Post-Excavation Assessment

Multi Period Remains at Zone G (Site 10), Beaulieu, Chelmsford

Updated Post-excavation Assessment

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Updated Post-excavation Assessment

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Summary

Oxford Archaeology East carried out an open area excavation within Zone G (Site 10), Beaulieu, Chelmsford ahead of the proposed development of residential housing. The works were carried out between the 7/4/15 and 15/05/15.

A 14th / 15th century pit was encountered, along with an associated ditch. This pit is provisionally interpreted as a retting pit due its characteristics and the recovery of flax stems and nettle seeds from its waterlogged deposits.

An early post-medieval ditched enclosure was also revealed, surrounding a 16th century building represented by the remains of two brick-built fireplaces and a possible brick-built staircase. Two further brick-built ancillary structures were also evident, comprising a cellar and a probable latrine block.

The main building went out of use in the early to mid 17th century when the land reverted to agriculture. Post-medieval remains were represented by a single field boundary ditch.

In August 2016, OA East carried out a further excavation on land west of Site 10 ahead of the construction of haulage road 2b. This excavation revealed what appears to have been the western extent of the early post-medieval ditched enclosure and possible demolition waste from the adjacent buildings.

1 Introduction

1.1 Project Background

1.1.1 Between the 7th April and 15th May 2015 Oxford Archaeology East carried out an archaeological excavation at Beaulieu, Chelmsford: Zone G (Site 10) (TL 7273 1043) (see Fig. 1). In advance of construction of a new neighbourhood planned for North-East Chelmsford, known as Beaulieu. Chelmsford City Council has resolved to grant outline planning permission (ref: 09/01314/EIA) for a new neighbourhood at Beaulieu of up to 3,600 new homes and up to 62,300m² of mixed use development including new schools, leisure and community facilities, employment areas, new highways and associated ancillary development, including full details in respect of roundabout access from Essex Regiment Way and a priority junction from White Hart Lane.

1.1.2 Between 23rd and 27th August 2016 OA East undertook a second archaeological excavation to the west of Site 10 (TL 7271 1043; Fig. 1) in advance of the construction of a haulage road for the same proposed development at Beaulieu. This updated report incorporates the results of this recent phase of works (Site 10 West) with those of the main excavation undertaken in 2015.

1.1.3 These archaeological excavations were undertaken to mitigate construction impacts of an area of residential housing with associated access and infrastructure. The eastern part of Site 10 was 0.5 hectares in size and Site 10 West was 0.08 hectares.

1.1.4 This work was carried out in accordance with the Beaulieu Archaeological Investigation Strategy (URS 2013a), and an Archaeological Method Statement prepared by Oxford Archaeology East (Mortimer 2015).

1.1.5 This excavation is part of an ongoing archaeological project, across a phased development. The time-scale for this development is dependant on many factors and so cannot be accurately determined at the present time. The work presented in this Post-Excavation Assessment will eventually be incorporated into wider Analysis and Publication Reports.

1.1.6 This assessment has been conducted in accordance with the principles identified in English Heritage's guidance documents *Management of Research Projects in the Historic Environment,* specifically *The MoRPHE Project Manager's Guide* (2006) and *PPN3 Archaeological Excavation* (2008).

1.2 Geology and Topography

1.2.1 Beaulieu (the Site) is located approximately 4km to the north-east of Chelmsford, Essex (centred on TL 7273 1043; Figure 1). The Site encompasses an area of high ground surrounded on three sides by river valleys. To the west and south is the River Chelmer, and to the east is Boreham Brook. North of the Site the ground rises towards the village of Terling. From the southern part of the Site there are views south towards the Chelmer Valley and Danbury Hill.

1.2.2 The superficial geology consists of boulder clay of the Lowestoft Till formation underlain by London Clays. To the south of the area lay a mixture of head deposits and sand and gravels (British Geological Survey).

1.3 Archaeological and Historical Background

Neolithic

1.3.1 Essex has some of the earliest surviving evidence of settlement, mainly concentrated to the north-east along the River Crouch at Lawford and Lemarsh (Hedges, 1984). Evidence for possible domestic settlement within the vicinity of Beaulieu was recorded at Court Road, 1km to the north-west, in the form of several pits with Neolithic pottery within their fills (SMR 6142).

Bronze Age

1.3.2 Settlement continued to be concentrated along the river valleys of the Chelmer and Crouch, however during the Bronze Age the landscape was enclosed by field systems for the first time, such as those found at Great Wakering (Kemble, 2001). These enclosed field systems would have continued in use through into the early Iron Age. It has been suggested that these Bronze Age field systems form the basis for the modern landscape in the Chelmer Valley (Drury & Rodwell, 1980).

1.3.3 Several crop-marks have been recorded by aerial photography to the south of Belstead Hall and interpreted as part of a Bronze Age settlement (SMR 16888), with further domestic dwellings excavated at Springfield Lyons, 2.5km to the south-west. Further occupation sites are attested to by the recovery of artefacts, such as at New Hall School, to the south-east and Pratt's Farm, to the north.

Iron Age

1.3.4 The settlement pattern during the Iron Age would have been of nucleated settlements within a larger farming landscape. Evidence of this, within the vicinity of the development area, was seen to the south of Belstead Hall (SMR 17438). This comprised a large enclosure with associated pits and smaller ditches (Drury, 1978).

1.3.5 The Later Iron Age witnessed an expansion of settlement onto the heavier clay soils and the continued occupation of the estuaries. These estuarine sites are seen to become more complex in nature over time, with higher population density and sustained occupation, such as has been found at Little Waltham (Drury 1980).

1.3.6 By the end of the Iron Age sites such as Gosbecks oppida show that portions of the population were highly structured and of high status. These sites would have relied on farming communities scattered around the environs to supply agricultural commodities. (Crummy 1997).

Roman

1.3.7 During the Roman period a small market town would have grown up around the Mansio, located 5km to the south-west at Moulsham Street. The area surrounding this would have formed an agricultural hinterland to supply produce to the town.

1.3.8 This agricultural landscape would have comprised of large farms and villa complexes, such as those at Great Holts Farm and Bulls Farm Lodge. Smaller domestic sites would also have formed part of the landscape. Evidence for these has been recorded during evaluation work at Greater Beaulieu. Evidence for pottery making, associated with domestic use was also recorded.

Anglo-Saxon

1.3.9 In the immediate post-Roman period, the Roman town at Chelmsford was abandoned and much of the surrounding landscape reverted to rough pasture or woodland (Hunter, 2003). No known remains of Anglo-Saxon date are recorded within the

application site although this is more likely to reflect the relatively poor archaeological visibility of Anglo- Saxon settlement sites rather than a lack of activity during the period.

1.3.10 Two records dating to the Anglo-Saxon period are held by the EHER; both of which are documentary records for Late Saxon manors, Belestedam (Belstead Hall) is recorded in the Domesday survey of AD 1086 (Reaney, 1935).

Medieval

1.3.11 The medieval town of Chelmsford was founded at the end of the 12th century, by the Bishop of London, to the north of the earlier Roman settlement at Moulsham. Throughout the medieval period the site was located within the rural hinterland of Chelmsford in a landscape populated by scattered farmsteads and manors.

1.3.12 To the south-east lay the manor of New Hall on the site of the current New Hall School. It is first mentioned by name (as 'Nova Aula') in documents dating to AD1301 when the site formed part of the lands owned by the Canons of Waltham Abbey and was used as the summer residence of the Abbott. It was later transferred to the Regular Canons under Henry II (Burgess & Rance, 1988).

1.3.13 The first deer park surrounding New Hall was created during the medieval period with the manor at its centre (Tuckwell, 2006). Under Henry VII, New Hall was granted to Thomas Boteler, Earl of Ormond, who received a licence to crenellate (fortify) it in AD1481 (E41/420) and who, in all likelihood, rebuilt or remodelled the original medieval hall in the latest architectural style. The new structure came to the attention of Henry VIII who visited New Hall in 1510 and 1515, shortly before Ormond's death. Subsequently, the property passed to Thomas' daughter and thus into the Boleyn family through her husband Sir Thomas Boleyn, from whom Henry VIII acquired the hall in 1516, changing its name to the 'Palace of Beaulieu'. Shortly after 1518 he rebuilt the Ormond's medieval hall on a quadrangular plan with gatehouse in the south range, great hall in the east and chapel in the west ranges. Mary Tudor took residency at New Hall intermittently between 1532 and her ascendancy to the crown in 1553.

1.3.14 Evidence for a further moated manor is recorded at Belstead. This manor was occupied throughout the medieval period. By 1325 it was called Belestede, in 1354 it was recorded as Belestede Hall and by 1504 it was known as Belested Hall. The name is thought to derive from 'the site of the bell house' (Reaney, 1935).

1.3.15 Analysis of aerial photographs and geophysical survey identified a number of features which, when investigated by trial trench evaluation, were found to comprise a possible enclosure ditch or moat. A cobbled surface (possibly representing a house platform or yard surface), pit and several further ditches were recorded within the enclosure. Pottery recovered from the features suggests an occupation date of the 12th-13th century (ECC FAU 2009). These remains have been interpreted as a medieval farmstead or manor, possibly the precursor to the later manorial site at Belstead Hall *c.*160m to the north-east of Site 7.

Post-Medieval

1.3.16 The development of New Hall and its deer park dominated the landscape of the application site and the surrounding area until the park contracted in size and the fields were enclosed for agriculture in the early 18th century. As the deer park was reduced in size the former medieval manors or lodges developed into farms, creating an essentially agricultural landscape.

1.3.17 Since the medieval period, New Hall had been set within the largest deer park in Essex; once totalling some 1,500 acres. The EHER records that the enclosed area actually comprised four separate parks surrounding New Hall and its gardens. Within the Great or Old Park located to the north of New Hall. The remaining parks were known as the Red Deer Park located to east of New Hall, the Dukes Park (located further east beyond the study area; EHER 47226) and the New or Little Park situated to the south and west of New Hall. The application site is located within this latter area.

Previous Archaeological Investigations

Geophysical Surveys

1.3.18 Geophysical magnetic susceptibility and detailed magnetometer surveys were carried out to evaluate the potential for important archaeological remains that may be buried within the Site. The magnetic susceptibility survey provided a rapid assessment of likely areas for previous settlement and industrial activity. The survey identified six areas of high potential, ten areas of medium potential and seven areas of low potential (Scott Wilson 2008). The magnetic susceptibility survey was followed by a detailed magnetometer survey of c.50% of the Beaulieu scheme. This survey provided a greater level of detail and identified individual features such as pits and ditches, field boundaries, buildings and structures, kilns or hearths and buried iron objects. The detailed magnetometer survey identified ten areas of high archaeological potential; six of medium potential and 19 of low potential (Scott Wilson 2008).

