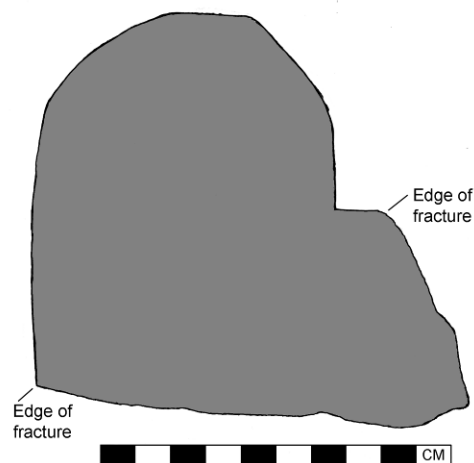
- Reigate stone with mortar, 1 piece.
- Chalk, 1 piece.
- Brown sandstone, one surface, some mortar.
- Blue slate, 37 pieces.
- Purple slate, 10 pieces.

### Layer [CG3]

- <19> Reigate stone, 2 pieces.
- Reigate stone, 3 scraps.
  - Kentish rag (?), 1 piece.
  - Oolitic limestone. Stone is similar to <18> but is coarser. Two smoothed faces meeting at an angle of 149 degrees.
  - Light brown sandstone with fine dark mica (?) bands through it, 4 scraps.
  - Light brown sandstone with sparkling mica (?) scattered through it. Tool marks. 1 piece.
  - Light brown sandstone similar to the above but with little mica, 1 piece.
  - Fine medium brown sandstone, fragment of a slab 10mm thick.
  - White limestone (?) 1 piece with smooth surface.
  - Light brown sandstone, 3 pieces two of which have a surface. One with a surface has light paint (?) on it.
  - Light brown sandstone with fine dark bedding lines, 1 piece.
  - Fine grey / brown sandstone or limestone with thin grey brown streaks in it, 3 pieces two of which have a small area of smoothed surface.
  - Hard white limestone (Portland?), 1 flake.
  - Purple slate, 1 piece.
  - Grey slate, 2 pieces.

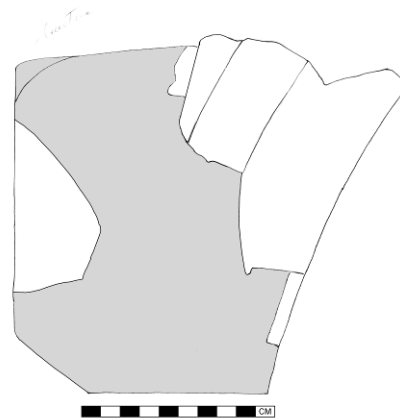
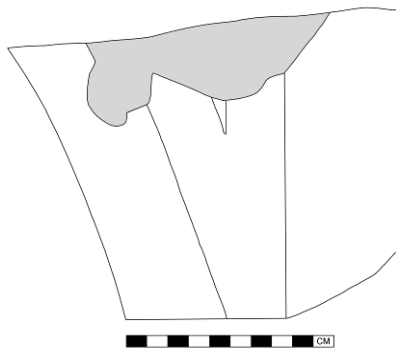
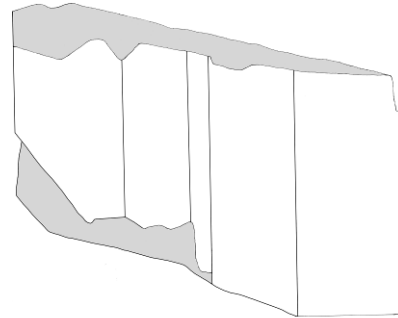
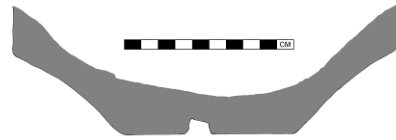
### Layer [CG4]

- <39> Surviving length 140mm. One side of the roll moulding burnt grey. This could be the result of flames touching the underside of a horizontal string course.





<40> Part of a Reigate stone window mullion. One side has the lower part of a curved window head with a glazing slot and hollow chamfers on either side of it. The other side is straight with straight chamfers and no glazing slot. There is mortar on the surfaces and a little on the fractures. The glazing slot is not fully cut. There is lime wash on one of the hollow chamfers.



- Reigate stone with mortar on it. Sooted on one side. 1 piece.
- Chalk, 2 pieces.
- Slate, 1 piece and 3 scraps.

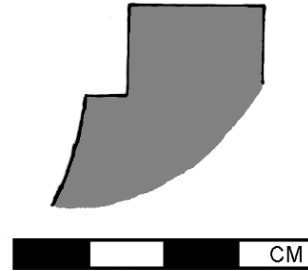
#### Layer [CG6]

- <20> Reigate stone. About half a roll moulding 53mm in dia. Surviving length 100mm.
- Reigate stone. 1 surface with a size of 110mm burnt grey to a depth of 15mm. Two other surfaces at right angles, so the block had a thickness of 98mm. One of these is tooled with shallow adze-like marks. Mortar on the surfaces and on the fracture.
  - Reigate stone, size 60mm. Mortar with a maximum depth of 17mm on one surface. Partly greyed by fire.
  - Reigate stone, size 150mm, small area of surface.
  - Purple slate, a scrap.

#### Layer [CG11]

- Reigate stone, 1 scrap.
- Lump of chalk rubble with both grey and brown mortar on it.

<18> Fine, hard oolitic limestone with few inclusions.



**Layer [CG12]**

- Chalk rubble with mortar on it, 2 pieces.
- Grey brown sandstone, a scrap with mortar on it.

**Layer [CG13]**

- Reigate stone, surface with size of 170mm. Comb chiselling on the surface. There is a second roughly smoothed surface not at right angles to the other one.

**Layer [CG16]**

- Reigate stone, 1 smooth surface with size of 65mm.
- Reigate stone, 1 smooth surface with size of 90mm.
- Reigate stone with worked surface with clear tool marks. Size of surface 30mm.
- Reigate stone with 1 smooth surface with size of 50mm. Straight score mark across it about 1mm deep.
- Reigate stone rubble, 5 pieces.
- Reigate stone rubble, a scrap of mortar.
- Reigate stone, 1 smooth surface, size 35mm.

**Layer [CG17]**

- Coarse brown grit stone. A flake from the corner of a block. The surviving top is about 50mm by 55mm. The corner was rubbed and rounded. Possibly part of a large hone stone.
- White chalk. A piece with some surfaces darkened (through burning?)
- White chalk, 1 piece.

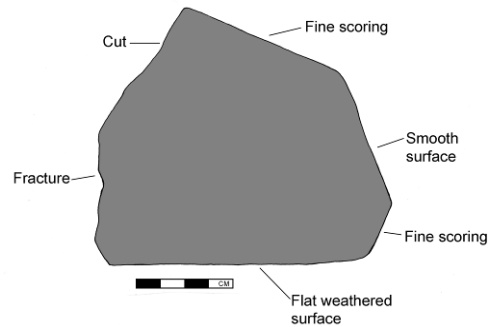
**Layer [CH1]**

- Reigate stone, a flake.
- Reigate, 2 pieces.
- Limestone, 1 piece.
- Hone stone? One edge smooth and concave and the other smooth and convex. The hone appears to have split on bedding lines.
- Slate, 1 piece.

**Layer [CH3]**

- Reigate stone with 1 area of smoothed surface, 2 pieces.
- Reigate stone with one surface smoothed with a comb chisel.
- Chalk, 1 piece.
- A flint with mortar on it.

<32> Reigate stone. Small block with top, bottom and 6 other faces. Maximum length at right angles to the figure 85mm. Probably part of a window. Some areas grey from burning.



**Layer [CH4]**

- Reigate stone, 150mm long, 110mm wide, 45mm thick. Tool marks on the faces.
- Reigate stone with tool marks.
- Reigate stone rubble, 1 piece, size 180mm.

**Layer [CH5]**

- Reigate stone, 1 piece with mortar on the surface.
- Reigate stone, 1 scrap.

**Layer [CI2]**

- Sandstone, dark-brown, 2 pieces.
- Slate, grey, a scrap.
- Slate pencil point.

**Layer [CI4]**

- Reigate stone, 6 scraps one of which has mortar on it.
- Chalk, 1 piece.
- Light grey/brown sandstone with brown strips through it, 1 piece.
- Tufa, 1 piece.

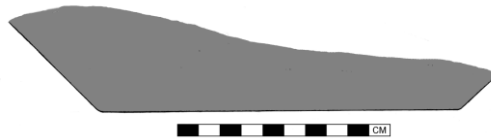
**Layer [CI5]**

- Reigate stone, a scrap.
- Reigate stone, size 160mm.
- Reigate stone, two faces at right angles, one with clear tool marks. Size of the faces 70 and 40mm.
- Reigate stone with two roughly tooled surfaces, one of which is concave. Size about 150mm. Possibly masons' waste.
- Reigate stone. Size 50mm. No surfaces.
- Reigate stone, Size 120mm. One piece of roughly worked surface about 20 by 70mm.
- Reigate stone. Size 65mm. No surfaces.
- Reigate stone. Size 80mm. No surfaces.
- Reigate stone. Small flake.
- Reigate stone, 1 piece with 2 worked surfaces, both tool marked. Size 215mm.
- Reigate stone, 1 piece with 3 surfaces one of which is heavily sooted. Tool marks. Size 100mm.
- Reigate stone, 1 piece with 2 surfaces one of which is heavily sooted. Size 110mm.
- Reigate stone, a fragment.
- White limestone, a small piece with lime wash on it.
- Chalk, 1 piece.

- Chalk, a scrap with mortar on it.
- Chalk rubble with a large lump of brown mortar attached to it. Size of the chalk 160mm. The mortar has a size of 150mm and a maximum thickness of 50mm.
- Large mortared flints, 12.

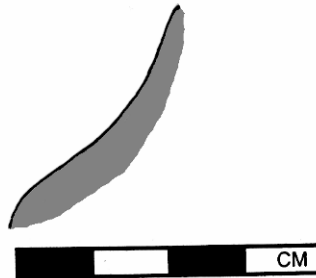
**Layer [CI6]**

<1> Two joining pieces of oolitic & limestone forming part of three

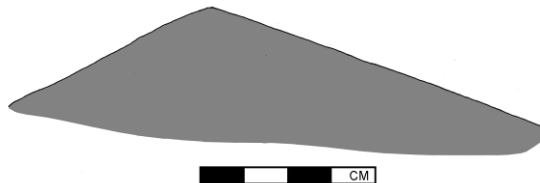


<2> faces of an octagonal moulding or pillar about 0.4m across. Maximum surviving length 50mm.

<3> Part of an ogee moulding. Oolitic limestone.



