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SUMMARY

Oxford Archaeology (OA) carried out an archaeological watching brief and excavation to record restoration and stabilisation works to a ground slippage on the north-west side of the Castle Mound, Oxford on behalf of Mouchel Parkman for Oxfordshire County Council. The archaeological works revealed the construction of the mound and the remains of the 12th century stone tower on its summit with English Civil War earthworks and later 18th and 19th century landscaping of the mound.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 In March to August 2008 OA carried out an archaeological watching brief and excavation to record the restoration and stabilisation to the north-west side of the Castle Mound, Oxford (Fig. 1). The work was commissioned by Mouchel Parkman on behalf of Oxfordshire County Council. Paul Smith, the County Archaeological Officer prepared a *Design Brief for an Archaeological Watching Brief* (OCAS 2007). The design brief set out the requirements and standards for the archaeological work to be undertaken during the remedial groundworks. Scheduled Ancient Monument Consent was granted by English Heritage.

1.1.2 OA produced a Written Scheme of Investigation (OA 2008) detailing how Oxford Archaeology (OA) would implement the requirements of the Design Brief during the course of the restoration works.

1.2 Location and topography

1.2.1 The motte of Oxford Castle is situated on the south side of New Road, Oxford (NGR SP 5096 0619). It is part of Scheduled Monument 21701 - Oxford Castle. The mound lies at the north west corner of the Castle complex built in 1071 by Robert d'Oilli. The mound is turf covered with some scrub and mature trees. The mound is accessed by two paths: the 'zig-zag' path on the eastern side, and the older 'spiral' path going around the whole mound (Fig. 2).

1.2.2 The mound is steeper on the west and north sides showing greater signs of 'spreading' on the north east side. It is this portion of the mound that has suffered from slippage - the second occurrence since the 1970s. The fault lines appeared to have formed from an erosion fissure on the western side of the slip, and also from the line of the older spiral path near the summit of the mound.

2 ARCHAEOLOGICAL BACKGROUND

2.1.1 A number of archaeological investigations have been carried out on the castle motte. The uneven ground and marked circular feature at the top must represent the walls of the 10-sided stone tower shown on Agas' map in 1578, drawn by John Aubrey in the

17th century and partially excavated by Daniel Harris in the 1780s. Boreholes put through the mound in 1965 as part of the archaeological work by Tom Hassall indicated an interruption in the material of the mound at a level, which may represent a break in building or an earlier phase consisting a lower mound (Hassall, T 1976). Examination at the base of the mound when the revetment wall along New Road was rebuilt after a previous slippage in the 1970s showed that there was a considerable amount of post-medieval material at the bottom of the slope.

- 2.1.2 The most recent evidence has been produced by the extensive programme of archaeological investigations carried out by Oxford Archaeology as part of the Oxford Castle Development works (OA, forthcoming). This revealed a portion of the motte ditch, the base of which was reached *c.* 8 m below the modern ground level. At the base of the ditch was a sequence of silt deposits dating from the 11th century to the late 15th century. A large quantity of leather shoes was recovered along with a limited number of wooden items. To the north east of the motte ditch, on the upper outer edge, a large limestone footing for the castle curtain wall was seen. A possible buttress or tower base was seen to butt its internal edge, and a crude limestone footing was also revealed that might have been a support for a small bridge over the ditch. Between the 13th and 16th centuries the motte ditch appears to have gone out of defensive use, being used as a dumping area for waste from the castle. A number of inhumations dating from the 16th to 18th centuries were revealed within the upper fills, and these appear to be burials of felons.

3 WATCHING BRIEF AIMS

- 3.1.1 To identify and record the presence/absence, extent, condition, quality and date of all archaeological remains in the areas affected by the soil remediation works.
- 3.1.2 To allow, if feasible and practicable, *in-situ* preservation of remains of special importance or sensitivity.
- 3.1.3 To signal, before the destruction of the material in question, the discovery of a significant archaeological find, for which the resources allocated are not sufficient to support a treatment to a satisfactory and proper standard.
- 3.1.4 To make available the results of the investigation.

4 WATCHING BRIEF METHODOLOGY

4.1 Scope of fieldwork

- 4.1.1 The excavation and restoration of the collapse to the north-west side of the mound consisted of removing the collapsed material and rebuilding the face of the slope with a series of interlocked wire baskets (gabions) with a profiled face (Fig. 12). The collapsed material was removed under close archaeological supervision by a 360° mini-mechanical excavator fitted with a toothless bucket, which also cut a series of 0.5 m steps into the side of the gravel core of the mound for the baskets to sit on

(Plates 3, 4, 5, 6). A later triangular area at the base of the west section was excavated to re-enforce the toe of the base. Also a 15 m wide strip was excavated down the east side to help tie the new works with the earlier 1970s collapse on the north-east side of the mound (Fig. 2).

4.2 Fieldwork methods and recording

4.2.1 After the collapsed material of the mound was removed the two long sections down the side of the area of restoration were cleaned by hand and recorded (Figs. 5 and 6). The top of the mound was excavated by hand and any features were sampled to determine their extent and nature, and to retrieve finds and environmental samples. All archaeological features were planned and where excavated their sections drawn at scales of 1:20. All features were photographed using digital; colour slide and black and white print film. Recording followed procedures laid down in the *OAU Fieldwork Manual* (ed. D Wilkinson, 1992).

5 RESULTS: DESCRIPTIONS

5.1 Description of deposits

Mound construction

5.1.1 The mound consisted of a series of deposits.

- Firstly natural gravel (41) was excavated from the ditch around the mound and heaped up.
- Cut into the slope was a series of uneven steps (67, 66, 74 and 84) varying from 1.2 m x 0.5 m to 0.4 m x 0.3 m.
- These were filled by a grey brown gravel clay mix (70, 75, 85, 86, 87, 88 and 89) this formed a bonding material for
- A 1 m thick grey blue clay (40, 47, 49, 50 and 59) which formed the first clay capping of the mound.
- Cut into the top of the first clay capping was a second series of steps (63, 64 and 69) on which a second series of gravel and silty clay loam deposits (19, 24, 25, 26, 27, 28, 29, 36, 38, 39, 45, 46 and 82) were deposited to form the second tier of the mound.
- Into the slope of this second gravel tier more steps (62, 65, 72 and 79) were cut and filled by a grey brown gravel clay mix (80, 37 and 23).
- This was to hold the blue grey and brown clay (17, 22, 35, 44, 81 and 115), that formed the second and final clay capping on top of the mound (Figs 4,5 and 6).

Stone tower

5.1.2 In the top of the level area of the mound a 2.5 m wide construction trench was excavated cutting through the clay cap. Only the top of the construction cut was

exposed in two areas, a 1 m wide length (122) along the outer north face and 1 m long x 0.25 m to 0.30 m wide section (113) along the inner face at the south-east corner (Fig. 3). This was filled by the construction of the stone tower wall (90), which was built against the outer face of the construction cut.

- 5.1.3 The wall exposed in the excavation area measured 10 m long, 2.1 m wide and 0.75 m high and consisted of two faces and two corners of a ten sided tower (Fig. 3). The length of the outer face measured 6.7 m and the inner face 5.8 m. The wall was constructed of ragstone and rough-hewn limestone fragments laid in a series of courses with a light yellowish brown course gravel mortar. This was similar in style to that of other parts of the castle recorded in earlier excavations. The depth of the footings is unknown as only the top of the construction cut was exposed.
- 5.1.4 The construction cut (113) on the inner side of the tower (Fig. 7, section 4) was backfilled with a dark reddish brown silty sandy loam (116) with limestone and mortar fragments. This was below a loose, dark grey-brown silty, sand loam (114) filling in the top of the cut.
- 5.1.5 Sealing this last fill was a 0.45 m thick dark grey brown silty sand and gravel (112) dumped against the inner face of the wall. Above this was a 0.26 m thick layer of light yellowish brown course sand and mortar (111) mason's debris with limestone fragments. This was sealed below a 0.18 m thick dark yellowish brown silty sand and pea gravel surface (110) that may have formed a floor within the interior of the tower. Horizon 110 appears to correspond with the level of depth of the survival of the masonry remains.
- 5.1.6 Against the base of the outer face of the tower wall (90) was a 0.4 m thick grey brown silty sand loam (16) old topsoil horizon around the base of the tower and stretching some 1.6 m to 3 m down the slope of the mound.
- 5.1.7 To the east of the centre of the exposed north face of the tower wall (90) an opening (120) had been made through the fabric of the structure (perhaps as a later embrasure or window, Fig. 3). It measured 2.4 m wide and cut the full thickness of the wall. Stratigraphically the opening was sealed by deposit 16.
- 5.1.8 The insertion of the opening appears to have required a localised rebuild to the outer face of the tower. The rebuild consisted of four courses (including a slight offset) of roughly cut limestone blocks. Any further evidence of the rebuild did not survive later robbing. The inside faces of the opening or embrasure appear not to have been given a stone faced 'finish', as the sides displayed only the rough rubble core of which they had been cut through. It is entirely possible that the inside faces had been rendered, but no evidence of this was encountered in the excavation.
- 5.1.9 This rebuild comprised a light grey mortar bond (120). The bottom of the opening in wall (90) was covered with a light yellowish brown gravel mortar base (92) that measured 1.3 m², from which a fragment of late 11th century pottery was recovered. This mortar formed the base for a floor (91) composed of an off white coarse sandy

mortar, 0.08 m thick. The impressions of stone slabs removed in antiquity were visible in the mortar surface. The floor of this feature was approximately 0.8 m above the soil horizon (16) around the outside of the tower.

17th Century works

- 5.1.10 During the period of the English civil war (1642 - 1651) Oxford was used as the Royalist capital for King Charles I. The town's defences were strengthened and improved with new outer town wall to the north and east.
- 5.1.11 The tower itself had been demolished and infilled with an earthen rampart 107 (Fig. 7 section 4). Evidence from this survives as a series of deposits of yellowish brown silty sand (107) with patches of gravel and clay with pottery and clay pipe from the 1640s. It also contained a deposit of limestone rubble (106) against the inner face of wall (90).
- 5.1.12 It would appear that the opening in the wall had been blocked up, as the earthen rampart material overlay mortar surface (91) which also appeared respected an butted up against material that was later robbed (Fig. 6).
- 5.1.13 On the outer face of the tower, against its base was a 1.6 m wide and 0.8 m deep loose light yellowish brown, coarse gravel mortar (8) with lots of limestone and worked sandstone fragments (Small Finds 4 and 5). This material represented initial demolition of the tower and may date from the civil war period when it is documented that a number of the taller medieval towers of the castle and town defences were reduced in height.
- 5.1.14 At the base of the mound for the last 6 metres a whole series of thin dark grey brown silty clay and silty sand layers (50, 51, 53, 54, 55, 56, 57, 58 and 68) representing mound material being washed and eroded down slope (Fig. 6).
- 5.1.15 During the late 17th and early 18th century the tower was robbed of its facing stone. The robber trench (96) cutting demolition rubble (8). It was 4 m 0.16 m deep and 0.30 m wide. The robber trench could be observed for a length of 4 m. It was filled by a dark grey brown silty sand (97). A series of silty sandy gravels (11, 12, 14, 15, 30, 31, 100, 101, 102 and 119), appear to have been dumped immediately after the robbing episode, possibly to cover up the visual scars of the robbing. Pottery from the early 18th century was recovered from layer 12 (Figs. 6 and 7).

18th Century Landscaping

- 5.1.16 During the late 18th century King and Harris published their excavation and recording works on the mound including the lower core of the tower prior to the construction of the prison (King, 1796).
- 5.1.17 After this a programme of beautification began, which included a circular path from the southern side of the mound curving clockwise up around to the top of the mound with a stand of trees planted on the top. The construction cut (76) for the footpath

was an L shaped step into the side of the slope of the mound (Fig. 5). As it neared the top on the northern side of the mound it cut deeper and the step was broader. Here the cut for the path had penetrated the upper clay cap (81) and into the second tier of gravel, but, fortunately it had not pierced the first clay cap (40) further down slope (Fig. 5). The material of grey brown silty clay and gravel (73) from the construction of the path was dumped along the outer edge of the cut. The later zig-zag path had put this part of the spiral path out of use. Construction debris from the zig-zag path was also dumped on the mound and figure 5 shows material from both paths lying on one another.

- 5.1.18 Against the north face of the wall 90 a sub circular pit (95) with shallow sloping sides and concave base was excavated. It measured 2.5 m x 0.8 m x 0.6 m and contained a number of fills. The first being a mid orange brown silty sand (94) with pottery, bone and CBM dating from mid 16th century. This was sealed below a blue grey silty clay (93) with pottery, bone, CBM and stone dating from the mid 18th century with a 0.26 m thick dark brown silty sand (99).
- 5.1.19 The top of the mound was further landscaped after the robbing of the stone tower to its present state. Robber trench 103 and 117 cut through the previous landscaping layer 102 and across wall 90 and into earthen rampart 107. It had a gentle sloping outer edge forming a rim around the top of the mound with a flat base across wall 90 to rise sharply to a near vertical side against the earthen rampart 107. It contained a number of deposits back filling it. These were a loose yellowish brown silty and mortar (104 and 105) and a slump of dark reddish brown silty sand (118). Overlaying this a series of dark grey brown silty sand loam (6, 7 and 5) with pottery, bone, CBM and glass dating from the mid 18th century. These back fills were sealed below re-deposited very grey brown silty sand and cultivated soil (3 and 4) (Figs 4, 5 and 6).
- 5.1.20 In the south-east corner a tree root hole (108), 'cut' into the top of earthen rampart (107). It measured 2.68 m x 0.8 m x 0.35 m and was filled by a loose grey brown silty sand loam (109) and contained mid 17th century pottery and clay pipe (Fig. 7, section 4). Sealing all these deposits was a 0.10 m thick mid grey brown silty sand loam (2) with pottery and bone, which levelled and landscaped the top of the mound. Sealing this was the 0.10 m - 0.25 m thick very dark grey brown silty sand (1) topsoil covering the mound.