Trial Trench Evaluation (2008)

1.3.19 A limited programme of targeted trial trench evaluation was undertaken between June and August 2008. The purpose of the trial trenching was to confirm the presence/absence and significance of archaeological remains at eight sites identified by an assessment of the combined results of the desk-based studies and non-intrusive surveys (Scott Wilson 2007).

1.3.20 The trial trenching confirmed the presence of archaeological remains dating from the late prehistoric to post-medieval periods. This included a Late Iron Age and Early Romano-British settlement (Site 8); an Iron Age ditch (Site 5); medieval rural settlement possibly indicative of a precursor to Belstead Hall (Site 7); a possible medieval/early post-medieval warrener's lodge associated with the former deer park (Site 10); early post-medieval moated enclosure (Site 11); Tudor fishpond and associated earthwork damn (Site 2); a brick making site comprising two scove or clamp kilns of possible Tudor date (Site 3) and evidence for associated quarrying activity (Site 4).

Beaulieu Minerals trial trench evaluation

1.3.21 A trial trench evaluation was undertaken in September/October 2011 to inform and support the planning application for the Beaulieu Minerals Extraction scheme. The evaluation identified a concentration of archaeological remains to the north-west of New Hall School. These remains appear to represent a rural settlement and possible metalworking activity dating from the Late Bronze Age through to the end of the Roman period. Metal detecting of the plough soil revealed several Early Roman coins and fragments of Early Roman brooches within the main area of activity.

Beaulieu 1st Mitigation evaluation and excavations 2013

1.3.22 Recent archaeological trial trench evaluation of the proposed Essex Regiment Way roundabout, White Hart Lane junction and connecting access road identified four locations of significant archaeological remains (Stocks-Morgan, 2013).

1.3.23 Site 5, located within the footprint of the proposed Essex Regiments Way roundabout, identified part of a Middle Iron Age settlement comprised a single round-house, surviving only as the remains of an eaves-drip gully. Several small pits and postholes were identified outside the roundhouse and were likely to be associated with domestic activity contemporary with the building. This settlement was surrounded by a large oval enclosure.

1.3.24 In Area A1 a single east to west aligned field boundary ditch of possibly Late Iron Age date attests to a wider agricultural landscape of field systems. A second, probably medieval, ditch was encountered on a north-west to south-east alignment (Stocks-Morgan, 2013a).

1.3.25 Site 11 and Zone D1 identified evidence of two high medieval house platforms and their surrounding enclosures. Thought to be a medieval settlement associated with Belstead Manor estate (Stocks-Morgan, 2013b).

Beaulieu Zone A Housing Evaluation and Excavations, 2014

1.3.26 Four areas of significant archaeological remains were identified on land to the south of Belstead Manor (Zone A Housing) (Stocks-Morgan 2014a).

1.3.27 A Middle Bronze Age boundary ditch, aligned north-east to south-west, was identified in Site 7; whilst an Early Iron Age open settlement comprising of ten pits containing a large assemblage of pottery and fired clay, and medieval animal husbandry remains were present in the excavation area. Sparse domestic activity is suggested from the five Late Iron Age pits that were revealed in Areas A3 and A4 along the side of a brook to the south of Zone A. In contrast, Area A2 revealed the presence of a Late Iron Age/Early Roman enclosure ditch and later medieval ditch.

Zone B and E Trench Evaluation (2014)

1.3.28 Three areas of significant archaeological remains were identified in Zone B and E (Stocks-Morgan 2014b).

1.3.29 Two small open area excavations were undertaken to the west of the area, which encountered Late Bronze Age / Early Iron Age open settlement, comprising five four-poster structures and several pits.

1.3.30 A large open area excavation (Site 8) was undertaken immediately west of New Hall School which identified a nucleated settlement spanning a period from the Late Iron Age into the Early Roman period. These settlement remains consisted of an enclosure surrounding a roundhouse and associated occupation features. In the Early Roman period this enclosure was reconfigured, and roundhouse replaced. This phase of settlement also produced associated midden deposits and an ancillary roundhouse (Stocks-Morgan, 2016).

1.3.31 In the early post-medieval period rows of brick filled pits were encountered in the south-east of the excavation area and may have been part of a formal garden or tree plantation.

Beaulieu Mitigation evaluation and excavations 2015

A small open area excavation (Site 9) was carried out ahead of the construction of ponds and swales infrastructure works. The archaeology encountered comprised a prehistoric trackway and a Late Iron Age nucleated settlement.

Beaulieu School Site

1.3.32 A total of sixty-one trenches were excavated within the proposed development area, across three separate fields.

1.3.33 Two phases of medieval field boundaries were present within the southern field, one of which was on a north-west to south-east alignment and the second phase aligned on a north to south axis. One further undated ditch was encountered in the northern part of the development area.

Beaulieu Zone C

1.3.34 A total of fifty-one trenches were excavated across three separate fields within the proposed development area.

1.3.35 A concentration of prehistoric remains, comprising a putative roundhouse gully and a fire pit, were encountered in the centre of the evaluation area. To the south-east of the evaluation, further archaeological remains were recorded that consisted of an unurned cremation and three postholes.

Beaulieu Zone F and I

1.3.36 A total of thirty-eight trenches were excavated across three fields. Further excavation was undertaken in an area in the eastern part of Zone F revealing a Late Iron Age settlement and a medieval watering hole and square pit.

Beaulieu Zone G

1.3.37 This evaluation comprised the excavation of thirty-three trenches across three separate fields, within the proposed development area.

1.3.38 A possible prehistoric posthole was recorded to the north of the site and an early post-medieval ditch and two quarry pits were encountered towards the eastern side of the development area. A further undated ditch was present.

Beauileu Zone P

1.3.39 A total of forty-five trenches were excavated across two separate fields, within the proposed development area.

1.3.40 Evidence of Early Iron Age open settlement was encountered, comprising a fire pit and two small pits. A Middle Iron Age ditch, thought to be part of either a field system or trackway. was seen in the eastern field.

1.3.41 Early post-medieval remains comprising several brick-built linear features associated with the deer park were recorded in the eastern field. These are suggested to form part of a deer course. A post-medieval ring ditch was evident in the north-western part of the site along with a field boundary.

Beaulieu Zone Q

1.3.42 Forty-one trenches were excavated across two separate fields, within the proposed development area.

1.3.43 This evaluation recorded the remains of early prehistoric dispersed settlement in the form of a fire pit and a rectangular pit which contained frequent charcoal. In the northern part of the development area a putative late medieval settlement was encountered, which comprised four potential wall foundations, potentially part of a building and two ditches thought to be part and an enclosure.

1.3.44 Early post-medieval remains comprising several brick-built linear features associated with the deer park were recorded in both fields. These are suggested to form part of a deer course.

Beaulieu Zone R

1.3.45 A total of eighteen trenches were excavated, within the proposed development area.

1.3.46 The remains of two early post-medieval linear, brick built features. Theses were thought to form part of a deer course. A further three post-medieval field boundaries were encountered, along with two undated ditches and an undated posthole.

1.4 Acknowledgements

1.4.1 The author would like thank Iain Williamson of AECOM and Countryside Zest (Beaulieu Park) LLP who respectively commissioned and funded the archaeological work. The project was managed by Richard Mortimer and the illustrator was Charlotte Walton. Thanks are also extended to Mary Andrews, Lukas Barnes, Matthew Brooks, Alexandra Cameron, Ed Cole, Jessica Dyson, Nick Gilmour, Malgorzata Kwiatkowska, Diogo Silva and Daria Tsybaeva who helped with the fieldwork. The project was monitored by Alison Bennett of Essex County Council. The machining was undertaken by Oliver Scanlon of Danbury Plant Hire.

2 Project Scope

2.1.1 This assessment deals only with the excavation carried out on areas designated as Zone G, within a larger phased development. The earlier evaluation data will be incorporated in to the results where relevant. Further assessments will be produced following any future work required on other parts of the development.

3 Original Research Aims and Objectives

3.1 Aims

3.1.1 The main aim of the excavation was to preserve by record the archaeological remains present within the development area and to reconstruct the history and use of the site.

3.1.2 The current project will be incorporated within the wider archaeological investigations at Beaulieu. The research objectives that are applicable to this specific site are detailed below.

3.2 Regional Research Objectives

There are a number of regional research objectives that have been identified by Historic England (Historic England, 1997) which provide a framework for investigation and can be applied to the Medieval evidence recovered at Beaulieu.

Iron Age (700BC to 43 AD)

The need to identify suitable means of dating Iron Age sites chronologically through absolute dating, regional pottery sequences and datable pottery assemblages

A focus on developing a greater understanding of the development of the agrarian economy; this should including the relationship with the use of the landscape such as trackways, enclosures, drove routes and fields

Site specific excavation to focus on settlement remains

The transition between the Bronze Age and the Iron Age in the region

Focus on Iron Age settlement chronology and dynamics, social organisation and settlement form and function in the Early and Middle Iron Age

The processes of social and economic change during the Late Iron Age including the adoption of the Aylesford/ Swarling culture and the development of tribal polities

Understand the Iron Age / Roman transition

Understand the distribution, density and dynamics of Iron Age settlements.

The Medieval Period (AD 1066-1540)

The study of medieval rural settlement diversity across East Anglia

The characterisation of settlement forms, function, chronology, structure and the investigation rural settlement type and morphology.

The understanding of agrarian regimes on the geology of the rural sites, through the use of environmental sampling

The characterisation and chronology of medieval field systems and understanding how the size and shape of fields can be related to agricultural regimes.

The study of the evolution of the medieval house and farmstead and agrarian economy.

To Understand the form that farms take and the type of building present and whether functions can be attributed to them.

The Post Medieval Period AD (1540 – 1900)

To map historic parks and gardens and identify / define unregistered parks and gardens. To assess the differential survival of earlier phases of historic parks.

The characterisation of settlement forms, function, chronology,

To assess / understand the development of parks and gardens in respect to the social and economic circumstances, especially in relation to the distribution of wealth and social stratification

To understand the development of farmsteads and modern farming practices. To determine the social status specifically through architectural design

To understand the effect of the dissolution and the social change brought about by the decline in manors, estates and gardens

3.3 Site Specific Research Objectives

3.3.1 A number of site specific research objectives were identified based on the results of the evaluation (URS, 2013)

To preserve by record the nature, extent, form, function and longevity of medieval / early post-medieval settlement activity

To identify whether this site was the Warrener's lodge recorded in documentary sources or similar lodge associated with the deer park

To investigate how the medieval / early post-medieval settlement relates to the wider rural landscape notably in relation to New Hall, the deer park and adjacent park pale

3.4 Methodology

3.4.1 The methodology used was carried out in accordance with the Beaulieu Archaeological Investigation Strategy (URS 2013a), the Beaulieu Site 10 Mitigation Archaeological Mitigation Design (URS 2014) and an Archaeological Method Statement (Mortimer 2015).

3.4.2 The total area excavated 0.54ha.

3.4.3 Machine excavation was carried out by a 360º type excavator using a 2m wide flat bladed ditching bucket. under constant supervision of a suitably qualified and experienced archaeologist.