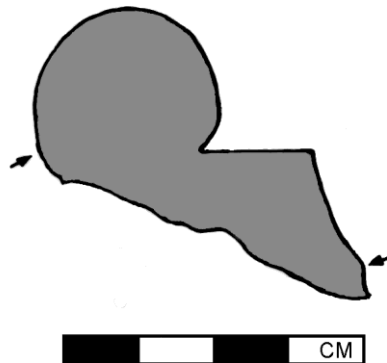
<4> Reigate stone with two smoothed faces joining at an angle of about 133 degrees. This is similar to the angle on <1> and <2> and may be part of a similar moulding.



<5> Oolitic limestone - coarse and shelly. 64mm thick.

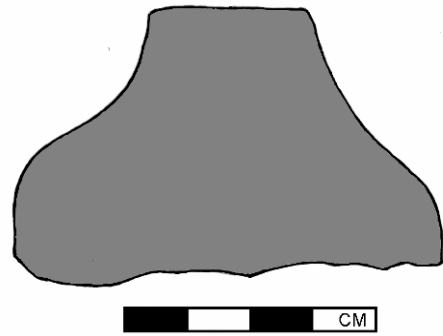
<6> Oolitic limestone. Slab 25 to 27mm thick. Saw marks (?) on one surface. Traces of mortar.

<7> Oolitic limestone. Maximum surviving length 64mm. No traces of whitewash. The arrows mark the edges of the worked surfaces.

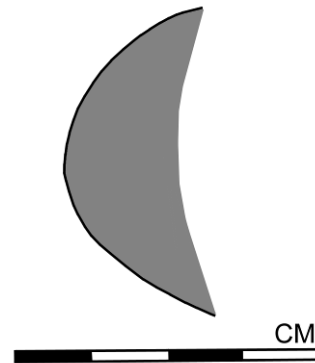


<17> Oolitic limestone - much small broken shell with occasional clear quartz. The corner of a block. Traces of white plaster (?) on one face, traces of light brown mortar on another. Dimensions of the block were greater than 85mm by 44mm by 42mm.

<38> Oolitic limestone with traces of whitewash. Surviving length 80mm.



<42> Reigate stone. Part of a curved moulding. Surviving length 35mm.



<44> Oolitic limestone. Part of a flat surface with ball-like end curved in two dimensions. Diameter of curve about 30mm.

- Reigate stone, one smoothed surface.
- Reigate stone, corner of a block, tool marks on two surfaces, the other fairly smooth.
- Reigate stone rubble with spotty mortar on it.
- Reigate stone, 2 smoothed faces at right angles, tool marks on one face.
- Reigate stone with small area of smoothed surface, 2 pieces.
- Reigate stone, parts of two faces at right angles, both with tool marks.
- Reigate stone, a scrap with mortar on it.
- Reigate stone with two smoothed faces at right angles.
- Reigate stone, 3 scraps.
- Kentish rag, one smoothed surface.
- Chalk rubble with mortar. 1 piece.
- Chalk, 2 pieces.
- Chalk, part of a squared block. Four smoothed surfaces. Thickness 85mm, length greater than 118mm, width greater than 60mm. Two types of mortar on the surface, one brown the other grey.
- Chalk. One smoothed surface with size of 98mm.
- Chalk, one smoothed surface with tool marks on it. Size 65mm.

**Layer [CI7]**

- Reigate stone, 2 pieces and 2 tiny scraps.
- Reigate stone? Colour and texture are like Reigate stone but it is heavier and has more fine dark spots.
- Light grey (limestone?) somewhat coarser than Reigate with more dark spots. Another scrap may be the same material.

**Layer [CJ2]**

- Reigate stone, 15 pieces and 1 scrap.

- Reigate stone, small piece with a small area of surface with saw marks?
- Grey slate, 2 pieces.
- Scrap of stone? broken into 2 parts with internal red stain.

#### Layer [CJ7]

- Reigate stone, a scrap.
- Reigate stone with mortar on it. No surfaces.
- Reigate stone, 2 smoothed surfaces at right angles. Mortar on the surface.
- Chalk, 1 piece.
- Fine grey stone with darker patches in it. Mortar on the surface but not on the fracture. 1 flake from the corner of a block.
- Slate pencil, 1 piece.

#### Layer [CJ8]

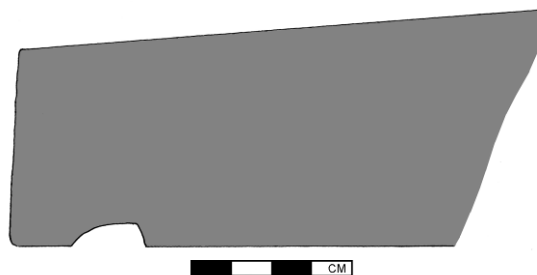
<26> Flake from a squared block of hard dark grey limestone. Rough tool marks. Mortar on the surface.

<27> Reigate stone, two smooth faces meeting at an angle of 111-112 degrees.

- Reigate stone, 21 pieces and 7 scraps
- Reigate stone. One surface with a size of 130mm.
- Reigate stone. 1 smooth surface with mortar on it. Size 130mm. Mortar on the surface.
- Reigate stone, one surface with a size of 96mm which has mortar on it.
- Reigate stone with an area of smoothed surface, 2 pieces.
- Reigate stone with an area of smoothed surface which has traces of whitewash (?) on it, 1 piece.
- Reigate stone with a small area of chiselled surface, 1 piece.
- Reigate stone with a small area of 'adzed' tooling, 1 piece.
- Reigate stone with a small area of smoothed surface possibly from a moulding.
- Dark hard limestone (Kentish rag?), 1 piece and a scrap.
- Chalk, 3 very small fragments.
- Chalk, 2 scraps one of which has brown mortar on it.
- Flint, angular with mortar on the surface. Size 170mm.

#### Layer [CJ9]

<12> Corner of a slab of Portland stone. Drip catch cut in the underside. Surviving length at right angles to the drawing 60mm. Probably part of a windowsill.



- Reigate stone? Part of block with smoothed surface and two rough surfaces one on each side of the smooth. Width of smoothed surface 150mm. Greatest thickness 105mm. Unusually heavy for Reigate stone.
- Reigate stone 3 pieces.
- Portland stone, a flake with one flat surface.
- Corner of a block of fine light brown limestone. Dimensions were greater than 108 by 115 by 127mm. Light tool marking on the surface.
- Wedge-shaped piece of light brown limestone similar to the above. 40mm thick tapering to 14mm. Mortar on one tapering surface and one side. Side appears to have been



finished with a comb chisel.

- Chalk. Size 110mm.
- Grey slate, rather soft with a slightly wavy fracture.

**Layer [CJ10]**

- Chalk, 1 piece.

**Layer [CJ11]**

- Reigate stone, 3 pieces.

**Layer [CJ12]**

- Reigate stone, 15 pieces and 3 scraps.
- Reigate stone, 2 joining pieces. Two roughly smoothed sides one of which is about 150mm by 50mm and has 'adzed' tool marks. Heavy sooting on the top extending down the sides. Also sooted on the underside.
- Chalk, 3 pieces.
- Slate, grey, 3 scraps.

**Layer [CJ13]**

- <38> Flint fossil sea urchin. The shell appears to have been partially crushed in the course of fossilisation.
- Reigate stone, 2 pieces and a scrap
  - Reigate stone. Part of a roughly finished block. One rough surface is heavily sooted and greyed to a depth of about 12mm. Another rough surface at right angles to it has been partly smoothed, probably with a comb chisel.
  - Reigate stone rubble. Size 90mm.
  - Kentish rag, 1 piece.
  - Grey slate, 2 pieces.

**Layer [CJ14]**

- Chalk, size 150mm. No smoothed surfaces. Deep pit-like depression cut into surface with 2 chisel strokes. Mortar on surface.
- Chalk rubble, 1 piece.

**Layer [CJ15]**

- <22> Amphibolite? Shiny black irregular broken-looking crystals in a fairly sparse light almost white (quartz?) matrix. There is a thin scatter of small red inclusions. The stone is heavy and hard. The rock is slightly streaky.

**Layer [CJ18]**

- Kentish rag, 2 pieces.
- Grey slate, 1 piece.
- Reigate stone, 6 small pieces.

**Layer [CX1]**

- Corner of roughly shaped slab of fissile micaceous sandstone. Chisel marks on one side. Thickness 53-55mm. 1,938g.
- Part of slab of slab of fissile micaceous sandstone. Smooth surfaces. 28mm thick. 206g.
- Part of slab or block laminated pale grey sandstone, Smooth surfaces on both sides.

72mm thick. 365g.

- Corner of a slab of hard medium-grey-brown slightly micaceous sandstone. One surface worn smooth the other split. 34mm thick. Sandy mortar on surface and fractures. 621g.

#### Layer [CX2]

- Slate, 2 pieces, 12g.

#### Layer [CX7]

- Burnt flint 13 pieces, 119g.
- Iron pan. Sandy clay cemented by iron oxide. Contains scraps of flint, mortar, ceramic building material and coal and unidentified tube-like structures about 2.5mm across. 65g.

#### Layer [CX9]

- Slate, 1 piece, 6g.

#### Layer [CX10]

- Slate, 1g.

#### Layer [CX11]

- Reigate stone. 1 flat burnt surface. Mortar on fractures. 1 piece, 142g.

#### Layer [CX12]

- Chalk, hard. Part of slab 39mm thick with a smooth and rough side and a bevelled edge. 215g.
- Chalk rubble. 15g.

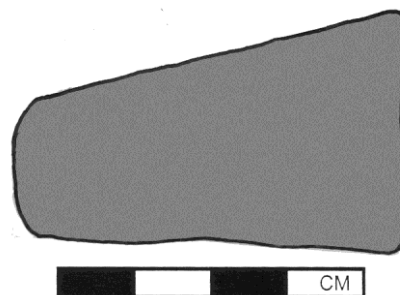
#### Layer [CEZ1]

Reigate stone

- One surface with mortar. 57g.
- Possibly the edge of a roughly shaped block. 37g.

White oolitic limestone

- <43> Small block with the cross-section shown in the drawing. The tapering faces are at an angle of 16 degrees. The narrow side has a small area of worked surface which is not parallel to the opposite side. One end a fracture. The other largely fracture but with small flat striated area. 121g.



- <44> Slab with two faces 3 degrees out of parallel. 25 to 28mm thick. One face with saw marks. 71g.

- <45> Slab with two surfaces 10 degrees out of parallel. Tapers from 25mm to 17mm thick. Saw marks on one face. 114g.

- One piece. 16g.

York stone

- Hard medium brown sandstone with a scatter of fine sparkling mica and often fine laminations. Probably York stone. The pieces are small with sharp fractures.

- Slab 17mm thick. 29g.
- Pieces with one surface. Weights 37, 27, 81, 5, 27 and 9g.
- Small area of doubtful surface. 26g.
- Slab 30mm thick. 61g.
- Pieces. Weights 66 and 7g.

