Archaeology South-East

ASE

An Archaeological Watching Brief at Bodiam Castle Sewage Treatment Plant, Rose Garden, Bodiam, East Sussex.

Planning Ref: RR/2010/1108/P

NGR: 578367 125443
(TQ 78367 25443)

Project No: 4470
Site Code: BD08

ASE Report No. 2011218
OASIS id: archaeol6-111022

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With contributions from
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Archaeology South-East
Units 1 & 2
2 Chapel Place
Portslade
East Sussex
BN41 1DR

Tel: 01273 426830
Fax: 01273 420866
Email: fau@ucl.ac.uk

Abstract

Archaeology South-East was commissioned by The National Trust, to undertake an archaeological watching brief during the construction of the new Bodiam Castle Sewage Treatment Works (STW) at Rose Garden, Bodiam, East Sussex (NGR 578376 125443).

The underlying sedimentary sequence was equivalent to previous observations showing at depth, a peat-rich deposit of Early Bronze Age date indicating a wooded, infilled meander/oxbow on the margins of the floodplain.

There was an unconformity in the sedimentary sequence where the peat was truncated and overlain by an anaerobic blue-grey alluvium containing medieval remains, which then graded into weathered modern floodplain deposits. The abrupt change in sedimentary regime is unexplained at the time of writing but is likely to relate to deposits associated with the northern edge of the medieval flote.

All deposits and remains on the site that were stratified above the upper weathered alluvium probably related to activity dating from, at the earliest, the later 18th century to the present day.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), a division of University College London Centre for Applied Archaeology (UCLCAA), were commissioned by The National Trust, (hereafter referred to as the client), to undertake an archaeological watching brief during the construction of the new Bodiam Castle Sewage Treatment Plant (STP) at Rose Garden, Bodiam, East Sussex (NGR 578376 125443) (Fig 1).

1.0 Geology and Topography

1.2.1 The site lies within Bodiam village opposite the Castle Inn public house and south of Wharf Cottages (Figs 1 and 2). The site occupies an area known as the 'Rose Garden', adjacent to the main visitor entrance to the National Trust Bodiam Castle Property, and the eastern part of the back garden of No 1 Wharf Cottages. Most of the site is lawn and gravel hard standing with areas of screen planting, hedge and shrub; the site includes an existing sewage treatment plant installed in 1998.

1.2.2 The underlying geology is reflected in the surface topography, with the dominant Cretaceous fine-grained sandstone of the Ashdown Beds forming the higher ground of the Rother Valley, which is occupied by Bodiam Castle. The site itself lies within the valley floor and is characterised by alluvial deposits including buried peats of Bronze Age date.

1.2.3 The soils within the valley floor are of the Fladbury 3 Association, typically stoneless clayey silts and silty loams with poor drainage. The area has been heavily landscaped since the medieval period, which means that few areas can be expected to contain true examples of this type and recorded observations indicate complex sequences of clays and silts with thin topsoils of relatively recent formation.

1.3 Planning Background

1.3.1 A planning application for the construction of replacement sewage treatment plant (STP) including reed bed treatment system and removal of existing STP and change of use of land to extend side garden of 1 Wharf Cottages has been approved by Rother District Council (Planning Reference RR/2010/1108/P). Condition 4 of the planning consent states the following:

> *No development shall take place within the area indicated until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological works in accordance with a written scheme of investigation, including a timetable for the investigation, which has first been submitted to and approved in writing by the Local Planning Authority and the works shall be carried out in accordance with the approved details.*
>
> *Reason: The development is likely to disturb features of archaeological interest, which need to be examined and recorded in accordance with GD1(viii) of the Rother District Local Plan.*

1.3.2 ASE and the client consulted the ESCC County Archaeologist (Casper Johnson) during the planning process in order to establish the scope of works

required under Condition 4 of the Planning Consent. A *Summary Impact Assessment of Proposed Development* produced by ASE (James 2010) includes proposals for archaeological mitigation was submitted to and approved by the County Archaeologist.

1.3.3 In response to the planning condition, a *Written Scheme of Investigation* (WSI) was produced by Archaeology South-East, for the archaeological watching brief (Griffin 2010). The WSI was compiled with reference to the East Sussex Standards (ESCC 2008) and the *Summary Impact Assessment of Proposed Development* and was submitted to the ESCC Archaeologist Officer for approval prior to commencement of works. All work was carried out in accordance with these documents (unless otherwise specified), and the relevant *Standards and Guidance* of the Institute of Field Archaeologists (IFA).

1.4 Aims and Objectives

1.4.1 The WSI (Griffin 2010) detailed the aims and objectives of the watching brief.

1.4.2 The general aim of the archaeological work was to ensure that any features, artefacts or ecofacts of archaeological interest affected by the proposed groundworks were recorded and interpreted to appropriate standards.

1.4.3 Specifically, the current project is likely to expose important archaeological deposits as outlined in the Archaeological Background (2.0) and thereby facilitate more detailed examination, sampling and recording.

1.5 Scope of Report

1.5.1 This report details the findings of the archaeological watching brief undertaken by Chris Kileen, Dr. Matt Pope Sarah Porteus and Chris Russell. The project was managed by Neil Griffin (Project Manager) and Jim Stevenson (Project Manager, post-excavation).

2.0 ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

2.1.1 The site of the proposed works is not covered by any statutory heritage designation. However, it is immediately adjacent to Bodiam Castle a Scheduled Ancient Monument (SAM 24405 –a quadrangular castle and its landscaped setting, an associated millpond, medieval crofts and cultivation earthworks, and a World War II pillbox at Bodiam).

2.1.2 There has been a series of desk based studies and archaeological field investigations at, or in the environs of, Bodiam Castle over the last 15 years. These investigations have produced important, though diverse and complicated data enabling the creation of a speculative model of the development of the Bodiam Castle landscape, most importantly with regard to the River Rother.

2.2 Summary of the known archaeological sequence

2.2.1 Previous work in the vicinity of the Rose Garden has revealed an archaeological sequence with the following key elements (described earliest to latest, below).

- a peat deposit of Bronze Age date, 2m below current ground level, representing alder carr wetland. It is up to 2m thick and appears to thin out towards the east.
- a possible Roman layer, dated by one piece of *imbrex* roof tile (which may be residual).
- timbers found at a depth of 1.8m and dated to the 6th to 7th century, possibly representing a revetment wall.
- a medieval alluvial deposit, containing 13th- to 14th-century pottery, and interpreted as the western part of the late 14th-century millpond.
- a series of post-medieval deposits, 1.4m thick in total, comprising a 15th- to 16th-century alluvial deposit, an 18th- to 19th-century deposit, a 19th-century soakaway and modern hardcore. Demolition deposits relating to a house built in 1671 were also found.

2.2.2 In addition, it suspected that that the Rose Garden may sit on the edge of a former medieval wharf (or 'Flote'), although there is little direct archaeological evidence for this (Johnson, Martin & Whittick 2001; James and Whittick 2008). The location of the potential wharf is shown on Figure 3.

2.3 Previous investigations

2.3.1 The Summary Impact Assessment

Prior to the Rose Garden watching brief, the results of the previous

investigations were compiled as part of a Summary Impact Assessment (James 2010). This information is repeated below by period with some additions (2.3.2-2.6). These descriptions should be read in conjunction with Figures 2 and 3.

2.3.2 Prehistoric

A watching brief in April – May 1998 during installation of a new sewage plant (in the same location as the current investigations) (15m x 7m, with a depth of *c.*4.5m) found a 2m thick deposit of peat, comprising branches and bark/twig fragments set within a dark grey to black organic/fibrous clay matrix (Barber 1998). The upper surface of the deposit was c.2m below ground level. Two C14 samples gave calibrated dates of 2050-1730BC (Beta Analytic No. 121615 – 1.8mOD) and 2500-2195BC (Beta Analytic No. 121616 – 0.74mOD). This Bronze Age peat formation overlay sterile alluvial deposits, and represents a low-energy deposition phase associated with quantities of organic material such as driftwood. The peat was overlain by alluvial deposits of medieval date, suggesting that the original deposits relating to later Bronze Age and subsequent activity had been truncated by the construction of the mill pond in the late 14th century.

A watching brief in September 2003 during the excavation of 26m of trenching from the sewage plant into the western end of the car park (former mill pond) located a 0.1m thick peaty deposit at a depth of 0.8m below the modern ground level (Worrall 2003). This deposit was located to the west of the footpath (i.e. adjacent to the sewage plant) and was interpreted as the same Bronze Age peat deposit examined in 1998. It would appear to thin out as it extends to the east, although its exact relationship with the earlier recorded sample is hampered by the absence of levels data.

A watching brief was maintained in January – March 2007 during excavations for drain runs in the car park and across the road in the car park of the Castle Inn. Trench 1 adjacent to the sewage plant located pieces of wood/peat within a medieval deposit below 1.7m in depth, suggesting the presence of the underlying Bronze Age peat deposit (Barber 2007).

A series of geo-technical boreholes were excavated in the Rose Garden in March 2007. Three alluvial sequences were identified: an Early Holocene floodplain, an Early Bronze Age deposit interpreted as reed-beds, and a Later Holocene flood-plain. The abrupt unconformity between the EBA deposits and the overlying Roman and Post-Roman alluvial deposits noted elsewhere was observed again in the sedimentary sequence.

Geo-archaeological evaluation in the Rose Garden during drainage works in April 2009 located loosely consolidated wood peat at between *c.*1.8 – 5m depth, which was observed thinning to the north and has previously been dated to the Early Bronze Age (Pope 2009). The peat was interpreted as representing an alder carr wetland environment established across the Rother floodplain. The upper surface appears to have been truncated or eroded by a later sedimentary regime comprising alluvial silts. A possible hypothesis was put forward that this may be the result of Middle Bronze Age clearance and agricultural activity extending into the Romano-British period.

2.3.3 Roman

A watching brief during excavations for a drain run adjacent to the sewage plant produced an unabraded and possibly residual piece of Roman imbrex tile from an otherwise undated layer immediately above the peat deposit (Barber 2007). A geo-physical survey undertaken by the Hastings Area Archaeological Research Group (HAARG) to the north of the site has confirmed that the alignment of a double ditched Roman road will run immediately west of the current site underneath or very close to the existing road (Casper Johnson pers. comm.).

2.3.4 Anglo-Saxon

An evaluation in the Rose Garden during drainage works in April 2009 recovered samples of wood from alluvial deposits at a depth of *c.*1.8m. C14 dating indicated a date range of 550-660 AD (Priestley-Bell & Pope 2009). A piece of leather off-cut was also recovered. Further investigation was not possible due to water ingress and to prevent further disturbance to a potentially significant deposit. The timber was interpreted as a possibly *in situ* fragment of a revetment associated with the remains of an earthen bank, and possibly associated with occupation in the vicinity of the crossing point of the Roman road. This is the first find of Anglo-Saxon date at Bodiam.

2.3.5 Medieval

A watching brief during the installation of a new sewage plant located a silty clay alluvial deposit overlying a prehistoric peat deposit (Barber 1998). The lower 0.6m of this context produced a sherd of 13th- to14th-century pottery together with several animal bones, an oyster shell and a tile fragment. A rough alignment of water-rounded cobbles at 3.15mOD was interpreted as ship's ballast. The deposit was interpreted as alluvial silt associated with the mill pond which was excavated in the late 14th century (truncating earlier deposits).

2.3.6 Post-medieval

A watching brief during installation of new sewage plant identified four deposits of post-medieval date, up to 1.4m thick in total (Barber 1998). The lowest (the upper part of Context [4]) was an alluvial silt containing numerous sherds of late 15th- to early 16th-century pottery, some of which represented an almost complete bowl that had been thrown into water. The deposits relate to the silting up of a medieval mill pond – documentary sources indicate that the mill pond had gone out of use by 1567 (D. Martin pers. comm.), and seems to have been used for rubbish disposal thereafter – Context [3] contained early 16th-century pottery sherds. This was sealed (at a depth of 0.55m below ground level) by a deposit containing 18th- to early 19th-century pottery, which was itself cut by a drain or soakaway of 19th-century date. The upper deposit was a modern hardcore.

A watching brief during tree and shrub planting around the new sewage plant in March 1999 involved hand excavation of planting holes to a depth of <0.45m. Several contexts representing current and former garden soils produced 18th- to 20th-century pottery. A watching brief during drainage runs confirming the presence of the early post-medieval water-lain deposits identified in 1998.

A geo-physical survey in December 2008, in advance of a new pumping station, produced a series of linear anomalies that correspond to a former house known to have existed on the site from at least 1671 until it was demolished between 1872 and 1897 (Honess 2009). Evaluation in the Rose Garden in advance of drainage works in April 2009 located demolition deposits associated with the house known to have existed from at least 1671 until its demolition in the late 19th century (Priestley-Bell & Pope 2009). Several small pits were also found containing 16th- and 18th- to 19th- century finds.

3.0 ARCHAEOLOGICAL METHODOLOGY

3.1 The Written Scheme of Investigation

3.1.1 Full details of the archaeological methodology are contained within the WSI, a copy of which is held in the site archive (Griffin 2010).

3.2 Monitored groundworks

3.2.1 The following intrusive groundwork's were monitored during the watching brief (Fig. 4):

- compact vertical flow reed bed (200m2, 18m x 12m), involving excavation to a depth of 0.6m into the existing garden
- sewage treatment works (8m x 2.5m) involving excavation to a depth of c.3.5m (all below-ground);
- service runs linking the new facilities with the existing drainage system;

3.3 Fieldwork methodology

3.3.1 The intrusive groundworks detailed in 3.2 were carried out under the direct supervision of an archaeologist. Ground reduction/excavation was undertaken in a controlled manner using a machine equipped with a flat bladed bucket in spits no greater than 100mm.

3.3.2 The following methodology was employed for the deep Sewage Treatment Works (STW) excavations:

- An initial watching brief was carried out on the slit trench excavated to receive the piling sheets
- Ground reduction within piling footprint was undertaken under archaeological supervision.
- Excavations were halted at appropriate intervals so that the trench could be safely entered and exposed archaeological remains recorded as necessary.
- A running section was recorded through the deposits as the excavations progressed.
- Water ingress during the work made the fieldwork problematic and at times meant that Health and Safety considerations took priority

3.4 Environmental and palaeo-environmental sampling strategy

3.4.1 A column sample was taken through the sequence exposed in the Sewage Treatment Works excavations (Fig. 6). The lowest exposed unit in this sequence, [012], was not suitable for column sampling (the matrix was too friable) although bulk samples were taken. The column sample was submitted for pollen assessment.