20th Century works

- 5.1.21 These works consisted of the very steep to near vertical cut (71) along the base of the mound. It was 3 m to 4 m high along the base of the mound and cut to a depth of 1.5 m into the slope. This was the upper part of the 1970s excavations for the building of the reinforced wall along New Road and curving into and alongside the council offices. It was filled by dark blue clay with patches of yellowish and reddish brown silty sand (52) backfill. Further up the slope an oval shaped cut (42) covering an area 18 m x 14 m x 0.65 m with a fill of grey brown silty clay (43) was a repair to a late 1990s slump on the north face of the mound. Both these features were covered by a

0.25 m thick very dark grey brown silty sand (60) modern topsoil around the base of the mound.

5.2 Finds

5.2.1 Finds were recovered by hand during the course of the excavation and generally bagged by context. Finds of special interest were given a unique small find number. After the finds had been cleaned and sorted they were analysed to be identified and dated. The reports for the various artefacts recovered during the watching brief is summarised below and the full reports are in the appendices at the rear of the report.

Pottery

- 5.2.2 The pottery assemblage comprised mainly post-medieval wares, especially assemblages of 18th century date, but medieval wares were also present, along with a single sherd of early/middle Saxon material and two late Saxon sherds.
- 5.2.3 The earliest sherd from the late Saxon period was found within the matrix formed the earliest topsoil at the outside base of the tower on the mound. Also in this context (16) was a sherd of pottery dating from the late 11th century, broadly in line with the likely date of foundation of the mound.
- 5.2.4 A sherd dating from the 11th century was extracted from a sealed locaton within context 41 which was part of the gravel deposit forming the mound core. Other early pottery sherds were recovered from layers containing later material, and must be considered as residual. This would suggest that much of the earlier mound material, was re-used and remodelled in preference to the importing new material from elsewhere.
- 5.2.5 Residuality was high in the 18th century assemblages, and it seems there was something of a hiatus in deposition at the site from the 14th–16th centuries.

Clay pipes

- 5.2.6 The clay pipes were probably deposited during the refortification and occupation of the castle during the English Civil War, although a number of fragments occur in the later 18th century landscaping deposits as residual finds.
- 5.2.7 Although the date ranges given are for London types (1610 -1670), it can be assumed that examples from Oxford will have been made at a similar time. However, the Dutch pipe has a later date (1680 - 1700), though it was retrieved from context 109, which was the fill of the tree root hole.

Stonework

- 5.2.8 A total of 9 pieces of stone were retained during the excavation. Two these are worked or utilised, one of which was probably used as a whetstone.

Glass

- 5.2.9 The glass assemblage comprised 36 sherds including 5 sherds of window glass. The bulk of the glass comprises 21 sherds from bottles or probable bottles and 8 sherds from wine bottles or probable wine bottles. Two small sherds were not identifiable to form or function. All the bottle glass was of 19th- or early 20th-century date, with the exception of two large weathered sherds from cylindrical wine bottles that might be late 18th or 19th century in date (context 1 and 2).
- 5.2.10 The window glass comprises 1 small fragment of modern thin float glass (context 94) and 4 small sherds of very thin olive green glass with some possible bubbles in the metal (context 7). The latter is not closely dateable.

Bone

- 5.2.11 Animal bone was recovered from seventeen contexts towards the top of the castle mound. Contexts associated with the animal bone are mainly post-medieval in date. Deposits containing animal bone included an 18th century landscaping area and 17th and 18th century backfills of robber trenches.

Metalwork

- 5.2.12 The metal assemblage comprises five nails, one curved copper alloy fragment possibly from a circular buckle, and a single cufflink. The latter has two oval plates engraved with floral motifs and a Greek key pattern border.

5.3 Palaeo-environmental remains

- 5.3.1 During the watching brief two monolith samples were taken from the west section down the slope of the mound. This was at the point where the first clay capping and second tier of the mound started. The samples were to identify traces of topsoil between the two principal mounds in order to identify a hiatus in construction.
- 5.3.2 The samples confirmed that the mound was built in a single phase. The full report for the monolith samples is in Appendix 8 in the rear of the report.

6 DISCUSSION AND INTERPRETATION

- 6.1.1 The watching brief revealed that the core of the mound was constructed with sandy gravels which were excavated during the creation of the castle moat. These deposits appeared to have been unconsolidated and inherently unstable. Without the presence of the clay cap they could have become saturated and liable to subsidence.
- 6.1.2 Environmental analysis showed an absence of any stabilisation or standstill deposits overlying the first clay cap, which proves that the overlying gravels were deposited shortly afterwards. This would suggest that the first clay cap was not representative of an earlier mound that was superseded, but rather that it was used to stabilize the mound in order to aid in the construction of the tower and the vault chamber. This is supported by the fact that the vault floor appears to have been constructed on the first

clay mound at 70.31 m OD, and this ties in exactly with investigations undertaken by Tom Hassall in the 1960s (Hassall, 1976). The vault would have been constructed gradually with the deposition of the sandy gravel, and then sealed with the second clay cap. This is a much more plausible scenario than the alternative; that the vault was constructed by excavating into unconsolidated gravels once the mound was finished. Pottery retrieved from the gravel core (41) dates the mound construction to the late 11th century.

- 6.1.3 On top of the mound and cut into it were the stone foundations for a ten-sided tower, which Harris and King reported to have surrounded an internal keep (Figs. 9 and 10). This was thought to have been removed in the late 18th century during the expansion of oxford prison (King, 1796). The tower was built of limestone ragstone and was of similar construction to other castle buildings uncovered during excavations in 2003-5 (forthcoming) by Oxford Archaeology for the Castle Development of the Old Prison (OAU 1996). A complete face of one of the towers ten sides was exposed to its full 6.5 m length and 2.1 m width. It had been robbed of its facing stones to the top of the original mound, though the robbed and damaged core and inner face stood another 0.7 m higher.
- 6.1.4 Just off-centre on the exposed face an embrasure had been cut through the wall and a new outer face constructed, and the core covered by a mortared floor, which was level with the internal gravel surface of the tower. The embrasure appears to be of similar construction to that found at the surviving bastion of Oxford's medieval defensive walls (SAM No. OX26 (Bastion Number 21)) at Corpus Christi College (OA 2008). Both were cut straight through the wall with a new stone built face and mortar and stone floor. The Corpus Christi embrasures had a single arrow slit each, but a drawing from Christchurch college dating to 1617 show cross arrow slits with oilets at each end around the base of the tower (Fig. 11). There are records and accounts of work to the castle and improvements to the town defences in the early 13th century by Henry III (OAU, 1998). Although this embrasure appears now to be 'off centre' architecturally, at the time of construction it may have reflected a particular need given contemporary topography.
- 6.1.5 The flat 'pimple' seen on the top of the mound is the remains of a 17th century earthen rampart within the tower and dates from the English Civil War when Oxford was held by the Royalists. This earthen rampart was laid directly on the gravel surface inside the tower that originated with the medieval tower and keep.
- 6.1.6 Excavations were carried out on the castle mound prior to the new prison works in the late 18th century by Harris and his findings were published by King (King, 1796). The information and measurements recorded by Harris of the tower were found to be very accurate and had been taken from the better surviving interior. King's drawing of the tower (Fig. 10) show that the tower had already been greatly reduced in height and the outer facing removed leaving only the core still standing. The tower was finally demolished and reduced to 0.6 m below ground level. The demolition and

landscaping material was spread out around the top of the mound to form the present profile of the mound.

- 6.1.7 From the early 18th century the tower was a ruin and the mound covered with trees around its top. Various illustrations of Oxford Castle from the mid 18th century show a pathway to the top of the mound. This curved up from the south base and as it curved round the north side near the top the path became broader and cut deeper into the slope possibly to provide a more spacious area for views. The construction of this pathway was the cause of the present slippage as the then workmen had cut through the clay cap of the upper part of the mound and into the gravel core. This allowed water to seep through the gravel and collect at the impermeable lower clay cap. The water pressure eventually built up and the gravels of the upper mound sheared away from the intact lower clay cap, resulting in the present day slippage.
- 6.1.8 The watching brief revealed the construction of the mound and reason for the collapse on the north side. It also located the position and remains of the stone wall to the ten-sided tower known to have stood on the mound summit. Along with this information and the fragments of curtain wall and towers at the base of the mound (Fig. 8) (discovered during excavations by Oxford Archaeology in 2003 to 2005), this provides the location of the north-west fortifications of Oxford Castle and confirms the earlier plans of a royal castle (Fig. 9).

APPENDICES

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

<i>Context No</i>	<i>Type</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Thick (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>Date</i>
1	Deposit			0.25 m	Topsoil	Pot, Bone & Clay pipe	M 18th C
2	Deposit			0.10 m	Landscaping layer	Pot, Bone, Glass & Clay pipe	M 18th C
3	Deposit			0.15 m	Landscaping layer		
4	Deposit			0.10 m	Old topsoil horizon	Bone	13th C
5	Deposit			0.10 m	Backfill of robber trench	Pot, Bone, CBM, Glass & Clay pipe	M 18th C
6	Deposit			0.20 m	Backfill of robber trench	Pot, Bone & Clay pipe	M 18th C
7	Deposit			0.25 m	Backfill of robber trench	Pot, Bone, Clay pipe & SF 1	M 18th C
8	Deposit			0.60 m	Demolition material from tower	Pot, SF's 4 & 5	
9	VOID	VOID	VOID	VOID	VOID	VOID	VOID
10	VOID	VOID	VOID	VOID	VOID	VOID	VOID
11	Deposit			0.20 m	Landscaping layer		
12	Deposit			0.26 m	Landscaping layer	Pot	E 18th C
13	Deposit			0.20 m	Landscaping layer	Pot, Bone & Clay pipe	
14	Deposit			0.10 m	Soil horizon on mound		
15	Deposit			0.13 m	Soil horizon on mound		
16	Deposit			0.40 m	Soil horizon around tower	Pot, Bone & SF 6	L 11th C
17	Deposit			0.45 m	Clay capping of mound		
18	VOID	VOID	VOID	VOID	VOID	VOID	VOID
19	Deposit			0.15 m	Mound construction		
20	VOID	VOID	VOID	VOID	VOID	VOID	VOID
21	VOID	VOID	VOID	VOID	VOID	VOID	VOID
22	Deposit						
23	Deposit			0.45 m	Mound construction		
24	Deposit			0.50 m	Clay capping of mound		

<i>Context No</i>	<i>Type</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Thick (m)</i>	<i>Comment</i>	<i> Finds</i>	<i>Date</i>
25	Deposit			0.18 m	Mound construction		
26	Deposit			0.20 m	Mound construction		
27	Deposit			0.18 m	Mound construction		
28	Deposit			0.60 m	Mound construction		
29	Deposit			0.25 m	Mound construction Slump		
30	Deposit			0.45 m	Mound construction Slump		
31	Deposit			0.40 m	Mound construction Slump		
32	Deposit			0.30 m	Mound construction		
33	Deposit			0.60 m	Mound construction		
34	Deposit						
35	Deposit						
36	Deposit			0.20 m	Mound construction		
37	Deposit			0.10 m	Fill of step		
38	Deposit			0.30 m	Mound construction		
39	Deposit			0.60 m	Mound construction		
40	Deposit			1 m	Clay capping		
41	Deposit				Gravel mound	Pot & SF 2	11th C
42	Cut	18 m	0.75 m	0.65 m	1970's cut for roadway		
43	Fill				Fill of cut 42		
44	Deposit			0.50 m	Clay capping		
45	Deposit			0.30 m	Mound construction		
46	Deposit			0.40 m	Mound construction		
47	Deposit			0.20 m	Fill of step		
48	Deposit			0.16 m	Mound construction		
49	Deposit			0.50 m	Fill of step		
50	Deposit			0.40 m	Clay capping		
51	Deposit			0.20 m	Mound construction		
52	Deposit			0.80 m	1970's backfill to earlier slump		
53	Deposit			0.25 m	Fill of step		
54	Deposit			0.30 m	Slump at base of mound		
55	Deposit			0.08 m	Slump at base of mound		

<i>Context No</i>	<i>Type</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Thick (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>Date</i>
56	Deposit			0.13 m	Slump at base of mound		
57	Deposit			0.08 m	Slump at base of mound		
58	Deposit			0.40 m	Slump at base of mound		
59	Deposit			0.20 m	Slump at base of mound		
60	Deposit			0.30 m	Topsoil over 1970's repair		
61							
62	Cut				Series of shallow keying in steps		
63	Cut				Series of shallow keying in steps		
64	Cut				Series of shallow keying in steps		
65	Cut				Series of shallow keying in steps		
66	Cut				Series of shallow keying in steps		
67	Cut				Series of shallow keying in steps		
68	Deposit			0.24 m	Landscaping layer		
69	Cut				Keying in step		
70	Deposit			0.45 m	Fill of step		
71	Cut		5.4 m		Cut from 1970's retaining wall		
72	Cut				keying in step		
73	Deposit				Fill of 18th century path		
74	Cut				Keying in step		
75	Fill			0.5 m	Fill of step		
76	Cut				Cut for path		
77	Fill		2 m	1.1 m	Fill of 77		
78	Deposit				Fill of 18th century path		
79	Cut				Keying in step		
80	Fill			0.50 m	Fill of step		
81	Deposit			0.31 m	Clay capping		
82	Deposit			0.12 m	Mound construction		
83	Deposit			0.15 m	Landscaping layer		