#### Chalk

- Mortar or limescale on the fractures. 45g.
- Light brown possibly Lower Chalk? Edge of block? Mortar on surface and fractures. 50g.
- Light brown possibly Lower Chalk? 54g.

#### Slate

- Purple slate. 2 pieces. 4 and 7g.
- Point of a slate pencil.

#### Marble

- Fragment of white marble slab 28mm thick, 59g.

### Layer [CEZ2]

#### Reigate stone

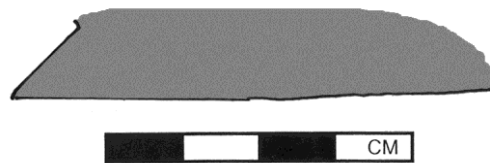
- Pieces with weights of 12, 16, 1, 48 and 57g.
- One smooth surface. 14g.

#### Kentish rag stone

<16> One smooth surface. Orange stain in some fractures. 21g.

#### White oolitic limestone.

<34> Two sawn surfaces meeting at an angle of 45 degrees. One surface ends 12mm from the point in a break with a slight ledge on it. Possibly the end of a saw-cut. 66g.



<35> Corner of a slab 33mm thick. 2mm wide saw-cut in to the corner. One face clearly saw-cut. 37g.

<36> Flake from the edge of a block. One face smooth the other with ridged tool marks about 5mm wide. Stone fine possibly Portland. Probably classical rustication. 17g.

<37> Corner of a block with three saw-cut faces. 105g.

<38> Wedge-shaped. One face at right angles to the end, the other at 63 degrees. Right angle corner rounded. Point and both sides are fractures. The three faces are saw-cut. 81g.

<39> Wedge-shaped. One face at right angles to the end, the other at 52 degrees. Point and one side are fractures. The other side is a worked face with ridges 1.5mm apart possibly from a fine comb chisel. The other three faces are saw-cut. 60g.

<40> Two joining pieces from the corner of a block 82mm thick. Top has saw marks. One side covered with parallel striations 3mm apart which are too regular over too large an area to be from a comb chisel. The other side has similar score marks except that there are two sets crossing each other at right angles. The edges of the block are sharp. 267g.

- Fragment of a slab 45mm thick. 53g.
- Fragment from a slab 10 to 14mm thick. One side with saw marks. 13g.
- Corner of a block. 25g.
- One surface. 3g.
- Edge of a slab 15mm thick. 3g.

## York stone

- Hard medium brown sandstone with a scatter of fine sparkling mica and often fine laminations. Probably York stone. The pieces are small with sharp fractures.
- Part of a slab 40mm thick with tool marks on one side. 69g.
- Part of a slab 21 to 25mm thick. 45g.

## Slate

- Purple. 17g.
- Grey. 7g.

## Layer [CEZ3]

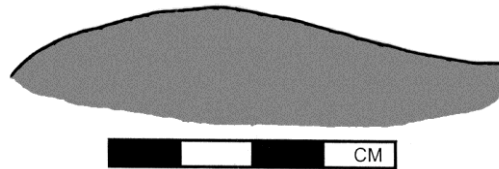
### Reigate stone

- Small area of tooled surface. 4g
- Mortar on fractures. 15g.

### White oolitic limestone.

<7> White oolitic limestone with a moulding. 44g.

<10> Piece of white oolitic limestone with a shallow wave moulding. Finer stone than usual. Portland? 89g.



<11> Wedge-shaped. One face meets the end at right angles, the other at an angle of 64 degrees. Saw marks on the angled face and the end. The sides are fractures. Point missing. 73g.

<12> Wedge-shaped. One face meets the end at right angles, the other at an angle of 63 degrees. The sides are fractures. The three faces are saw-cut – one of them very obviously so. 149g.

<13> Corner of a block. Smooth top and bottom. One rough and one smooth side. The top is 9 degrees out of parallel to the bottom. Thickness 55mm tapering to 45mm. 374g.

<29> Two faces meeting at an angle of 54 degrees. 43g.

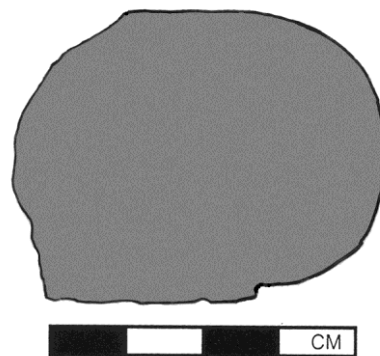
<30> Point of a window mullion? The two sides meet the front at angles of 98 and 103 degrees. 50g.

- Pieces with weights of 109, 12, 9, 9, 25, 37, 66, 20, 13, 26 and 20g.
- One surface and two doubtful ones at right angles to each other. Possibly the corner of a roughly shaped block. 74g.
- Edge of a smoothed block, 31g.
- Pieces with one smoothed surface. Weights 41, 20, 68, 23, 30, 20, 30, 19, 9 and 2g.
- Part of a slab 9mm thick. Score marks on one side. 11g.
- Corner of a slab (or possibly the tip of a mullion) 36mm thick. 39g.
- Corners of blocks. Weights 31, 30 and 26g.
- Edge of a slab 19mm thick. 17g.
- Corner of a block.
- Corner of a slab 30mm thick. 15g.
- Edges of a blocks. Weights 8 and 40g.
- Corner of a slab 33mm thick. 19g.
- Corner of a block. All three faces have tool marks: one with parallel striations 2.5mm wide; another with parallel striations 3 to 5mm wide; a third with cross cutting striations 2mm wide in one direction and about 4mm in the other. A little mortar on the surface. 58g.
- Fragment of a slab 33mm thick. A little mortar or white limescale on one side. 121g.
- Edge of a squared block. Tool marks on surfaces. A little mortar on the fracture. 58g.

- Edge of a slab 19mm thick. Edge has comb chisel marks. Doubtful saw marks on one side. 63g.
- Slab 20mm thick. 33g.
- Mortar on the fracture. 18g.
- Edge of a slab 20mm thick. 19g.
- Edge of a block. One side smooth with striations. The other uneven. 54g.
- Corner of block. Striations on faces. 16g.
- Corner of a block. Striations on the faces. 17g.
- Slab 15mm thick. 11g.
- Edge of block. 16g.
- Slab 10mm thick. 8g.
- Edge of a weathered block. 190g.
- Slab 9mm to 13mm thick. 12g.

York stone

<9> Roll moulding surviving length 53mm.  
148g.



- Hard medium brown sandstone with a scatter of fine sparkling mica and often fine laminations. Probably York stone. The pieces are small with sharp fractures. One more or less smooth surface. 97g.
- Pieces with weights of 103, 51, 83, 38, 50, 32, 42, 37, 36, 16, 20, 15, 27, 16, 13, 8, 18, 35, 12, 14, 7, 8, 5, 4, 18, 66, 24, 63, 22, 23, 35, 8, 21, 28, 15, 12, 10, 17, 9, 3, 8, 16, 7, 5, 5, 51, 51, 1129, 18, 14, 13, 17, 7, 14, 5, 41, 14, 23, 11, 16, 48, 14, 6, 34, 19, 5, 32, 15, 9, 13, 11, 9, 15, 6, 8, 2, 3 and 7g.
- Pieces with one surface 75, 108, 16, 252, 23, 126, 20, 23, 15, 48, 14, 15, 30, 19 and 31g.
- Possibly from rough a slab 50mm thick. 177g
- Possibly from a slab 25mm thick. 38g.
- Possibly from the corner of a roughly-shaped block. 28g.
- Corner from the edge of a slab. 60g.
- Pieces with one possible surface. Weights 53, 45, 22, 35, 17, 12, 13, 10, 14, 8, 9, 24, 22, 14 and 21g.
- Possibly from a rough slab about 15mm thick. 36g.
- Possibly from slab 17mm thick. 11g.
- Pieces possibly from slab 20mm thick. Weights 26, 18g.
- Possibly from a slab 15mm thick. 16g.
- Pieces possibly from a slab 19mm thick. Weights 10, 88, 59g.
- Slab 9 thick. One surface worn. 9g.
- Possibly from a slab 13mm thick. 4g.
- From a slab 15mm thick. 27g.
- From a slab 23mm thick. 37g.
- One smooth surface with part of an edge. 42g.
- Possibly from a slab 22mm thick. 26g.

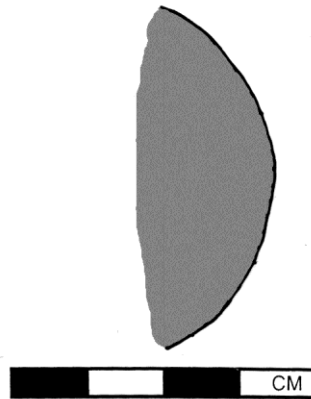
- Possibly from a slab 10mm thick. 6g.
- Pieces possibly from a slab 23mm thick. 18 and 27g.
- Possibly from a slab about 48mm thick. 136g.
- Probably from a slab 29mm thick. 40g.
- One surface with score marks 69g.
- Probably from a slab 38mm thick. 42g
- Probably from a slab 25mm thick. 25g.
- Probably from a slab 34 thick. 63g.
- One surface with striations 35g.
- Probably from slab with rough edge. 23g.
- Probably from a slab 28mm thick. 27g.

#### Chalk

- Pieces of rubble. Weights 101, 38 and 10g.
- Piece with mortar on fractures. 18g.

#### Slate

<14> Roll moulding about 50mm diameter. Grey slate. 77g.



- Purple slate, 2 scraps.
- Grey slate, 1 scrap.

#### Flint

- Sharp fractures. Mortar or line scale on the surface. Two pieces, 25g and 40g.

#### Layer [CEZ4]

##### Reigate stone

- Mortar on the fractures. 25g.

#### Layer [CEZ6]

##### Reigate stone

- Rubble. Weights 55, 33, 16, 15 and 7g.
- A little mortar on the fracture. 19g.

#### Layer [CEZ10]

##### Reigate stone

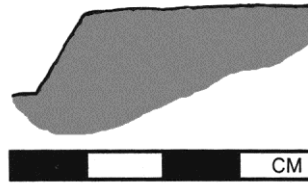
- With mortar on fractures. Two pieces weights 20 and 59g.
- Rubble with mortar on fractures.
- Two scarps.

#### White oolitic limestone

<31> Edge of a block. One face smooth, the other tooled into low ridges. 158g.



<32> Fragment with the moulding. The two faces have coarse tool marks the largest having rounded parallel ridges about 6mm wide. Possibly classical rustication. 97g.



- Edge of a block? One smooth and one rough face. 2 pieces, 21 and 107g.
- One striated surface. Two pieces 45 and 78g.
- Edge of a block. One surface with light marks possibly from a comb chisel. The other surface striated. 55g.