3.4.4 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.

3.4.5 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales and monochrome photographs were taken of all relevant features and deposits.

3.4.6 A total of 33 bulk samples were taken, with 28 samples then selected for processing from deposits considered most appropriate for environmental sampling, while also considering feature type and period

3.4.7 Site conditions were generally good.

3.5 Contour Survey

3.5.1 A contour survey of the excavation area and the field to the west was conducted using a Leica GS08 machine. The continuation of the enclosure ditch was recorded enclosing a platform area of 0.06ha (approximately 38m by 17m) against the western field boundaries (See Fig. 4). It is likely that the ditch continued across the modern boundaries but has been flattened by ploughing in the adjacent fields, it ranged in depth from 1m to 0.9m and the area enclosed lay between 52.3m and 52.6m OD.

4 Summary of Results

4.1 Provisional Site Phasing

4.1.1 For consistency with all previous and forthcoming reports features where dating is available it will be attributed to the following periods shown in Table 1. Features have been placed in phases based on stratigraphic and spatial relationships, alongside the use of artefact dating.

Neolithic (3500 – 2000 BC)	Early Neolithic (3500 – 2900 BC)
	Middle Neolithic (2900-2500 BC)
	Later Neolithic (2500 - 2000 BC)
Bronze Age (2000 – 700 BC)	Early Bronze Age (2000 - 1500 BC)
	Middle Bronze Age (1500 - 1000 BC)
	Later Bronze Age (1000 – 700 BC)
Iron Age (700 BC – AD 43)	Early Iron Age (700 – 200 BC)
	Middle Iron Age (200 – 50 BC)
	Later Iron Age (50 BC – AD 43)
Roman (AD 43 - 410)	
Saxon (AD 410 – 1066)	Early Anglo-Saxon (AD 410 – 650)
	Middle Anglo-Saxon (AD 650 – 850)
	Late Anglo-Saxon (AD 850 – 1066)
Medieval (AD 1066 – 1650)	early medieval (AD 1066 – 1200)
	high medieval (AD 1200 – 1500)
	early post-medieval (AD 1500 - 1650)
Post-Medieval (AD 1650 - 1800)	
Modern (AD 1800 – present)	

Table 1: Chronology used in this report

4.2 Early Iron Age

4.2.1 Towards the south-eastern corner of the excavation area lay four pits (**2388**, **2390**, **2402**, **2405**) which date to the Early Iron Age period (see Fig. 2 for plan).

4.2.2 Pit **2388** was oval in plan, with steep sides and a concave base. It measured 0.39m in diameter and 0.19m deep. This pit had an initial fill of naturally derived soil, comprising mid yellowish brown silty clay (2389). This was overlain by a charcoal rich, dark greyish black silty clay (2434) which contained two sherds of Early Iron Age pottery.

4.2.3 This pit was then truncated by a sub-circular pit (**2390**), which had steep sides and a concave base, measuring 0.84m in diameter and 0.49m deep. The fill sequence was similar with a lower, naturally derived fill, comprising mid yellowish brown silty clay (2391). This was overlain by a charcoal rich, dark greyish black silty clay (2392) which contained twenty-four sherds of Early Iron Age pottery.

4.2.4 Two further pits were encountered immediately to the north (**2402**, **2405**) with almost identical forms and fill sequence, measuring respectively 0.86m and 1.06m in diameter and 0.15m and 0.37m deep. These contained eleven sherds (weight 38g) and three sherds (weight 12g) of Early Iron Age pottery respectively.

4.3 High Medieval (AD 1300-1500)

4.3.1 A pit (**2506**) was encountered in the northern part of the excavation area, which lay within a slight dip in the ground level (52.60m OD) (see Fig. 2 for plan). The pit was rectangular in plan with rounded corners and measured 8m by 5.9m. It had near vertical sides and a flat base and measured 1.8m deep. The remains of six wooden planks were recovered from fill 2504 (see App. B10). Their presence along with the vertical sides and the absence of slumping suggest that the pit would have had a wooden lining (see Plate 1).

4.3.2 The pit had an initial fill of mid orangey grey clayey silt (2552), 0.3m thick, which contained three 14th century leather shoes, six sherds of sandy orange ware pottery and four fragments of roof tile. It was overlain by a dark blueish grey clayey silt (2504), which was 0.3m thick and contained a leather archers brace, twenty-seven fragments of leather shoe and six sherds of 14th to 15th century pottery. Above this layer was a light brownish grey silty clay (2551), which was 0.42m thick. Eight fragments of leather shoe, twelve sherds of pottery, three fragments of roof tile and shell were retrieved from this fill.

4.3.3 Environmental samples from this pit have been analysed for waterlogged and charred remains, the middle fill (2504) contained plant stems which may be flax or nettle along with several seeds of nettle. Monoliths were taken for pollen analysis and are currently with the specialist, an appendix will be added with the results when available.

4.3.4 All the deposits described above appear to have formed within standing water and were associated with the pit's use. Above these deposits was a series of five fills (2511-2515), with a total thickness of 0.88m: these all relate to when the pit went out of use and the subsequent levelling of the ground. These fills contained 23 sherds of pottery, a whittle tang knife blade, six fragments of brick and tile and a fragment of lava quern, which mostly date to the high medieval period combined with some later (early post-medieval) material.

4.3.5 The pit had an associated ditch (**2554**), which would have channelled rain water from the slightly higher ground (53.60m OD) to the east into the pit. This ditch had concave sides and a concave base, measuring 0.97m wide and 0.29m deep. It was filled by a mid orangey brown silty clay (2555), which contained five sherds of medieval coarseware pottery.

4.4 Early post-medieval (AD 1500 – 1650)

4.4.1 The early post-medieval remains encountered relate to a building, surrounded by a large rectilinear enclosure and associated small pits and postholes. The earliest known occupation for the building dates to the 16th century and continued in use into the early 17th century (see Fig. 3 for plan).

Building

4.4.2 The building was orientated on a north-north-east to south-south-west alignment measured 22m in length and 8.5m in width. The visible remains of the building was limited to the remains of two brick built fire places, one staircase, a cellar and a latrine.

Fireplaces

4.4.3 A fireplace (**2375**) was encountered along the projected western wall. This fireplace was rectangular, measuring 3.5m long and 1.5m wide, with the internal C-shaped rebate measuring 1.3m by 0.5m.

4.4.4 A construction cut (**2583**) was dug, which had vertical sides and a flat base, measuring 0.08m deep. It was filled by a thin lens of yellow sharp sand (2594), 0.02m thick. Within this trench the fireplace was constructed using handmade red bricks, (max size 120mm x 100mm x 150mm). The bricks were laid on bed, in a random course with no mortar or bonding material evident. Only one course survived, with the total height of the surviving fireplace measuring 0.1m thick.

4.4.5 A second fireplace (**2446**) was located in the centre of the southern wall. It had several similarities with the earlier described fireplace, being C shaped. It measured 2.9m long and 1.5m wide, with an internal space 1.3m by 0.5m. The bricks date to the 14th to 16th century and are made from a sandy orange fabric.

4.4.6 The construction cut for this fireplace (**2447**) had vertical sides and a flat base, measuring 1.1m wide and 0.26m deep. The fireplace was inserted into the northern side of the trench, with a course of red bricks (2584) spanning the full width of the construction cut. The brick structure (**2446**) was laid on the northern side of the trench directly on top of the brick course. The remaining space was filled by a mid greyish brown silty clay (2591) with occasional gravel, 0.16m thick.

4.4.7 The fireplace structure comprised two courses of handmade red brick (max size 260mm x 130mm x 60mm), which were laid on bed, in a random course. Bonding material consisting of a light whitish grey sandy mortar, with chalk inclusion was visible attached to some bricks, but not being used to bond the brick together, which suggests that some of the bricks may have been reused from a previous building.

4.4.8 Abutting the western side of this fireplace was an alcove (**2448**), which was arranged in two perpendicular lengths of brick, set at a right angle. The structure consisted of one course of red brick laid on bed. It measured 0.8m north to south, 0.8m east to west and the wall was 0.25m wide.

4.4.9 Inside the alcove there was a primary layer, comprising a light greyish brown silty clay (2475), measuring 0.03m thick which contained one sherd of mill green fineware, the environmental sample contained indeterminate berry pips. This was overlain by a light greyish brown silty clay (2474), which was 0.02m thick and had visible evidence of discolouration caused by scorching. This was covered by a 0.07m thick layer of charcoal (2473) which contained two sherds of 14th century pottery.

Staircase

4.4.10 In the centre of the projected northern wall the foundations for a brick built structure (**2489**). This structure was L shaped. It measured 1.55m long and 0.7m wide (N-S) and 2.1m long by 0.8m wide (E-W).

4.4.11 The construction cut (**2570**) had vertical sides and a flat base, measuring 0.2m deep. It had an initial fill of mid greyish orange silty clay (2582) with moderate greyish mortar inclusions, which was 0.02m thick and contained a sherd of residual medieval coarseware.

4.4.12 The structure (**2489**) was placed directly on top of this lens and comprised three coarses. Red handmade bricks (max size 230m x 110mm x 50mm) were laid on bed orientated north to south. Some bricks had a creamy grey mortar attached to them, but this was not present on all brick and was not used to bond the bricks together, therefore suggesting the bricks had a previous use in a mortared structure.

Latrine

4.4.13 In the north-western corner of the building was a brick built rectangular structure (**2470**), orientated east to west. This structure measured 1.75m long, 1.26 wide and 1.06m deep.

4.4.14 The initial construction cut for the structure (2469) had vertical sides and a flat base, with the brick structure laid directly onto this. The whole structure was made using handmade red bricks (max size 180mm x 120mm x 60mm), which were bonded by a light creamy grey sandy mortar. The floor consisted of one course of bricks laid on bed, in an off-set pattern. The brick fabric dates to the 14th to 16th century (see Fig. 5 for section).

4.4.15 The walls were then placed on top of this floor and the surviving height showed a maximum of twelve courses. These mainly had a stretcher bond, but were slightly irregular, with the bed joints being on average 12mm thick.

4.4.16 This structure was first filled by a dark greenish grey clayey silt (2471), which measured 0.58m thick. It had frequent inclusions of charcoal fragments, as well as a noticeable mineralised content, suggestive of cessy material. The fill was rich in pottery and other objects, which are listed in Table 2, with two thirds of the assemblage being retrieved from the eastern half of the structure.

4.4.17 Environmental samples taken for from the lowest fill (2471) contained cherry, bramble and grape seeds, three coprolites and several insect remains, along with several charred plant remains.