<i>Context No</i>	<i>Type</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Thick (m)</i>	<i>Comment</i>	<i> Finds</i>	<i>Date</i>
84	Cut				Series of shallow keying in steps		
85	Deposit			0.30 m	Fill of Step		
86	Deposit			0.40 m	Clay capping		
87	Deposit			0.10 m	Mound construction		
88	Deposit			0.18 m	Clay capping slump		
89	Deposit			0.32 m	Mound construction		
90	Structure	8 m	2.1 m	0.75 m	Tower foundation		
91	Layer	2m	1.3 m	0.08 m	Mortar base		
92	Layer	2m	1.3 m	0.35 m	Mortar base	pottery	L 11th C
93	Fill				Fill of pit 95	Pot, Bone, stone, CBM & Clay pipe	E 18th C
94	Fill				Fill of pit 95	Pot, Bone, Glass & Clay pipe	M 16th C
95	Cut	2.3 m	0.80 m	0.45 m	18th century pit		
96	Cut	4 m	0.18 m	0.16 m	Robber trench of tower		
97	Fill				Fill of cut 96		
98	Deposit			0.65 m	Landscaping deposit		
99	Fill				Fill of pit 95	Clay pipe	
100	Deposit			0.30 m	Landscaping deposit	Pottery	13th C
101	Deposit			0.18 m	Landscaping deposit	Clay Pipe	
102	Deposit			0.30 m	Landscaping deposit		
103	Cut	6.8 m	2.7 m	0.38 m	18th century robber trench		
104	Fill				Fill of 103	Pottery	M16th C
105	Fill				Fill of 103		
106	Deposit	1.6 m	1.1 m	0.15 m	Rubble deposit in 107		
107	Deposit	7.1 m	1.2 m	0.45 m	17th century rampart	SF 3, Bone & Pottery	17th C
108	Cut	2.68 m	0.8 m	0.35 m	Root hole		
109	Fill				Fill of root hole	Pot, Bone & Clay pipe	L17th C
110	Layer			0.18 m	Gravel surface inside tower	Bone & Pottery	L11th C

<i>Context No</i>	<i>Type</i>	<i>Length (m)</i>	<i>Width (m)</i>	<i>Thick (m)</i>	<i>Comment</i>	<i> Finds</i>	<i>Date</i>
111	Layer			0.24 m	Make up layer inside tower		
112	Layer			0.23 m	Make up layer inside tower	Bone & Pottery	L11th C
113	Cut	1 m	0.30 m	0.15 m	Construction cut inside tower		
114	Fill				Fill of 113		
115	Deposit				Capping of mound	Bone & Pottery	L11th C
116	Fill				Fill of 113		
117	Cut	1.8 m	0.93 m	0.36 m	Root hole in top of mound		
118	Fill				Fill of 103	Pot, Bone & Clay pipe	19th C
119	Layer			0.20 m	Landscaping layer		
120	Cut	2.4 m	1.65 m	0.35 m	Cut for embrasure		
121	Masonry		0.3 m	0.3 m	Rebuild of embrasure		

APPENDIX 2 ASSESSMENT OF POTTERY

Pottery from Oxford Castle Mound by Paul Blinkhorn

Introduction

The pottery assemblage comprised mainly post-medieval wares, especially assemblages of 18th century date, but medieval wares were also present, along with a single sherd of early/middle Saxon material and two late Saxon sherds.

The earliest sherd from the late Saxon period was found within the matrix formed the earliest topsoil at the outside base of the tower on the mound. Also in this context (16) was a sherd of pottery dating from the late 11th century, broadly in line with the likely date of foundation of the mound.

A sherd dating from the 11th century was extracted from a sealed locaton within context 41 which was part of the gravel deposit forming the mound core. Other early pottery sherds were recovered from layers containing later material, and must be considered as residual. This would suggest that much of the earlier mound material, was re-used and remodelled in preference to the importing new material from elsewhere.

Residuality was high in the 18th century assemblages, and it seems there was something of a hiatus in deposition at the site from the 14th–16th centuries.

Analytical Methodology

The pottery was initially bulk-sorted and recorded on a computer using DBase IV software. The material from each context was recorded by number and weight of sherds per fabric type,

with featureless body sherds of the same fabric counted, weighed and recorded as one database entry. Feature sherds such as rims, bases and lugs were individually recorded, with individual codes used for the various types. Decorated sherds were similarly treated. In the case of the rimsherds, the form, diameter in mm and the percentage remaining of the original complete circumference was all recorded. This figure was summed for each fabric type to obtain the estimated vessel equivalent (EVE).

The terminology used is that defined by the Medieval Pottery Research Group's Guide to the Classification of Medieval Ceramic Forms (MPRG 1998) and to the minimum standards laid out in the Minimum Standards for the Processing, Recording, Analysis and Publication of post-roman Ceramics (MPRG2001). All the statistical analyses were carried out using a Dbase package written by the author, which interrogated the original or subsidiary databases, with some of the final calculations made with an electronic calculator. Any statistical analyses were carried out to the minimum standards suggested by Orton (1998-9, 135-7).

Fabric

The pottery was recorded utilizing the coding system and chronology of the Oxfordshire County type-series (Mellor 1984; 1994), as follows:

- F100: OXR: St. Neots Ware type T1(1), AD850-1100. 2 sherds, 20 g, EVE = 0.09.
 F200: OXAC: Cotswold-type ware, AD975-1350. 21 sherds, 264 g, EVE = 0.17.
 F202: OXBF: North-East Wiltshire Ware, AD1050 – 1400. 1 sherd, 18 g, EVE = 0.
 F300: OXY: Medieval Oxford ware, AD1075 – 1350. 51 sherds, 702 g, EVE = 0.26.
 F352: OXAM: Brill/Boarstall ware, AD1200 – 1600. 24 sherds, 319 g, EVE = 0.
 F404: OXCL: Cistercian ware, 1475-1700. 8 sherds, 32 g, EVE = 0.
 F405: OXST: Rhenish Stoneware, AD1480 – 1700. 9 sherds, 125 g, EVE = 0.
 F410: OXCE: Tin-glazed Earthenware, 1613 – 1800. 14 sherds, 85 g.
 F412: OXRESWL: Polychrome Slipware, 17thC. 9 sherds, 285 g.
 F413: OXST: Westerwald stoneware. c. 1590-1800. 2 sherds, 6 g.
 F414: OXBW: Staffordshire manganese wares. c. 1700-1800. 2 sherds, 62 g.
 F416: OXBESWL: Staffordshire slip-trailed earthenware, 1650 – 1750. 4 sherds, 61 g.
 F418: CRM: Creamware, mid 18th - early 19th C. 24 sherds, 100 g.
 F425: OXDR: Red Earthenwares, 1550+. 80 sherds, 2166 g.
 F430: OXFI: Chinese Porcelain, c1650+. 1 sherd, 8 g.
 F438: OXEST: London stoneware. c. 1680 plus. 2 sherds, 51 g.
 F443: OXFM: Staffordshire White-glazed English Stoneware, 1730–1800. 17 sherds, 129 g.
 F451: OXFH: Border wares, 1550 - 1700. 4 sherds, 25 g, .
 F1000: WHEW: Mass-produced white earthenware's, 19th - 20th C. 1 sherd, 6 g.

The following, not included in the Oxford type-series, were also noted:

- F2: Early-middle Saxon handmade wares, AD450 – 850. Sandy fabric with rare shell fragments up to 2mm. 1 sherd, 5 g, EVE = 0.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*. The range of fabric types is typical of contemporary sites in Oxford. The single sherd of early/middle Saxon pottery is worthy of comment as a fairly large (for Oxford) assemblage of 23 sherds (301 g, EVE = 0.30) was noted at large-scale excavations at Oxford Castle from 2002 (Blinkhorn in print).

Chronology and Pottery Occurrence

All the pottery assemblages were given dates based on the range of ware and vessel types present. On this basis, they were then given a seriated ceramic phase date, as shown in Table A2.2, along with the pottery occurrence per ceramic phase. It shows that, other than phases where the assemblages were quite small, the mean sherd size is on the small side, and the assemblage generally secondary in nature, with most vessels represented by single sherds.

TABLE A2.2: CERAMIC PHASE CHRONOLOGY AND DEFINING WARES

Phase	Date	Defining Fabric	No Sherds	Wt. Sherds	Mean Sherd Wt
CP 1	AD1000 - 1070	OXAC	2	84	42.0g
CP 2	AD1070 - 1200	OXY, OXBF	43	278	6.5g
CP 3	13 th C – late 15 th C	OXAM	8	89	11.1g
CP 4	L 15 th – M16 th	OXCL, OXST	0	0	0
CP 5	M16 th – 17 th C	OXDR, OXFH	7	75	10.7g
CP 6	17 th – M 17 th C	OXREWSL, OXCE	2	23	11.5g
CP 7	M – L 17 th C	OXBEWSL	0	0	0
CP 8	L 17 th C – E 18 th C	OXBEW, OXEST	8	91	11.4g
CP 9	E – M 18 th C	OXFM	32	894	27.9g
CP10	M – L 18 th C	CRM	160	2797	17.5g
MOD	19 th C +	WHEW	15	138	9.2g
			277	4469	

The pottery occurrence per ceramic phase by major fabric type is shown in Table A2.3. It indicates that there was activity at the site from the Saxon-Norman period onwards. Perhaps the most interesting aspect is the gap in medieval activity from some time in the 13th century to the mid – 16th century, and then the low levels of activity in the post-medieval period until the 17th century. This is perhaps due to severe disturbance of the site in the 18th century, although later medieval pottery types of the 14th – 16th century, such as Surrey Whiteware, ‘Tudor Green’, later OXAM fabrics and Cistercian ware, were either absent or extremely rare even as residual material, despite earlier medieval wares being present in such contexts (see Table X2). A similar pattern was noted in the pottery occurrence in the much larger assemblage from the main phase of excavations at Oxford Castle (Blinkhorn in print). There, the amount of pottery from the period CP4 – CP5 (14th – late 15th century) was considerably smaller than those from 13th century and late 15th – 16th century ceramic phases.

Table A2.3: Pottery occurrence per ceramic phase by fabric type, expressed as a percentage of the phase assemblage, by weight in g

Phase	CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9	CP10	MOD
OXR	19.0 %	0	0	0	0	0	0	0	0	0.1	0
OXAC	81.0	13. 7	65. 2	0	2.7	0	0	4.4	1.3	2.9	0
OXBF	-	0	0	0	0	0	0	0	0	0	13.0
OXY	-	84. 5	11. 2	0	0	0	0	0	0	16.3	0.7
OXAM	-	-	23. 6	0	16. 0	0	0	3.3	6.4	7.8	5.1
OXCL	-	-	-	-	0	0	0	7.7	0.7	0.7	0
OXST	-	-	-	-	22. 7	0	0	4.4	1.8	2.8	10.9

Phase	CP1	CP2	CP3	CP4	CP5	CP6	CP7	CP8	CP9	CP10	MOD
OXDR	-	-	-	-	58.7	65.2	0	12.1	76.4	48.4	43.5
OXFH	-	-	-	-	0	0	0	0	1.2	0.5	0
OXRESWL	-	-	-	-	-	34.8	0	0	9.4	6.9	0
OXCE	-	-	-	-	-	0	0	5.5	1.9	2.0	5.8
OXBEWSL	-	-	-	-	-	-	0	0	0	2.2	0
OXBEW	-	-	-	-	-	-	-	62.6	0	0.2	0
OXEST	-	-	-	-	-	-	-	0	0	1.8	0
OXFM	-	-	-	-	-	-	-	-	0.9	3.8	11.6
CRM	-	-	-	-	-	-	-	-	-	3.3	5.1
WHEW	-	-	-	-	-	-	-	-	-	-	4.3
Total Wt	84	278	89	0	75	23	0	91	894	2797	138

Shaded cells = residual

The data in Table A2.3 shows that residuality is quite high in the later phase of the site, particularly CP9 – CP10 (18th century). A total of 20.8% (by weight) of the pottery from CP9 is residual, with the figure rising to 38.2% for CP10. This figure entirely excludes Red Earthenwares (fabric OXDR), at least some of which are very likely to be residual, which given their high representation in each phase, means the amount of residual pottery is probably somewhat higher than the given figure. Most of the residual pottery in these phases is medieval, and as noted above, the commoner later medieval types are all but entirely absent, suggesting that there was very little activity at the site between the 14th and 16th centuries. It is unlikely that the lack of later pottery is due to the physical removal of soils from the site, as earlier medieval wares are present in residual contexts.

Discussion

Generally, the range of fabric and vessel types is exactly what would be expected from a site in Oxford, other than the apparent gap in activity between the 14th and 16th centuries. The earliest context appears to be (41), which produced two large, well-preserved rimsherds, one from an OXR jar and the other from an OXAC. This would date the context to before the Norman Conquest, however, this was part of the original gravel mound and therefore the sherds are residual.

The earlier medieval vessels are mainly jars, apart from a few sherds of OXY glazed tripod pitchers, the OXAM vessels are largely decorated jugs typical of the 13th – 14th centuries, and the post-medieval wares a range of utilitarian earthenwares and fine tablewares.