**Chalk**

- Pieces of rubble. Weights 66, 3, 24, 28, 47 and 5g.

**Flint**

- Stuck face and several smaller fractures. Mortar on the fracture. 419g.
- Flake from a knobbly flint. Sharp fractures. 146g.
- Knobbly flint with sharp fractures. 224g.
- Flake from a knobbly flint. Sharp fractures. 111g.
- Sharp flake. 131g.
- Sharp flake with cortex on most fractures. 106g.
- Sharp flint with some cortex covered fractures and some sharp clean ones. 316g.
- Knobbly flint with sharp fractures and some iron stains. 566g.
- Sub-angular flint. Sharp fractures, one with cortex. 124g.
- Angular flint with sharp fractures mostly with a cortex. 245g.
- Knobbly flint with sharp fractures. Mortar and doubtful limescale on the surface and the fractures. 185g.
- Sub-angular flint with cortex on most fractures. 314g.
- Flint flake with sharp fractures. Mortar and yellow limescale on surface and fractures. 194g.
- Flint flake with sharp fractures. Mortar and yellow limescale on surface and fractures. 74g.
- Sub-angular flint with sharp fracture. Mortar or limescale on the surface. 127g.
- Angular flint with sharp fractures. Mortar on the fractures. Two pieces. 86 and 89g.

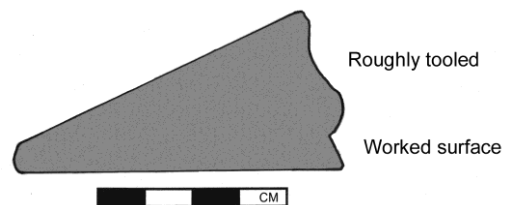
**Layer [CEZ11]**

**White oolitic limestone**

*Most of this material has sharp right-angled edges and smooth sides which gives the impression of having been sawn.*

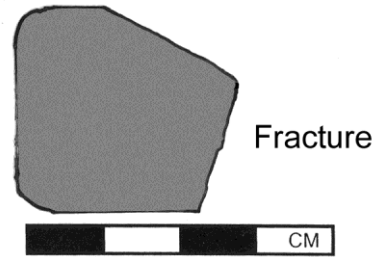
<11> Two sawn faces meeting at an angle of 100 degrees. 116g.

<21> Wedge-shaped with two sawn sides at an angle of 25 degrees to each other. The end has a ledge about 8mm wide cut along one side. The rest of the end is partly fracture and partly rough tooling. Both sides are fractures. Maximum surviving length 128mm. 307g.



<22> Corner of a block with mortar on the surface and fractures. 168g.

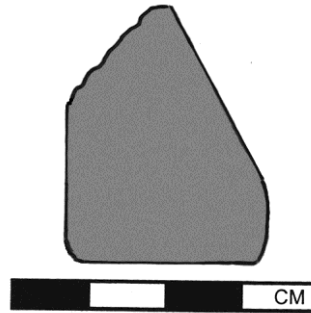
- <24> Bar-like, 27mm thick. One angled face which, if projected, would come to a point at an angle of 29 degrees. Length at 56mm. Both ends are breaks. 62g.



- <25> Edge of a block. Two smooth worn uneven faces meeting at an angle of 141 degrees. A third face at right angles to the others with tool marks. A little black stain on the worn surfaces and one of the fractures. 33g.

- <26> Wedge-shaped. One face at right angles to the edge, the other at an angle of 63 degrees. 84g.

- <27> Wedge-shaped. The two faces which would meet at angle of 28 degrees. Both sides are fractures. 45g.



- <28> Two faces meeting at an angle of 124 degrees. A third face at right angles to them. Two of the tree faces are clearly saw-cut. 64g.

- From the edge of a block 75mm thick. 225g.
- From a block 85mm thick. 257g.
- Pieces from the edge of a block. Weights 137, 157, 74 and 50g.
- One surface. 118g.
- From a slab 48mm thick. Mortar on the fracture. 112g.
- Corner of a slab 66mm thick. Mortar on the surface. 151g.
- Corner of a block. Mortar on the surface. 156g.
- From a slab 24mm thick. 78g.
- Pieces or rubble. Weights 69, 1 and 40g.
- Corner of a block. Traces of mortar or whitewash on the surface. 119g.
- Flat sawn surface. 51g.
- Block about 44mm high and 57mm wide. Both ends broken. Surviving length 60mm. One face appears to be sawn. 247g.
- Edge of block. One face with saw marks. 99g.
- Edge of block. Mortar on the surface. 100g.
- Corner of block. Striations on the surfaces. 57g.
- From a slab 14mm thick. 28g.
- Corner of a slab 27mm thick. 31g.
- Edge of block with rough surfaces. 27g.
- Corners of blocks. Weights 13, 51
- Edges of blocks. Weights 19 and 4g.
- Pieces with one surface. Weights 19 and 16g.
- Corner of a slab 27mm thick. 19g.
- Slab 6mm thick. 3g.
- One surface. Mortar on fractures. 13g.

### Layer [CEZ14]

Reigate stone

- Rubble. 1 piece 20g.

York stone

- Hard medium-brown sandstone with scatter of fine sparkling mica and often fine laminations. Probably York stone. The pieces are small with sharp fractures.
- Possibly from a slab 15 thick. 27g.
- Rubble 36, 26, 11 and 22g.

White oolitic limestone

- Rubble. 44g.
- From edge of block. 18g.
- One flat surface. 20g.

### Layer [CEZ15]

White oolitic limestone

- Slab 18mm thick. 48g.

### Layer [CEZ17]

White oolitic limestone

- Fragment from block 75mm thick. One surface has striations ending in a fracture as if saw-cut. 305g.

### Layer [CEZ19]

Reigate stone

- Rubble. 10g.

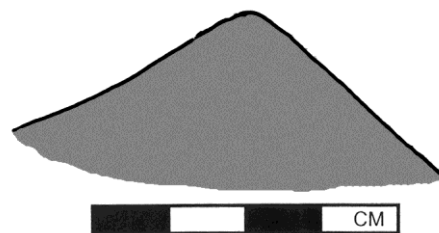
Grey brown sandstone (Possibly York stone but doubtful)

- One surface. 8g.
- Rubble, 3g.

### Layer [CEZ20]

Reigate stone

<33> Corner of a block with two faces meeting at an angle of 111 degrees. One face slightly hollow and has a scrap of whitewash on it. 63g.



- A little mortar on the fractures. Two pieces. 132 and 139g.
- Edge of a roughly shaped block. A little harder and heavier than is usual for Reigate stone. 151g.
- Rubble. Weights 6, 35, 14, 8, 10, 13, 12, 12, 30, 4, 9, 81, 41, 37, 17, 37, 18, 14 and 10g.
- Edge of a block. Surfaces roughly finished with a straight bladed chisel. 412g.
- Edge of a block. One surface smoothed, the other with marks from a toothed chisel. 193g.
- With one smoothed surface. Weights 87, 10, 7 and 14g.
- One surface with marks from a straight-bladed chisel. 118g.
- One probable surface with mortar. 42g.
- One uneven surface. 14g.

### Kentish rag stone

- Edge of roughly squared block. 104g.
- Probably Kentish rag. 53g.

### Pale brown oolitic limestone

- Probably the edge of a block. One smooth and one rather rough doubtful face. 53g.

### Uncertain limestone

- Part of a heavily worn hone. 82g.

### Chalk

- Rubble. Weights 40, 16, 7, 7, 7, 6, 2, 7, 4 and 26g.
- Possibly the edge of a block. Two pieces, 12 and 14g.
- Edge of a block. 34g.

### Flint

- Angular flint with sharp fractures. Yellow limescale on the surface and mortar on the fractures. 121g.
- Angular flint largely covered with mortar. Some limescale. 288g.
- Sub-angular flint largely covered with mortar. Some limescale. 177g.
- Flake from a knobbly flint. Some mortar on surface and fractures. Limescale on parts of fractures. 72g.
- Flint largely covered with mortar. Some limescale. 63g.
- Knobbly flint with sharp fractures. Mortar on surface and fractures. Doubtful limescale on the surface. 45g.
- Angular flint with mortar and limescale on the fractures. 46g.
- Angular flints with mortar and limescale on the surface and fractures. Weights 28 and 57g.
- Rounded flint with several sharp fractures. Mortar and limescale on the surface and fractures. 25g.
- Flake with sharp fractures. Mortar on the surface. 6g.
- Flakes with sharp fractures. 2 and 4g.
- Flake with sharp fractures. Mortar and / or limescale on the surface and fractures. 5g.

### Thanet Sand

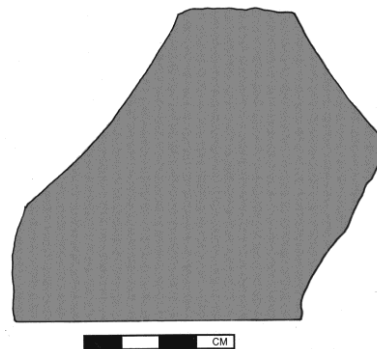
- Mortar attached to soft green sand, probably from the Thanet beds. 21g.

### Layer [CEZ21]

#### Reigate stone

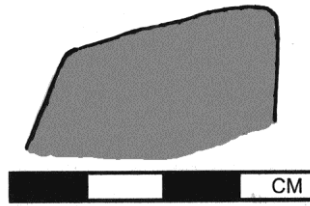
- Corner of roughly-shaped block with chisel marks on all three surfaces. 185g.
- Mortar on fracture, 70g.
- Edge of roughly shaped block. 70g.
- Pieces of rubble. Weights 109, 93, 104, 51, 2, 905 and 82g.
- Rough surface with chisel marks. 69g.

- <5> Reigate stone with the following faces:
1. Flat with marks from a fine comb chisel.
  2. Two shallow concave faces at right angles to 1.
  3. Another flat face at right angles to 1.
- 242g.



- <17> Two smoothed faces meeting at an angle of 105 degrees. 20g.

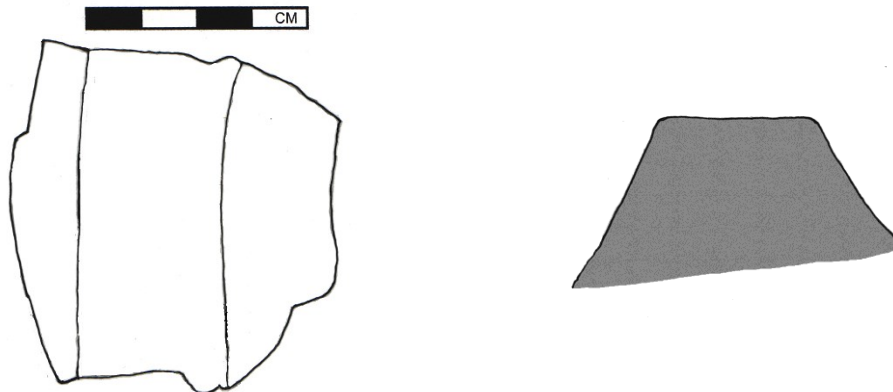
<18> Fragment of a moulding possibly from the edge of a window. Surface with comb chisel marks at right angles to the moulding. 18g.