3.4.2 Ostracod assessment was not undertaken as alluvial deposits at Bodiam Castle have been found to have minimal potential for this category and the project resources were better employed for increased pollen assessment (M. Pope, *pers.comm*).

3.4.3 Standard bulk environmental samples were taken as appropriate. In addition, these samples were intended to provide material for submission for scientific (C14) dating as appropriate.

3.5 The site archive

3.5.1 The site archive was offered to and accepted by Bodiam Castle. Bodiam Castle do not issue accession numbers for work which is carried out on their property. The archive will be produced in accordance with National Trust guidelines.

Watching Brief Record Sheets	13
Context Register Sheets	1
Number of Contexts	24
No. of files/paper record	1 folder
Plan and sections sheets	1 sheet
Photographic Register Sheets	5
Photographs	74 digital

Table 1: Quantification of site archive.

4.0 RESULTS

4.1 Context summary (Figs 5 and 6)

4.1.1 In the following text, context numbers are shown in square brackets; [100]. Sample numbers are shown as follows; <5>.

4.1.2 Some key finds were given context numbers on site to record their location. A concordance table is given below;

Item	Deposit from which item was recovered from
[008] pottery group	[005]
[010] timber	[005]
[011 branch fragment	[005]
[013] timber plank	[005]

4.1.2 A summary of all the contexts recorded during the investigations is given in Table 2, below.

Number	Type	Description	Max. Length	Max. Width	Deposit Thickness	Height m.AOD	Site Area
001	Dep	Made Ground	Tr.	Tr.	0.40m	4.64	Shuttered trench
002	Dep	Alluvial Clay	Tr.	Tr.	0.90m	4.24	Shuttered trench
003	Fill	Fill of Post med ditch	3.0m+	0.65m	0.18m	3.94	Shuttered trench
004	Cut	Cut of Post med ditch	3.0m+	0.65m	0.18m	3.94	Shuttered trench
005=009	Dep	Alluvial Clay	Tr.	Tr.	0.74m	3.34	Shuttered trench
006	Fill	Fill of pit	0.43m	0.43m	0.10m	2.80	Shuttered trench
007	Cut	Cut of pit	0.43m	0.43m	0.10m	2.80	Shuttered trench
008	Bowl	Pottery group found in [005]	N/A	N/A	N/A	2.83	Shuttered trench
009=005	Fill	Alluvial matrix around [010] and [013]	N/A	N/A	N/A	2.83	Shuttered trench
010	Wood	Cut Timber	N/A	N/A	N/A	-	Shuttered trench
011	Wood	Wood fragment	N/A	N/A	N/A	-	Shuttered trench
012	Dep	Organic alluvium	Tr.	Tr.	0.96m	2.58-1.67	Shuttered trench
013	Wood	Cut Timber	N/A	N/A	N/A	2.57	Shuttered trench
014	Dep	Alluvial Lens	Tr.	1.50m	0.20m	2.17	Shuttered trench
015	Cut	Cut of post-med Ditch	Tr.	2.60m	0.95m	4.02	Pump chamber and pipelines
016	Fill	Fill of post-med Ditch	Tr.	2.60m	0.95m	4.02	Pump chamber and pipelines
017	Dep	Topsoil	Tr.	Tr.	0.45m	4.46	Reed bed
018	Wall	Wall of outhouse	3.40m	1.65m	0.30m	4.09	Reed bed
019	Drain	Drain from outhouse	2.0m+	0.20m	0.10m	4.16	Reed bed
020	Floor	External floor	2.55m	1.55m	0.10m	4.14	Reed bed
021	Dep	Modern made ground	Tr.	Tr.	0.10m	4.11	Car park service trenching
022	Dep	Modern made ground	Tr.	Tr.	0.50m	4.06	Car park service trenching
023	Dep	Alluvial clay	N/A	N/A	N/A	3.81	Car park service trenching
024	Dep	Buried topsoil	Tr.	Tr.	0.25	4.06	Car park service trenching

Table 2: List of recorded contexts

4.2 Sewage treatment works (STW) (shuttered trench)

4.2.1 The STW excavation was 8m x 2.5m and reached a maximum depth of 3m. The following stratigraphic sequence was recorded (described latest to earliest).

4.2.2 At the top of the exposed sequence was a deposit of made ground, [001], consisting of 400mm of dirty dark grey clay with frequent gravel, modern CBM and demolition rubble.

4.2.3 Underlying the made ground was a linear cut (a ditch), [004], measuring at least 3m long, 650mm wide and 180mm deep. This feature had gently sloping sides with a rounded base and contained a fill, [003], of dark blue clay that produced a fragment of pottery dating to *c.* 1750-1800. Feature [004] was cut into alluvial deposit [002].

4.2.4 Alluvial deposit [002] was a 750mm thick, bluish grey clay. No finds were recovered.

4.2.5 Underlying [002] was circular cut [007], measuring 430mm in diameter and 100mm deep with a fill, [006] <4>, <5> of dark brown silty clay with occasional pebbles. The feature was cut into deposit [005] and was truncated by the shuttering at the north of the trench. No artefacts were recovered from this feature.

4.2.6 Underlying alluvium [002] was a further alluvial deposit, [005] <2>. This consisted of dark bluish grey clay, 700mm thick, with occasional wood fragments. This unit was the primary alluvial deposit observed in the STW excavation.

4.2.7 Alluvium [005] was more productive in terms of finds and a broken pottery bowl (given context number [008]) dating to *c.* 1300-1400/25 was recovered. The location from which this pot was recovered is shown on section and in plan (Fig 6). Well preserved wood was also present: a timber plank [013] with nails and attached fibres, a further timber fragment [010], and a poorly preserved branch fragment [011].

4.2.8 Alluvium [005] overlay the lowest revealed deposit within the STW excavations, [012]. Deposit [012] <6> consisted of a layer of organic alluvium/wood peat at least 960mm in thickness. This unit was interspersed with occasional lenses of colluvial clay material. Deposit [012] contained a lens [014] of soft whitish grey clay, measuring 1.5m in width and 200mm in thickness. No finds were recovered. Two charcoal samples from this deposit were submitted for radiocarbon dating (see section 7.0). Both returned a date of 3605± 30BP (CAL 2040BC - 1880BC at 95.4%. Lab references: SUERC - 35886, GU-24179 and SUERC – 35887, GU-25180), suggesting an Early Bronze Age date for the formation of this layer.

4.3 Geoarchaeological review of the STW stratigraphic sequence

4.3.1 From a geoarchaeological perspective, the sedimentary sequence is comparable to that observed at other locations within the Rose Garden area (Pope 2009) and can be broadly correlated with the Borehole 1 (BH1) (location shown on Fig. 2) record made during this earlier phase of work.

[002] Equates to the upper, weathered alluvial sequence encountered at between 1.0 and 1,8m in BH1

[005] Equates to the blue grey anaerobic alluvium encountered between 1.8 -2.8m depth in BH1

[012] Equates to the wood peat encountered at between 2.8 and 4.6m in BH1. However within the STW shuttered trench this deposits contained a higher proportion of clay and fewer wood fragments.

4.3.2 Unlike the sequence recorded in BH1, no clear occupation layer was found at the junction between the upper weathered alluvium and lower anaerobic alluvium. Certainly the latter contained occupation material, it is possible that this locale represent a deeper water area away from the floodplain margin with a clearer occupation signature.

4.3.3 The junction between the peat and overlying alluvium here was as abrupt as observed in other exposures. This suggests the possibility of a truncated unconformable transition between each phase of deposition. The radiocarbon dating, which suggests a possible Early Bronze Age date for the peat and the apparent medieval archaeological signature of the overlying alluvium, supports this assumption.

4.4 Pump chamber and pipelines (Fig. 4)

4.4.1 A probably linear cut [015], measuring 2.6m wide and 950mm deep, was recorded in the pipe trench just to the north of the pump chamber and east of the STW. Cut [015] contained a fill [016] of mid bluish grey clay with intrusive inclusions comprising a piece of 18th- to 19th-century brick, glass and cartridge case.

4.5 Reed bed (Fig. 5)

4.5.1 The area was covered with a continuous layer of topsoil [017] of humic, dark brown silty clay, between 300mm-450mm thick. A brick structure [018] was cut into a yellowish blue silty clay deposit. The structure was rectangular in shape measuring 3.40m north to south and 1.65m east to west with a central wall dividing the interior space and forming two internal areas perhaps rooms. The interior of the north room measured 1.45m north to south by 1m east to west and the south room measured 1.20m north to south by 1m east to west. A pebble and mortar surface [020], measuring 2.55m north to south, 1.55m east to west and 100mm thick, abutted the west of structure [018]. A 200mm wide brick drain [019], a single brick in depth, cut through mortar surface [020] and the west wall [018] into the southern room.

4.5.2 Brick samples taken from the structure [018] and the drain [019] are of 18th-19th century date.

4.5.3 The drain leading from the small building suggests that the structure may be a privy.

4.5 Car park service trenching

4.5.1 The area was covered by a continuous 50mm-100mm layer of pea shingle over sand [021], which overlay a concrete slab and a loose packed tarmac deposit, [022], up to 500mm thick and containing brick and concrete fragments. This overlay 250mm of buried topsoil [024] consisting of light brown silty clay and containing 19th- and 20th-century CBM.; the basal deposit was alluvial silty clay [023].

4.5.2 No ancient features or finds were present

5.0 THE FINDS

5.1 Summary and quantification

5.1.1 A small assemblage of finds was recovered as detailed below.

Context	Pot	Wt (g)	CBM	Wt (g)	Fe	Wt (g)	Cu. Al.	Wt (g)	Glass	Wt (g)	CTP	Wt (g)	Slag	Wt (g)
003	4	54	3	452	2	>6000			2	336			1	10
008 (005)	83	626												
016			2	54			1	14	1	6			1	50
017	2	58							1	106	2	6		
018			3	9344										
019			2	5824										

Table 3: Quantification of the finds

5.2 **The Pottery** by Luke Barber

5.2.1 Only three contexts produced pottery during the latest phase of fieldwork. The most notable of these was pottery group [008] (from deposit [005]) that produced the vast majority of the overall assemblage. This deposit yielded 81 sherds, weighing 623g, from two different vessels. Of these, 80 sherds (619g) are from the lower portion of a Winchelsea Black-type fine sand tempered greyware cooking pot with sparse calcareous (burnt out shell) inclusions to 1mm. The vessel is medium fired with vertical thumbed strips and although the sherds show some signs of abrasion the presence of sooting deposits on its exterior demonstrate it has not been substantially reworked.

5.2.2 The other sherd is from a better-fired dark grey/black Winchelsea Black vessel with no obvious shell but combed external decoration. Similar wares were found in association with internally glazed Rye wares during the evaluation (context [2/08], the lower fill of channel [2/04]) where they were dated to the 14th or early 15th centuries. The lower-fired nature of the shelly vessel in the current assemblage would suggest a late 13th- to 14th- century date, but this could be an old vessel at the time of deposition. The small harder-fired sherd is more in keeping with a 14th- to early 15th- century date.

5.2.3 Context [003] produced a sherd (4g) from an oxidised hard-fired earthenware vessel with scattered chalk inclusions to 1mm. This is likely to be of later 16th- to 17th-century date. However, the same deposit also produced a sherd of glazed red earthenware (40g), part of a Staffordshire white salt-glazed plate (8g) and creamware sherd (1g) suggesting a date in the second half of the 18th century.

5.2.4 Context [017] produced a refined redware teapot sherd with horizontal bands of external white slip (44g) and part of the base of a refined white earthenware teacup with yellow glaze. The latter has the remains of a black transfer-print ‘ENGLAND’ suggesting a date at the very end of the 19th or early 20th century.

5.3 The Ceramic Building Material by Sarah Porteus

5.3.1 A total of 10 fragments of ceramic building material (CBM) with a combined weight of 15674g were recovered during the works. The assemblage is entirely of 18th- to 19th-century post-medieval date.

5.3.2 Two provisional fabrics were identified: brick in fabric B1, an orange-red fabric with coarse chunky cream silt and occasional coarse flint and sparse black iron rich inclusions; and peg tile in fabric T1, A red fabric with moderate black iron rich inclusions and moderate fine quartz.

5.3.3 Contexts [003] and [016] both contained a single fragment of 18th- to 19th-century brick in fabric B1 and a fragment of peg tile in fabric T1. Structural contexts [018] and [019] both contained samples of unfrogged brick with standard 240 by 120 by 65mm dimensions, fine sanding and sharp arises.

5.4 The Glass by Elke Raemen

5.4.1 Four fragments of glass were recovered from three individually numbered contexts. Included are two wine bottle fragments from [003], consisting of a 19th-century body fragment and a mid 19th- to early 20th-century base fragment. A second body fragment, again dating to the mid 19th to early 20th century, was recovered from [016]. In addition, a small, clear glass whiskey bottle of 20th-century date, embossed “OLD ORKNEY WHISKY” and with white metal screw top, was found in [017].

5.5 The Clay Tobacco Pipe by Elke Raemen

5.5.1 Two plain stem fragments, unmarked and undecorated, were recovered from [017]. Both date to *c*.1750-1910. One retains external burn marks, possibly signifying discard in fire.

5.6 The Iron Objects by Trista Clifford

5.6.1 A small amount of ironwork was recovered, weighing just over 6kg. Context [003] contained a large rectangular object, probably a drain cover frame, together with a plate fragment of uncertain function.

5.6.2 A stout iron nail with rectangular section shank and umbonate, lozenge shaped head RF<2>, was found embedded in timber plank [13]. Also embedded within the plank was RF<101>, the remains of a small iron stud. The tack appears to have a figure of eight shaped decorative head. Environmental sample <11> [13] produced a further, heavier stud with a flattened circular head.

5.7 The Copper Alloy Objects by Trista Clifford (incorporating comments by Justin Russell)

5.7.1 Two copper alloy objects were recovered. A mark VII British .303 blank cartridge manufactured by Crompton and Parkinson Ltd in 1943 was recovered from context [016]. The cartridge has been fired.

5.7.2 A complete dress pin with wound wire head came from context [005],

environmental sample <2>. An early post-medieval date is probable.