Two sherds are worthy of further comment. The first, a large fragment of a Red Earthenware (fabric OXDR) colander (Fig CM1) is worthy of illustration, as such vessels while not unknown, are rarely found other than as small individual sherds. The second is a fragment of Creamware (fabric CRM) which has a fragment of an inscription in blue lettering under the glaze. Just two letters remain, “..d C.” (Fig. CM2). The original inscription is likely to refer to ownership of the vessel, be it a person, an inn or an educational establishment. An assemblage of Creamware plates with personal names in underglaze blue were noted at St. Ebbe’s (Mellor 1984, 207 and 217). Those which could be identified were largely the property of inn- and coffee-house keepers in the city, and possibly college servants, in the later 18th century. None of the St. Ebbe’s vessels had a name which could be related to the tankard from this site, but it is almost certainly contemporary with the St. Ebbe’s vessels.

Mellor (ibid. 218) noted that ‘chinamen’, who were likely to have acted as agents for the producers of Creamware in the Potteries region, were working in Oxford by 1769.

APPENDIX 3 ASSESSMENT OF STONE

Stone from Oxford Castle Mound by Ruth Shaffrey (OA)

Summary and Quantification

A total of 9 pieces of stone were retained during the excavation. Two these are worked or utilised, one of which was probably used as a whetstone.

Methodology

The stone was examined with the aid of a x10 magnification hand lens.

Table A3.1

Context	Description
2	Small fragment with worked surface but of indeterminate function. Oolitic limestone
93	Slab with worn surface including a shallow groove probably from whetting. Sandy limestone with occasional shell fragment

Statement of Potential

The stone assemblage is small and has little potential.

APPENDIX 4 ASSESSMENT OF GLASS

Glass By Ian Scott (OA)

The glass assemblage comprised 36 sherds including 5 sherds of window glass. The bulk of the glass comprises 21 sherds from bottles or probable bottles and 8 sherds from wine bottles or probable wine bottles. Two small sherds were not identifiable to form or function. All the bottle glass was of 19th- or early 20th-century date, with the exception of two large weathered sherds from cylindrical wine bottles that might be late 18th or 19th century in date (context 1 and 2).

The window glass comprises 1 small fragment of modern thin float glass (context 94) and 4 small sherds of very thin olive green glass with some possible bubbles in the metal (context 7). The latter is not closely dateable.

Table A4.1

Context	Vessel	Window	Total
1	9		9
2	5		5
4	1		1
5	9		9
6	3		3
7	1	4	5
93	2		2
94		1	1
112	1		1
Total	31	5	36

APPENDIX 5 ASSESSMENT OF METAL WORK*Metal By Ian Scott (OA)*

The metal assemblage comprises 5 nails, 1 curved copper alloy fragment possibly from a circular buckle, and a single cufflink. The latter has two oval plates engraved with floral motifs and a Greek key pattern border.

Table A5.1

Context	Nail	Personal	Query	Total
1		1		1
2	1			1
5	2		1	3
7	1			1
109	1			1
Total	5	1	1	7

APPENDIX 6 ASSESSMENT OF CLAY TOBACCO PIPES*Clay tobacco pipes pipe by Andrew Norton (OA)***Introduction**

The excavation produced a total of 104 fragments of clay tobacco pipes. The assemblage was recovered from dumped deposits abutting a medieval wall at the top of the Oxford castle motte.

Methodology

All fragments were examined for evidence of markings, decoration and name stamps. Unmarked bowls have been dated by reference to Oswald's general typology (Oswald 1975). No attempt has been made to consider the bowl shape in terms of regional variations. Plain stems have been counted, but due to number of well dated bowls no attempt has been made at stem bore analysis.

Results

The results of the assessment are tabulated below by context (Table 1).

Of the total 104 fragments of clay tobacco pipes 91 are stem fragments, and no decoration, makers marks or stamps were observed. The 13 bowl fragments are in general whole or partially whole, and seven can be closely dated. Six bowls are dated to the mid-17th century, and are generally comparable to London types 5G and 17G (dating from 1640-60 and 1640-70). One bowl from context 5 is most similar to a London type 16G (1610-40), although it is slightly larger than is typical and may be a transitional type.

A highly burnished Dutch bowl, with very fine milling around the lip of the bowl, was recovered from context 109. The bowl had a makers mark stamped on the heel; a crossbow within a beaded border. The mark is recorded as being registered to various Gouda makers from 1679 onwards, and the pipe can probably be dated to c1680-1700 (David Higgins pers).

comm.). Three vertical grooves were evident on a stem fragment from context 6; possibly part of a maker's mark.

Discussion

The clay pipes were probably deposited during the refortification and occupation of the castle during the English Civil War, although a number of fragments occur in the later 18th century landscaping deposits as residual finds.

Although the date ranges given are for London types (1610 -1670), it can be assumed that examples from Oxford will have been made at a similar time. However, the Dutch pipe has a later date (1680 - 1700), though it was retrieved from context 109, which was the fill of the tree root hole.

Table A6.1: Incidence of clay pipe stems and diagnostic fragments by context

Context	Stem	Bowls	Heel/Spur	Comments
1	7	1	s	1 x type 17G 1640-70 very bulbous, long spur. Residual
2	30	2	s/h	1 x type 17G 1640-70; 1 x type 5G 1640-60 (in two parts); 1 x stem shows signs of burning. Residual
5	5	4	1 x s; 3 x ?	1 x type 16G 1610-40 - ?transition bowl, slightly bigger than a 16G; 2 x fragment bowls (early-mid 17thC); 1 x unid. bowl frag; spur on end of 1 stem. From robber trench - residual
6	12	1	h	1 x type 5G 1640-60; 1 x stem has three scored vertical lines. residual
7	12	1	s	1 x type 17G 1640-70 very bulbous, long spur. Residual
13	1			
93	10			
94	1			
99	1			burnt stem
101	1			
109	9	3	s; h ; ?	1 x type 17G 1680-1700; 1 x ?Dutch or ?French 17th century bowl, high quality burnish, very fine milling, merchants stamp on the base - very fine detail; 1 x I x unid. bowl fragment. Root hole
118	2	1	?	1 x bowl fragment

APPENDIX 7 ASSESSMENT OF BONE

Animal bones by Rachel Scales (OA)

Introduction

Animal bone was recovered by hand from seventeen contexts towards the top of the castle mound. Contexts associated with the animal bone are thought to be mainly post-medieval in date. Deposits containing animal bone included an 18th century landscaping area and 17th and 18th century backfills of robber trenches.

Methods

The animal bone was recorded following the protocol outlined in Serjeantson (1996). Where possible fragments were identified to species using the Oxford Archaeology Zooarchaeology reference collection. Fragments that could not be identified to species were put into categories: large mammal sized (e.g. cattle, horse or large deer), medium mammal sized (e.g.

sheep/goat or pig).

Results

A total of 234 bones were hand collected from the site, of which 116 (50%) were identifiable to species level. Of the material not identifiable to species level 31 (13%) bones were recorded as indeterminate, 49 (21%) were noted as being from large sized mammals and 36 (15%) from medium sized mammals.

Cattle (*Bos taurus*) was the most frequent species present making up 36% of the identifiable fragments in the assemblage (Table 1). Sheep/ goat (*Ovis aries/ Capra hircus*) was the second most frequent mammal (32%) present. Other species recorded in small numbers were pig (*Sus scrofra*) (15%), deer (*Cervus sp.*), chicken (*Gallus gallus*) (9%), goose (*Anser anser*), duck (*Anas anas*) and rabbit (*Oryctolagus cuniculus*). Table 2 shows the contexts, species and elements of the bones recovered.

The condition of the bone was on the whole very good, however the bone from a couple of contexts (16, 115) were very badly preserved due to plant root damage. No burnt bones were present.

Table A7.1 Number and percentage of bones identified to species

Species	Number of fragments.	Percentage
Cattle	42	36
Sheep/goat	38	32
Pig	17	15
Deer sp.	2	3
Rabbit	1	0
Chicken	11	9
Goose	3	3
Duck	2	2
Total	116	100

Of the major domesticated bones, two sheep-goat, five pig and five cattle bones were from juvenile animals. Sixteen (7%) bones showed evidence of carnivore gnawing and a further 36 (15%) exhibited butchery marks. Cut marks indicative of filleting were present along with cut, chop and saw marks associated with the dismembering process. The presence of both meat bearing and non meat bearing cattle and sheep/ goat elements, together with butchery marks recorded appear to reflect the deposition of butchery waste. The two deer long bones were recovered from the 18th century landscaping layer (2) and a worked antler point was recovered from the gravel mound (41).

Recommendations

The animal bone assemblages from the castle mound was well preserved, with a range of both domestic and wild species represented.

Further work on this material is not recommended at this time, but should further excavations be carried out at the site it should be included in future analysis.

Table A7.2. Elements, quantity and weight by context

Context	Species	Element	Quantity	Weight (g)
1	Cattle	Hyoid	1	4
1	Cattle	Radius	2	170
1	Cattle	Skull	1	21
1	Duck	Femur	1	0
1	Indeterminate	Indeterminate	1	1
1	Large mammal	Indeterminate	1	12
1	Large mammal	Rib	1	6
1	Large mammal	Vertebra	1	45
1	Medium mammal	Long bone fragment	1	10
1	Medium mammal	Mandible	1	0
1	Medium mammal	Rib	2	4
1	Pig	Femur	1	40
1	Pig	Ulna	1	14
1	Sheep/goat	Calcaneus	1	3
1	Sheep/goat	Radius	2	18
1	Sheep/goat	Scapula	1	12
1	Sheep/goat	Tibia	1	11
2	Cattle	Femur	1	40
2	Cattle	Humerus	2	90
2	Cattle	Mandible	1	17
2	Cattle	Metacarpal	1	24
2	Cattle	Metapodial	2	27
2	Cattle	Pelvis	1	25
2	Cattle	Phalange	2	18
2	Cattle	Tibia	2	121
2	Cattle	Tooth	1	5
2	Cattle	Ulna	1	13
2	Deer sp.	Radius	1	14
2	Deer sp.	Tibia	1	18
2	Indeterminate	Indeterminate	8	21
2	Indeterminate	Pelvis	1	7
2	Indeterminate	Skull	1	3
2	Large bird	Ulna	1	2
2	Large mammal	Indeterminate	6	60
2	Large mammal	Long bone fragment	1	30
2	Large mammal	Mandible	1	9
2	Large mammal	Rib	2	18
2	Large mammal	Scapula	1	19
2	Large mammal	Vertebra	1	6
2	Medium mammal	Long bone fragment	1	2
2	Medium mammal	Rib	3	7
2	Medium mammal	Tibia	2	15
2	Medium mammal	Vertebra	2	1
2	Pig	Fibula	1	0
2	Pig	Maxilar	1	9
2	Pig	Metacarpal 4	1	6
2	Pig	Tibia	2	14
2	Pig	Ulna	1	10
2	Sheep/goat	Calcaneus	1	4
2	Sheep/goat	Femur	1	5
2	Sheep/goat	Humerus	2	26
2	Sheep/goat	Pelvis	2	17
2	Sheep/goat	Phalange	2	7
2	Sheep/goat	Radius	2	28
2	Sheep/goat	Ulna	1	2
4	Chicken	Sacrum	1	3
4	Indeterminate	Indeterminate	2	12
4	Large mammal	Rib	1	3
4	Large mammal	Vertebra	1	7
4	Medium mammal	Rib	1	1
4	Medium mammal	Vertebra	1	1
4	Pig	Femur	1	17
5	Cattle	Femur	1	144
5	Cattle	Tooth	1	6
5	Duck	Ulna	1	2

Context	Species	Element	Quantity	Weight (g)
5	Indeterminate	Indeterminate	5	12
5	Large mammal	Vertebra	1	15
5	Medium mammal	Rib	1	0
5	Medium mammal	Vertebra	1	0
5	Pig	Astragalus	1	13
5	Sheep/goat	Maxilar	1	12
6	Cattle	Sacrum	1	12
6	Chicken	Coracoid	1	0
6	Large mammal	Mandible	2	51
6	Large mammal	Rib	7	57
6	Large mammal	Vertebra	1	32
6	Medium mammal	Rib	2	0
6	Pig	Metatarsal 4	1	8
6	Sheep/goat	Maxilar	1	31
6	Sheep/goat	Radius	1	10
6	Sheep/goat	Tibia	1	28
6	Sheep/goat	Tooth	1	7
7	Cattle	Femur	1	63
7	Cattle	Metatarsal	1	48
7	Cattle	Phalange	1	19
7	Cattle	Radius	1	12
7	Indeterminate	Indeterminate	2	0
7	Large mammal	Rib	1	13
7	Large mammal	Vertebra	1	22
7	Medium mammal	Mandible	1	1
7	Medium mammal	Rib	2	1
7	Medium mammal	Vertebra	2	5
7	Sheep/goat	Calcaneus	1	11
7	Sheep/goat	Radius	1	17
13	Cattle	Humerus	1	60
13	Large mammal	Rib	1	20
13	Large mammal	Vertebra	1	9
16	Cattle	Femur	1	23
16	Chicken	Carpometacarpus	1	0
16	Goose	Coracoid	1	2
16	Goose	Tarsometatarsus	1	0
16	Indeterminate	Indeterminate	3	10
16	Large mammal	Vertebra	1	14
16	Medium mammal	Rib	1	2
16	Rabbit	Tibia	1	0
16	Sheep/goat	Metatarsal	1	6
93	Cattle	Humerus	1	151
93	Cattle	Humerus	1	31
93	Cattle	Scapula	3	180
93	Cattle	Skull	2	82
93	Indeterminate	Indeterminate	7	5
93	Large mammal	Mandible	1	9
93	Large mammal	Rib	1	4
93	Medium mammal	Indeterminate	2	3
93	Medium mammal	Rib	2	1
93	Medium mammal	Skull	1	3
93	Medium mammal	Vertebra	2	3
93	Pig	Humerus	1	23
93	Pig	Tibia	1	47
93	Pig	Ulna	1	30
93	Sheep/goat	Maxilar	2	26
93	Sheep/goat	Phalange	2	7
93	Sheep/goat	Scapula	1	16
93	Sheep/goat	Ulna	1	8
94	Cattle	Femur	2	35
94	Chicken	Ulna	1	0
94	Goose	Carpometacarpus	1	2
94	indet	Indeterminate	1	0
94	Large mammal	Rib	1	12
94	Pig	Metatarsus 3	1	4
94	Sheep	Horn	1	15
94	Sheep/goat	Metatarsal	1	14
107	Large mammal	Indeterminate	7	80