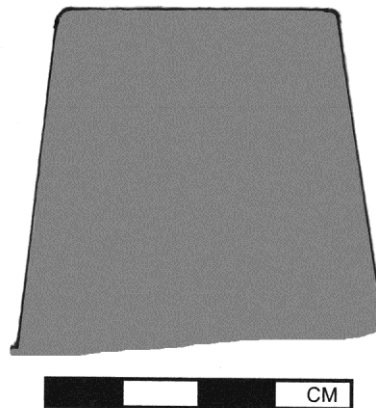
<64> Part of a plain almost rectangular moulding at the junction with tracery – possibly for a window head. 93g.



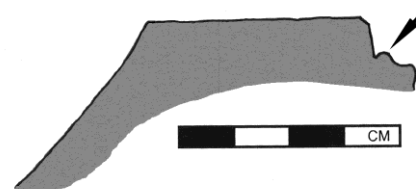
<65> Fragment of a curving moulding from tracery. Hollow chamfers on the sides. Front and one side largely covered with whitewash. Traces of whitewash on the other side. 95g.



<66> Tip of a mullion with plain almost rectangular moulding. A slight nib on along the edge of the fracture on the left hand side of the drawing suggest that the break was on a outward turn. The surfaces are unweathered and have the remains of whitewash on them including a 13mm wide stripe along the front edge of the right hand side. Late gothic? 336g.



<67> Edge of a window? One side has a hollow chamfer. The other side is at right angles to the front. It goes back for 8mm and ends of a projecting scrap of roughly tooled stone. 106g. The arrow marks the edge of the break.

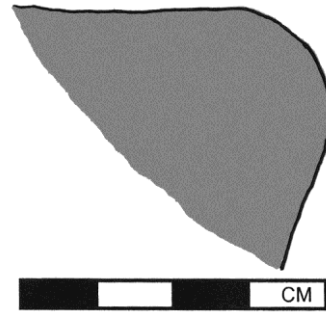


- One tooled surface. Chisel marks on fracture. 413g.
- Mortar on one fracture. 507g.
- Corner of a roughly-shaped block. Marks from a chisel 7mm wide on two surfaces. 563g.
- One fracture has marks from a chisel 4mm wide. Mortar on another fracture. 264g.

- Edge of a block. One surface with marks from a comb chisel. 75g.
- One doubtful surface. 20g.
- A little mortar on fractures. 83g.
- Edge of a block with a slab of mortar 6mm to 20mm thick on one surface. Mortar had a contact surface with CBM, probably brick. 762g.
- Corner of a block. A little mortar on the surface. 161g.
- One surface with chisel marks. 69g.
- One surface with fine parallel tool marks. 245g.

White oolitic limestone

<19> Two faces at 70 degrees to each other joined by a curve. One face largely covered with yellow limescale with a patch of dark grey mortar or limescale. There is chalky mortar on the fracture adjacent to this face. The mortar has yellow limescale on it – apparently formed in a crack. The other face has some mortar and lime. These are also present on parts of the fractures. Possibly part of cascade. The moulding is the same as <125> from [CM15]. This was catalogued as Portland with black deposit on it. It may also be related to <128> from [CM15] and much less closely to <50> from [CN14] both of Reigate stone.<sup>59</sup>



- Rubble, 33g.
- From a slab 44mm thick. Mortar on one surface and a small part of the fractures. 221g.
- From a slab 58mm thick. Mortar on a small part of the fractures. 226g.

Chalk

- Rubble, 336g.

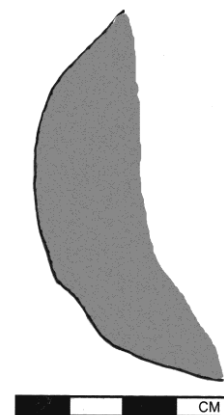
Flint

- Large sharp flake. Mortar and limescale on the fractures. 198g.
- Large knobbly flint with several sharp fractures. Mortar and yellow limescale on surface and fractures. 3,067g.

**Layer [CEZ22]**

Reigate stone

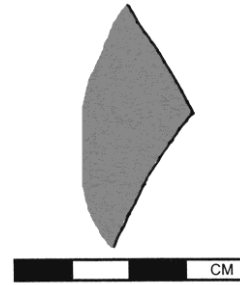
<41> Part of a heavily weathered roll moulding about 75mm diameter. 125g.



<sup>59</sup> Trenches CM and CN were excavated in the lawn east of the house. See volume 1 section 13.1.



<42> Moulding with one straight face and one shallow hollow chamfer. 26g.



- Edge of blocks with rough surfaces. Some mortar on the surfaces and fractures. Weights 667, 108 and 490g.
- Edge of a block. One smooth and one uneven surface. 83g.
- Edge of a block with rough surfaces. Some mortar on the surface. 90g.
- Edge of a block. Mortar on one surface. 27g.
- Mortar on fractures. 2g.
- Rubble. Two pieces 48 and 1g.

### Layer [CEZ26]

#### Reigate stone

- One roughly smoothed surface. 480g.
- Rubble pieces. Weights 23, 24, 7, 8, 7, 1, 480, 23, 24, 7, 8 and 7g.
- One rough surface or fracture with mortar on it. 59g.
- Scrap of smoothed surface. 21g.

#### Pale brown oolitic limestone

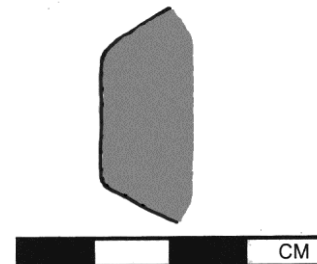
- Corner of a block. Two smoothed surfaces. One with striations probably from a comb chisel. 124g.

### Unstratified – likely to be [CEZ11]

#### White oolitic limestone

<46> Wedge-shaped. One face at right angles to the end, the other at 65 degrees. Point and both sides are fractures. One face clearly saw-cut. 68g.

<47> Scrap of moulding, possibly from the tip of a window mullion. 35g.



- <48> Surface with a scrap of hollow moulding at right angles to it. 18g.
- <49> Wedge-shaped. One face at right angles to the end with a rounded corner. The other face is at an angle of 64 degrees to the end. Both sides are fractures. The angled face is clearly saw-cut. 76g.
- <50> Wedge-shaped. One face meeting the other at 65 degrees. The other face is a fracture more or less at right angles to the end. One side is a smooth surface the other a fracture. The angled face is clearly saw-cut. 104g.
- <51> One smooth face with an edge formed by a 5mm deep bevel leading to a fracture. 57g.
- <52> Edge of a block. One saw-cut face ends in a fracture after 20mm. 62g.
- <53> Corner of a block. Two faces meeting at an angle of 118 degrees. A third face at right angles. Two faces have saw marks. 16g.
- <54> Two faces which would meet at an angle of 26 degrees. One with saw marks. 3g.

- <55> Edge of a slab. 15mm thick at the edge. Thickening to 18mm 55mm from the edge. Clear saw-cuts on one side. 67mm.
- <56> Edge of a slab 26mm thick. Three sawn faces. Large worn chip on one of the edges. 72g.
- <57> Two faces at an angle of 24 degrees. All edges are fractures. 11g.
- <58> Slab 18mm thick increasing to 23mm. Saw-cut faces. One face meets the edge at right angles, the other at 95 degrees. 43g.
- <59> Corner of a block. Two faces meeting at an angle of 67 degrees. Another face at right angles to them. 53g.
- <60> Wedge-shaped. One face at right angles to the end, the other at 64 degrees. Point and both sides are fractures. One face clearly saw-cut. 58g.
- <61> Corner of a slab 48mm thick. One side has clear rough saw marks. The other side has possible saw marks. A little mortar on the surfaces. 128g.
  - Corners of blocks. Weights 41 and 36g.
  - Small area of surface with striations. 27g.
  - One smooth surface with striations 4mm apart. 27g.
  - Corner of a block. One surface with irregularly-spaced striations. Two other surfaces with mortar. 36g.
  - Edge of a slab 13mm thick. Edge has striations. One side ends in a break suggesting the end of a saw-cut. 22g.
  - One surface. 14g.
  - Slab tapering from 7 to 11mm over a distance of 42mm. Irregular striations on one surface. 14g.
  - Wedge-shaped tapering from 22 to 12mm over a distance of 45mm. 36g.
  - Edge of a block. 19g.
  - One smooth surface. Weights 118, 80, 7, 72 and 212g.
  - With mortar on the fractures. Weights 28 and 43g.
  - Rubble. Weights 22, 50 and 23g.
  - Edge of a slab 44mm thick. One side and the edge appear to have been sawn towards a corner and then broken off leaving a rough corner. The edge cut was 8 to 10mm short of the corner, the side cut about 3mm. There is a slight lip at the beginning of the breaks. 191g.
  - Edge of a slab 45mm thick. One side and the edge appear to have been sawn towards a corner and then broken off leaving a rough corner. The edge cut was 2mm to 7mm short of the corner, the side cut about 3 to 5mm. 144g.
  - Edge of a slab 49mm thick. 185g.
  - Probably the corner of a block. 74g.
  - Corner of a block. A little mortar on one surface. 36g.
  - Edge of a block. One surface has striations that sometimes cross at a shallow angle. The other has shallow parallel striations 3mm apart. 99g.
  - Edge of a slab 50mm thick. Saw marks on two faces. 159g.
  - Slab 40mm thick. Possibly the edge, but if so it is worn and rounded. 86g.
  - Possibly the edge of a roughly squared block. A little mortar on the suspected surfaces. 110g.
  - Edge of a block. 62g.
  - Corner of a block. Two faces with saw marks, the other with a rough chisel cut. 59g.
  - One surface with a shallow straight cut in it. 59g.
  - Edge of a block. Saw marks on one face. 31g.
  - Slab 18mm thick. A little mortar on one face. Saw (?) marks on the other. 32g.
  - One smooth face. Weights 21 and 41g.