4.4.18 This was overlain by a second deposit (2472), comprising a mid grey brown silty clay, with frequent charcoal inclusions and a moderate mineralised content.

context	material	object	no	Weight (g)
2471	pottery	Post-med red earthenware	94	4811
		Martincamp flask typ III	44	383
		Black glazed ware	13	494
		Frechen stoneware	9	507
		Anglo-netherlands tge	3	19
	Copper Alloy	dress pins	119	
		sheet	2	
		fragments	17	
	Iron	nails	37	
		Knifes (1 with bone handles)	4	
		arrowhead	1	
		Horse spur	1	
	glass	beads	15	
		shards from multiple vessels	13	81
		Window glass	19	68
	Worked bone	Decorated combs	2	
	bone	Fallow deer	52	1991
		Medium bird	36	86

context	material	object	no	Weight (g)
		Pig	8	22
		Medium mammal	60	211
2472	pottery	Tudor red earthenware	1	12
		English tin glazed earthenware	1	79
	Iron	Bone handled knife	1	
	glass	vessel	1	
	bone	Fallow deer	2	29
		Large mammal	3	85
		rabbit	1	1

Table 2: finds from latrine 2370

Cellar

4.4.19 To the south of the latrine (**2470**) lay a rectangular brick built structure (**2374**) which measured 3.1m long, 1.75m wide and 0.5m in height.

4.4.20 The construction cut (2477) had near vertical sides and a flat base, measuring 3.1m long, 2.2m wide and 0.52m deep. This was filled by a thin lens of sandy grey mortar (2478), 0.03m thick. A floor surface (2481) was laid directly onto the cut covering the whole area. The floor was made using one course of handmade red bricks (max size 170mm x 120mm x 60mm), laid on bed but in a random pattern. The bonding material was a creamy grey lime mortar.

4.4.21 The cellar walls (2374) were constructed directly on top of the floor, with the internal dimensions 15cm narrower than the original floor. The northern, eastern and southern walls were 220mm thick (two brick widths) and were four courses high. The walls were made with similar bricks to the floor and were laid on bed in a stretcher pattern. The bonding material was a similar creamy grey lime mortar, with the bed joints measuring an average of 15mm thick. One brick was sent for assessment and dated to the 14th to 16th century.

4.4.22 The western wall was constructed in a similar fashion, however, in the centre of the wall a gap was made creating a step, which measured a 0.9m wide. Between this gap was a further wall, constructed with the same bonding pattern, but only one brick width (0.12m wide).

4.4.23 A later insertion was made into the floor to create an additional square compartment (**2476**) in the south-western corner, measuring 0.4m long and 0.3m deep. In order to do this, part of the floor was replaced in the south-western corner. This compartment and floor was made using different bricks, which were also handmade with similar dimensions, but were a slightly darker red. The internal walls were offset slightly from the floor surface and left slightly lower, creating a ledge on which a lid could be placed over the compartment.

4.4.24 The brick structure was then overlain by a 0.15m thick layer of creamy white lime mortar (2480), which could be a bed for a second floor. Overlying this was the first of two demolition layers, deliberately used to backfill the cellar when it went out of use. This backfill was a dark grey silty clay (2466), 0.1m thick, with frequent whole or partial bricks and moderate inclusions of creamy mortar fragments, this fill also contained twenty sherds of pottery and a flemish type floor tile. Sealing this was a dark grey silty

clay (2465) measuring 0.2m thick, it contained a whetstone and twelve sherds of pottery.

Exterior Features

4.4.25 Immediately adjacent to the eastern side of the building was a stretch of ditch (**2408**) aligned north to south, in line with the building. The ditch had concave sides and flattish base, measuring 0.95m wide and 0.2m deep. It was filled by dark greyish brown silty clay (2409). Three slots were excavated in this ditch and it contained a fragment of a rotary quern stone, twenty sherds of pottery and three fragments of brick, dating to the 16th century.

4.4.26 To the south of the building was evidence for a lean to structure and cobbled surface, putatively interpreted as a working area for domestic activities.

4.4.27 The earliest feature in this area was a posthole (**2546**), circular in plan with a diameter of 0.5m. It had near vertical sides and a concave base, measuring 0.26m deep. It was filled by mid greyish brown silty clay (2547) and was densely packed with bricks fragments.

4.4.28 Immediately above the backfilled posthole and butting up against the southern fireplace (2446) was a rough surface (**2488**), which encompassed an area 5m (E-W) by 2.2m (N-S). It was made up of compacted gravel (rounded in shape measuring c. 5cm in diameter) with mortar and brick fragments (c 0.06m in size) and had an overall thickness of 0.1m and contained twenty-eight sherds of mid 17th century pottery, eleven fragments of lead came and nine shards of window glass. Overlying this surface was a layer of mid brownish grey silty clay (2452), 0.18m thick, which contained seventeen sherds of pottery, a cattle scapula and three iron nails.

4.4.29 Contemporary with the rough surface and lying to the south was another cobbled surface (**2487**), which covered an area 5m wide (E-W) and 2.3m long (N-S). This was constructed using compacted gravel, measuring an average of 0.03m in diameter. Embedded in to the surface and possibly a result of accidental loss and trample were three iron nails and twelve sherds of 16th to 17th century pottery.

4.4.30 In between the two surface was a linear trench (**2445**), measuring 0.5m wide, aligned east to west. This was filled by a mid brown silty clay (2490) which contained frequent brick fragments and was 0.2m thick. This was thought to represent the line of the wall, for a lean-to structure which would have attached to the southern wall of the building.

4.4.31 Several layers and small pits were encountered overlying these surfaces which relate to the period when the building was no longer used and represent demolition layers (**2486**, **2468, 2557**, **2569**). Pit **2468** contained thirteen sherds of 17th century pottery, one CuA dress pin, one horse spur, forty-one fragments of animal bone including fallow deer, goat and a rabbit/hare and several fragments of 14th to 16th century brick.

Pits / postholes

4.4.32 In the eastern part of the enclosure were a series of five postholes, which were contemporary with the occupation of the building. Three of which (**2519**, **2520**, **2522**) were in a line and encompassed an area 10m north to south. A further two postholes (**2571**, **2565**) were located to the west of these postholes.

4.4.33 Posthole (**2519**) was sub-circular in plan, with a stepped side and concave base, which measured 0.9m in diameter and 0.2m deep. It was filled by a dark orangey grey silty clay (2518) which contained a sherd of pottery. Two metres to the south lay the second posthole (**2520**) which was sub-circular in plan, and measured 0.39m in

diameter. It had steep sides and a concave base, which was 0.18m deep. It was filled by a mid brownish grey silty clay (2521) which contained CBM.

4.4.34 Seven metres to the south lay the third posthole (**2522**), which was similar in shape and profile. This posthole measured 0.31m in diameter and 0.26m deep. The posthole contained a dark greyish brown silty clay (2523) which had CBM within the fill.

4.4.35 To the west lay posthole (**2565**) which was sub-circular in plan, measuring 0.64m in diameter. It had steep sides and a flat base, which was 0.3m deep. The posthole was filled by a mid greyish brown silty clay (2566) which contained six sherds of pottery.

4.4.36 A pit (**2571**) was encountered, which was oval in plan and aligned north-east to south-west. It measured 0.76m long and 0.59m wide. The pit had near vertical sides and concave base and measured 0.34m deep. It had an initial fill of mid orangey brown silty clay (2572), 0.12m thick. This was overlain by a mid greyish brown silty clay (2573) which was 0.22m thick and contained two sherds of pottery and CBM.

4.4.37 Pit **2562** was sub-circular in plan and measured 0.6m in diameter. It had steep sides and a flat base and was 0.45m deep. The pit was filled by a light greyish brown silty clay (2561) which contained two sherds of pottery and CBM.

Enclosure

4.4.38 A large ditch (**2432**) was dug to create a rectilinear enclosure surrounding the building. The enclosure area seen in the excavation covered 1302 sq m (50m N-S by 22m E-W), however, a topographic survey completed on the adjacent western field showed the full extent of the enclosure to be 1750 sq m (50m north to south by 35m east to west), with the building lying at its centre. A possible entranceway is located in the north-eastern corner of the enclosure. The southern arm of the enclosure was mostly truncated by a later pond.

4.4.39 Five slots were excavated through the enclosure ditch which showed the profile to be similar around the northern and eastern side. The ditch had a concave base and stepped sides, with the lower 0.5m being steep sided and then becoming more gradual and concave towards the top (see Fig. 5 for section). In the eastern arm the ditch became noticeably deeper towards the north, ranging from 0.55m deep (2491) to 0.8m (2538). On its northern arm it was at its deepest, being 1.6m (2432). This reflects its topographic position, with the northern arm being at the bottom of a slight slope meaning that it acted as the catchment for water. Any surface finds were collected and assigned the context numbers 2600, 2601.

4.4.40 A similar sequence of infilling was present along the ditch. It had an initial layer of dark blueish grey silty clay (2537), on average 0.1m thick. This was overlain by a mid blueish grey clayey silt (2536), maximum thickness of 0.18m. This was followed by a dark greyish brown silty clay (2534) which measured a maximum of 0.45m thick.

Ditch Slot	pottery (no of sherds / g)	other finds
2395		1 lead came, 12 fallow deer bones, 1 pig bone
2432	66/885	2 window glass fragments, 11 fallow deer bones, 1 cat bone 2 horse bones
2442	32/519	2 CuA sheets, 1 CuA buckle, 1 (tudor / stuart) brick, 10 fallow deer bones, 1 large bird bone, 5 cattle bone

Ditch Slot	pottery (no of sherds / g)	other finds
2491	91/2611	1 CuA dress pin, 2 x horse spur, 57 fallow deer bone, 2 large bird bones, cattle bones and fish bonws
2496	72/2229	3 CuA fragments, 1 x horse spur, 3 shards from glass vessels, 1 window glass, 1 preserved wooden plank, 72 fallow deer bones, 26 horse bones, 1 med bird bone
2538	7/367	1 fallow deer bone, 1 cattle bone
2600	56/1032	11 fragments of CBM

Table 3: finds from enclosure ditch

4.4.41 After the initial infilling of the ditch, represented by fills (2537, 2536, 2534), a drain (**2479**) was constructed in the north-eastern corner of the enclosure. The drain was aligned north to south and measured 6m in length.

4.4.42 A construction cut (**2482**) was dug, measuring 0.7m wide and 0.3m deep which had steep sides and a flattish base. This was initially filled by a compacted white chalk (2533), with a thickness of 0.08m, to create a stable base for the drain.

4.4.43 The drain (**2479**) was laid directly onto this chalk and made using handmade brick, which was a dark red in colour (270mm x 240mm x 60mm() and dates to the 17th century. The base was created by laying bricks on bed, with the longest dimension perpendicular to the alignment of the drain. The walls were then constructed either side of the base, by laying two course of bricks with their longest dimension parallel to the line of the drain. It would have had a course of brick to seal the top, however, this had been truncated by later activity. The drain was filled with a mid to dark greyish brown clayey silt (2484).

4.4.44 At the southern end of the drain three postholes (**2574**, **2588**, **2589**) were encountered which are putatively ascribed as a structure either to hold a bridge over the enclosure or as a revetment to hold soil.