Context	Species	Element	Quantity	Weight (g)
109	Large mammal	Rib	1	2
109	Sheep/goat	Femur	1	13
109	Sheep/goat	Ulna	1	4
110	Medium mammal	Indeterminate	1	0
112	Chicken	Tarsometatarsus	3	
112	Chicken	Tibia	2	1
112	Large mammal	Rib	1	10
112	Pig	Metacarpal 4	1	5
112	Pig	Ulna	1	8
112	Sheep/goat	Ulna	1	0
115	Chicken	Femur	1	1
115	Chicken	Ulna	1	0
115	Goose/duck	Mandible	1	0
115	Large mammal	Rib	1	2
115	Medium mammal	Rib	2	3
115	Medium mammal	Vertebra	1	8
118	Cattle	Mandible	1	106
118	Cattle	Phalange	1	29
118	Cattle	Tooth	4	8
118	Large mammal	Phalange	1	3
118	Large mammal	Rib	1	8
118	Large mammal	Vertebra	1	12
118	Medium mammal	Rib	1	1
118	Sheep/goat	Calcaneus	1	4
118	Sheep/goat	Femur	1	24
118	Sheep/goat	Tooth	1	1
		Totals	234	3006

Appendix 8 Sediment Assessment

Sediment Assessment from Oxford Castle Mound by Carl Champness (OA)

Introduction

Project design

As part of an archaeological watching brief on stabilisation work at Oxford Castle Mound during 2007, two monolith samples were taken through the upper sediment sequence for sedimentary assessment. It was hoped that these samples would help to inform about the construction methods of the mound and whether there was any evidence for secondary modifications.

The monolith samples were logged and assessed by a member of OA Geoarchaeology Department. These samples were placed within the sedimentary context of the mound and examined in conjunction with the sections and information collected during the watching brief.

Aims

The main aim of the assessment was to record and interpret the sedimentary sequence from the monolith samples taken through the mound of Oxford Castle, to help to elucidate the mound's construction and how it developed over time. It was hoped that the assessment would provide information to help answer the following research objectives:

- Whether the motte sequence represents a single phase of construction or whether it reflects a more complex sequence of redesigns.
- To identify the character and possible source of the material used in the construction of the mound.
- To identify any post construction processes, such as periods of slumping, destruction or soil formation, which may have occurred over time.

Method

The monoliths, context numbers and their relative locations were identified with reference to the field records/section drawings.

The sediments were described according to the OA *Geoarchaeological Guidelines (2008 1st edition)*, which is based on Jones, Tucker and Hart (1999). The sediments were described in terms of colour (using the Munsell colour system on fresh sediment), compaction, texture, sorting, structure and inclusions (including abundance, shape and material). The nature of observable contacts/boundaries (e.g abrupt and irregular. diffuse etc) were also noted. All relevant information has been recorded on the OA monolith/core logging proforma sheet (Appendix 1).

The top surface of the monoliths were cleaned and photographed (at a resolution of at least 600dpi) with a digital camera prior to any recording/sampling taking place. The monoliths were photographed from directly overhead, using a tape measure placed alongside as a scale and an identification board (with details of site code/trench number, sample or borehole/core number).

Result

Monolith samples

Monolith samples <2> and <3> were taken through two clay deposits and interstratified gravel deposits identified near to the top of the south face of the mound. Detailed logs for each sample can be found in Appendix I. These deposits had been previously noted within the 1965 boreholes, leading to the suggestion of two possible phases of mound construction (see above).

The core of the mound is believed to be entirely composed of unconsolidated sandy gravel. These deposits were encountered at the base of the exposed sections of the mound. Overlying these deposits was a series of two clay layers, believed to be caps, interstratified with more sandy gravel. The lowest of these clay deposits (40), sampled within Monolith <3>, consisted of a soft and pliable dark greyish brown (2.5Y 4/2) silty clay with rare poorly sorted sub-rounded inclusions (2-3cm). The gravel inclusions potentially represent residual material that was incorporated into the clay during the construction of the mound. The nature of clay would indicate a low energy alluvial origin for this material with a potential source on the Oxford floodplain or nearby Castle stream.

The lower clay deposit (40) had a very sharp and well-defined boundary with the overlying sandy gravel (39). This deposit consisted of loose brown (10YR 4/3) sandy gravels with occasional clay inclusions. The gravels were poorly sorted sub-rounded pebbles ranging in size from 1-4cms. There was no evidence of any stabilisation or standstill horizons which would indicate either the development of a soil or that significant time had elapsed between the deposition of the two contexts.

The overlying upper clay (17) sampled in monolith sample <2> consisted of a very firm dark grey (10YR 4/1) silty clay with frequent poorly sorted gravel inclusions (0.5-2.5cm). This deposit was of a significantly different nature to the lower clay, suggesting a potentially different source for this material. The stiffness and appearance of this deposit is characteristic of the Oxford clay, which would have been readily available during the excavation of the moat.

Overlying the second clay cap there was a gradual transition into a moderately compacted dark greyish brown clayey silt/sand (22) with poorly sorted gravel inclusions (1-5cms). This deposit was slightly humic and potentially represents the start of soil formation processes on

the mound. Deposit (22) was overlain by two further layers of gravelly silt/sand (32) with frequent poorly sorted sub-rounded gravel inclusions. These two deposits may represent further phases of gravel slumping and soil formation.

Discussion and Summary

Discussion

The assessment revealed that the core of the mound was constructed with sandy gravels which were excavated during the creation of the castle moat. These deposits appeared to have been unconsolidated and inherently unstable. Without the presence of the clay cap they could have become saturated and liable to subsidence. The recent episodes of slumping have been largely caused by the erosion of the clay cap, allowing the gravels to become saturated by heavy rain. Episodes of collapse usually followed periods of prolonged rainfall, when the mound's field capacity had been reached.

The absence of any stabilisation or standstill deposits overlying the first clay cap would indicate that the overlying gravels were deposited shortly afterwards. This would suggest that the first clay cap was not representative of an earlier mound that was superseded, but rather that it was used to stabilize the mound in order to aid in the construction of the tower and the vault chamber. This is supported by the fact that the vault floor appears to have been constructed on the first clay mound at 70.31 m OD. The vault would have been constructed gradually with the deposition of the sandy gravel, and then sealed with the second clay cap. This is a much more plausible scenario than the alternative; that the vault was constructed by excavating into unconsolidated gravels once the mound was finished.

The selection of different source material to build the two clay caps may reflect their physical properties. The lower clay cap was added to consolidate the mound, so preventing rainwater percolating down into the core and making it unstable. The lower cap therefore had to act as an impermeable seal, which would have required a watertight material. The fine textured alluvial material would have been more suited for this purpose than the Oxford clay, which is more broken and fractured. Similarly the Oxford clay is better suited for the upper cap, which needed to be strong enough to take the weight of the stone tower.

The various phases of gravelly deposits overlying the upper cap deposit would indicate periods of stabilisation and edge erosion. There is no evidence to suggest that rubbish was deposited on the mound, in fact the absence of midden deposits may indicate that this was forbidden. However the thickness and nature of the overlying deposits may indicate that the mound could have been used to graze animals like sheep and goat. No evidence of destruction or burning activity was detected.

Summary

Based on the results of the sediment assessment the following conclusions can be drawn:

- The Oxford Castle mound was created as a single phase of construction that involved the use of two clay caps
- The vault chamber was constructed first on top of the lower clay cap at 70.31m OD, and then gradually buried by further deposits of sandy gravel and sealed by a second clay cap. The stone tower was built on top of the second clay cap.
- At least two different clay sources were utilised in the construction of Oxford Castle Mound due to their different physical properties. Holocene floodplain alluvial clay appears to have formed the inner clay core, whilst the outer core appears to have been constructed using Oxford Clay.

- The mound has always been inherently unstable and relies on the integrity of the clay cap. The caps now only survive near to the top of the mound and the stabilisation work is badly needed in order to protect the monument.
- Soil formation processes appear to have started to occur on the mound following the deposition of the upper clay cap deposit. The nature and depth of these upper deposits may indicate that animals may have grazed the mound. This occurred alongside episodic periods of erosion and slumping.

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APPENDIX 10 SUMMARY OF SITE DETAILS

Site name: The Castle Mound, Oxford, Oxfordshire

Site code: OXFCAM 08

Grid reference: NGR SP 5096 0619

Type of evaluation: Archaeological watching brief and excavation of features during the reconstruction of the mound repairing slumping to the slope of the mound.

Date and duration of project: March to August 2008

Area of site: 24 m x 18 m

Summary of results: The archaeological works revealed the construction of the mound and the remains of the 12th century stone tower on its summit and later 18th and 19th century landscaping of the mound.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Oxfordshire County Museums Service in due course, under the following accession number: OXCMS 2008.19