5.8 The 'Fabric' by Trista Clifford

5.8.1 *Introduction*

A sample of fabric was attached to the timber plank [013] It consists of five small pieces made up of densely matted hairs; two of the pieces are joined. The fragments are dark brown in colour and waterlogged.

5.8.2 *Methodology*

The fragments were examined under a microscope at a magnification of 7x 45. All were observed to be compacted together but were separated before examination.

Individual hairs were examined at a magnification of x400 in order to identify the origin of the fibres. Identification was attempted using a hair identification key (De Marinis and Asprea 2006) and Deedrick and Koch (2004).

5.8.3 *Results*

Three pieces appeared to be harder in texture than the others; one of these was investigated further and found to contain a quantity of dark brown sediment between the fibres. No skin or leather was observed.

One piece was observed to have been cut to a slightly curved shape along one edge which was thicker in cross section than the opposing edge. The opposite edge appeared to have been worn down rather than deliberately cut.

Individual hairs selected for examination were found to be of animal origin. Certain identification of species could not be established. The fibres are medium to coarse in diameter with darker pigmentation at the tip and root. Scale shape is imbricate where observed. The characteristics of the medulla and root most closely resemble hair of the domestic horse.

5.8.4 *Conclusion*

The form of the fragments and evidence of deliberate shaping suggest that the fibre was intentionally manipulated to make a felt -like fabric. This was probably used as padding or lining within another object given the evidence of wear through friction. A possible origin for the hair is the domestic horse.

6.0 ENVIRONMENTAL SAMPLES by Karine Le Hégarat and Lucy Allott

6.1 Introduction

6.1.1 A total of seven bulk soil samples of between ten and 110 litres were taken during the watching brief at Bodiam Castle, Sewage Treatment Facility. Previous investigations at the "Rose Garden" site identified a sedimentary profile with varying degrees of organic preservation (Priestley-Bell and Pope 2009). Therefore, sampling targeted recovery of environmental indicators which could support these previous results as well as provide further detailed information regarding the changes in the past vegetation and environment. More particularly, it aimed to establish evidence for remains which would help clarify the post-depositional and sedimentary history of the deposits. In addition, sampling aimed to provide information indicative of anthropogenic influence and activity over the period represented by these deposits (such as the possible presence of a revetment lining an area of water). All the samples came from the STW excavations but were extracted from three different types of deposits: three came from natural sedimentary deposits, two from material surrounding timbers including one worked timber [013] and a further two originated from archaeological features.

6.2 Methodology

6.2.2 Various methods of processing have been applied to the soil samples as they originated from several types of deposits ranging from moist Organic Alluvium/Wood Peat deposit to clayey sediments of alluvial origin. Grab samples of 500ml have been retained from each sample to allow for analysis of other types of environmental remains if required. Processing methods specific to each sample are presented in Table 4.

6.2.3 All bulk samples were processed in a floatation tank. The flots and residues from samples <2>, <3>, <4> and <10> were retained on 250 and 500µm meshes and allow to air dry. The flots and residues from samples <6>, <7> and <11> were passed through 8, 4, 2mm and 500 & 250µm sieves and kept wet. While processing, small fragments of uncharred wood were collected and stored in water in air tight bags. The dried residues were sorted for environmental and archaeological remains while the flots were scanned under a stereozoom microscope at x7-45 magnification.

6.2.4 Samples were taken from fragments of waterlogged wood, including worked wood [013], and manually sectioned along three anatomical planes with a flexible razor and viewed under a transmitted light microscope at x50, 100, 200 and 400 magnifications.

6.2.5 Identifications have been provided for macrobotancial remains and wood through comparison with specimens documented in reference manuals/texts (Cappers et al. 2006, Hather 2000, NIAB 2004, Mauquoy and van Geel 2007, Schoch et al. 2004) and modern comparative material. An overview of the bulk sample contents is presented in Tables 5 and 6. Nomenclature and habitat information follows Stace (1997).

6.3 Results

6.3.1 *Stratigraphic units: sampling summary*

No samples were extracted from the alluvial clay [002]; however three samples (<6>, <7> and <2>) were taken from a sequence of sedimentary units located below alluvial clay [002]; including an organic alluvium/wood peat ([012] sample <6>, a grey clay deposit [014] (sample <7>) of possible alluvial origin which was resting within the Organic Alluvium/Wood Peat unit [012] and a bluish grey alluvial clay ([005], sample <2>).

6.3.2 *Organic Alluvium/Wood Peat [012], sample <6>*

Sample <6> was extracted from the lowest layer uncovered during the watching brief (organic alluvium/wood peat) [012]). Well preserved uncharred wood fragments including twigs and several large pieces >140mm in size were abundant in this sample. Two pieces of alder round wood were identified and submitted for radiocarbon dating. Both were relatively small displaying 3 growth rings (ASE_DS_00075 / GU24179) and up to 10 growth rings (ASE_DS_00076 / GU25180). Small fragments of plant stems, roots and/or rhizomes were also numerous. Although unidentified, some of the stems were consistent with stem fragments from monocotyledon species. A moderate quantity of waterlogged seeds was also present, the majority of which were alder (*Alnus glutinosa*). Sedge (*Carex* sp.), knotgrass/dock (*Polygonum/Rumex* sp.) and gypsywort (*Lypocus europaeus*) were also noted in the sample.

6.3.3 *Grey clay lens [014] within the Organic Alluvium/Wood Peat, sample <7>*

Sample <7> from grey clay lens [014] produced a similar range of uncharred botanical remains to those recorded in the surrounding Organic Alluvium/Wood Peat unit. Alder was well represented with female cone axe and numerous fruits. Additional macrobotanical remains included sedge and gypsywort. There was a large quantity of small fragments of probable stems, roots and/or rhizomes but also a moderate amount of large uncharred well preserved wood fragments. Two pieces of alder wood were identified from this deposit. One was a small twig with bark still attached and displayed approximately 10 years growth. The other was a piece of highly twisted and distorted wood (possibly root wood). In addition, a small assemblage of charred wood fragments were recorded in this sample, including pieces <4mm in size although the majority were considerably smaller (<2mm).

6.3.4 *Alluvial clay [005] overlying the Organic Alluvium/Wood Peat [012], sample <2>*

The flot from sample <2>, alluvial deposit [005], was dominated by uncharred vegetation (97%) including rootlets, fragmented woody debris, fragmented leaves and frequent wild/weed seeds and fruits. The assemblage of seeds and fruits was principally composed of taxa from disturbed ground and waste places including blackberry/raspberry (*Rubus fruticosus* agg./*idaeus*), nightshade (*Solanum* sp.), nettle (*Urtica* sp.), probable woundwort (cf. *Stachys* sp) as well as seeds from the goosefoot (Chenopodiaceae) and dead-nettle (Lamiaceae) families. Elder (*Sambucus* sp.) which can grow in hedgerows was also recorded. The assemblage of charcoal consisted principally of fragments <2mm in size with fragments

>12mm infrequent. Several pieces of uncharred, compressed oak wood and bark fragments were also recovered from this deposit. Both the charred and uncharred wood fragments were moderately well preserved. The sample also produced small pieces of glass, a single copper pin and a small amount of burnt clay.

6.3.5 *Timbers [010] and [013]:*

Alluvial clay [005] yielded two large timbers [010] and [013] and sample <3> came from deposit [009] surrounding these pieces of wood. An additional sample (<11>) was extracted from the sediment surrounding large timber [013]. A further timber fragment [011] was collected from deposit [005] and assessment revealed that it probably derives from a natural branch or narrow stem and shows no evidence of working.

Timber [013] is an oak plank measuring approximately 965 x 210 x 21mm with three holes (one retaining a tack, and another with a nail) along one edge, one hole located on the opposite side and a fourth located towards one end of the plank (Fig. 6). The date and function of this object are unknown. Timber [010] retains no signs of working or conversion although it may derive from a larger worked object such as a stake.

6.3.6 *Unit [009]: material surrounding timbers [010] and [013], samples <3> and <11>*

Sample <3> taken from the sediment surrounding two large timber artefacts ([010] and [013]) produced a flot rich in uncharred botanical remains consisting of a mixture of woody and herbaceous detritus. The sample contained a similar array of uncharred seeds to deposit [005] including species found on disturbed grounds and waste places as well as species growing in hedgerows and shrubs. In addition the sample produced taxa specific to wetland habitats such as gypsywort (*Lypocus europaeus*) and floating club-rush (*Eleogiton fluitans*). Other seeds from the sedge family (Cyperaceae) were present in the deposit. Charred macrobotanicals were also recorded including a single sedge seed (Carex sp. lenticular), a possible wild privet (cf. *Ligustrum vulgare*), vetch/tare/vetchling (*Vicia/Lathyrus* sp.) as well as oat/brome (*Avena/Bromus* sp.) and other indeterminate large grass (Poaceae) caryopses. The assemblage of charcoal was similar to that recorded in deposit [005] with some fragments >6mm in size and a single piece of round wood.

An additional sample (<11>) was extracted from the sediment surrounding timber [013]. Large pieces of uncharred wood measuring up to 200mm in size were recovered. The residue from this sample produced a nail. This sample contained a variety of uncharred seeds and fruits suggesting a mixture of taxa some of which represent wetland habitats: branched burr weed (*Sparghanium erectum*) and sedge. A single seed from the hop (Cannabaceae) family as well as a single uncharred blackthorn (*Prunus spinosa*) stone and two indeterminate fruit stone fragments were also recorded in the deposit. Charcoal fragments were infrequent and consisted of small fragments (<2mm) only.

6.3.7 *Cut archaeological features:*

The remaining two samples were taken from archaeological features

excavated within the Alluvial clay [002]; sample <10> from the fill [003] of post-medieval linear feature [004] and sample <4> came from the fill [006] of pit [007].

6.3.8 *Post-medieval ditch [004], sample <10>*

The flot from sample <10> taken from the fill [003] of post-medieval linear shaped feature [004] was dominated by uncharred plant remains including roots, twigs and wild/weed seeds. The assemblage of uncharred wild/weed seeds contained a large quantity of blackberry/raspberry but elder, nettle, possible woundwort (cf. *Stachys* sp.) and seeds from the goosefoot and carrot (Chenopodiaceae and Apiaceae) families were also recorded. The presence of disturbed ground is again implied by the occurrence of taxa such as blackberry/raspberry and nettle and elder suggests the presence of hedgerow. A very small assemblage of charred wood fragments was present in this sample and a single charred grain of wheat (*Triticum* sp.) was recovered from the residue. Two pieces of coal and a fragment of peg tile (S. Porteus pers. comm.) were also recovered from this sample.

6.3.9 *Pit [007], sample <4>*

Sample <4> from pit [007] contained a small assemblage of wood charcoal fragments. Uncharred botanical remains were also abundant in the flot comprising a mixture of woody and herbaceous detritus. The array of uncharred wild/weed seeds included taxa similar to those recorded in sample <10> and represented principally plants from disturbed grounds, shrubs and hedgerows. Occasional seeds from plants associated with wetland environments were also present: gypsywort and sedge. In addition, this sample produced a seed from the hop (Cannabaceae) family. Infrequent charred seeds from the goosefoot (Chenopodiaceae) family were recorded.

6.4 Discussion

6.4.1 *Summary*

Overall sampling has confirmed the presence of environmental indicators and although the evidence is limited to botanical remains (wood, fruits, wild/weed seeds and cereal grains), the assemblage recovered is particularly rich in terms of quantity and diversity. The assemblage of plant remains is preserved principally through waterlogging in these well sealed deposits although some material is also preserved through charring. The majority of remains were well preserved. Overall, the macro botanical remains provide some evidence for the past vegetation environments as well as the depositional conditions which have contributed to the formation of these deposits.

6.4.2 *Evidence for past vegetation (macrobotanical remains)*

The assemblage of botanical remains recovered in samples taken from the lowest layers uncovered during the watching brief ([014] and [012]), is typical of Alder carr, a “swampy” low-lying area covered principally with alder that develops over a poorly drained peaty soil. Gypsywort is associated with wetter fens and wet fields and it can grow by rivers and lake (Stace 1997). Sedge is also often an indicator of wetland environments. Together these taxa suggest therefore that the Alder carr could have been associated with

groundcover comprising sedge and gypsywort. The later could also represent plants growing by the nearby river Rother. No aquatic taxa specific to inland standing open waters such as ponds or lakes were recovered in deposits [014] and [012]. However, fragments of stems, roots and/or rhizomes were abundant in these deposits and although they were not identified, they are highly consistent with monocotyledons. Their high concentration together with the presence of sedge could indicate the presence of Fen Carr. The taxa identified in deposits [012] and [014] suggest therefore an environment which would have developed over a terrain originally submerged by water: an Alder Carr woodland in association with a Fen Carr.

The next facies overlying the organic alluvium/wood peat contained a different array of botanical remains. There was no direct evidence for wetland environment in the alluvial clay [005] and the assemblage of macrobotanical remains present in this deposit suggested principally a disturbed environment with nettle, nightshade and blackberry/raspberry. The plants are common on land disturbed by and associated with settlements. Elder which can also be found on rough ground and waste places is more often associated with hedgerows and shrubs. The fact that there were no real indicators of wetland environment in alluvial clay [005] suggests a clear alteration of the vegetation landscape. The apparent absence of a transitional phase between the organic alluvium/wood peat [012] and alluvium [005] suggests some kind of modification and truncation of deposit [012] or a possible hiatus in sediment accumulation. Erosion or anthropogenic intervention could explain this apparent sharp boundary.

Although timbers [010] and [013] were found on the same level as the alluvium [005], the samples extracted from the sediment surrounding these wood fragments (<3 and 11>) contained a broader variety of botanical remains than those found in [005]. In addition to species found on disturbed ground, the deposits contained taxa associated with wetland environments including sedge and gypsywort suggesting that the pieces of wood were deposited in or directly associated with an area of wetter soil. It is also possible that the timbers and surrounding sediment deposit were re-deposited within alluvial clay [005] from another source which might explain the different composition of the macrobotanical assemblages. Branched bur-weed species grow on fresh water margins as well as marshland and floating club-rush which can be found by peaty ponds and ditches and might provide evidence for stands of fresh water or very slow flowing water such as drainage ditches for instance. Hedgerows and/or shrubs were implied by the presence of a blackthorn stone.