4.4.45 At the southern terminal of the drain a sub-square posthole (**2588**) was encountered which was cut into the lower ditch fills (2534,2536,2537) and measured 1m in width. This posthole had vertical sides and a flattish base and was 0.6m deep. It was filled by a creamy grey silty clay (2587) which contained a high proportion of mortar fragments, ash deposits and two sherds of pottery.

4.4.46 Four metres to the west lay second posthole (**2574**) which was sub-circular in plan and 0.65m in diameter. This posthole had near vertical sides and a flattish base, which was 0.3m deep. It was filled by a mid to dark brownish grey silty clay (2575), which contained a sherd of red earthenware pottery and frequent brick fragments.

4.4.47 Located immediately to the north was a smaller posthole (**2589**), sub-circular in plan, which was 0.4m wide. The posthole had steep sides and a concave base and was 0.25m deep. This posthole was filled by a mid grey silty clay (2590).

4.4.48 The southern end of the drain a layer of brick rubble (2483), with a maximum thickness of 0.2m overlying the drain and contained nineteen sherds of 17th century pottery and twelve shards of vessel glass. This was then overlain by a thin lens of crushed creamy white lime mortar (2580), 0.03m thick. To the north of the drain the ditch was backfilled

with a mid to dark greyish brown silty clay (2499), with frequent CBM and chalk fragments.

Outer Fields

4.4.49 A north to south aligned ditch (**2377**) was encountered extending from the south-eastern corner of the enclosure and was seen for a length of 15m. The ditch had a U shaped profile, which measured 1m wide and 0.4m deep. It was filled by a mid to dark brownish grey silty clay (2376) which contained a sherd of Frechen stoneware.

Tree Belt / Screen

4.4.50 Along the external side of the eastern arm of the enclosure ditch lay a row of seven pits (**2410**, **2412**, **2414**, **2419**, **2421**, **2423**, **2425**, **2501**), aligned north to south. All sub-circular in plan with concave sides and a concave base, however, several of them were slightly irregular in profile due to root disturbance. The pits ranged in size from 0.58m in diameter, 0.2m deep and 1.25m in diameter and 0.35m deep. They were filled with a similar mid reddish grey silty clay (2413, 2415, 2418, 2420, 2422, 2424, 2502, 2503). two of which, contained sherds of late 15th to 17th century pottery.

4.5 Post-medieval

Field boundary

4.5.1 Along the western edge of the excavation area a north-north-west to south-south-east aligned ditch (**2399**) was encountered, measuring 1.9m wide (see Fig. 3 for plan). The ditch which was 0.75m deep, had steep sides and a flattish base. The ditch was initially filled with a mid greyish brown silty clay (2401), 0.15m thick which contained residual early medieval pottery. This was overlain by a light brownish grey silty clay (2400), which was 0.35m thick and contained 16th century pottery.

4.5.2 A later version of this ditch (**2528**) was seen 0.5m to the west, representing the gradual shift of the ditch to its current position. The ditch had gradual sides and a concave base, measuring 1.9m wide and 0.35m deep. It was filled by a light greyish brown silty clay (2530), measuring 0.2m thick. This was overlain by a mid greyish brown silty clay (2529), which was 0.18m thick and contained two sherds of residual medieval coarseware, six fragments of fallow deer and CBM.

Brick pad

4.5.3 At the south-eastern corner of the enclosure ditch, once it had been backfilled a small sub-square brick pad (**2393**) was constructed, which measured 0.9m long and 0.87m wide. The pad was constructed of broken handmade red bricks (120mm x 80mm x 6mm), dating to the 14th to 16th century, however, they were probably reused from the earlier buildings. In the south-western corner of this brick pad there was a square indentation, measuring 0.10m, which would have originally held a small square post.

Postholes

4.5.4 Two undated postholes (**2544**,**2569**) were present just to the south of the building, however, they were cut into the demolition layers above the cobbled surface (2487) and therefore represent later activity. These lay 3.2m apart and were sub-circular in plan, with steep sides and a concave base. They were filled a mid brownish grey silty clay (2545,2568).

Ponds

4.5.5 Two ponds were encountered along the western edge of the excavation area. These were located in natural hollows, which had been accentuated by the creation of the

enclosure ditch. Due to their stratigraphic relation with the enclosure ditch, these were created no earlier than 17th century, however, radiocarbon dating of deposits in the southern pond may establish a more precise date. Both these ponds were known to have been backfilled in the mid 20th century.

4.5.6 The northern pond (**2599**) measured 16m in length (N-S) and had an exposed width of 10m. A machine slot was excavated in the centre to a depth of 1.5m, further excavation was not carried out due to health and safety concerns. A series of four deposits (2595, 2596, 2597, 2598) filled the pond, with post-medieval CBM common throughout the lower three fills. The uppermost fill contained CBM, modern pottery and glass.

4.5.7 The southern pond (**2548**) was sub-circular in plan, measuring 9m long (N-S) and the exposed width was 3.5m (E-W). A machine slot was excavated removing the top two fills (2549,2550) and hand excavation was commenced when waterlogged deposits were encountered, at a depth of 0.95m. The waterlogged deposit comprised the primary fill of the pond and were composed of frequent decomposing leaves and tree bark interspersed by a mid greyish orange silt (2539), which measured 0.2m thick.

4.6 Undated

Fenceline

4.6.1 In the south-eastern corner of the excavation area lay a line of five postholes (**2379**, **2381**, **2383**, **2385, 2387**) aligned north to south (see Fig. 3 for plan).

4.6.2 Three postholes, comprising the northernmost posthole (**2387**) and the two southernmost postholes (**2379**, **2381**) were similar in characteristics. They were all sub-circular in plan, with steep sides and a concave base. These measured between 0.32m and 0.41m in diameter and 0.12m and 0.22m deep and were all filled by a similar mid brownish grey silty clay (2378, 2380, 2386).

4.6.3 Two of the postholes (**2383**, **2385**) which were spaced 2m apart were similar in characteristics, being both sub-square, with near vertical sides and a concave base. They measured 0.27m and 0.28m in diameter and 0.16m and 0.15m respectively. They were filled by a similar dark blackish grey silty clay (2382, 2384).

Pits

4.6.4 In the eastern part of the excavation area lay a pit (**2440**), which was sub-circular in plan, measuring 0.65m long and 0.14m wide. The pit had concave sides and a flat base, which was 0.18 deep. It was filled with a dark blueish grey silty clay (2441), which had a thin lens of charcoal fragments along the base of the pit.

In the western part of the excavation area, adjacent to fireplace **2446** lay two intercutting pits (**2540**, **2542**). The earliest pit (**2540**) was sub-circular in plan with a diameter of 0.4m. It had steep sides and a flat base and was 0.12m deep. It was filled by a light grey silty clay (2541). Truncating this pit was pit **2542**, which was similar in shape and profile and measured 0.54m in diameter ad 0.12m deep. This pit was filled by a mid grey silty clay (2543).

4.6.5 Directly outside the enclosure and near to the tree belt was a pit (**2526**), which was sub-circular in plan, measuring 0.86m in diameter. The pit had gentle sides and a flattish base, which was 0.15m deep. It was filled by a mid reddish grey silty clay (2527).

4.7 Site 10 West

4.7.1 A further area of excavation was carried out in August 2016 to investigate the western extent of the enclosure identified previously (see above). This which lay in the field immediately to the west of the original excavation area, from which it was separated by a modern field boundary. These results are outlined below and all finds which relate to this phase of works are detailed in Appendix D.

4.7.2 Towards the eastern baulk of the excavation was a mid brown silty clay (6245) which overlay the natural and probably represents a subsoil which has built up against the adjacent field boundary.

4.7.3 The earliest remains comprise a north-to-south aligned ditch (**6248**) which was 3.4m wide. It had concave sides and a concave base and was 0.64m deep (see Fig. 6 for section). Its initial fill consisted of a 0.35m thick dark brownish grey silty clay (6249), which contained a shard of 17th century glass. This was overlain by a 0.3m thick, mid orangey brown silty clay (6251) which contained a sherd of post-medieval red earthenware.

4.7.4 Along the line of the ditch there was noticeably more brick rubble, which was interspersed with a mid brown silty clay. These bricks were a mid orangish red sandy fabric, all of which were broken fragments measuring no more than 80 x 60 x 60 mm in size. These probably represent demolition rubble from the building to the east that was subsequently deposited into the ditch.

4.7.5 A small sub-circular pit (**6246**) which was 0.8m in diameter was also identified. This pit had concave sides and a concave base and measured 0.1m in depth. It was filled by a dark brownish grey silty clay (6277).

4.7.6 Along the eastern baulk of the excavation lay an area of gravelly material (6243) which measured 2.5m north to south and had an exposed width of 1.7m. This surface comprised frequent sub-angular flint gravel, on average 40mm in diameter densely packed into the clay natural.

4.7.7 During the excavation all surface finds were collected, then collated to the nearest 1m and given a context number. The vast majority of these originated from the extensive demolition layer (6245). Their locations were surveyed using a hand held GPS (NB: this data appears to have been corrupted and is showing the locations to be 100m west of the excavation and are therefore not accurate). The finds are listed below in Table 3a. This assemblage is of a similar date to the assemblage retrieved to the east in Site 10.

Material	Description	Date	Count	Weight (g)
Glass	Utility vessel, wine bottle	17 - 18th C	2	32
Glass	Utlity vessel - spirit bottle	1640 - 1660 or 1680 - 1695	16	312
Glass	Utility vessel	17th century	1	12
Pottery	Post-medieval red earthenware	later 16th to 19th C	1	93
Pottery	Hedingham coarseware	mid-12th to 14th C	7	79
Pottery	Mill Green ware	mid-13th to 14th C	2	9
Pottery	Medieval coarseware	13th C	11	118
Pottery	Frechen stoneware	late 16th to 17th c	2	46

Clay pipe	fragment, not closely identifiable	NCD	6	33
Clay pipe	Oswald type 6	1660 - 1680	1	21

Table 3a: Surface finds from Site 10 west

5 Factual Data and Assessment of Archaeological Potential

5.1 Stratigraphic and Structural Data

The Excavation Record

5.1.1 All hand written records have been collated and checked for internal consistency, and the site records have been transcribed onto an MS Access Database. Contexts will be ascribed to a phase dependant on the evidence found within them. The site plans and all relevant sections have been digitised in AutoCAD, finds will be drawn by hand. The quantification list of excavation records have been recorded in Table 4

Type	**Excavation**
Context registers	8
Context numbers/sheets	261
Trench sheets	0
Plan registers	3
Section registers	3
Sample registers	8
Photo registers	7
Plans (1:20; 1:50)	62
Sections (1:10; 1:20)	79
Black and white films (36 exp)	3
Digital photographs	234

Table 4: quantification of excavation records

Finds and Environmental Quantification

5.1.2 A large assemblage was recovered during the excavation. Pottery, CBM and animal bone form the greatest components.

5.1.3 The bulk finds have been washed, bagged, marked (in accordance with Essex County Council guidelines) and quantified by material type onto an MS Office Access database to allow integration with the stratigraphic record. These overall totals are summarised in Table 5), which also includes some data obtained from the evaluation reports; more detailed quantification is presented in the finds appendices.