Scale 1:2,500

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Figure 1: Site location

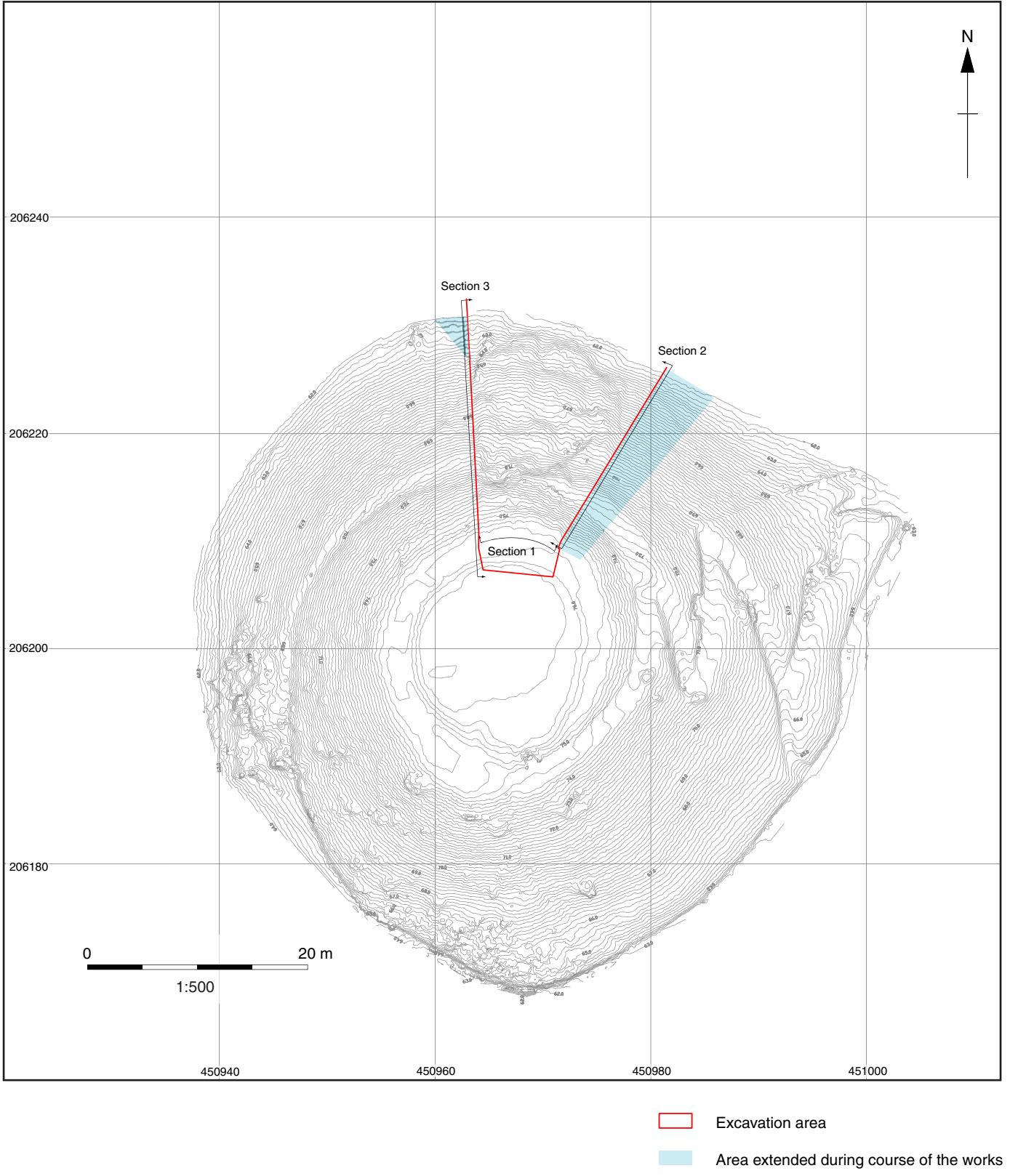
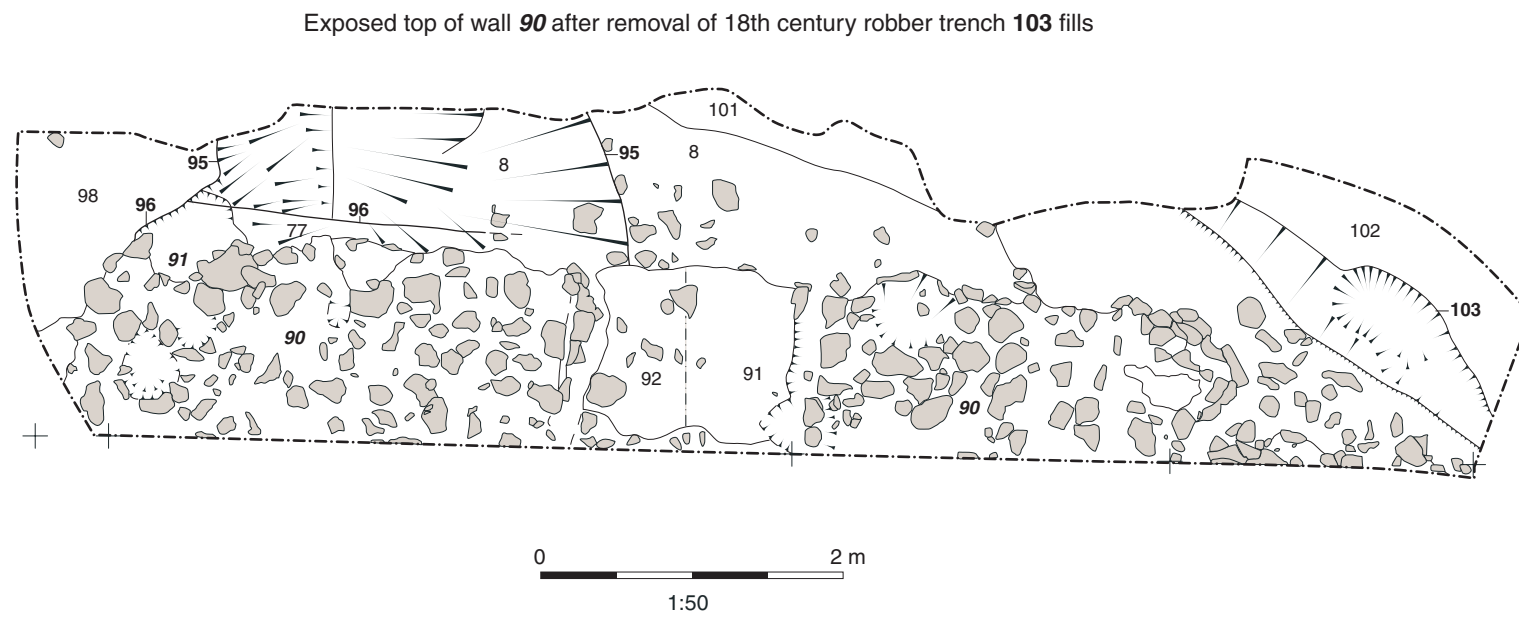
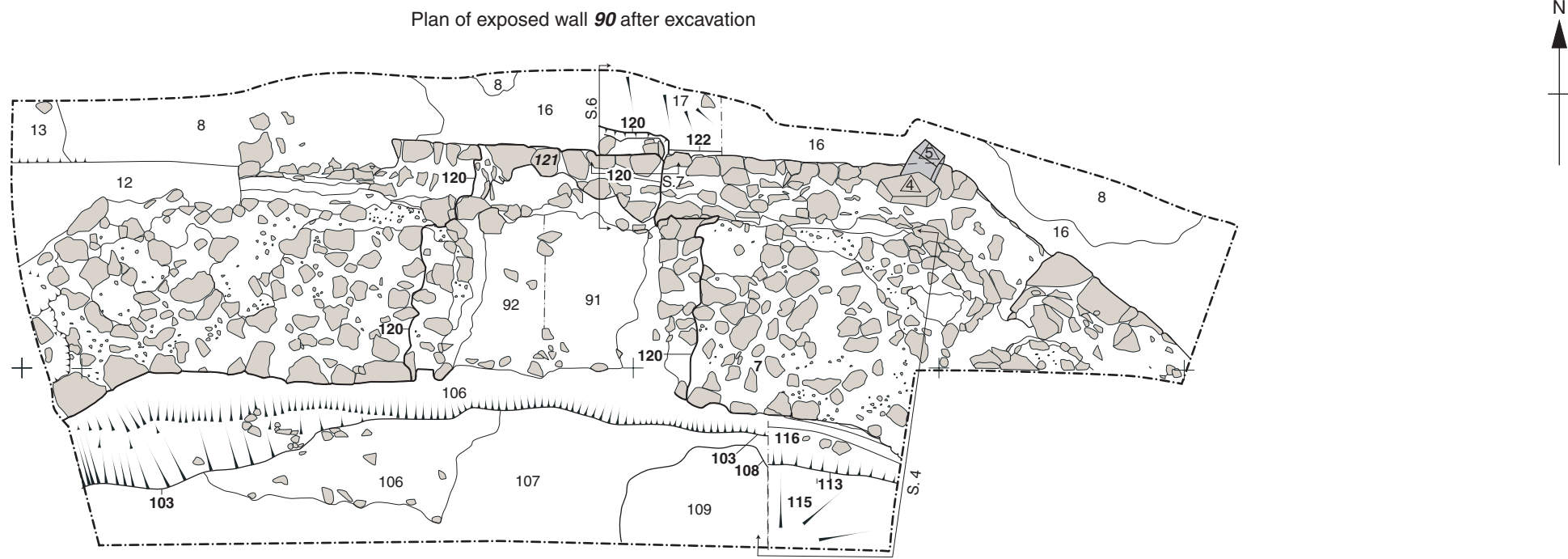
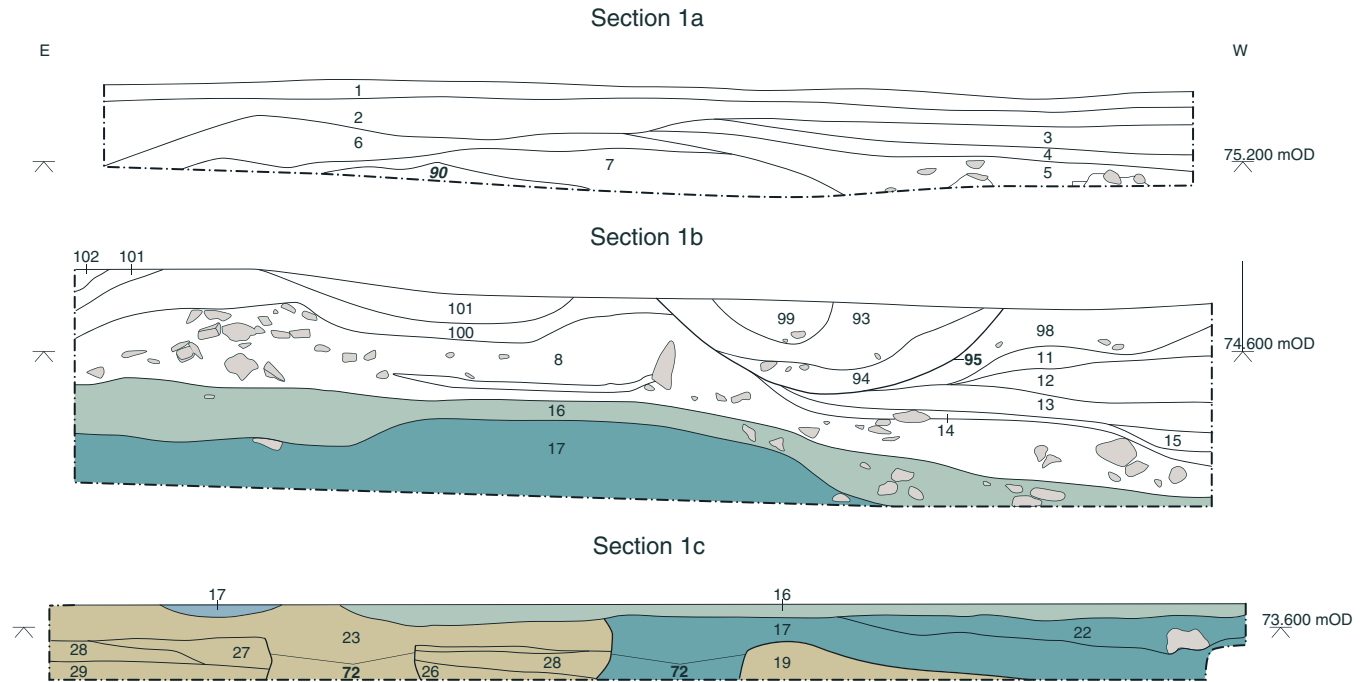






Figure 2: Area of watching brief and location of sections 1, 2 and 3



Stone

Figure 3: Plans of wall 90



-  Stone
-  Topsoil horizon on top of the tower
-  Clay
-  Gravel core of the mound