Species associated with disturbed grounds were also present in pit fill context [006] and linear feature [004]. However, the pit produced additional taxa which are directly related to damp or an otherwise waterlogged environment. Overall, evidence for domestic and/or agricultural activities was very scarce. The only crop remain, a charred grain of wheat, was recorded in the linear shaped feature. Nonetheless, pit [007] and sample <11> surrounding wood timber [013] contained uncharred seeds from the hop family. The seeds compares best with hemp (*Cannabis sativa*) but could also be hop (*Humulus lupulus*). During the medieval period hemp was cultivated for its fibre as well as for the oil from the seed (Gearey *et al.* 2005) and hemp was almost certainly cultivated in the surroundings of Bodiam Castle as suggested by some notes present in the “Account and

memoranda book of John Everenden of Sedlescombe" regarding wages paid for 'brakeing and swinghing hemp' (1654-1656) (East Sussex Record Office). Hop, one of the main ingredients for making beer, could also have been cultivated locally.

It is interesting to note that no alder seeds were recorded in the archaeological features excavated in the Alluvial clay [002] although the taxa was frequent in the pollen profile for deposit [002] (see Scaife). This can be interpreted as evidence for alder trees growing in the region but not in the immediate vicinity of the site.

6.4.3 *Conclusion*

Sampling revealed interesting evidence regarding the changes in the past vegetation and environment at the "Rose Garden". On the whole waterlogged environmental conditions and Alder Carr vegetation are indicated being replaced by a much dryer environment with strong evidence for ground disturbances that were probably associated with settlement activities during the medieval period.

Sample Number	Context	Parent context	Context / deposit type	Comments	Sample Volume litres	sub-Sample Volume litres
2	005	005	Deposit – Blue Grey Alluvial layer within the shuttered trench	Processed by flotation; pieces of wood retained wet (Sub-sample of 500ml retained for grab)	20	20
3	009	009	Material surrounding timbers [010] and [013] within Alluvial layer [005]	Processed by flotation; pieces of wood retained wet	110	20
4	006	007	Fill of pit [007] within the shuttered trench	Processed by flotation; pieces of wood retained wet	16	10
6	012	012	Deposit - Layer of Organic Alluvium/Wood Peat within the shuttered trench (lowest layer uncovered during this watching brief)	Processed by wash-over flotation (residue and fractions from the flot kept wet) (Sub-sample of 500ml retained for grab)	20	20
7	014	014	Lens of grey clay within the Organic Alluvium/Wood Peat deposit [012]	Processed by wash-over flotation (residue and fractions from the flot kept wet) (Sub-sample of 500ml retained for grab)	20	20
10	003	004	Fill of post-medieval linear feature [004] within the shuttered trench	Processed by flotation (Sub-sample of 500ml retained for grab)	10	10
11	013	013	Material surrounding worked timber plank [013] within Alluvial layer [005]	Processed by wash-over flotation (residue and fractions from the flot kept wet) (Sub-sample of 500ml retained for grab)	20	20

Table 4: Bulk samples from Bodiam Castle, Sewage Treatment Facility: location and processing details

		Flot									Residue						
Sample Number	Context	weight g	Flot volume ml	Uncharred %	seeds/fruits uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	weed seeds charred	Identifications	Preservation	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than charcoal)	Weight (g)	Other (eg ind, pot, cbm)
2	5	14	70	97	*Rubus fruticosus* agg./*idaeus* sp. (**), *Urtica* sp. (**), *Sambucus nigra* (*), cf. *Stachys* sp. (*), Chenopodiaceae (*), Lamiaceae (*), *Solanum* sp. (*), unident. seed, unident. fruit		*	*				**	4	**	<2			B. Clay */4g - Pin */<2g - Glass */<2g
3	9	40	225	97	*Sambucus nigra (*), Lycopus europaeus* (*), Caryophyllaceae (*), Chenopodiaceae (*), *Rubus fruticosus agg./idaeus* sp. (*), Apiaceae (*), *Ranunculus* sp. (*), cf. *Persicaria lapathifolia* (*),*Eleogiton fluitans* (*), *Polygonum/Rumex* sp. (*), *Carex* sp. (*), cf. *Stachys* sp. (*), Lamiaceae (*), unident. seed, unident. fruit			**	*	Poaceae (*), Asteraceae (*), cf. *Ligustrum vulgare* (*), Cyperaceae (*)	+ to ++	**	2	**	<2	* *Avena/Bromus* sp., Poaceae, *Vicia/Lathyrus* sp.	<2	

		Flot										Residue						
Sample Number	Context	weight g	Flot volume ml	Uncharred %	seeds/fruits uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	weed seeds charred	Identifications	Preservation	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charred botanicals (other than charcoal)	Weight (g)	Other (eg ind, pot, cbm)
4	6	28	115	97	*Sambucus nigra (**), Rubus fruticosus agg./idaeus sp. (**), Caryophyllaceae (*), Chenopodiaceae (*),* cf. *Persicaria lapathifolia* (*), cf. *Carex* sp. (*), cf. *Stachys* sp. (*), Lamiaceae (*), *Lycopus europaeus (*)*, *Urtica* sp. (*), Cannabaceae, unident. seed, unident. fruit	*	*	*				**	2	**	<2			
10	3	2	20	98	*Rubus fruticosus* agg./*idaeus* sp. (***), *Urtica* sp. (**), *Sambucus nigra* (**), cf. *Stachys* sp. (*), Chenopodiaceae (*), Apiaceae (*), unident. seed							*	<2	*	<2	*Triticum* sp. (1)		CBM */12g - Coal */<2g

Table 5: Sample quantification for four samples processed by flotation (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and weights in grams

Sample	Context	Macrobotanical Remains	Idenitification and preservation notes	Wood	Notes on Preservation of Wood
6	12	P	Uncharred: *Alnus glutinosa* (***; ++), *Carex* sp. (**; ++), *Lypocus europaeus* (*; ++), *Polygonum/Rumex* sp. (**; ++), unident. small frags of stems, rootlets, rhizomes (***; +)	P	Uncharred: large frags. >140mm, twigs, well preserved
7	14	P	Uncharred: *Alnus glutinosa* fruits and one cone (***; ++), cf. *Carex* sp. (**; ++), Apiaceae, *Lypocus europaeus (*; +),* unident. small frags of stems, rootlets, rhizomes (***; +)	P	Uncharred: large frags. >400mm (**; ++), smaller frags. (***; + to ++), twigs, well preserved; Charred: twigs (**)
11	13	P	Uncharred: *Persicaria* sp. (**; ++), Poaceae (*; ++), *Rubus* sp. (*; ++), indet. thorn, *Polygonum/Rumex* sp. (***; ++), *Carex* sp. (+++, **), *Sparganium erectum* (*; + to ++), Cannabaceae, (*, + to ++), *Ranunculus* sp., *Prunus spinosa* (*;++); stone frags. (*; +)	P	Uncharred: large frags >200mm (*; ++), Charred: small fragments <2mm in size (**; +)

Table 6: Flots and residues quantification for three samples processed by wash-over flotation (* = <5 items, ** = 5-10 items, *** = 11-25 items, **** = 26-100 items and **** = > 101 items) and preservation (+ = poor, ++ = moderate, +++ = good). Presence of remains is denoted as 'P'

7.0 SCIENTIFIC DATING: text prepared by Lucy Allott

7.1 Radiocarbon dating samples

7.1.1 Two wood samples were taken from Organic Alluvium (Wood Peat?) deposit [012] and submitted for radiocarbon dating at the Scottish Universities Environmental Research Centre (SUERC). Both were identified as alder round wood and were relatively small displaying approximately three growth rings (ASE_DS_00076) and 10 growth rings (ASE_DS_00076). Alder was the only taxon recorded in this assemblage and these fragments were selected as they had different diameters and it was assumed that they represented two different pieces of wood. Although it is possible that they derive from the same tree this cannot be determined from wood fragments alone.

7.2 Aims

7.2.1 The purpose of submitting these samples was to obtain dates for the accumulation of the organic rich alluvium [012] which sits within a sequence of alluvial deposits. The medieval sequence was not targeted as a large number of fragments of a Winchelsea Black-type fine sand tempered grey ware cooking pot [008] already provide a date to c. 1300-1400/25 AD (see Barber) for the deposit [005].

7.3 Results

7.3.1 Details of the radiocarbon dates are given in Table 7 quoted in accordance with the international standard, Trondheim convention (Stuiver & Kra 1986), and are given as conventional radiocarbon ages (Stuiver & Polach 1977). 2 Sigma calibrated dates, obtained using IntCal04 (Reimer *et al.* 2004), are also given at the 95% confidence level.

Lab Code	Context	ASE dating sample number	Material	Analysis Method	Conventional Radiocarbon age (BP)	Delta C13	2 Sigma calibrated date (95% confidence)
SUERC - 35886, GU-24179	012	ASE_DS_00075	Wood (*Alnus glutinosa*)	AMS	3605 ± 30	-29.8‰	2040BC (95.4%) 1880BC
SUERC – 35887, GU-25180	012	ASE_DS_00076	Wood (*Alnus glutinosa*)	AMS	3600 ± 30	-30.7‰	2040BC (95.4%) 1880BC

Table 7: AMS dates for waterlogged wood specimens from context [012]

8.0 POLLEN ANALYSIS by Rob Scaife

8.1 Introduction

8.1.1 Samples taken from the lower, water-logged, anaerobic peat [012] and the overlying alluvial sediments [005] [002] have been examined for sub-fossil pollen and spores. The principal aims of this pollen assessment study were seen as:

a) To ascertain if fossil pollen was present in the deposits and if so the quality of preservation.

b) To provide a preliminary idea of the vegetation types present and the environment during the time-span represented by this peat and alluvial sediment.

c) To determine if there is evidence for human activity in the pollen record especially as the sediments are in association with Bodiam Castle.

d) Assess the potential for a more detailed pollen analysis of the site at a future date.

8.1.2 The sequence obtained fulfilled all of these objectives and add to earlier palaeoenvironmental information obtained from 'The Rose Garden' excavations at Bodiam Castle (Priestley-Bell and Pope 2009). The results of this study are detailed below.

8.2 Pollen method

8.2.1 Sub-samples of 2ml volume were processed using standard pollen extraction techniques as described in Moore and Webb (1978) and Moore *et al.* (1991). Pollen was identified and counted using an Olympus biological research microscope fitted with Leitz optics. Total pollen sums of between 200 and 350 grains per level were identified and counted. Numbers depended on the numbers of pollen and preservation. A pollen diagram (Fig.8) was constructed and plotted using Tilia and Tilia Graph.

Percentages have been calculated as follows:

Sum =	% total dry land pollen (tdlp) (incl. *Alnus*)
Marsh/aquatic =	% tdlp + sum of marsh/aquatics
Spores =	% tdlp + sum of spores
Misc. =	% tdlp + sum of misc. taxa.

8.2.2 Taxonomy, in general, follows that of Moore and Webb (1978) modified according to Bennett *et al.* (1994) for pollen types and Stace (1997) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton.

8.3 The pollen data

8.3.1 Pollen samples were obtained and examined from the lower wood peat [012] the overlying alluvial sediment [005] which contained worked timber

artefacts, pottery and a metal objects. Two samples (35-45cm) come from the fill of a linear feature [003/004] cut into alluvial context [002]. Sample depths/context are given in Table 8 below.

Depth cm	***Monolith***	***Context***
5	T1	002
15	T2	"
25	T3	"
35	T4	"
45	T5	"
55	T6	"
65	T7	"
75	T8	"
85	T9	"
95	T10	005
105	T11	"
130	T12	"
140	T13	"
150	T14	"
160	T15	"
180	Bulk	012

Table 8: Pollen sample depths for Fig. 8 and contexts.

8.3.2 Pollen abundance and state of preservation was variable as might be expected from the peat and minerogenic alluvium, the latter having much poorer preservation and smaller absolute numbers. However, pollen was obtained from all sixteen of the samples submitted for analysis. Within this 1.70m sequence, a number of changes in the pollen stratigraphy can be differentiated and as such, preliminary local pollen assemblages can be ascribed. These are characterised in Table 9 below.

Local pollen assemblage zone	**Palynology**
l.p.a.z. 4 40cm to 5cm *Quercus*-Poaceae	This uppermost zone is tentatively delimited by an expansion of herb pollen and a continued reduction of trees and shrubs. Poaceae (to 35%) increases to the top of the profile along with Lactucoideae (15%). There is also a small increase in numbers of cereal pollen. Marsh/fen taxa, spores and misc. palynomorphs remain as in l.p.a.z.4.
l.p.a.z. 3 90cm to 40cm Alnus	Cereal and other Poaceae pollen of the preceding zone are reduced to lower levels (15-20%). *Alnus* attains its highest values in this profile (*c*. 75%). *Quercus* and *Corylus avellana* type increases to a peaks (*c.* 30% each) at the top of the zone. *Fagus* (to 6%) is more abundant in this zone. Overall, the pollen diversity is less in this (and the above) zone than in preceding levels. This is attributed to poorer pollen preservation in the upper alluvial sediment. This is also manifested by increased numbers of fern spores (*Pteridium, Dryopteris* type, *Polypodium*). There are also increased numbers of derived pre-Quaternary palynomorphs.
l.p.a.z. 2 120cm to 90cm. Poaceae-Cerealia	This zone is differentiated by a reduction of the trees noted in l.p.a.z. 1 and an expansion of herbs dominated by Poaceae (35%), Cereal type (peak to 28%) and large Poaceae (>45u). There are also small increases in *Ranunculus* type, *Plantago lanceolata* and Lactucoideae. A number of these herbs types are more consistent from the base of this zone. There is a reduction in spores.
l.p.a.z. 1 180cm to 120cm. *Quercus-Alnus-Corylus avellana* type	Trees and shrubs are dominant with only small numbers of herbs except for a peak of Poaceae at 150cm (39%). *Quercus* has highest values at the base of the profile (27%) declining upwards (10%). *Alnus* (to 60%) is dominant from on-site growth. Corylus is the dominant shrub (not thought to be *Myrica*). Other trees and shrubs include sporadic occurrences of *Betula, Pinus, Tilia* and *Salix*. Herb percentages are low but with a quite diverse taxonomic range which occur sporadically. Marsh taxa are dominated by Cyperaceae (20%) with a range of other fen taxa including the fern *Osmunda regalis*. There are a range of spores comprising *Polypodium, Dryopteris* type and *Pteridium.*

Table 9*:* Details of pollen zonation

8.4 Discussion

8.4.1 *Introduction to discussion*

The pollen sequence obtained can be regarded from two principal aspects. First, those pollen which derive from the on-site wetland/mire habitat and second, the surrounding drier, terrestrial zone. The latter comprises pollen coming largely from the local habitat but with potential for fluvially transported and long distance wind blown elements.