- Darker grey. 61g.
- Slab 23mm thick. Probably the edge. 24g.
- One smooth surface. Mortar on the fractures. 36g.
- Slab tapering from 11mm to 14mm. Saw marks on one surface. 28g.
- One smooth surface. Mortar on the surface and the fractures. 45g.
- Edge of a slab 22mm thick. 12g.
- Edge of a slab 32mm thick. Edge has a mark from a 3-pointed comb chisel (?)  
Probable saw mark on one side. 28g.
- Edges of blocks. Weights 24 and 27g.
- Corner of a block. Saw marks on 2 faces. 72g.
- Slab 13mm thick. One side with saw marks. 14g.
- Slab 8mm to 11mm thick. 14g.
- One smooth face. Weights 10, 10, 11 and 11g.
- Rounded edge of a block. 9g.
- Slab 7mm to 9mm thick. 8g.
- Edge of a block. One face sawn, the other rough. 56g.
- Edges of a blocks. Weights 11 and 24g.
- Slab 10mm thick. A little mortar on the surfaces. 8g.
- Slab 8mm to 11mm thick. One side uneven. Probably sawn. 19g.
- Corner of a block. 11g.
- Corner of a block. Mortar on one face. 12g.
- Slab 12mm thick. Two pieces. 17 and 13g.
- Slab 9mm thick. Saw (?) marks on one face. 5g.
- Edge of block. Rounded edge. 35g.
- Edge of a slab 10mm to 11mm thick. 20g.
- Rubble. Weights 11, 3 and 39g.
- One smooth surface. 15 and 28g.

#### Reigate stone

- Mortar on fractures. 80g.

#### Kentish rag stone?

- Rubble. 42g.

#### Hard medium brown sandstone

- From a slab 35mm thick. 119g.
- From a slab 28mm thick. 76g.
- Possibly from a slab about 25mm thick. 80g.
- From a slab 18mm thick. Two pieces, 51g and 35g.
- From a slab 19mm thick. 33g.
- From a slab 22mm thick. 13g.
- From a slab 17mm thick. 16 and 17g.
- Rubble. Weights 9, 13, 32 and 16g.
- One surface. 15g.
- One tool marked surface. 18g.
- From a slab 20mm thick. 14g.
- From a slab 30mm thick. 17g.

#### Chalk

- Rounded with one fracture. 171g.
- Mortar on fractures. 7g.

## 12.11 Slag

### Layer [CI7]

- Slag? Light grey – pumice-like with many cavities in the 1-2mm size range. Fairly friable.

### Layer [CX13]

- Slag? 2 scraps 4g.

### Layer [DE1]

- Slag. Light grey pumice-like. Wedge-shaped. About 87mm long. 50mm by 46mm at one end tapering to 20mm by 25mm at the other. One face is flat as if cut and has a dark grey oval inclusion about 20mm long. Possibly dross from a casting feeder.

## 12.12 Iron

### Layer [CA3]

- Right-angled iron – 55mm long from one corner 28mm from the other - long side tapers - could be some special kind of nail.

### Layer [CA4]

- Square nails - 56mm, 30mm and 69mm long.
- Nails, one 26mm long, the other 35mm long.
- Thin iron nail - 29mm long.

### Layer [CA5] third spit

- Nails - lengths 50, 55, 50, 28, 40mm.

### Layer [CB1]

- Nails - lengths 40, 56, 40, 53, 120 and 50mm.
- Modern screw.

### Layer [CB2]

- Nails – lengths 40mm and 55mm.
- Wire 137mm long.

### Layer [CC7]

- Nail 34mm long.
- Nail (?) about 45mm long - concretion at both ends.

### Layer [CG1]

- Rectangular nails lengths 60, 76, 56, 40 and 42mm.
- Rectangular cut nail. End missing. Length 33mm.
- Oval nail. Length 50mm. Modern.

### Layer [CG2]

- Iron wire. 1mm thick. 375mm long in a double coil with the ends twisted together.
- Cast iron 3mm thick.

**Layer [CG3]**

- Square nails. Lengths 70 and 47mm.
- Square nail. Part.
- Nail, shape uncertain. Length 47mm.
- Rust, 2 pieces and a scrap.

**Layer [CG4]**

- Rectangular nails. Lengths 92, 37 and 63mm.
- Nail. Uncertain shape. 54mm long.
- Sandy rust or possibly iron pan, 2 pieces.

**Layer [CG11]**

- Nails 35mm long. Very corroded. Shape uncertain.

**Layer [CG12]**

- Rectangular nails. Length 42mm.

**Layer [CG13]**

- Rectangular nail with a flint stuck to it. Point bent. Length 85mm.
- Square flat headed nail. Length 45mm.
- Rust, an unidentifiable lump.

**Layer [CG14]**

- Square nail. Length 50mm.
- Rust, 2 pieces with attached mortar or conglomerate.

**Layer [CH1]**

- Cast iron pipe? 8mm thick.
- Iron strip, 280 by 60 by 3mm.
- Iron strip, 166 by 26 by 7mm.
- Nails 45 and 48mm long.

**Layer [CH4]**

- Rectangular nail 41mm long.

**Layer [CI2]**

- Nails of uncertain shape. Lengths 38, 43, 34, 42, 22, 18, 29, 30, 22, 30 and 25mm.
- Nails – probably rectangular. Lengths 57, 33 and 38mm.
- Rust, 9 unidentifiable pieces.

**Layer [CI3]**

- Nails. Uncertain shape. Lengths 40, 35 and 35mm.
- Rust, 3 scraps.

**Layer [CI5]**

- Square nails. Lengths 100, 55, 42 and 31mm.
- Nail. Shape uncertain. Length 45mm.

**Layer [CI6]**

- Rectangular nails. Lengths 40 and 46mm.

- Square nail. Length 45mm.
- Nail with another piece of rust attached. Length 35mm.
- Nail. Shape uncertain. Length 40mm.

#### **Layer [CJ2]**

- Round nails. Lengths 65, 38 and 55mm.
- Oval nail. Length 50mm.
- Nail with round head and square shaft. Length 34mm
- Square nail. Length 45mm.
- Nail. Shape uncertain. Length 51mm.

#### **Layer [CJ7]**

- Iron grate, 1 piece.
- A double loop of iron wire, 2 thick, 100mm [?] long.
- Rust, 1 scrap.
- Rectangular nails. Lengths 57, 116 and 39mm.
- Nails – probably round. Lengths 107, 79, 110 and 56mm.
- Nail. Uncertain shape. Length 52mm.
- Staple. Width at the top 30mm. One spike 60mm long, the other 65mm. Rectangular section.

#### **Layer [CJ8]**

- Rectangular nail. 88mm long.
- Rectangular nail. 21mm long, probably broken.
- Nail. Shape uncertain. Length 30mm.
- Rust, 3 pieces.

#### **Layer [CJ9]**

- Nail. Uncertain shape, 110mm long.
- Rectangular nail. 70mm long.

#### **Layer [CJ10]**

- Iron spike, 155mm long. Rectangular section. Head spreads on only one side.
- Scraps of rust, 8 pieces.

#### **Layer [CJ11]**

- Nails. Shape uncertain. Lengths 47, 65 and 30mm.
- Nail. Shape uncertain. Bent with no apparent head. 63mm long.
- Lump of rust attached to a flint.

#### **Layer [CJ12]**

- Nails. Shape uncertain. 50mm long.
- Nail? about 50 long.
- Rust, 24 unidentifiable lumps. Two of these are attached to flint pebbles.

#### **Layer [CJ13]**

- Nails. Shape uncertain. Lengths 30, 52, 38, 42, 40 and 25mm.
- Rectangular nail 48mm long.
- Rectangular nail 35mm long. Rusted to a flint.
- Nail. Probably square. Length 92mm.

- Iron staple or heavily bent nail. Total length about 80mm. If it was a staple it was about 35mm high and 25mm wide and part of one spike is missing.
- Iron bar bent at right angles. One arm 70mm long the other 20mm. Diameter about 10mm. Possibly a large round nail.
- Rust, 11 unrecognisable lumps.

**Layer [CJ14]**

- Part of an iron knife blade? Maximum length 83mm, width 18mm.
- Strip of iron 125mm long. The centre has a triangular cross section about 15mm high by 5mm wide. The strip tapers away towards both ends.
- Rust, 4 lumps.
- Broken lumps of rust from an unidentifiable iron object.
- Sheet iron, a scrap.
- Nails. Shape uncertain. Lengths 49 and 37mm.

**Layer [CJ15]**

- Nails. Shape uncertain. 57mm long.
- Square nail 37mm long.
- Nail – possibly oval. 38mm long.
- Rust, a scrap.

**Layer [CJ17]**

- Rust, 5 scraps, possibly iron pan.

**Layer [CJ18]**

- Nail, round headed? 2.
- Rust, 2 unidentifiable pieces.
- Iron wire? a tiny scrap.

**Layer [CX3]**

- Nail, rectangular, 44mm long.

**Layer [CX7]**

- Nail, rectangular, 58mm long.
- Nail? Length 45mm.

**Layer [CEZ1]**

- Piece of screw threaded rod. 8mm dia. 30mm long. Modern.
- Head end of a square nail. 48mm long.
- Rectangular nail 88mm long.
- Head end of a nail. 45mm long.
- Head end of a nail. 33mm long.

**Layer [CEZ2]**

- Rectangular nail. Point missing. 59mm long
- Square nail. Point missing. 69mm long.
- Part of a square nail. 48mm long.
- Part of a square nail. 50mm long.
- Part of a nail. 54mm long.
- Round nail 77mm long.
- Rectangular nails 59 and 44mm long.



- Part of a rectangular nail 58mm long.
- Two scraps of cast (?) iron.

**Layer [CEZ3]**

- Nail, square 70mm long. Point missing. Slightly bent.
- Nails. Rectangular 105 and 79mm long.
- Iron strip 11mm wide and about 2mm thick. 54mm long. Slightly curved. Break on one end.
- Nails, square, 56 and 78mm long.
- Nail, square, 66mm long. Point end missing.
- Nail, square, 55mm long. Point end missing. Roved over 40mm from head.

**Layer [CEZ10]**

- Nail? Heavily rusted. Incomplete. 27mm long.
- Part of a square nail 53mm long.
- Rust 29mm long.
- Part of a square nail 50mm long.
- Part of a rectangular nail 26mm long.

**Layer [CEZ11]**

- Nail. Square, 86mm long.

**Layer [CEZ14]**

- Rectangular nail. 51 long. Point bent. Head missing.

**Layer [CEZ17]**

- Scrap of rust attached to a small piece of flint.

**Layer [CEZ20]**

- Nail, square 45 long. Point missing.
- Rectangular nail with bent tip. Length 42mm. Wide more or less circular head 23mm diameter.

**Layer [CEZ21]**

- Rectangular nails. Lengths 47, 35, 76, 44 and 44mm.
- Square nail 75mm long.

**Layer [CEZ26]**

- Nail, rectangular, 60 long. Point missing.
- Nail? 43mm long.
- Nail, rectangular, 39 long.
- Rust, a scrap.
- Nail? 22mm long.