	Excavation Quantities	
Finds Category	**Weight (kg)**	**Number**
Pottery	18.934	818
CBM	139.907	634
Animal bone	24.959	806

	Excavation Quantities	
Finds Category	**Weight (kg)**	**Number**
Glass	1.355	100
Tobacco-pipe	0.087	22
lead	N/a	21
Copper alloy	N/a	143
Iron	N/a	182
Glass beads	N/a	15
Worked bone	N/a	21
Stone (worked)	0.687	3
leather	N/a	42
wood	N/a	12

Table 5: Quantification of finds

Range and Variety

5.1.4 Features on the site consisted of brick built foundations, pits, postholes and ditches. The features were of Early Iron Age to post-medieval date with the greatest proportion belonging to Early post-medieval period. The table (6) below summarises the total number of each type of feature.

		Provisional Date				
type	**total**	**Early Iron Age**	**High medieval**	**Early post-medieval**	**Post-medieval**	**undated**
Brick foundations	7			7		
Ditches	6		1	3	2	
Postholes	14			7	2	5
Pits	25	4	1	14		6
layers	10			10		
pond	2				2	

Table 6: Range and Variety of Features

Condition

5.1.5 Survival of the deposits was variable and there was some slight truncation due to ploughing. The overburden thickness was greatest in the northern part of the site.

5.2 Documentary Research

5.2.1 Research in documentary and cartographic evidence will be undertaken where appropriate to place the site into its wider context and specifically to research the building.

5.3 Artefact Summaries

Copper Alloy Objects

Summary

5.3.1 A total of 143 fragments of copper alloy were recovered, most were small and highly corroded fragments of dress pins, almost all from a single context (2471). Most are in poor to fair condition, with a substantial build-up of corrosion products, presumably a result of the depositional context.

Statement of Potential

5.3.2 The copper alloy finds have little potential to inform the site dating, but will provide a limited amount of information on the appearance and clothing of the inhabitants.

Proposed further work

5.3.3 Archival catalogue entries should be completed. X-radiography is advised, in order to confirm or clarify identifications and provide a more accurate estimate of the numbers of pins present. Up to three items will require illustration.

X-ray pins and other elements of the assemblage	2 plates	K Barker
Complete archive catalogue entries, and make brief comment for any intended publication	0.75 day	CHD

Iron Objects

Summary

5.3.4 A total of 182 fragments of iron artefacts were recovered, probably representing significantly fewer objects. The overwhelming majority comprises hand-forged nails (*c* 62 %, two knife handles, an arrowhead and featureless / unidentifiable fragments (*c 19.6*%).

Statement of Potential

5.3.5 The ironwork has demonstrable potential to inform the dating and nature of activity on the site.

Proposed further work

5.3.6 The assemblage should be x-rayed for final identification, and full archival catalogue entries should be completed. A brief summary report should be prepared for inclusion into any proposed publication. Approximately 10 illustrations will be required.

X-ray	184 objects	KB 10 plates
Complete archive catalogue entries	1.5 day	CHD
Write summary report for inclusion in publication	1 day	CHD

Lead objects

Summary

5.3.7 There were 20 small fragments of lead and one of lead alloy (pewter?) from Site 10, most of them can be identified as window kame. Most are in fair condition, but all are fragile.

Statement of Potential

5.3.8 Although limited, the lead has potential to corroborate other dating evidence from the site, and to contribute to an understanding of the appearance of structures.

Proposed further work

5.3.9 Archival catalogue entries should be completed. Selected fragments of kame should be cleaned to confirm their method of manufacture, and if necessary, cross-sections of the cleaned fragments should be illustrated. The pewter vessel fragment should also be drawn.

Glass Beads

Summary

5.3.10 A total of 15 small glass beads were recovered (Sfs 370-74), during soil samples processing, from fill 2471 (structure 2469). They are in good condition, but appear to show slight iridescent weathering.

Statement of Potential

5.3.11 The beads have no further potential.

Proposed further work

5.3.12 Archival catalogue entries should be completed.

Complete archive catalogue entries, and make brief comment for any intended publication	0. 25 days	CHD

Glass

Summary

5.3.13 The excavation produced a moderate assemblage of 100 shards of glass weighing approximately 1.355kg. The assemblage comprises 66 shards of vessel glass weighing 1.261kg and a further 34 shards of window glass (weight 0.094kg).

Statement of Potential

5.3.14 The vessel glass comprises six vessel bases which should be readily datable and the window glass comprise some whole or nearly whole shards which would be datable.

Further Work

5.3.15 The assemblage should be sent to a specialist and a full report is required including complete descriptions of the fabrics and forms present and discussion of these in a local and regional context.

Prehistoric pottery

Summary

5.3.16 A total of 40 sherds weighing 281g was collected from four contexts. The assemblage contains no rim or body sherds and is characterised by the extensive use of flint tempered fabrics which form 95% of the total assemblage.

Statement of Potential

5.3.17 The assemblage is in good condition, however, the small number pottery sherds offer little potential for further study. This catalogue should act as a full record for the assemblage and no further work is recommended.

Medieval Pottery

Summary

5.3.18 A total of 778 sherds weighing 18.653kg was excavated, spanning the early 13th to 18th centuries, although most dates to the later 15th to earlier 17th centuries and is largely domestic in nature.

Statement of Potential

5.3.19 The assemblage is of some interest as late medieval/post-medieval farmstead sites are not as common as their medieval counterparts and would make a good comparison to other post-medieval rural sites in the county and to the urban assemblages at nearby Chelmsford. The pottery merits a short publication concentrating on the group from the latrine (including illustration of the most complete vessels) and the contents of the enclosure ditch.

Task	Duration	
Researching other post-medieval assemblages at rural sites in Essex and at urban sites at Chelmsford	2	
Writing a catalogue of illustration for up to ten vessels	0.5	
Editing assessment report for publication (part of the big publication)	1	
Writing publication article incorporating the results of task 1	1	HW
Total	4.5	HW

Clay tobacco pipe

Summary

5.3.20 The archaeological excavation produced a small assemblage of clay tobacco pipe totalling 0.087kg in weight. One had a partial bowl with surviving heel and all other fragments from the excavation were stems which were plain, having no marks or decoration and is therefore not closely datable, other than to say it is post-1580.

Statement of Potential

5.3.21 The assemblage is in good condition, however, the small number of clay tobacco pipe fragments offer little potential for further study. This catalogue should act as a full record for the assemblage and no further work is recommended.

Worked Stone

Summary

5.3.22 The stone assemblage is small, consisting only of two lava quern fragments and a whetstone fragment. These have the potential to add to the overall picture of activity on site as they indicate the processing of grain and food preparation as well as general tool maintenance. However, there is nothing unusual in their presence here.

Statement of Potential

5.3.23 No further work is required other than editing the assessment text for publication

Task	Duration	

Editing assessment report for publication	1 hr	RS

Ceramic Building Material

Summary

5.3.24 A sample of the ceramic building material recovered amounting to twenty-eight pieces weighing 26496g, was submitted to the specialist for recording and assessment. The sample was selected from eighteen contexts to provide a full range of forms and fabrics. The assessed assemblage was dominated by brick with only a few fragments of roof and floor tile. The assemblage is wholly late medieval – early post-medieval (14th-16th century), though assigning a date is an imprecise art.

Statement of Potential

5.3.25 The assemblage was found almost in its entirety in primary structures or closely associated secondary contexts, related to the building phased to the early post-medieval period (AD1500-1650). A small quantity of brick was found in the ditch relating to the high medieval retting pit, but the brick is identical with that of the later phases and is likely to be demolition debris slumped into the silted fill of the earlier features. A small quantity of material was also reused in later post-medieval post holes.

5.3.26 The assemblage is a significant group of material that can be directly related to the late medieval/early post-medieval building, providing evidence for its construction, the range of materials utilised, and alterations. The use of ceramic building material reflects on the economic status of the inhabitants and the extent of its use, the quality of material, presence or absence of certain types and evidence of reuse informs the level of wealth available and aspirations of the owners.

5.3.27 The closely dated material can provide a good comparative assemblage for the identification of brick and roof tile of this period.

5.3.28 It is recommended that the whole assemblage is fully recorded in accordance with ACBMG recommendations, the data analysed in relation to the structures and stratified site record to establish the character of the buildings and changes and alterations to its structure and a report produced. A small selection of the better preserved objects should be illustrated. Prior to recording any discard policy should be fully discussed and established with the archiving body and implemented during recording.

Worked bone

Summary

5.3.29 A total of two fragments of worked bone and nineteen of ivory were recovered, they probably represent no more than two separate items, both coming from fill 2471 (structure 2469). Both are in good condition, if fragmentary.

Statement of Potential

5.3.30 The worked bone has no further potential.

Proposed further work

5.3.31 Archival catalogue entries should be completed. Both objects should be illustrated.

Complete archive catalogue entries, and make brief comment for any intended publication	0. 5 days	CHD

Leather

Summary

5.3.32 The leather comprised 42 registered finds representing at least 16 shoes, an archer's bracer, a cut down panel and scrap leather from an unknown item. The leather can be independently dated by the shoe styles present; all is of later medieval date dating to the second half of the fourteenth and beginning of the fifteenth centuries.

Statement of Potential

5.3.33 The assemblage is of interest coming from a rural location; the majority of leather, of all dates, being recovered from urban locations. Details of the group will add to the dataset of leather recovered from rural occupation in SE England during the late medieval period. The leather can provide independent dating evidence to compliment the ceramic evidence. It provides evidence of the social status of the inhabitants and some of the activities being undertaken in the vicinity. Shoes to fit adults and small children are present, ranging in size from Child size7 (24) up to Adult 9 (43), as might be expected, indicating that a 'normal' population is represented rather than a 'specialist group' of individuals. A small number of items in the two lowest fills (2504 and 2552) of the watering hole had been cut up in order to salvage leather for re-use, or metal fittings for recycling. While this does indicate that some leatherworking was being undertaken locally, no waste leather from the making or repairing of shoes was found; perhaps the inhabitants were salvaging leather to undertake their own repairs

Recommendations for conservation

5.3.34 The leather cannot be stored wet indefinitely. Without conservation the leather will deteriorate and is potentially hazardous to health being liable to fungal and bacterial infection. Wet leather presents difficulties with short-term storage, transportation, study and illustration (English Heritage Guidelines 1995; 6; 2012). The eventual repository of the leather should be consulted regarding their discard and retention policy for wet organic material. It is usual for this to follow that recommended in the SMA Guidelines and unlikely that they will accept wet leather. It is recommended that the leather be conserved. Once conserved the material can be safely stored, examined and displayed. Features of construction, decoration and species identification, not visible when the leather is wet, are revealed when the leather is dry. English Heritage Guidelines (2012) provides advice on the conservation options available. The archers' bracer (SF235) and the shoes with upper leather present should be conserved by freeze-drying to allow for their study and illustration as necessary. While the rest of the group is robust and air-dying under controlled conditions would be appropriate, it is likely that for such a group freeze-drying is the most cost-effective option.