8.4.2 *The development of the wetland environment*

There is a strong representation of alder (*Alnus glutinosa*) throughout the profile [005] [002] with the exception of some reduction in l.p.a.z. 2. This taxon is a strong producer of wind blown pollen which can consequently be over represented in pollen assemblages (Andersen 1970, 1973; Janssen 1959). However, numbers found here show that it was growing on and/or very local to the site as floodplain carr woodland (hence the wood peat) or along the fringes of the river. Little evidence of aquatic plants indicating standing water, was found and the other marsh types recorded are probably the ground flora associated with this typical southern English fen carr vegetation community or floodplain. These plants comprise predominant sedges (Cyperaceae) with Common Reedmace (*Typha latifolia*), greater reedmace and/or bur reed (*Typha angustifolia/Sparganium* type), water plantain (*Alisma*) and Royal Fern (*Osmunda regalis*). It is likely that a proportion of the grass (Poaceae) pollen also derives from this fen community. A single record of pondweed (*Potamogeton* type which may also include arrow grass) was found and is the only possible evidence of standing water. This may also have derived from overbank flooding of the river onto the floor of carr woodland. These fen herb taxa are more important within the lower peats of l.p.a.z. 1.

Although alder is important throughout, there are some fluctuations in its importance. This occurs in l.p.a.z. 1 and most notably in l.p.a.z. 2. These reductions are associated with increases of grasses and notably cereal type pollen in l.p.a.z. 2. These changes may in part be caused by the statistical aberration of the increasing numbers of pollen of one type (grasses/cereal type) causing percentage reduction in other taxa within the pollen sum (Janssen 1959). Here, however, there appears to be a real reduction in the importance of alder. This may have been caused by felling for timber and also associated with the evidence of increased human activity (arable cropping). A further explanation is that a reduction in the density of alder woodland may have allowed easier ingress onto the site of cereal pollen coming from greater distance. Additional pollen work would establish the cause of these changes more clearly.

Within l.p.a.z. 4, a more progressive decline in alder is attributed to the change in status from alder carr to a more open floodplain onto which fluvial/alluvial sediments were deposited. The latter is also evidenced by the occurrence of pre-Quaternary pollen and spores which derived from the basal geology and/or reworked from older alluvial sediment.

8.4.3 *Summary: the site environs*

The site was an alder fen carr woodland (alder and possibly willow) with a

ground flora of typical fen herbs (grasses, sedges, reed mace, bur reed). Although alder was important throughout, there were ephemeral phases of less importance (especially l.p.a.z. 2). The cause of these is enigmatic but may be due to cutting and use of alder timber. With change to a more alluvial environment alder remained important probably fringing the river or its floodplain. There is little evidence of standing or slow flowing water and a semi terrestrial mire habitat is postulated.

8.4.4 *The vegetation of the surrounding landscape*

Alder has not been excluded from the pollen sum as suggested by Janssen (1959) for reasons described above (4.i.). Therefore, the % representations of other taxa in the pollen diagram will, to a certain extent, have been suppressed. This needs to be taken in to account in any interpretation. It is clear that oak (*Quercus*) and hazel (*Corylus*) are the principal tree pollen types during the time-span of the sediments. The more or less absence of lime/linden (*Tilia*) is important as this has implications for the dating of the sequence (prior to radiocarbon measurements). Other tree pollen types include occasional birch (*Betula*), pine (*Pinus*) and hornbeam (*Carpinus*). These are wind-pollinated taxa and may derive from long distance (i.e. the extra regional component). Contrasting with these are the relatively small numbers, but importance of beech (*Fagus*) and holly (*Ilex*). These are trees markedly under represented in pollen assemblages away from local growth (Andersen 1970, 1973) and their presence even in small numbers suggests their presence in close proximity to the site (i.e. accepting the possibility of fluvial rather than airborne transport).

Pollen spectra from 'The Rose Garden' (Scaife 2009) show the earlier importance of lime (zone 1) in the this region during earlier periods and the profile was suggested as being of late Neolithic or early Bronze Age date. It is probable that peats at the Sewage Treatment site may also extend back into this period.

8.4.5 *Human activity in the pollen record*

The absence of lime (*Tilia*) and elm (*Ulmus*) in any significant numbers show that this sediment/pollen sequence post dates the broadly synchronous Neolithic Elm Decline at *c.* 5,500-5,000 BP and the Lime Decline of often early to middle Bronze Age date. Both of the events have been much discussed in terms of human activity. The former has been much discussed and provides a very useful palynological marker event (Smith 1970, 1981; Scaife 1988) which is attributed to the effects of Neolithic forest clearance allowing the spread of elm bark beetle and fungus which destroyed elms across the British Isles (Girling 1988). The latter is largely attributed to clearance for lime woodland for agriculture although other causes have also been suggested for some pollen spectra (Waller 1993, 1994 a/b). In this sequence neither taxon is present in quantity even in the lower peat of context [012] and as such, it can be said that a substantial degree of anthropogenic impact had occurred by the start of this pollen sequence. After removal of elm and lime, oak and hazel woodland remained the principal trees across this region as a whole with strong evidence of beech growing nearby this site (especially l.p.a.z. 2 and 3). This is typical of pollen assemblages from the very late-prehistoric and historic periods. This is also in accord with the archaeological evidence obtained from the alluvial contexts [005] and [002] overlying the peat.

Within this landscape, agriculture was obviously being practised. Cereal pollen is consistently present in small numbers from the middle of l.p.a.z.1 with strong maxima and an expansion of grasses at 105-95cm (l.p.a.z.2), the top of alluvial context [005]. This peak probably represents cultivation in proximity to the site. However, as already noted this is also associated with a decline of alder pollen which may have allowed easier ingress of pollen to the site through reduced woodland/canopy cover. Alternatively, it is attractive to think of this, as felling of alder from the floodplain or its margins which was associated with this increased human impact. Pastoral agriculture is less discernible in pollen spectra because of the presence of grasses which may come from a wide range of plant communities, not least, the on-site habitat. Ribwort plantain (*Plantago lanceolata*) is frequently used as an indicator of dry grassland. Here, although it is present throughout, numbers of this and other herbs of pasture are small. This may also be attributable to the filtering effect of the alder floodplain woodland.

The only possible cultigen other than cereals is a single record of *Cannabis sativa* type, that is, hop or hemp. Unfortunately these have similar pollen morphology and it is not possible to separate them. Hop is a native of southern English fen woodland and hemp was a typical crop of the Saxon-medieval periods, especially in relation to castles and manor houses. Either is, therefore, a possibility here.

In the upper alluvial sediment [002] of probably post-medieval age, there is an increase of dandelion type (Lactucoideae) pollen and fern spores. This is typical of the poorer pollen preservation in alluvial sediments where there is differential preservation in favour of more robust pollen types and is also seen in other River Ouse floodplain sites (Burrin and Scaife 1984; Scaife and Burrin 1992).

8.4.6 *Summary: the local landscape*

By the start of this pollen record, elm and lime had disappeared from the local landscape from which it is suggested that the profile is of late Bronze Age or historic age. This concurs with the archaeological/artefactual information obtained from the excavation. Oak and hazel woodland remained with in the region and beech and holly were probably growing in close proximity to the site. There is clear evidence of arable cultivation throughout most of the profile and especially at one point in the profile (l.p.a.z. 2). Pasture/grassland is less well represented but was undoubtedly present. The filtering effect of the on-site floodplain canopy may in part be responsible for this poor representation. Changes in the pollen taphonomy occurred with the change from peat to alluvium and from contexts [005] to [002]. The latter is shown by an increase of dandelion type pollen, fern spores and derived geological palynomorphs. The possibility of a temporal hiatus between the peat and the different alluvial sediments is noted (Dr. A. Yates pers. com.). There are no appreciable differences in the pollen assemblages obtained from linear feature [004] indicating that infilling may have been rapid and/or reworking from surrounding sediment.

8.5 Additional analysis

8.5.1 *Potential*

Useful information has been gained from this assessment and it is clear that there is potential for providing a detailed vegetation/palaeoecological history of the area around Bodiam Castle. The profile presented here appears to extend back into the later prehistoric period in the lower peats. The peat at the base of this profile extends downwards and as such, offers the potential for obtaining a pollen/vegetation record which goes back substantially further and which may well embrace the earlier impacts of Mesolithic, Neolithic and Bronze Age activity. For the overlying alluvial sediment, this dates to the very late prehistoric period at its earliest through to the medieval period. Consequently further pollen study and dating of the sediment could be related to activities associated with the Bodiam Castle.

8.5.2 *Considerations for further analysis*

If further palaeoecological/palaeoenvironmental study is considered, it is suggested that a more detailed stratigraphical survey could be carried out and sleeved cores obtained from the most appropriate location. This would not necessitate open machine trenching and such samples could be obtained using a Cobra machine corer with sleeved tubing. The stratigraphy would be described in detail and sampled for pollen (and other ecofacts) in the laboratory. Samples at 4 and 8cm intervals as appropriate and pollen counts of 500 or more grains per sample level (where preservation permits) would be provide greater stratigraphical and taxonomic detail than obtained in this evaluation study. This would need to be supported by radiocarbon dating to provide and absolute chronology of change which would allow the work to be compared with, and fitted into, the existing framework of known environmental change for this region.

8.6 Conclusions

8.6.1 The following principal points have been made in this study:

1. Pollen was obtained from all of the sixteen samples examined including both peat and minerogenic alluvial sediment.

2. The wider depositional habitat was largely alder dominated floodplain woodland possibly changing to a more open floodplain with alder fringing the river of edges of the wetland.

3. The understorey flora comprised typical fen herbs including marsh marigold, reed mace, bur-reed, water plantain and some willow. There is very little evidence of open standing or slow flowing water. i.e. no aquatic macrophytes.

4. The vegetation of surrounding dry land had beech and holly but with oak and hazel. The latter, contrasting with the former may have been from more regional woodland.

5. There is clear evidence of a phase of arable cultivation (cereal pollen in l.p.a.z. 2) probably in close proximity to the site. This may be associated with a clear reduction in the importance of the floodplain alder (felling?).

6. Age of the sequence: Pollen analysis is not a technique for dating. However, pollen spectra provide a clue to possible age when the regional data are taken into consideration. Here, the absence of lime (*Tilia*) suggests a post Middle Bronze Age date i.e. after the Lime Decline. It seems probable that the profile extends into the historic period and the presence of Hemp (*Cannabis* type) may be indicative of this although this pollen taxon may also represent native hop.

7. The site has the potential for producing a long vegetation record which might span the late prehistoric and historic periods. It is suggested that if additional work is required, core samples rather than machine dug trenches would provide the necessary samples for pollen analysis and dating.

9.0 DISCUSSION

9.1 Project review: rationale and aims

9.1.1 Of all the aspects of the watching brief (the reed bed, the pipeline and pumping station, the car park area and the Sewage Treatment Works), the investigations during the installation of the Sewage Treatment Works were by far the most valuable for adding to the understanding of the past of the Bodiam Castle environs.

9.1.2 This was the first time that deposits at depths of greater than 1.2m through the alluvial sequence were exposed and able to be sampled and recorded by archaeologists. The deposits revealed a sequence from the early prehistoric (Early Bronze Age and earlier) to the late post-medieval periods and this afforded a potentially unparalleled opportunity to further our understanding of the landscape development in an arguably pivotal location (near the road crossing and adjacent to the River Rother).

9.1.3 The work in the STW had the potential to and has succeeded in, drawing together several types of evidence: palaeo-environmental (pollen, macrobotanicals and charcoal), geoarchaeology, scientific dating, stratigraphic analysis and artefactual reporting. Added to this is the extensive historic background (documentary and cartographic evidence) and, most importantly, the numerous and disparate pieces of archaeological fieldwork and desk based study that have been undertaken in over the past 15 or so years. Because of this it has been important to highlight this previous work and detail the interpretations that have been previously developed (Figs 2 and 3) so that the current work does not sit in isolation.

9.1.4 One of the key, specific, questions that the project has tried to address is the extent to which our understanding of the sedimentary and environmental processes at this location support, or not, the suggestion that this was the site of a medieval flote. Yet what has become apparent (and is summarised below) is that this cannot be achieved without understanding the earlier sequence: a change in sedimentation regime may have facilitated the development of the flote and harbour area.

9.2 Limitations

9.2.1 The realities of the fieldwork, and resources, have caused difficulties. It is worth emphasising that the STW excavations were an exceptionally difficult archaeological working environment (waterlogged, constant water ingress, confined space and deep, shuttered, excavations) and inevitably some compromises had to be made in the field.

9.2.2 With unlimited resources the scientific dating programme would have been more extensive, for example, and targeted throughout the sequence. However in combination with the artefactual evidence, we are reasonably confident of the results and that it has been targeted to most effect.

9.2.3 It was decided after consultation with the National Trust and the ESCC County archaeologist that we would report fully report on all aspects of the work, apart from the pollen which would be assessed. The pollen sequence is good, the assessment has provided an excellent characterisation and, on

balance, it is not worth progressing to full analysis of the existing column sample. Instead, Scaife suggests a different approach, (a borehole using a Cobra machine) should funding become available in the future.

9.3 Consideration of the sedimentary processes

9.3.1 Three marked phases of sedimentation were apparent within the site sequence, relating to distinct alluvial depositional environments. These deposits and associated palaeoenvironmental and dating evidence are summarised below.

9.3.2 By drawing these strands of evidence together (see Table 10), it is possible to begin to build a picture the environment and how the land may have been used in the prehistoric and medieval and post medieval periods.