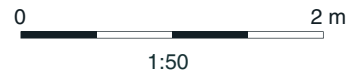


Figure 4: Section 1

Section 2

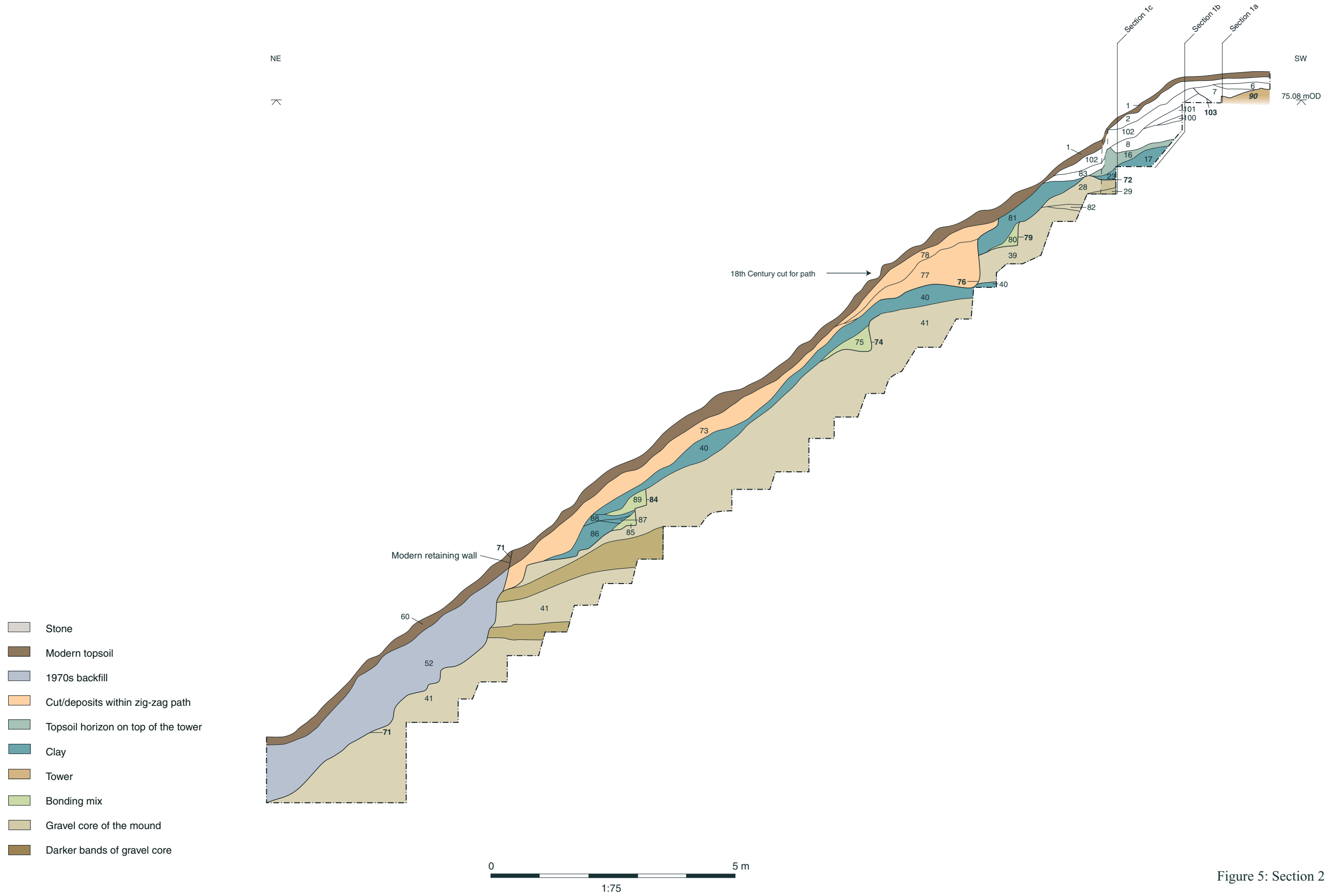


Figure 5: Section 2

Section 3

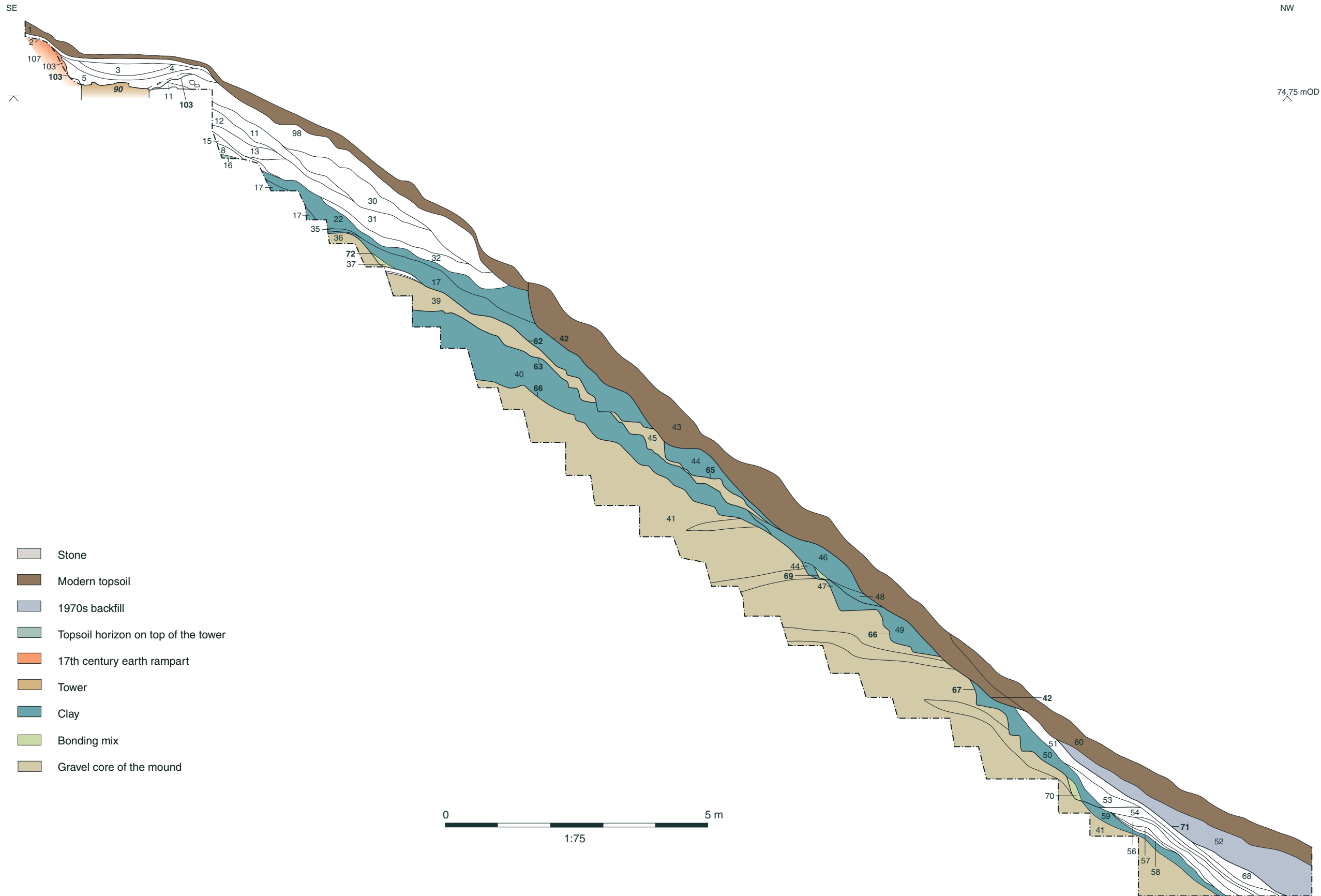
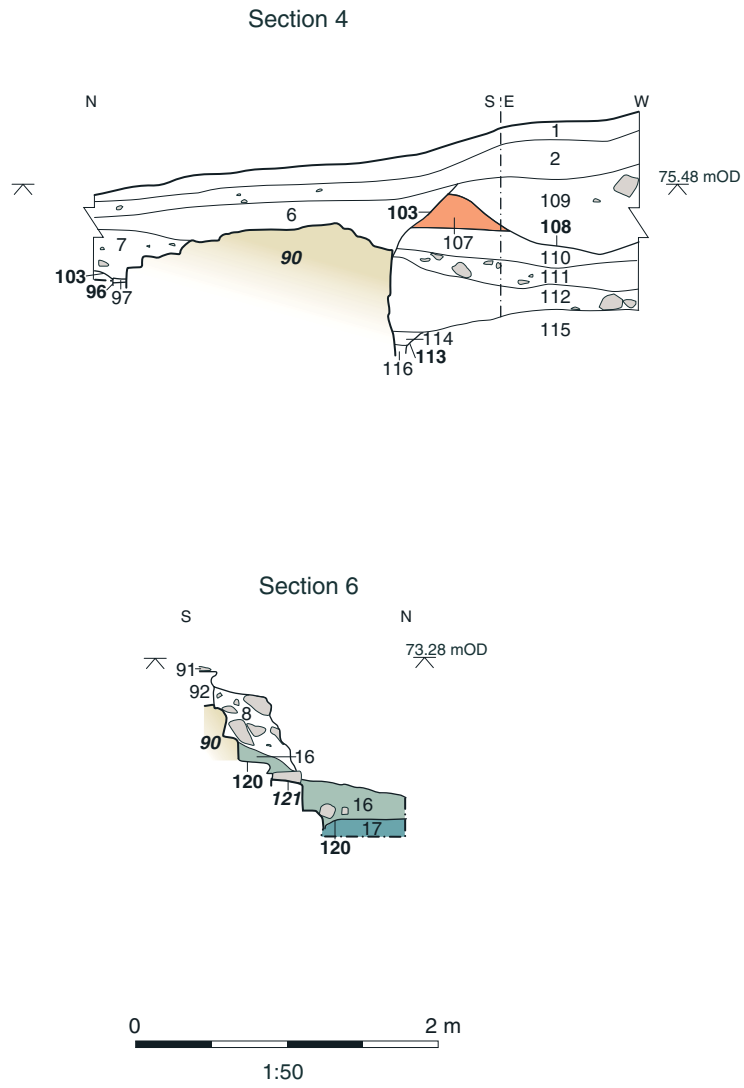


Figure 6: Section 3



- Topsoil horizon on top of the tower
- 17th century earth rampart
- Stone
- Clay
- Tower
- Bonding mix
- Gravel core of the mound

Figure 7: Sections 4, and 6

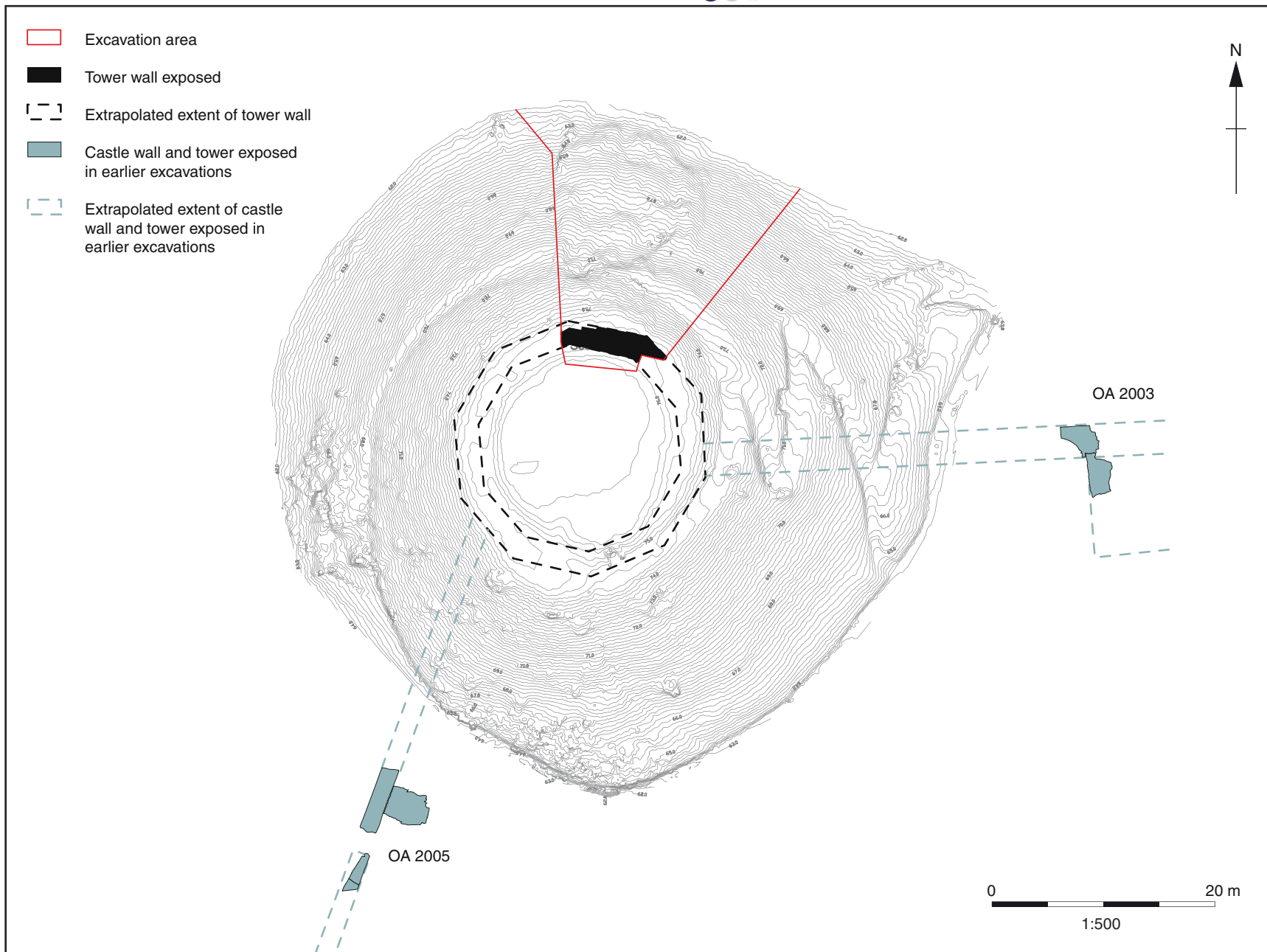
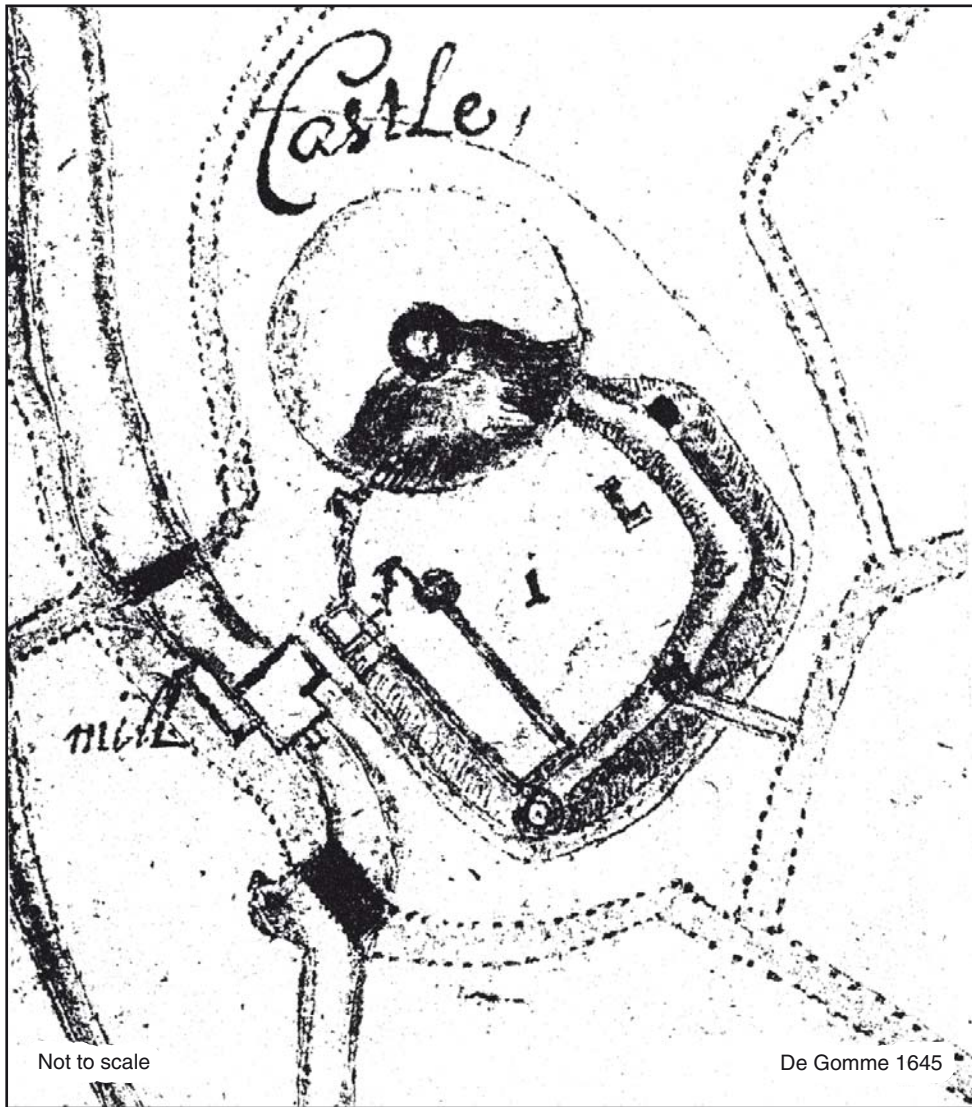
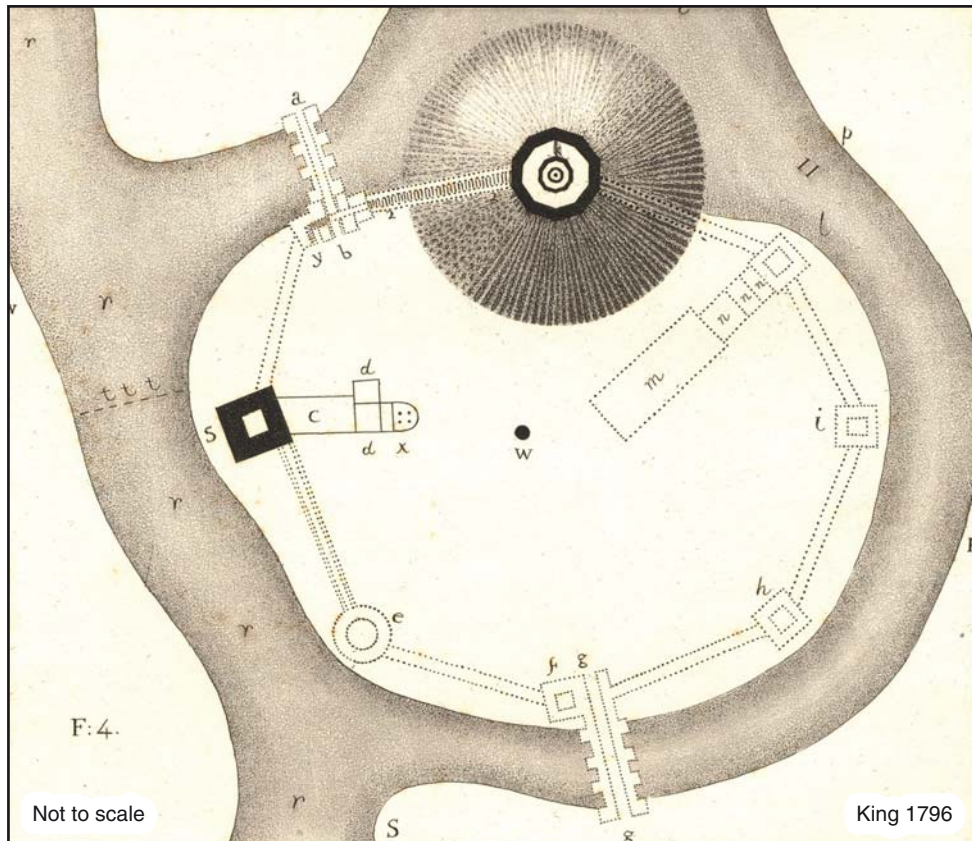