Work required

5.3.35 A basic record of the leather has been made, significant dimensions taken and working drawings made of selected items. The leather should be conserved to allow for its storage, further examination and professional illustration or photography if required for publication. The leather should be examined once it is conserved, components from the same shoe matched up where possible. The basic record should be updated and new working drawings made where necessary. A summary of the assemblage should be prepared to inform those writing the site narrative and for inclusion in the site report. The archer's bracer (SF235) and those shoes that provide dating evidence should be fully catalogued (estimated 7) and the best examples of each illustrated. It is estimated that no more than eight items will require illustration. A figure showing the shoe styles found will accompany the text.

Task	Duration	
Examine material (42 registered finds)	2.5	QM
Update basic record and working drawings	1	QM
Catalogue significant items (estimated 8 items)	1	QM
Prepare summary	1	QM
Editing assessment report for publication	1	QM

Wood

Summary

5.3.36 In total 12 pieces of timber were recovered from two features. Species identification was not entirely obvious using basic magnification, further identification would be necessary using a cellular microscope to establish beyond doubt the species. At this stage all pieces are provisionally identified as oak

Statement of Potential

5.3.37 A full report is recommended to determine species identification and also to establish further insights into purpose if possible. Due to damage and lack of tree rings dendrochronology is not advised for dating the timbers and c14 would be more practical. It is recommended that C14 dating is carried out at analysis stage in order to date what appears to be the collapsed timber lining of the pit.

5.4 Environmental Summaries

Faunal Remains

Summary

5.4.1 The size of the faunal assemblage from Site 10 at Beaulieu is of moderate size, with 727 mammal, 52 avian and two fish remains identified in the hand-collected samples. The majority of the assemblage dates form the early post-medieval phase.

Statement of Potential

5.4.2 The results presented so far leave little doubt about the high research potential of this faunal assemblage. There are strong indications that the assemblage reflects, at least partly, activities associated with high social status in the 16th century, such as deer hunting. The results presented in this assessment have already contributed to some of the regional and site-specific objectives. More specifically, the extent of fallow deer remains is compatible with the interpretation of the building as being the site of the warrener's lodge recorded in documentary sources. This direction can be further explored through additional data analyses (e.g. anatomical representation of fallow deer).

5.4.3 Further study of different aspects of this assemblage has the potential to address additional research objectives, both regional and site-specific. For example, already identified types of human-animal interactions can be further refined and previously unknown interactions are likely to be identified (e.g. provision of fish, poultry farming, falconry) with the collection of more data. Such data will shed light upon open archaeological questions revolving around the types of settlements (e.g. buildings in this case) in rural East Anglia, the management of deer parks, the management of

domestic animals, as well as the modes of consumption and possible differences between fallow deer and other animals.

5.4.4 More detailed demographic analyses might reveal whether all the farm animals present at the site were locally reared or were transported there thus shedding light into the mechanisms responsible for the provisioning of such sites.

5.4.5 The presence of smaller bird and amphibian species in the residues has the potential to provide information on micro-environments available at and near the site. The same holds true for fish species, if any are proven to have been captured or reared locally.

5.4.6 The occurrence of butchery marks on the faunal remains also shows the potential to approach culinary practices at the site.

5.4.7 The good preservation condition of the assemblage allows the recording of a large number of biometric measurements, both postcranial and dental, which can help address several issues such as the presence/absence of some species (e.g. goat, other equids besides horse), as well as understanding in more detail the approach to fallow deer hunting during the transition from the high medieval to the early post-Medieval period.

5.4.8 The only limitations in the research potential of this assemblage are the small sample sizes for some of the taxa. Moreover, research potential would have been enhanced even further if earlier and later samples than the one attributed to the 'early post-medieval Medieval' phase were available. This would have allowed comparisons between phases, which would add an evolutionary perspective to the history of the site. As a partial remedy to this problem, it is suggested that data available in the literature from relevant sites or unpublished sites in the vicinity are considered.

Further Work and Methods Statement

5.4.9 The fulfilment of the site's research potential requires that additional data are collected from the assemblage. More specifically, data collection on the following aspects is deemed necessary to address the issues outlined above.

5.4.10 Study of all residues from bulk samples in order to obtain a full picture of the entire spectrum of animals present at the site and the importance of each in human diet and other activities, as well as the environment. For the study of micromammal, fish and amphibian remains, specialists in these types of remains should be sought to contribute their expertise.

5.4.11 The identification of the bird remains to more specific taxonomic categories with the use of an appropriate comparative collection. Bird remains from the residues should be in conjunction with those the hand-collected remains presented in this assessment.

5.4.12 Further analyses on age-at-death data (e.g. integration of epiphyseal fusion with dental eruption/wear data), as well as the collection of additional data for some animal species such as the horse and farmyard birds (especially chicken). Tooth measurements on equid teeth (Levine 1982) will allow more precise ageing of the horses deposited at the site. Age-at-death data on chicken might reveal the management of this bird species at the site.

5.4.13 Collection of biometric data (mainly von den Driesch 1976) for analyses addressing the issues of male: female ratios (especially for fallow deer and possibly some bird species), the presence of different species/breeds of equids and possibly other mammals (e.g. goat) as well as birds.

5.4.14 Collection of data on the location of butchery marks, which can reveal approaches to carcass processing and possibly culinary practices concerning each species. Analyses of the fragmentation state will strengthen possible patterns identified in the analysis of butchery marks.

5.4.15 Analysis to explore the effect of other taphonomic factors on the assemblage, as well as possible spatial patterns in their occurrence.

5.4.16 Integration of the results and interpretation of the site's faunal remains with other sites of similar function and in general sites of the same period.

Shell

Summary

5.4.17 A total of 4.136kg of marine mollusca shell was recovered from 27 contexts. The assemblage mainly comprised of oyster (99%) with some cockle and mussel shell.

Statement of Potential

5.4.18 The marine mollusc assemblage of Site 10, Beaulieu provides evidence of oyster consumption on site through size of specimen, presence of shuck marks and background understanding that such consumption was particularly high during the medieval and post-medieval period. Whilst not in abundance on site, the oyster shells represent a species exploited as a food resource. There is no obvious trend or pattern to the deposition of the specimens, indicating that the waste was discarded wherever was seen as appropriate at the time. Further analysis would require larger samples from each of the different features on site, to establish a correlation between the ecofact and site structure. The assemblage has been fully quantified and no further work is required.

Environmental Remains

Summary

5.4.19 Twenty-nine samples were processed as part of this analysis. These samples contained a mixture of waterlogged and mineralised plant remains including cereal and weed seeds and fruit stones.

Statement of Potential

5.4.20 The initial assessment results show that preservation of plant remains is good with carbonised, mineralised and waterlogged plant remains present. Waterlogged plant remains are of particular value for providing information on the surrounding environment of a site whereas carbonised plant remains relate to agriculture and domestic, culinary activities and mineralised remains usually indicate cess. The carbonised component of the assemblages is low which is significant in that it suggests that this site was of high-status and/or seasonal use as flour was presumably brought on to site and there was little use of whole grains. The mineralised fruit seeds provide evidence of other foods consumed. In addition, the presence of mineralised insect remains are also an indication of cess. Further analysis of the samples from latrine **2470** has the potential to provide further information on the occupants of the site and the functions of the types of building present in relation to the regional research objectives (Historic England 1997). The waterlogged samples from high medieval retting pit 2506 have the potential to characterise the immediate environment of the site and further processing and analysis could enable an understanding of the original use of the feature. Samples 433 and 434 from early post-medieval ditch **2432** have

also produced waterlogged material that could be analysed as a comparison to the retting pit to investigate whether the environment has changed.

Recommendations for further work

5.4.21 Further analysis of the remaining soil from samples from latrine **2470**. There is remaining soil from Samples 438, 439 (1 bucket of each) which should be processed and analysed for the recovery of mineralised plant remains.

5.4.22 There are 5 buckets of Sample 458 and 2 buckets of Sample 459 from retting pit **2506** remaining. It is suggested that a 1L sub sample is wet-sieved and examined wet. The remaining soil can be tank processed and dried to allow for rapid examination of the material.

5.4.23 The remaining buckets of Sample 433 and 434 from ditch **2432** should each have 1L soil processed by wet-sieving and the remainder can be tank processed and dried.

Pollen

Summary

5.4.24 Two sub samples were processed to assess pollen preservation which was found to be mixed, with some grains obscured or deteriorated, although most pollen was reasonably well preserved. The samples demonstrated a rich pollen assemblage, dominated by cereal-type pollen and grasses (Poaceae). Herbs associated with disturbance and waste ground are commonly recorded

Recommendations for further work

5.4.25 It is recommended that sample <463> from the medieval pit (site 10) is fully analysed for pollen. Rapid assessment demonstrated a rich pollen assemblage, dominated by cereal-type pollen and grasses (Poaceae). Herbs associated with disturbance and waste ground are commonly recorded, including taxa such as ribwort plantain (*Plantago lanceolata),* docks/sorrels (*Rumex*), pollen of the carrot family (Apiaceae), a broad group including plants such as pignuts, burnet-saxifrages and fool's parsley, daisy-family (Asteraceae, another large group comprising for example, sow-thistles, burdocks and oxeye daisies) and goosefoot family (Chenopodiaceae), a further large group comprising taxa such as fat-hen, many-seeded goosefoot and fig-leaved goosefoot) and cabbage family (Brassicaceae, also a large group including plants such as garlic mustard, winter-cresses and shepherd's-purses). Fungal spores including cellulose decomposing types and spores that host on animal dung are recorded. Pollen preservation was found to be mixed, with some grains obscured or deteriorated, although most pollen was reasonably well preserved. Counts of between 300-500 pollen grains may be expected per sub-sample analysed

Task	Duration	
Process samples	0.75 days	supervisor
Analysis	7	MR
Reporting and Tilia production	3	MR

6 Report Writing, Archiving and Publication

6.1 Storage and Curation

6.1.1 Excavated material and records will be deposited with, and curated by, Essex County Council in appropriate county stores under the Site Code and county HER code SPBP15. A digital archive will be deposited with OA Library/ADS. ECC requires transfer of ownership prior to deposition (see Section 11). During analysis and report preparation, OA East will hold all material and reserves the right to send material for specialist analysis.

6.1.2 The archive will be prepared in accordance with current OA East guidelines, which are based on current national guidelines

6.2 Publication

6.2.1 The results from all phases of the project will form a site of regional significance, therefore publication in the East Anglian Archaeology monograph series appears appropriate. However, given the location of the site, the Oxford Archaeology monograph series is a viable alternative. Once the publication outlet is confirmed (following discussions with relevant parties), a preliminary synopsis will be prepared.