Context	Description	Pollen	Plant Macros	Hydrology	Dating
[002]	Upper Weathered Alluvium	Some woodland regrowth (LPAZ3) followed by later renewed clearance towards top of sequence (LPAZ4)	No samples for Alluvial clay [002]	Marginal, shallow water with periodic drying.	-
[005]	Lower Blue Alluvium	LPAZ2 More open conditions and cereal growth in surrounding environment	Remains typical of a disturbed environment with nettle, nightshade and blackberry/raspberry; no real indicators of wetlands environment in [005]	Clearance of floodplain margins and renewed deeper water flow.	14th-15th century pottery
[012]	Organic Alluvium	LPAZ1 Tree and shrub dominated environment	Remains typical of Alder Carr woodland in association with a Fen Carr. No aquatic taxa specific to inland standing open waters	Cut off meander/floodplain margins under wooded.	2040BC (95.4%) 1880BC (from C14 dating sample)

Table 10: Palaeoenvironmental Summary

9.3.3 The organic alluvium (peat) exposed at the base of the sequence ([012]) was probably being laid down during the Early Bronze Age or before, as suggested by the radiocarbon dating and is the earliest depositional event. The dates should be treated with a degree of caution as only two pieces of uncharred wood have been dated, although they appear consistent. Vegetation at the time of deposition suggest alder carr vegetation in the vicinity, perhaps in association with fen carr and other broadleaf woodland dominated vegetation also represented.

9.3.4 The artefacts recovered from alluvial deposit [005], comprising an almost complete 13th- to early 14th-century pottery bowl, wood timbers ([010] and [013]), and wood fragment [011] were found towards the base of the unit

(Fig. 6, Section 3). It seems unlikely that *c.*3500 years of deposition are represented by this short vertical sequence, strongly suggesting that some of the original alluviation has been removed.

9.3.5 It is possible that the timber represents flotsam or driftwood deposited in the immediate area prior to or just after the beginning of the period of alluviation represented by [005], while the pottery represents domestic refuse cast onto a waterlogged or temporarily dry land surface. It is interesting to note that samples <3 and 11> extracted from the sediment surrounding timbers [010] and [013] contained a broader variety of botanical remains than those found in [005]. While sample <2> taken from alluvial clay [005] produced remains of species growing on disturbed ground, samples <3 and 11> contained taxa associated with wetland environments including sedge, gypsywort, branched bur-weed and floating club-rush. This might suggest that the pieces of wood were deposited in or directly associated with an area of wetter soil or that they were re-deposited together with the surrounding sediment from another area that supported this vegetation. The range of wetland plants might provide evidence for stands of fresh water or very slow flowing water such as drainage ditches for instance. A mix of different vegetation habitats are implied at this time with the local wetland signature as well as more open vegetation including some evidence for cereal cultivation in the region.

9.3.6 Although the upper alluvial deposit, [002], did not produce any finds, in view of the likely date of underlying deposit [005], it was probably laid down at the end of the medieval or during the post-medieval period. There is some comparative evidence supporting this. Deposit [002] is quite probably the same unit as deposit [1/04] recorded in evaluation Trench 1 (Priestly-Bell and Pope 2009). This was a naturally deposited alluvium that had undergone a significant degree of disturbance and deformation but unlike deposit [002], contained cultural material dating from the 15th to the 19th century.

9.4 The change in sedimentary regime and viability of the flote

9.4.1 The change in sedimentary regime seen at the junction between [005] and [012] cannot at present be fully explained. However it is likely that [012] relates to Bronze Age infilling of a river meander, while [005] represents the subsequent switch to open, relatively deep river flow in the medieval period, although it is interesting that the timbers dated to the 6th-7th centuries found in 2009 (Priestley-Bell & Pope 2009) were located at a depth that corresponds almost exactly to the interface between these two sediment units. The switch might be related to local channel migration or to a more systematic change in the flow regime of the river, leading to increased erosion, removal of alluvium and the formation of a large open channel. This possible evidence for a river channel running along the northern side of the valley is interesting, given the evidence for a Roman period channel along the southern side (Burrin 1988) indicating channel fluctuation. It is known from the documentary record that the river ran through or close to the vicinity of the site (*i.e.* switched back to the north) in the late 14th century until it was physically diverted southwards to its present channel by Sir Edward Dallingridge when he built the castle. A lease of 1410 from Robertsbridge Abbey granting Sir Edward's widowed daughter-in-law the land severed by the new course of the river show that the river abutted the millpond, which he created at the same time, and that the old riverbed to the east was probably used as a leat to carry water away from the mill (CKS

U1475 T264/550 – discussed in detail in James & Whittick 2008).

9.4.2 This change in regime seems to bring the river close to the floodplain margins at the site, allowing for deeper navigable water. Providing a definitive interpretation for the nature and formation of these deposits is not possible at present. This location is extremely complex in that there are three possible interpretations for alluvial deposits within the area of the Site:

- The former river channel;
- The millpond;
- The flote.

The former river channel

9.4.3 The physical diversion of the river in c.1385 is historically documented. However, the details of this massive undertaking are unknown. Presumably the new river channel was excavated first, with the river subsequently diverted into it, leaving the original channel in the form of a man-made oxbow meander. Was it then backfilled, or left to silt up whilst acting as a drainage ditch? Its exact position is also unclear – the boundaries mentioned within the 1410 lease indicate that it abutted the millpond, which implies that the millpond was constructed before the river was diverted (otherwise, why not use the redundant channel as a pond?), which in turn implies that the river lay to the south of the pond, which lays hard against the natural slope to the north. This would, therefore, suggest that the original channel lay to the south of the site, presumably lying beneath the modern visitor facilities. This would then support the interpretation of the Anglo-Saxon timbers as a revetment supporting the Roman road on its final northern approach to the river crossing to the north of the existing bridge (although this interpretation of those timbers is by no means secure).

The millpond

9.4.4 The main problem with the millpond is the location of its western end. Barber in 1998 suggested that the alluvium containing medieval pottery observed in the installation of the original sewage plant on the site (the same deposit as [005]) related to the silting up of the millpond, a process attested by historical records which suggest that it had gone out of use by 1567 (Barber 1998), and that the western edge of the pond should be sought further to the west than its current location. He also referred to a line of stones interpreted as ballast stones, although it is difficult to see how and why a vessel would be tipping ballast into the millpond – this operation would be more likely to take place within the river channel or in the flote. Thus, the western end of the millpond has probably always lain just east of the Site.

The flote

9.4.5 The earliest evidence for a wharf at Bodiam occurs in documents of 1157-71, with specific references to a timber quay occurring in 1357 (James & Whittick 2008, 18); its location is unknown, but it was probably on the northern side of the river (*pers. comm.* Dr Mark Gardiner, quoted in James & Whittick 2008*).* By 1410 *(i.e.* following the diversion of the river to the south), the flote is known to have existed on land that had, before the diversion of the Rother, formed part of the meadows belonging to the manor of Ewhurst, *i.e* located on the southern side of the former river. This suggests that the location of the flote was originally to the north, in the vicinity of the Site, and later moved further to the south to follow the river,

with the former hard drying out as a result. Moreover, documentary evidence from 1607 records that the owner of Summers, the southernmost holding on the east side of the road (immediately west of the Site), was presented for encroaching on the flote (James & Whittick 2008, 35), suggesting that by this time it lay to the south of the Site. A geoarchaeological assessment of two trenches immediately north and west of the Site (Priestley-Bell & Pope 2009) concluded that the depth of medieval and later alluvium in this location was insufficient to support the feasibility of a medieval harbour in this location, although this may rely on an assumption that a harbour means a deep water anchorage and does not take into account the use of hards in the medieval period, where vessels were beached on a sloping foreshore (e.g. Lewes: Gardiner, Russell & Gregory 1996).

9.4.6 The sedimentary sequences are of limited assistance in that they relate to deposition after the three features outlined above went out of use. There is also some contradiction between the sedimentary studies, which suggest some level of water flow for the medieval period, and the environmental evidence which produced little evidence for standing or slow flowing water, which would seem to rule out river, millpond and flote. However, the historical context of the site should be considered when interpreting the macro and micro botanical results – a working harbour, settlement and millpond will have reduced the prevalence in the immediate environs for water margin vegetation that would be expected further up and down stream. Also, the palaeo-environmental work was detailed but very localised in its scope, making it very difficult to confidently compare alluvial sequences from the site with those identified in earlier phases of work, none of which received the same level of study.

9.4.7 In conclusion, it can be tentatively suggested that the evidence would appear to suggest that the site lay on the northern edge of the earliest flote at Bodiam associated with the original course of the river. When the river was diverted to the south, the flote migrated to follow it, with the area of the Site left to dry out.

9.5 Marginalisation of the flote?

9.5.1 Renewed woodland growth at the base of the weathered alluvium may relate to the marginalisation of this locale as the channel began to silt up and water became shallower. The weathered, oxidised condition of the sediments here certainly indicates much shallower water conditions. The usefulness of this locale as a riverside harbour had a finite time span, and dating the change in regimes which led to it's choking up is now an important priority.

9.6 Other aspects of the watching brief: late post-medieval features

9.5.1 The remainder of the watching brief results do not add to the hypothesis of the development of the prehistoric and medieval landscape around the Rose Garden area. However, there are some observation regarding the late post-medieval activity that are worth highlighting.

9.5.2 All deposits and remains on the site that were stratified above the upper weathered alluvium [002] probably related to activity dating from, at the

earliest, the later 18th century to the present day.

9.5.3 The ditch found in the STW excavations, [004], a post-medieval probable drainage ditch ran broadly parallel with pottery land drains recorded just to the north of evaluation trenches T2 and T3. The probable ditch cut [015] and fill [016] seen during the monitoring the Pump Chamber and pipelines likely represents the eastwards continuation of ditch [004].

9.5.4 The small structure, uncovered in the Reed Bed watching brief, [018] represents a small building shown on the 1897 1:2500 Ordnance Survey map, just within the eastern boundary of the garden of Wharf Cottages. Although a house is shown on the site on the 1872 OS map, the small building does not appear. The building almost certainly represents two adjoining privies built when the Wharf Cottages garden was enlarged at some time between 1872 and 1897. By 1947 the building has disappeared from the OS map.

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ACKNOWLEDGEMENTS

Archaeology South-East would like to thank the National Trust for commissioning the work, and Casper Johnson the ESCC Archaeological Officer for his help and guidance throughout the project.

SMR Summary Form

Site Code	BD08					
Identification Name and Address	Bodiam Castle Sewage Treatment Plant, Rose Garden, Bodiam, East Sussex, TN32 5UA					
County, District &/or Borough	Rother District, East Sussex					
OS Grid Refs.	578367 125443					
Geology	Alluvial deposits over Ashdown Beds					
Arch. South-East Project Number	4470					
Type of Fieldwork	Eval.	Excav.	Watching Brief X	Standing Structure	Survey	Other
Type of Site	Green Field X	Shallow Urban X	Deep Urban	Other		
Dates of Fieldwork	Eval.	Excav.	WB.	Other		
Sponsor/Client	The National Trust					
Project Manager	Neil Griffin					
Project Supervisor						
Period Summary	Palaeo.	Meso.	Neo.	BA X	IA	RB
	AS	MED X	PM X	Other Modern X		

100 Word Summary.

Archaeology South-East was commissioned by The National Trust, to undertake an archaeological watching brief during the construction of the new Bodiam Castle Sewage Treatment Works (STW) at Rose Garden, Bodiam, East Sussex (NGR 578376 125443).

The underlying sedimentary sequence was equivalent to previous observations showing at depth, a peat-rich deposit of Early Bronze Age date indicating a wooded, infilled meander/oxbow on the margins of the floodplain.

There was an unconformity in the sedimentary sequence where the peat was truncated and overlain by an anerobic blue-grey alluvium containing medieval remains, which then graded into weathered modern floodplain deposits. The abrupt change in sedimentary regime is unexplained at the time of writing but is likely to relate to migration of the meanders, bringing the main river channel close to the floodplain margins. The timing and depth of water at this time, combined with evidence for human activity in the form of artefacts and cereal cultivation indicators, makes this locale a likely candidate for the medieval flote.

All deposits and remains on the site that were stratified above the upper weathered alluvium probably related to activity dating from, at the earliest, the later 18th century to the present day.

OASIS DATA COLLECTION FORM: England

OASIS ID: archaeol6-111022

Project details

Project name	An archaeological watching brief at Bodiam Castle Sewage Treatment Plant, Rose Garden, Bodiam, East Sussex
Short description of the project	Archaeology South-East was commissioned by The National Trust, to undertake an archaeological watching brief during the construction of the new Bodiam Castle Sewage Treatment Works (STW) at Rose Garden, Bodiam, East Sussex (NGR 578376 125443). The underlying sedimentary sequence was equivalent to previous observations showing at depth, a peat-rich deposit of Early Bronze Age date indicating a wooded, infilled meander/oxbow on the margins of the floodplain. There was an unconformity in the sedimentary sequence where the peat was truncated and overlain by an anerobic blue-grey alluvium containing medieval remains, which then graded into weathered modern floodplain deposits. The abrupt change in sedimentary regime is unexplained at the time of writing but is likely to relate to migration of the meanders, bringing the main river channel close to the floodplain margins. The timing and depth of water at this time, combined with evidence for human activity in the form of artefacts and cereal cultivation indicators, makes this locale a likely candidate for the medieval flote. All deposits and remains on the site that were stratified above the upper weathered alluvium probably related to activity dating from, at the earliest, the later 18th century to the present day.
Previous/future work	Yes / Not known
Any associated project reference codes	BD08 - Sitecode
Type of project	Recording project
Investigation type	'Watching Brief'
Prompt	Planning condition

Project location

Country	England
Site location	EAST SUSSEX ROTHER BODIAM Bodiam Castle Sewage Treatment Facility, Bodiam, East Sussex
Postcode	TN32 5UA
Study area	1000.00 Square metres

Site coordinates	TQ 78367 25443 51.0001002212 0.542367413176 51 00 00 N 000 32 32 E Point
Height OD / Depth	Min: 1.57m Max: 4.64m

Project creators

Name of Organisation	Archaeology South East
Project brief originator	East Sussex County Council
Project design originator	Archaeology South-East
Project director/manager	Neil Griffin
Project supervisor	Matt Pope
Type of sponsor/funding body	National Trust
Name of sponsor/funding body	National Trust