**Unstratified – likely to be [CEZ11]**

- Nail head. 25mm long ending in a break where the shaft was bent. Shaft rectangular 5 by 3mm. A little rust. Mortar on the surface.
- Point of a nail partly embedded in mortar. 23mm long.
- Nail, rectangular 73mm long. Head and point missing.
- Nail, rectangular 56mm long, point missing.
- Nail, rectangular 70mm long point missing
- Nail, rectangular 75mm long. Slightly bent. Head and point missing.

- Nails, rectangular 30, 38, 50, 51 and 56mm long.
- Nail, rectangular 52mm long. Point broken off at bend.
- Nail, rectangular 33mm long. Point missing.
- Nail, rectangular 49mm long. Twisted.
- Nail, rectangular 31mm long point missing.
- Nail, square 35mm long. Point missing.
- Nail, rectangular 41mm long. Head and point missing.
- Nail, square 25mm long.
- Nail fragment? 25mm long.

## **12.13 Non-ferrous metal**

### **Layer [CA2]**

- Strip of lead 20mm wide and about 90mm long, folded over.

### **Layer [CB1]**

- Scrap of lead 40mm long.

### **Layer [CB2]**

- Scrap of sheet lead 2-3mm thick on one side tapering to a point, perhaps a piece of flashing.

### **Layer [CG1]**

- Metal foil, 1 piece.

### **Layer [CG3]**

- A buckle with a metal foil finish which is peeling off. 20th century.

### **Layer [CG13]**

- Lead. Strip with D-shaped cross-section. The 'D' is about 4mm high and 2mm deep. A blob of solder on the centre. Twisted.
- Lead. H-section came. Crushed and twisted. 58mm long.
- Lead. Sheet. 1.5mm thick. Roughly D-shaped. Straight side 44mm. Maximum depth of 'D' 24mm. One end bent up at a right angle.

### **Layer [CG16]**

- <45> Copper. Thin triangular sheet, about 20mm wide coming to a point. Wide end rolled over and crushed. Point about 0.5mm thick folded over apparently thinning at the wide end. Length about 65mm.

### **Layer [CH1]**

- Lead. Roughly oval piece of sheet lead 74 by 60 and 2.5mm thick. Obviously cut from a larger sheet. Chisel marks on the surface.

### **Layer [CI5]**

- Lead glazing came. H section. Length about 85mm, height 4.5mm, width about 3mm.

### CG, CH or CI Unstratified

<16> Drip of lead or lead fastening. Mortar on the surface.



#### Layer [CJ12]

- Copper (?) sheet, a tiny piece rolled into a tube which is 1.5mm diameter at one end and 2.5mm diameter at the other. About 18mm long. Bent into a right angle.

#### Layer [CEZ3]

- Lead spilled when molten. 23g.
- Part of a grey metal disc 60mm diameter and a little under 1mm thick. The disc appears to have been cut from a sheet leaving a faceted curve. Mortar on both sides. Yellow limescale on one side.

#### Layer [CEZ19]

- Lead spilled when molten. 31g
- Thin screwed-up strip of lead – probably an off cut. 5g.

#### Layer [CEZ10]

- Copper or copper alloy button with plain tinned front. 20mm diameter. Fixing loop missing.

#### Layer [CEZ21]

- Lead strip. Probably a crushed and bent window came. About 90mm long. 13g.
- Lead strip. Probably a crushed window came. About 47mm long. 4g.
- Lead window came. Bent. 150mm long. 17g.

#### Layer [CEZ26]

- Lead window came. Bent. About 80mm long. 6g.

### CEZ Unstratified

- Lead spilled when molten. 22g.

## 12.14 Bone

Quantity of bone and teeth by context.

| Context                | Bone number<br>of pieces | Teeth number | Other items |
|------------------------|--------------------------|--------------|-------------|
| [CA4]                  | 6                        | 1            |             |
| [CA5] second spit      | 3                        |              |             |
| Layer [CA5] third spit | 3                        |              |             |

| Context | Bone number<br>of pieces | Teeth number | Other items         |
|---------|--------------------------|--------------|---------------------|
| [CA16]  | 1                        |              |                     |
| [CA21]  | 2                        |              |                     |
| [CB1]   | 9                        | 1            | A boar tusk         |
| [CB2]   | 1                        |              |                     |
| [CC3]   | 1                        |              |                     |
| [CC5]   | 1                        |              |                     |
| [CC7]   | 6                        |              |                     |
| [CG1]   | 1                        |              |                     |
| [CG2]   | 1                        |              |                     |
| [CG3]   | 5                        |              |                     |
| [CG4]   | 10                       |              |                     |
| [CG6]   | 2                        |              |                     |
| [CG13]  | 8                        |              |                     |
| [CG14]  | 12                       |              |                     |
| [CG16]  | 1                        |              |                     |
| [CG17]  | 4                        |              |                     |
| [CH1]   | 13                       |              |                     |
| [CH3]   | 9                        |              |                     |
| [CH4]   | 6                        |              |                     |
| [CI2]   | 16                       | 1            |                     |
| [CI3]   | 16                       | 3            |                     |
| [CI4]   | 16                       | .5           |                     |
| [CI5]   | 98                       | 7            |                     |
| [CI6]   | 39                       |              |                     |
| [CI7]   | 6                        |              |                     |
| [CJ2]   | 1                        |              | Part of tooth brush |
| [CJ7]   | 9                        |              |                     |
| [CJ8]   | 27                       | 1.5          |                     |
| [CJ9]   | 103                      | 9            |                     |
| [CJ10]  | 1                        |              |                     |
| [CJ11]  | 1                        |              |                     |
| [CJ12]  | 48                       |              |                     |
| [CJ13]  | 28                       |              |                     |
| [CJ14]  | 4                        |              |                     |
| [CJ15]  | 6                        |              |                     |
| [CJ17]  | 2                        |              |                     |
| [CJ18]  | 7                        |              |                     |
| [CX2]   | 3                        |              |                     |
| [CX3]   | 1                        |              |                     |
| [CX7]   | 3                        |              |                     |
| [CX8]   | 3                        |              |                     |
| [CX11]  | 2                        |              |                     |
| [CX12]  | 2                        |              |                     |
| [CEZ1]  | 5                        |              |                     |
| [CEZ2]  | 23                       |              |                     |
| [CEZ3]  | 18                       |              |                     |
| [CEZ10] | 6                        |              |                     |
| [CEZ14] | 88                       | 1            | A dog claw          |

| Context              | Bone number<br>of pieces | Teeth number | Other items |
|----------------------|--------------------------|--------------|-------------|
| [CEZ17]              | 7                        |              |             |
| [CEZ18] Cleaning top | 6                        |              |             |
| [CEZ19]              | 5                        |              |             |
| [CEZ20]              | 4                        |              |             |
| [CEZ21]              | 13                       |              |             |
| [CEZ26]              | 15                       | 1            |             |
| [DE1]                |                          | 1            |             |

*The items below are included in the table above.*

#### **Layer [CJ2]**

- Part of a tooth brush handle (bone?). There are three maker's marks:  
Silvered wire  
Prophylacti[c]  
Made in England

The name 'Violet Unwin' has been scratched on it.

#### **Layer [CJ9]**

*This context contained a walrus skull and the bone is therefore listed in detail.*

<42> Tooth M3, red deer?

- Horse. Left-hand side of upper jaw with tooth P4, the canine and two front teeth.
- Horse. Three joining pieces of lower right jaw with tooth P4.
- Horse. Tibia-fibula. Two bones probably from the same animal.
- Horse radius-ulna. Two.
- Horse. Four innominate bones probably from different animals.
- Horse. Three joining parts of innominate bone. Two other non-joining pieces possibly from same bone.
- Horse scapula. Two left and right.
- Cattle ulna. Top broken from a cut with two other cut lines close to the break.
- Horse. Back of lower jaw. One large piece and 26 fragments probably from the same bone.
- Four fused vertebrae ending in a break. Horse or cattle.
- Horse cervical vertebrae. Two.
- Cervical vertebrae. Unidentified.
- Horse. Part of sacrum.
- Horse. End of humerus.
- Horse molar.
- Horse, 2 incisor teeth.
- Innominate bone possibly from a small horse or pony. 2 bones from different-sized animals.
- Scapulae, 2 pieces from medium sized-animal.
- Cattle? Two joining pieces of rib bone.
- Bone fragments, 28 pieces and 10 scraps.
- Bone heavily burnt, 1 piece.
- Rib bone, 1 piece.

### **Walrus skull**

- <7> Walrus skull - front and upper jaw.
- <28> A possible scrap of walrus skull
- <29> A scrap of walrus skull
- <43> A possible piece of skull.

Walrus live in the shallower areas of sea around the edge of the polar ice. At present they live in Hudson Bay, Baffin Island, the west and east coast of Greenland, Spitsbergen, and along parts of the north Russian coast to the east of the White Sea and around the Davies Strait in the north Pacific. In Canada their range used to extend further south and in the 16th century they appear to have been fairly common in the Gulf of St. Lawrence, and their Pacific range also extended further south.

Today they are occasionally found off Iceland, and exceptional stray animals have been found in Norway, Germany and the Netherlands. Stray animals are also found in British waters. One was caught in the Thames in 1456. There were 27 UK sightings between 1815 and 1954, mostly in Scotland.

The tusks have long been valued for their ivory, and they were occasionally imported attached to the skull to make a curio. In the eleventh century a Greenlander who wished to gain the favour of the King of Norway gave him a live polar bear, a set of carved chessmen and the skull of a walrus with the tusks carved and ornamented with gold. In the sixteenth century the Bishop of Trondheim sent the head of a walrus to the pope. This was preserved in a barrel of salt and is probably the walrus drawn by Durer. A live walrus from Bear Island in the East Siberian Sea was brought to the English court 1608 but it did not live long.<sup>60</sup>

## **12.15 Shell**

### **Oyster shells**

| Context | Pieces |
|---------|--------|
| [CA4]   | 3      |
| [CA11]  | 1      |
| [CA21]  | 2      |
| [CB1]   | 2      |
| [CC7]   | 2      |
| [CG3]   | 1      |
| [CG6]   | 4      |
| [CG12]  | 1      |
| [CG13]  | 3      |
| [CG14]  | 2      |
| [CG16]  | 1      |
| [CG17]  | 1      |
| [CH1]   | 1      |
| [CH3]   | 3      |
| [CH4]   | 2      |
| [CI5]   | 5      |
| [CI6]   | 6      |
| [CJ2]   | 1      |
| [CJ7]   | 12     |
| [CJ8]   | 7      |

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<sup>60</sup> King 1983 p. 65-72.

| Context | Pieces |                                |
|---------|--------|--------------------------------|
| [CJ9]   | 4      |                                |
| [CJ11]  | 1      |                                |
| [CJ12]  | 57     |                                |
| [CJ13]  | 13     |                                |
| [CJ14]  | 1      |                                |
| [CJ15]  | 7      |                                |
| [CJ17]  | 1      |                                |
| [CJ18]  | 6      |                                |
| [CX2]   | 2      |                                |
| [CX4]   | 1      |                                |
| [CX7]   | 1      |                                |
| [CX8]   | 1      |                                |
| [CX10]  | 1      |                                |
| [CX12]  | 6      |                                |
| [CEZ1]  | 6      |                                |
| [CEZ3]  | 2      |                                |
| [CEZ4]  | 2      |                                |
| [CEZ14] | 6      |                                |
| [CEZ20] | 5      |                                |
| [CEZ21] | 10     | Of which 2 have mortar on them |
| [CEZ26] | 103    |                                |

### **Other shell**

#### **Layer [CA4]**

- Small piece of cockle shell.