Figure 8: Plan of wall on mound and extrapolated extent



Not to scale

De Gomme 1645

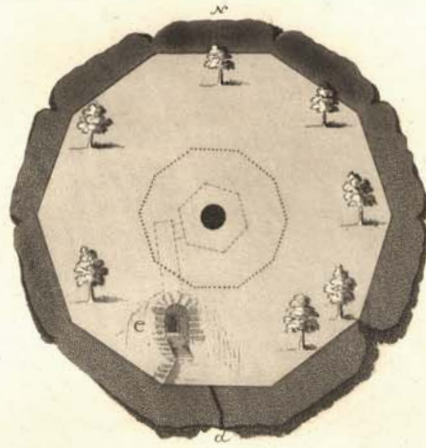


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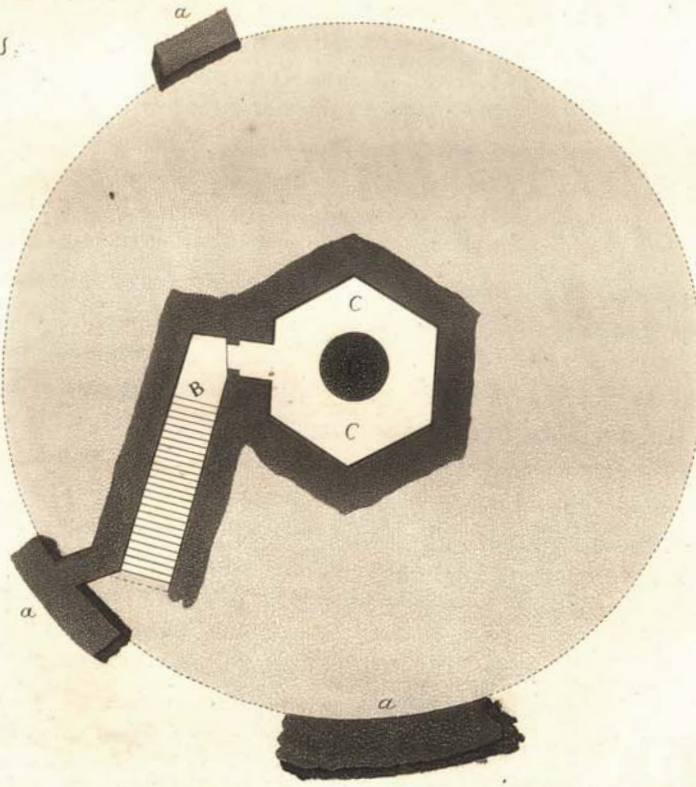
King 1796

Figure 9: Castle plans De Gomme 1645 and King 1796

F. 2.



F. 3.



Plans of the Keep, in Oxford Castle.

Not to scale

D. Harris, del.

J. Richardson, & Son, sculp.

Figure 10: Plan of Keep and well chamber by Harris published by King 1796

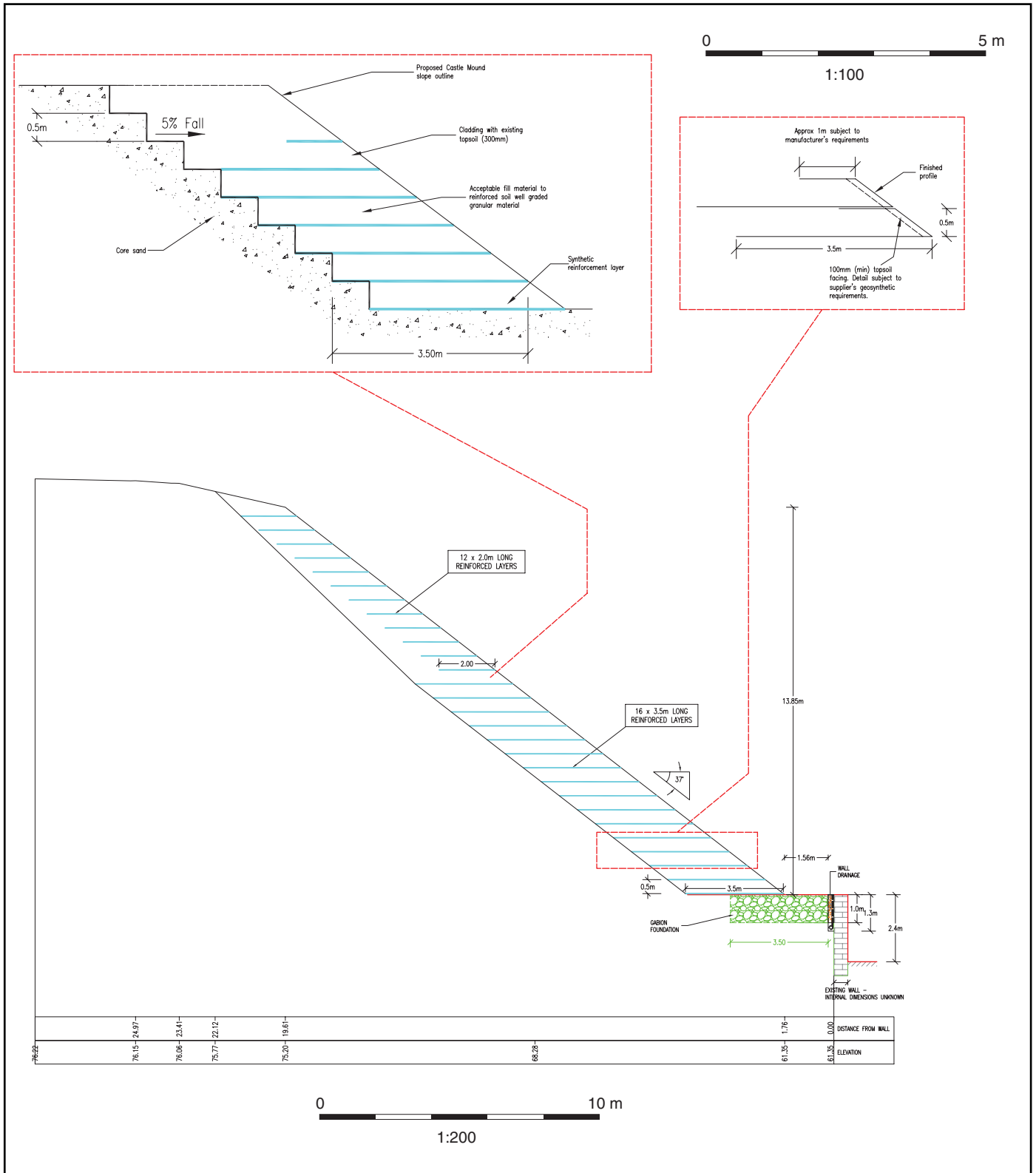
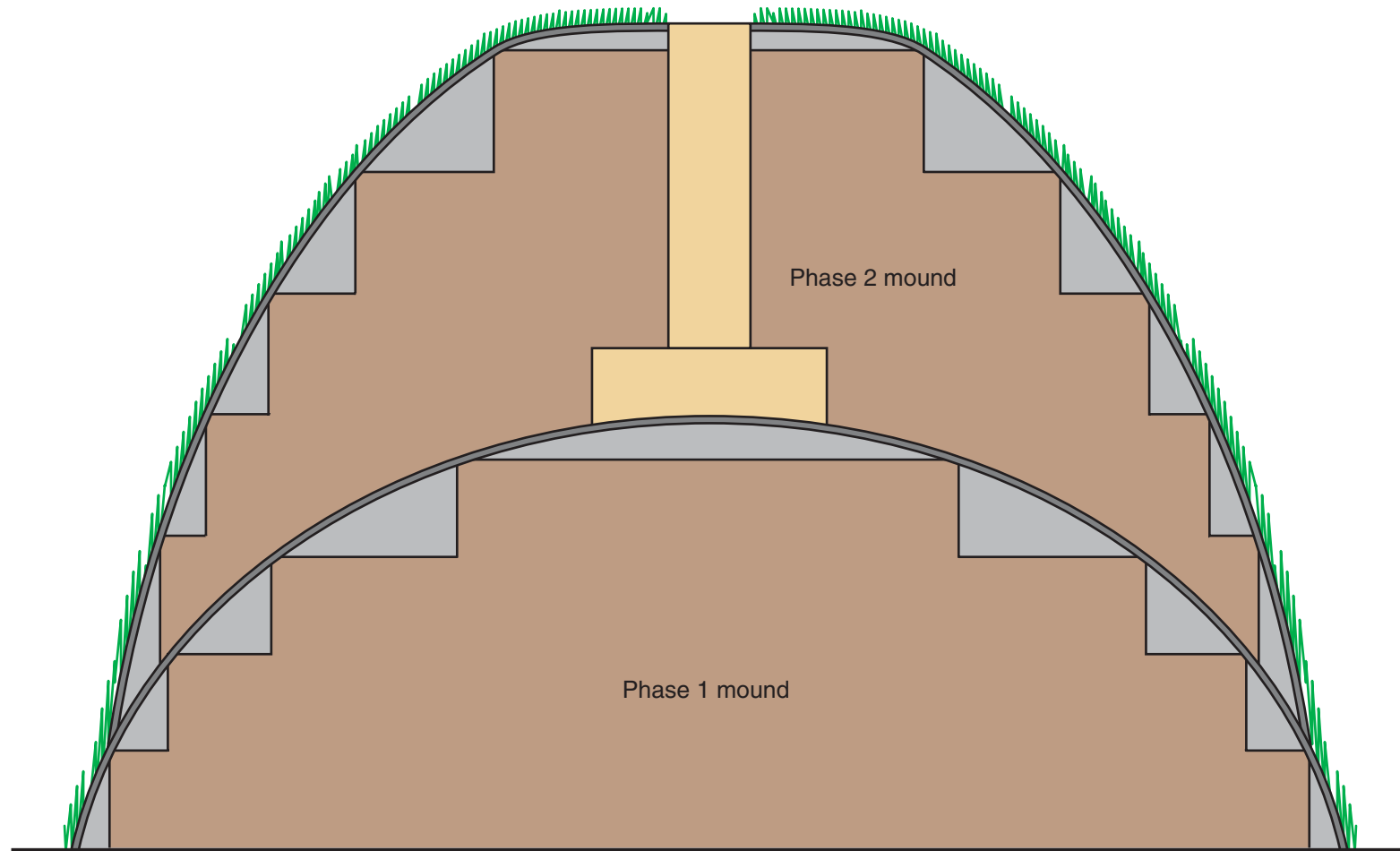


Figure 12: Drawings supplied by Mouchel showing Gabion Baskets layout



- Clay cap
- Bond
- Gravel
- Well
- Grass

Figure 13: Schematic showing mound construction



Plate 1: View along face of tower wall looking east.
17thC rampart on right against wall



Plate 2: Face of wall showing the inserted embrasure



Plate 3: Working view removing slumped material of mound



Plate 4: Working view recording west section on top of first phase of mound



Plate 5: View of west section showing the two clay caps meeting and sealing face of mound



Plate 6: View of Gabions in place and their construction, wall visible at the top



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