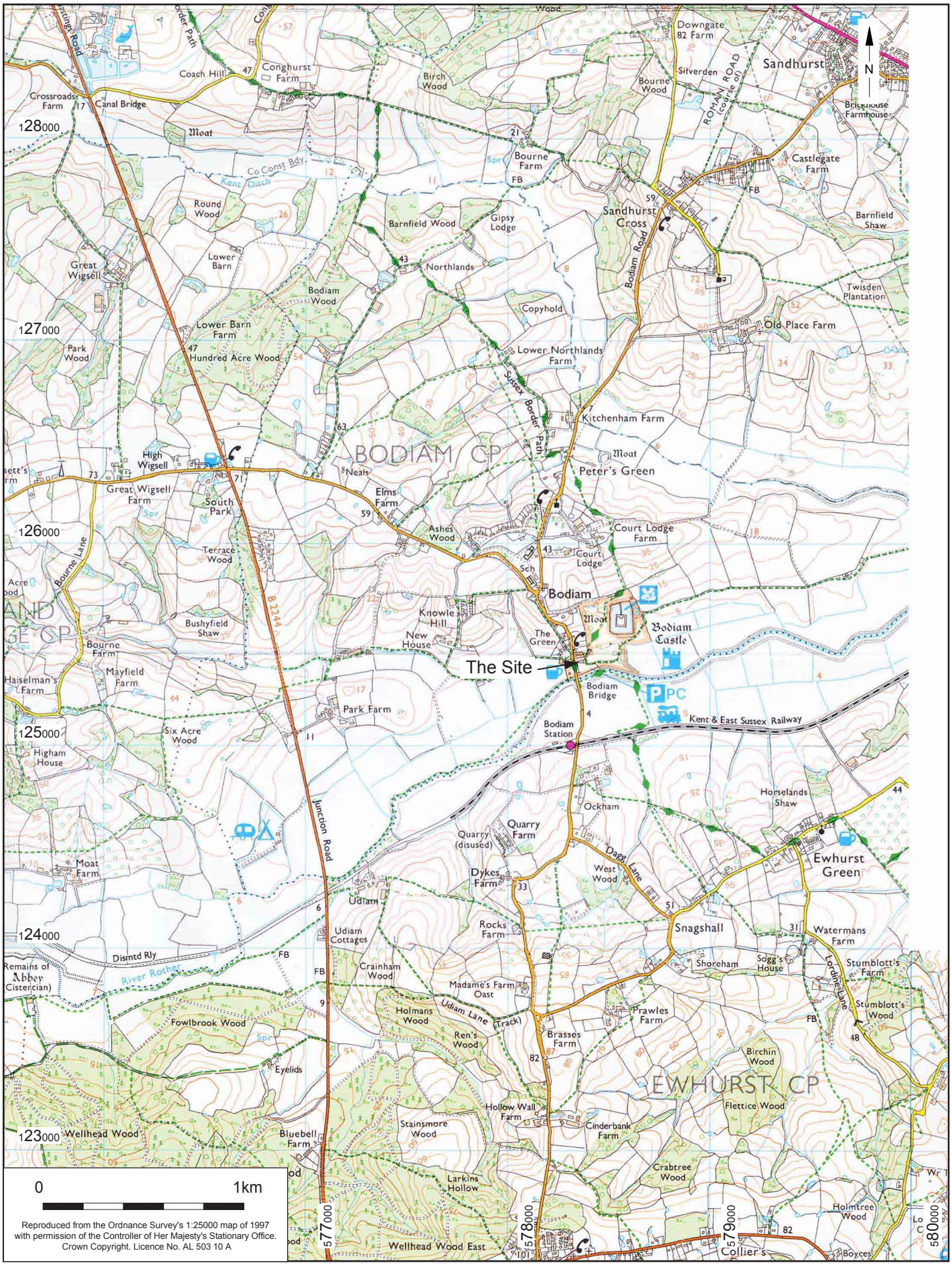
Project archives

Physical Archive recipient	Local Museum
Physical Contents	'Ceramics','Environmental','Glass','Wood','other'
Digital Archive recipient	Local Museum
Digital Contents	'none'
Digital Media available	'Geophysics','Images raster / digital photography','Survey','Text'
Paper Archive recipient	Bodiam Castle
Paper Contents	'Stratigraphic'
Paper Media available	'Context sheet','Drawing','Miscellaneous Material','Photograph','Plan','Section','Survey ','Unpublished Text'

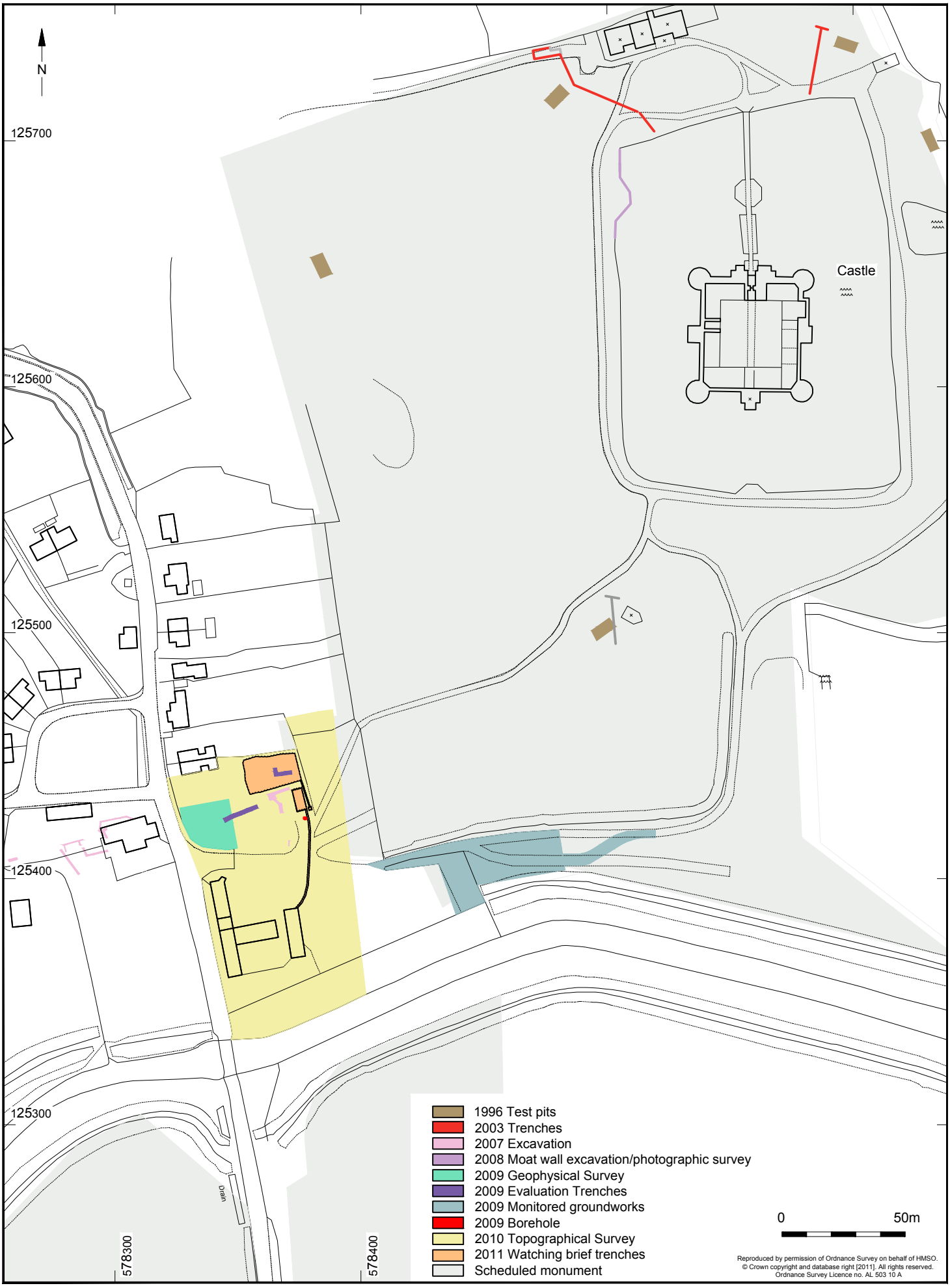
Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	An archaeological watching brief at Bodiam Castle Sewage Treatment Plant, Rose Garden, Bodiam, East Sussex

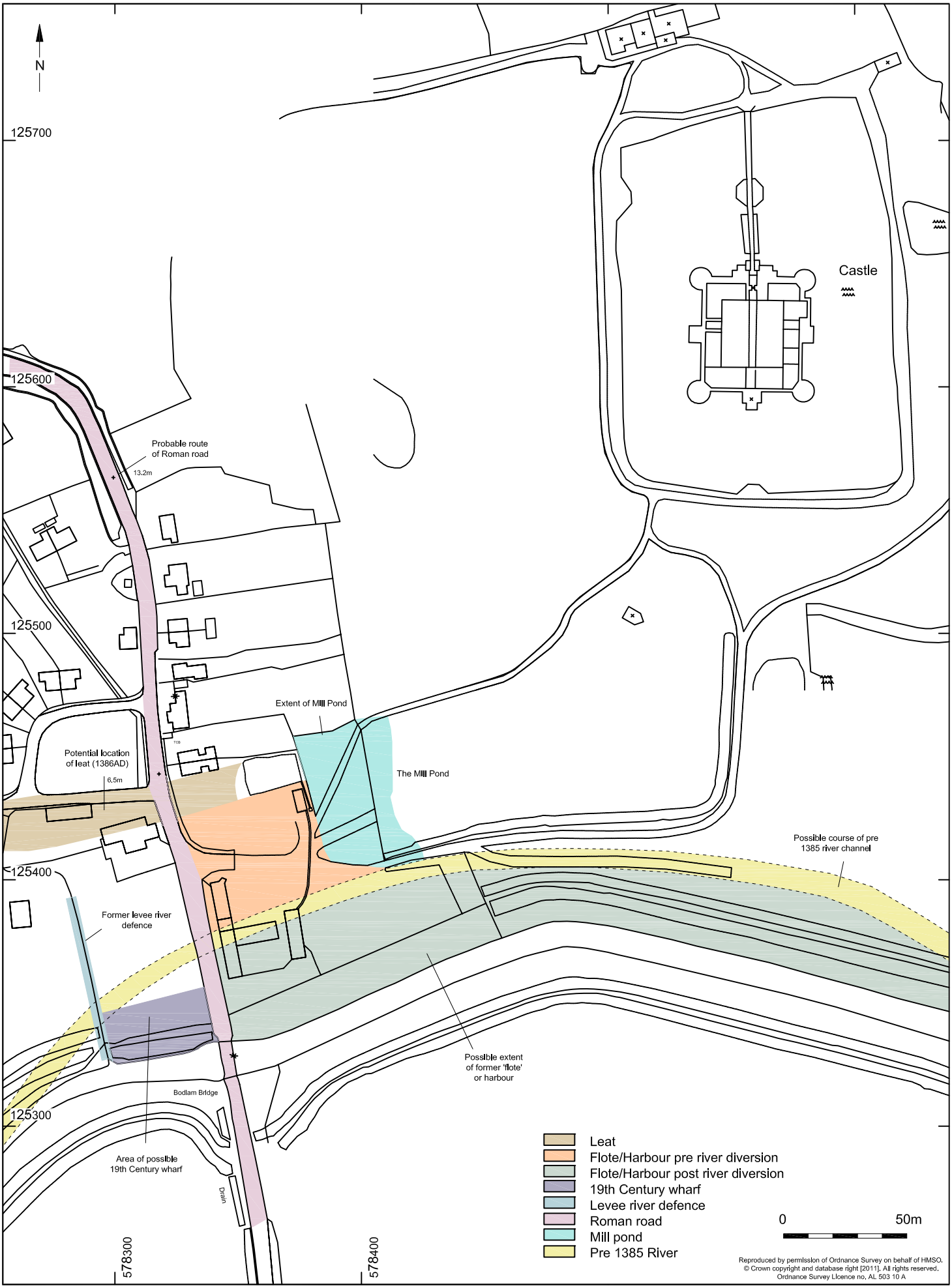
Author(s)/Editor(s)	Priestley-Bell, G.
Other bibliographic details	2011218
Date	2011
Issuer or publisher	Archaeology South-East
Place of issue or publication	Portslade
Description	Booklet
Entered by	Greg Priestley-Bell (gregpbell@btinternet.com)
Entered on	29 September 2011



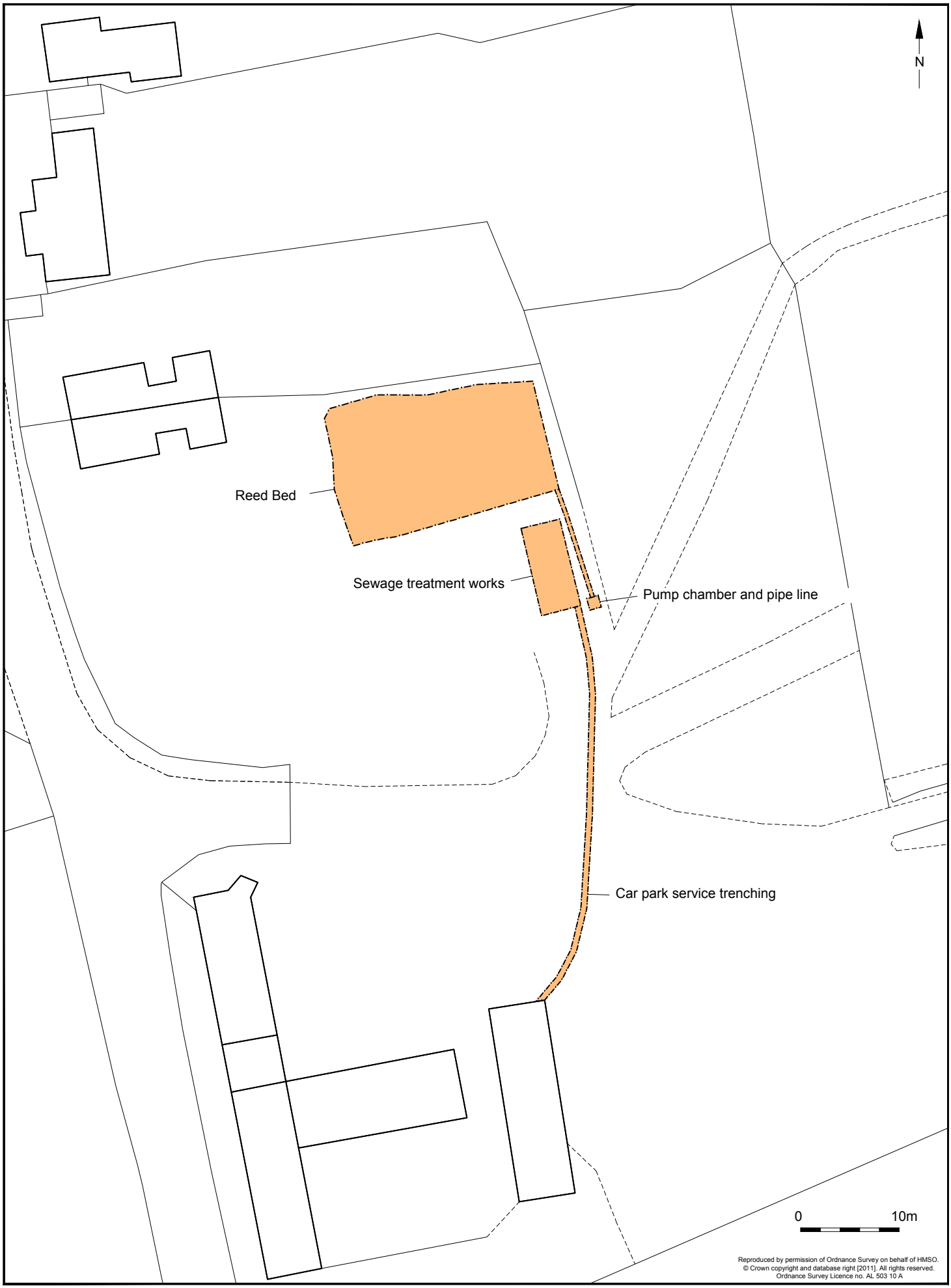
© **Archaeology South-East**		Bodiam Castle Sewage Treatment Facility	Fig. 1
Project Ref: 4470	Oct 2011	Site location	
Report Ref: 2011099	Drawn by: RHC		