#### **Layer [CC7]**

- Mussel shell, part.

#### **Layer [CG3]**

- Snail shell, 2 scraps.

#### **Layer [CH3]**

- Mussel shell, 1 piece.

#### **Layer [CH4]**

- Snail shells, 2.

#### **Layer [CI6]**

- Cockle shell, 1.
- Snail shells, 1.

#### **Layer [CJ7]**

- Snail shell, striped.

#### **Layer [CJ12]**

- Snail shell, 1 (damaged) and 4 scraps.



**Layer [CJ13]**

- Snail shell fragments, 2.

**Layer [CJ14]**

- Snails, 2

**Layer [CJ15]**

- Snail shells, 10

**Layer [CJ18]**

- Snail shells, 17

**Layer [CEZ21]**

- Snail shells, 8 and 6 incomplete ones.

**Layer [CEZ22]**

- Snail shells, 8 and 2 incomplete ones.

**Layer [CEZ26]**

- Snail shells, 24.
- Snail shell, 10 pieces.

**12.16 Plastic**

The following layers contained plastic items:

CG1, CJ2, CJ7, CX13, CEZ1

**12.17 The latest objects from layers**

|        |  |
|--------|--|
| [CA1]  | Plastic. Modern.   |
| [CA2]  | Modern glass, concrete.  |
| [CA3]  | Pipe stems. 18th century.  |
| [CA4]  | Tin-glaze. Post-medieval Redware. Stoneware. Early 18th century. |
| [CA5]  | Tin-glaze, redware 2 pipe bowls of uncertain form.               |
| [CA6]  | Nothing closely datable.   |
| [CA7]  | Nothing closely datable.   |
| [CA8]  | Nothing closely datable.   |
| [CA9]  | Nothing closely datable.   |
| [CA10] | Structure.   |
| [CA11] | Tin-glaze tile.  |
| [CA12] | Nothing closely datable.   |
| [CA13] | Stoneware.   |
| [CA14] | No finds.  |
| [CA15] | Nothing closely datable.   |
| [CA16] | Nothing closely datable.   |
| [CA17] | No finds   |
| [CA18] |  |
| [CA19] |  |

|        |  |
|--------|--|
| [CA20] | No finds   |
| [CA21] | Redware, pipe stem. Early 18th century.  |
| [CB1]  | Milk bottle top. 19th or 20th century pottery. Modern  |
| [CB2]  | Stoneware drain pipe.  |
| [CC1]  |  |
| [CC2]  |  |
| [CC3]  | Nothing closely datable.   |
| [CC4]  | Nothing closely datable.   |
| [CC5]  | Nothing closely datable.   |
| [CC6]  | No finds.  |
| [CC7]  | Nothing closely datable.   |
| [CC8]  | No finds.  |
| [CC9]  | Nothing closely datable.   |
| [CG1]  | Plastic. A sixpence dated 1932 and other modern items.   |
| [CG2]  | Galvanised iron nail, Portland cement, purple slate and modern bottle glass. 20th century.   |
| [CG3]  | Latest object is a buckle with metal foil on it. Pot is 18th or 19th century. Purple and grey slate. 20th century.                 |
| [CG4]  | Latest pottery 18th or 19th century. 19th and possibly 20th century brick. Late 19th or first half of 20th century.                |
| [CG5]  | Not excavated.   |
| [CG6]  | Modern glass. 19th or 20th century.  |
| [CG7]  | Not excavated.   |
| [CG8]  | Not excavated.   |
| [CG9]  | Not excavated.   |
| [CG10] | Pipe stem.   |
| [CG11] | Brick and rubble some of probable 19th century date.   |
| [CG12] | Few dateable finds. Much rubble. Probably nothing that need be 19th century.   |
| [CG13] | Pottery 17th – early 18th century pipe stem. Few other closely datable items. Early 18th century?                                  |
| [CG14] | Pipe stem. Glass handle <36>.  |
| [CG15] | Nothing closely datable.   |
| [CG16] | Nothing closely datable.   |
| [CG17] | Piece of pipe stem.  |
| [CH1]  | Modern glass and cast iron pipe. 19th or 20th century.   |
| [CH2]  | Finds not separated from [CH1].  |
| [CH3]  | Tin-glaze. Pipe stem. Crest tile 15th century. Floor tile of 15th or 16th-cent date. Latest object is the pipe stem. 18th century? |
| [CH4]  | Stoneware jug sherd - early to mid-17th or possibly 16th. Pipe stem. Top of a wine bottle kick up. 18th century.                   |
| [CH5]  | Nothing closely datable.   |
| [CI1]  | No finds kept.   |
| [CI2]  | Part of 19th century pottery doll. Modern glass. Slate pencil point. Modern.   |
| [CI3]  | Nothing closely datable.   |
| [CI4]  | Stoneware 16th century? Three pipe stems which are the latest objects. 18th-cent.  |

|        |   |
|--------|---|
| [CI5]  | Surrey white ware and Tudor Green. A piece of stoneware of possible 16th century date. Two pipe stems. Much rubble but nothing closely datable. Wine bottle. 18th-cent.   |
| [CI6]  | Stoneware jug sherds of early to mid-17th century. Mass of demolition debris including soft red brick of 18th century type and floor tile of about 1500. Tin-glazed floor tile of 16th century. Wine bottle. 18th-cent.                               |
| [CI7]  | London ware - late 13th or 14th-cent. Roof tile. Two pieces of brick. Reigate stone.  |
| [CJ2]  | Modern pottery, glass and plastic. 20th century.  |
| [CJ3]  | No finds.   |
| [CJ4]  | No finds.   |
| [CJ5]  | No finds.   |
| [CJ6]  | No finds.   |
| [CJ7]  | Several pieces of 18th and 19th century stoneware. Salt glazed drain pipe late 19th or 20th century. Modern glass and plastic. 20th century.  |
| [CJ8]  | Redwares of 18th century or later date. Pipe stems and L25 bowl. Patinated wine bottle.   |
| [CJ9]  | Piece of tin-glaze (?) mid-18th to 19th century. Piece of white salt glazed stoneware mid-18th century. Porcelain with hole through rim. One piece of redware 18th century or possibly later. Pipe stems. Cut brick possibly from Orangery Wall <23>. |
| [CJ10] | Piece of rather doubtful pan tile.  |
| [CJ11] | Pan tile. Post-medieval redware. Pipe stem.   |
| [CJ12] | L19 pipe bowl c. 1690-1710.   |
| [CJ13] | Boarder ware and post-medieval red wares, tin-glaze. Pipe bowl L19 c1690 - 1710. Pan tile. Late 17th or early 18th century.   |
| [CJ14] | Pipe stem and bowl. Form close L20 c1680 - 1710. Late 17th or early 18th century.   |
| [CJ15] | Tin-glaze – minute scraps. Pipe stems.  |
| [CJ16] | 18th century brick?   |
| [CJ17] | Redware of uncertain date.  |
| [CJ18] | Latest pottery Tudor. Two pipe stems with large bores.  |
| [CJ19] | No finds.   |
| [CX1]  |   |
| [CX2]  | Tin-glaze.  |
| [CX3]  | Transfer-print.   |
| [CX4]  | Modern white pottery.   |
| [CX5]  | Nothing closely datable.  |
| [CX6]  | Nothing closely datable.  |
| [CX7]  | Modern white pottery.   |
| [CX8]  | Tin-glaze.  |
| [CX9]  | Coarse red brick.   |
| [CX10] | Tin-glaze, coarse red brick with shallow frog. 19th century.  |
| [CX11] | Coarse red brick, concrete.   |
| [CX12] | Bowl late 18th century?   |
| [CX13] | Yellow plastic (almost certainly contamination).  |
| [CX14] | L21 pipe bowl marked WR. Early 18th century.  |
| [CX15] | Nothing closely datable.  |
| [CX16] | Nothing closely datable.  |

|         |   |
|---------|---|
| [CEZ1]  | Plastic. 20th century.  |
| [CEZ2]  | Transfer-print, modern bottle glass. 19th- or 20th century  |
| [CEZ3]  | Late 19th- or 20th century pottery, modern bottle glass   |
| [CEZ4]  | No closely datable finds.   |
| [CEZ5]  | No closely datable finds.   |
| [CEZ6]  | No closely datable finds.   |
| [CEZ7]  | No closely datable finds.   |
| [CEZ8]  | No closely datable finds.   |
| [CEZ9]  | No closely datable finds.   |
| [CEZ10] | Pipe stem, heavily patinated glass, thick red floor tile, copper alloy button. 18th or early 19th century.                        |
| [CEZ11] | No closely datable finds.   |
| [CEZ12] | Cut.  |
| [CEZ13] | Same as [CEZ19].  |
| [CEZ14] | Same as [CEZ10].  |
| [CEZ15] | No closely datable finds.   |
| [CEZ16] | Cut.  |
| [CEZ17] | Same layer as [CEZ10].  |
| [CEZ18] | Coal.   |
| [CEZ19] | No closely datable finds.   |
| [CEZ20] | Green-glazed floor tile – possibly Tudor  |
| [CEZ21] | Pipe stem with 2mm bore, bottle glass, coal, nails, lead. Early 18th century?   |
| [CEZ22] | No closely datable finds.   |
| [CEZ23] | Structure   |
| [CEZ24] | Structure   |
| [CEZ25] | No closely datable finds.   |
| [CEZ26] | Post-medieval redware, tin-glaze, pipe stem with 2mm bore, 17th or early 18th century wine bottle base, coal. Early 18th century? |
| [CEZ27] | No closely datable finds.   |
| [CEZ28] | No closely datable finds.   |
| [CEZ29] | No closely datable finds.   |
| [CEZ30] | No closely datable finds.   |
| [CEZ31] | No closely datable finds.   |
| [CEZ32] | No closely datable finds.   |
| [CEZ33] | Structure.  |
| [CEZ34] | No closely datable finds.   |
| [CEZ35] | No closely datable finds.   |

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