© Archaeology South-East		Bodiam Castle, Sewage Treatment Plant	Fig. 2
Project Ref: 4470	Oct 2011	Areas of archaeological interest and previous ASE investigations	
Report Ref: 2011090	Drawn by: LD/FG		



© Archaeology South-East		Bodiam Castle, Sewage Treatment Plant	Fig. 3
Project Ref: 4470	Oct 2011	Site plan showing interpretive information	
Report Ref: 2011090	Drawn by: LD/FG		



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Project Ref: 4470	Oct 2011	Plan of monitored areas	
Report Ref: 2011090	Drawn by: LD/FG		

019 and 020 with Structure 018 behind, looking east

Structure 018 looking south east

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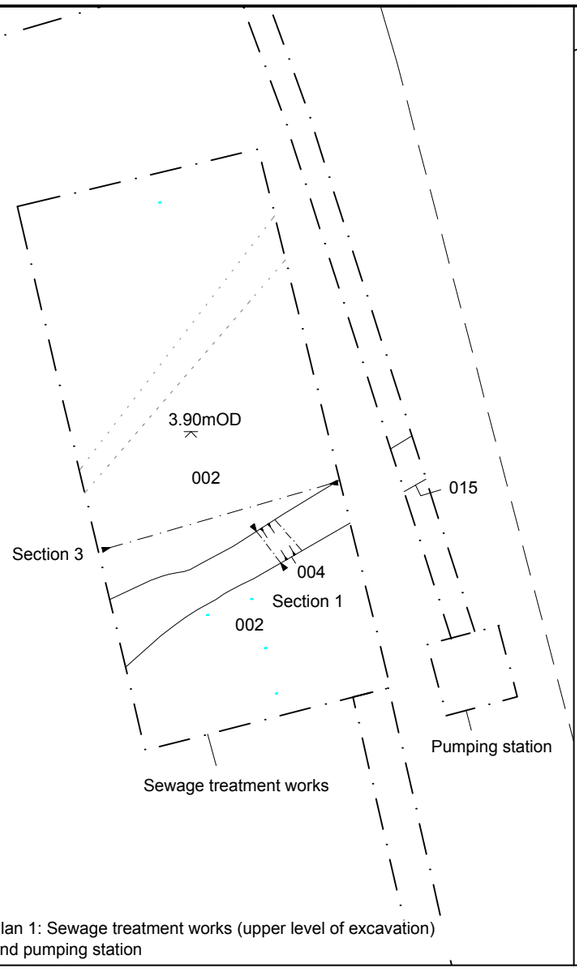
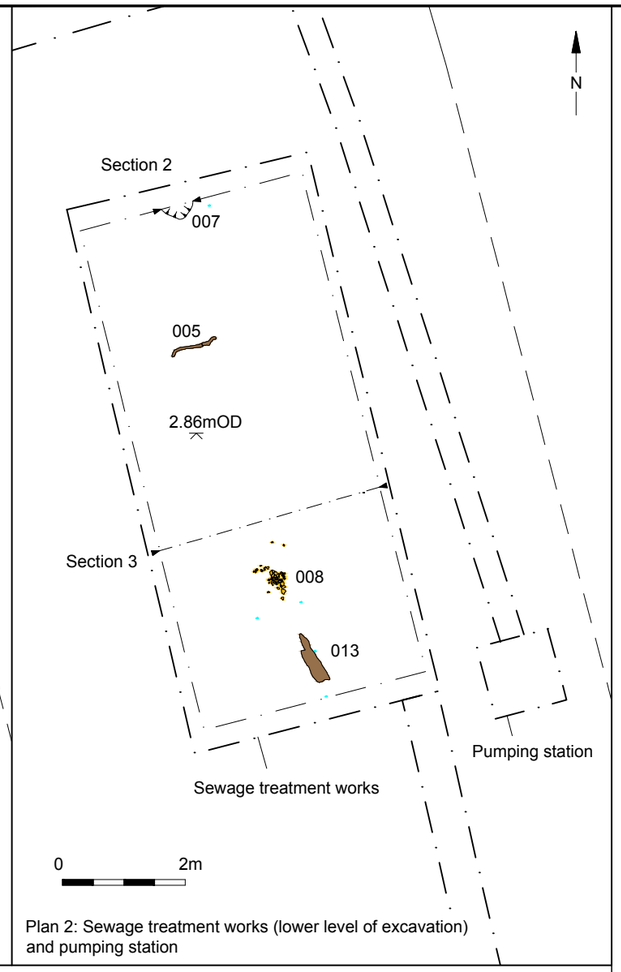
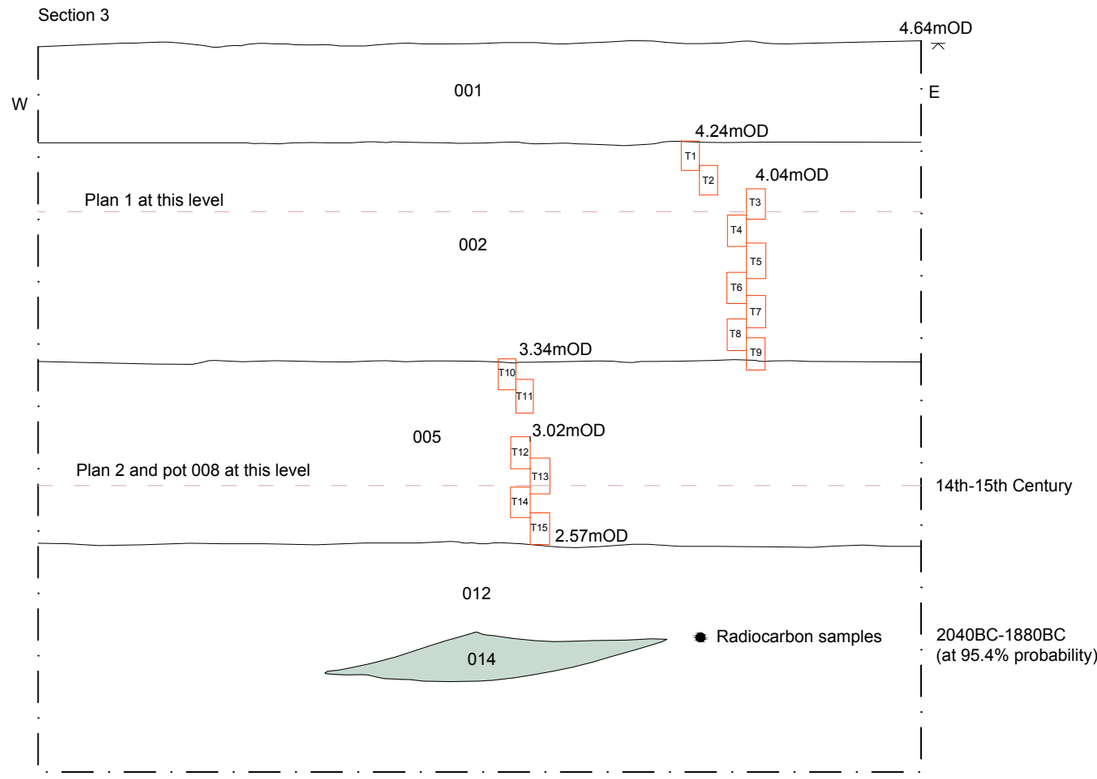
Project Ref: 4470	Oct 2011	Reed bed area: plan and photographs	
Report Ref: 2011090	Drawn by: LD/FG		

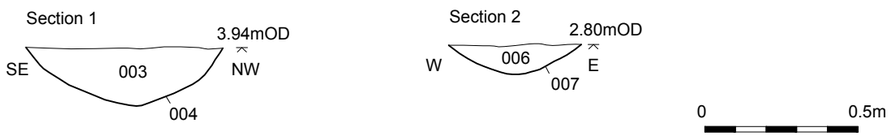


Plan 1: Sewage treatment works (upper level of excavation) and pumping station



Plan 2: Sewage treatment works (lower level of excavation) and pumping station





Wood 013 in situ

Pottery 08 in situ

Wood 013 post excavation

Wood
Pottery
Modern services
Column sample
Grey clay lens
0
0.5m

© Archaeology South-East		Bodiam Castle, Sewage Treatment Plant	Fig. 6
Project Ref: 4470	Oct 2011	Sewage treatment works and pumping station: plan, sections and photographs	
Report Ref: 2011090	Drawn by: LD/FG		

Upper level of Reed Bed excavation

Section 3 during excavation

Lower level of Reed Bed excacation

Maximum extent of Reed Bed excavation showing organic alluvium 012

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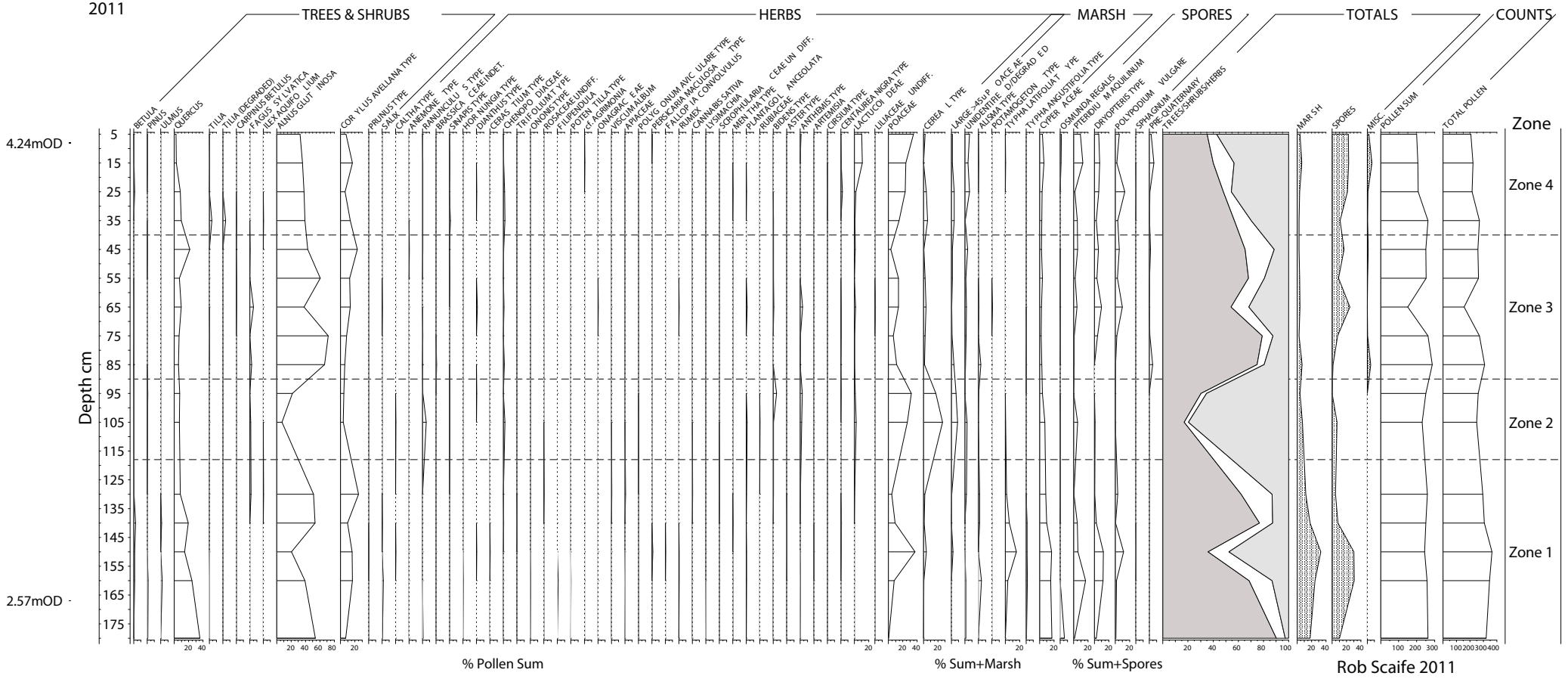
Project Ref: 4470	Oct 2011	Selected photographs from Sewage Waste Treatment Excavation	
Report Ref: 2011099	Drawn by: JLR		

The Sewage Treatment Works

Bodiam Castle

2011



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Project Ref: 4470	Oct 2011	Pollen diagram	
Report Ref: 2010099	Drawn by:		

Head Office
Units 1 & 2
2 Chapel Place
Portslade
East Sussex BN41 1DR
Tel: +44(0)1273 426830 Fax:+44(0)1273 420866
email: fau@ucl.ac.uk
Web: www.archaeologyse.co.uk

London Office
Centre for Applied Archaeology
Institute of Archaeology
University College London
31-34 Gordon Square, London, WC1 0PY
Tel: +44(0)20 7679 4778
Fax:+44(0)20 7383 2572
Web: www.ucl.ac.uk/caa

The contracts division of the Centre for Applied Archaeology, University College London