7 Discussion

7.1 Early Iron Age

7.1.1 Towards the south-eastern corner of the excavation are lay four pits which date to the Early Iron Age period. These remains are similar in date and form to the settlement remains found to the south in Site 8 and to the south-west in Site 7 and likely to be part of the same open settlement. If taken together this settlement covered an extensive area, of at least 5ha, and is situated on a ridge of high ground at c 50m AOD

7.2 High Medieval

Retting pit

7.2.1 In the centre of the excavation a large squarish pit was encountered, dug into the natural clay. A series of waterlogged deposits were filling the base of the pit, which suggests that up until recently when new drainage has been created in the wider Beaulieu area this pit would have been waterlogged. One ditch ran into the pit from the east which may have channelled water into the pit.

7.2.2 It is possible that this pit was used as a watering hole for animals however, no sloped access into the pit was evident from which the animals could gain safe and easy access. A further possible use is that of processing plants to produce cloth (retting) which is corroborated by the environmental remains which produced flax stems and nettle seeds and stems.

7.3 Early post-medieval

7.3.1 The archaeological remains encountered on site which date to the early post-medieval period relate to an enclosed farmstead. The settlement consists of one building (**2437**), thought to be a timber framed construction, with wattle and daub walls, and brick elements, such as the chimney, latrine, cellar and a possible staircase. No evidence for a roof survived, however, the amount of roof tile that has been retrieved from the backfill of the surrounding enclosure ditch suggests a high probability of the roof being constructed of ceramic tile, rather than thatched.

7.3.2 The building, which was orientated on a north-north-east to south-south-west alignment measures 22m in length and a projected width is 8.5m. The eastern wall is unknown, however, the fireplace is likely to be located centrally in the southern wall. It is believed that this would have been a two storey building, or at least have had access to an upper storey, possibly a form of attic within the rafters.

7.3.3 No archaeological remains relating to the wall construction was encountered, which suggests that the building was constructed on sill beams, and has been truncated by later ploughing. If postholes were used they would have had to be deep and well set to provide enough load bearing and it is unlikely to have been truncated, given the presence of other elements of the building which would have been higher up.

7.3.4 The archaeological evidence suggests that the building was partitioned into at least two rooms, each with its own fireplace. The northern part of the building, which would roughly cover about two thirds of the building would have formed the living and eating space, with a fireplace set into the western wall to heat the room. On the line of the northern wall remains of the foundations for a brick built structure was encountered, which was L shaped instead of the C shaped foundations for the fireplaces, which suggests a different function. It is possible given the size and high status of the

building that this would have formed a staircase up to a second floor. If this was the case then it is likely to have been used for a sleeping area / storage area.

7.3.5 Roe deer antlers were also retrieved from the surrounding area, some of which were naturally shed and some still had a portion of the cranium attached suggesting the deer were hunted. Horse spurs, an archer's race and an arrowhead were also recovered from deposits associated with the building, further suggesting hunting and horsemanship of the inhabitants.

7.3.6 The building lay to the north-west of New Hall and the main complex of the hunting lodge, but still within the hunting lodge grounds. Therefore it is part of the larger estate and would have been lived in by residents associated with the hunting lodge. The farmstead only shows a pottery assemblage that dates to a 100 year span which suggests that it was a relatively short lived building and may have been affected by the later contraction and remodelling of the hunting lodge.

7.3.7 The building was enclosed by a sub-rectangular ditch, the western side of this ditch was outside of the excavation area, however, a contour survey of the adjacent field suggests that the total enclosed space measured c 2.500 sq m. The contour survey also showed that the ground naturally sloped down northwards from a high point at he centre of the enclosure, where the house was built. This is seen in the ditch which was dug deeper and wider to compensate for the extra water in comparison to the eastern and southern sides of the ditch.

7.3.8 A possible entrance way is located in the north-eastern corner of the ditch, this is represented by a layer of deliberate backfilling, overlain by a brick built drain and then capped by more backfill. This would have created an entranceway in the enclosure with the drain keeping the ditch's function as a drainage channel open. The drain was constructed of brick dating to the late 16th to early 17th century which suggests that the entranceway is a later construction than the original ditch. No entranceway is evident that dates to the original construction, however, this may lie to the west and not picked up in the contour survey.

7.3.9 Outside the south-eastern corner of the enclosure was a north to south line of pits / tree boles. This may represent a tree belt as it is positioned to shield the view between the building and the palace building.

Site 10 West

7.3.10 The later excavation of the field to the west of the main farmstead house (Site 10 West) encountered what appears to have been the western arm of the enclosure. This confirmed the data gathered by the original topographic survey conducted in May 2015. The excavated remains seem to be quite truncated, with the southern part of the enclosure ditch no longer surviving. Additionally a large spread of brick rubble was overlying this ditch and is presumed to be demolition rubble from the house.

7.3.11 The gravel surface encountered to the southern part of the enclosed area may have formed a small working area and is consistent with the surface immediately south of the main building (2487). No surfaces were encountered to the north and east, suggesting that these areas were relatively open, with less evidence for domestic activity in comparison to the west.

7.3.12 There was no obvious entranceway in to the enclosure on its western side, however, it is possible that this was obscured by the demolition rubble. It is still thought that the most obvious entranceway would have been a timber structure over the ditch and evidenced by the postholes seen in the north-eastern part of the enclosure.

7.3.13 Of interest is that the ditch on the western side is not quite in alignment with the eastern arm. This means that the house, although central to the enclosure was not aligned with the enclosure. However this may not be significant: one possibility is that the enclosure was originally dug in the medieval period and a settlement or homestead was located within it. The only evidence for this settlement is the retting pit, although the presence of 52 sherds of medieval pottery recovered as residual elements from later contexts, may suggest that there were originally other features present on site which have been truncated by the early post-medieval settlement.

Appendix A. Context Summary with Provisional Phasing

Context	same as	Cut	Category	Feature Type	phase	group
2374		2477	masonry	cellar	early post-medieval	building
2375	2559	2583	masonry	fireplace	early post-medieval	building
2376		2377	fill	ditch	early post-medieval	Outer fields
2377			cut	ditch	early post-medieval	Outer fields
2378		2379	fill	post hole	undated	Fence
2379			cut	post hole	undated	Fence
2380		2381	fill	post hole	undated	Fence
2381			cut	post hole	undated	Fence
2382		2383	fill	post hole	undated	Fence
2383			cut	post hole	undated	Fence
2384		2385	fill	post hole	undated	Fence
2385			cut	post hole	undated	Fence
2386		2387	fill	post hole	undated	Fence
2387			cut	post hole	undated	Fence
2388			cut	pit	prehistoric	occupation
2389		2389	fill	pit	prehistoric	occupation
2390			cut	pit	prehistoric	occupation
2391		2390	fill	pit	prehistoric	occupation
2392		2390	fill	pit	prehistoric	occupation
2393			masonry	brick pad	post-medieval	Brick pad
2394		void	void	void		
2395	2432		cut	ditch	early post-medieval	enclosure
2396	2433	2395	fill	ditch	early post-medieval	enclosure
2397	2528		cut	ditch	post-medieval	Field boundary
2398		2397	fill	ditch	post-medieval	Field boundary
2399			cut	ditch	post-medieval	Field boundary
2400		2399	fill	ditch	post-medieval	Field boundary
2401		2399	fill	ditch	post-medieval	Field boundary
2402			cut	pit	prehistoric	occupation
2403		2402	fill	pit	prehistoric	occupation
2404		2402	fill	pit	prehistoric	occupation
2405			cut	pit	prehistoric	occupation
2406		2405	fill	pit	prehistoric	occupation
2407		2405	fill	pit	prehistoric	occupation

Context	same as	Cut	Category	Feature Type	phase	group
2408	2435,2508	2408	cut	ditch	early post-medieval	occupation
2409		2408	fill		early post-medieval	occupation
2410			cut	pit	early post-medieval	Tree belt
2411		2410	fill	pit	early post-medieval	Tree belt
2412			cut	pit	early post-medieval	Tree belt
2413		2412	fill	pit	early post-medieval	Tree belt
2414			cut	pit	early post-medieval	Tree belt
2415		2414	fill	pit	early post-medieval	Tree belt
2416						void
2417						void
2418		2419	fill	pit	early post-medieval	Tree belt
2419			cut	pit	early post-medieval	Tree belt
2420		2421	fill	pit	early post-medieval	Tree belt
2421			cut	pit	early post-medieval	Tree belt
2422		2423	fill	pit	early post-medieval	Tree belt
2423			cut	pit	early post-medieval	Tree belt
2424		2425	fill	pit	early post-medieval	Tree belt
2425			cut	pit	early post-medieval	Tree belt
2426		2427	fill		Natural feature	
2427			cut		Natural feature	
2428		2429	fill		Natural feature	
2429			cut		Natural feature	
2430		2431	fill		Natural feature	
2431			cut		Natural feature	
2432	2395,2442, 2491,2496, 2538,2576	2432	cut	ditch	early post-medieval	Enclosure
2433	2396,2500	2432	fill	ditch	early post-medieval	enclosure
2434		2388	fill	post hole	prehistoric	occupation
2435	2408,2508		cut	ditch	early post-medieval	occupation
2436		2435	fill	ditch	early post-medieval	occupation
2437			group	building	early post-medieval	building
2438		2432	fill	ditch	early post-medieval	enclosure
2439	2460,2492, 2507,2536	2432	fill	ditch	early post-medieval	enclosure
2440			cut	pit	undated	occupation

Context	same as	Cut	Category	Feature Type	phase	group
2441		2440	fill	pit	undated	occupation
2442	2432		cut	ditch	early post-medieval	enclosure
2443			cut	pit	early post-medieval	enclosure
2444		2468	fill	pit	early post-medieval	building
2445			layer	demolition	early post-medieval	building
2446	2558	2447	masonry	Fireplace	early post-medieval	building
2447			cut	construction	early post-medieval	building
2448	2584	2449	masonry	fireplace	early post-medieval	building
2449	2585		cut	construction	early post-medieval	building
2450		2473	layer	oven	early post-medieval	building
2451		void	void	void		
2452			layer	use	early post-medieval	building
2453		void	void	void		
2454		void	void	void		
2455		void	void	void		
2456		void	void	void		
2457		void	void	void		
2458	2534	2442	fill	ditch	early post-medieval	enclosure
2459	2495,2497, 2535	2442	fill	ditch	early post-medieval	enclosure
2460	2439	2442	fill	ditch	early post-medieval	enclosure
2461		2442	fill	ditch	early post-medieval	enclosure
2462		2442	fill	ditch	early post-medieval	enclosure
2463		2443	fill	pit	early post-medieval	enclosure
2464		2443	fill	pit	early post-medieval	enclosure
2465		2477	fill	cellar	early post-medieval	building
2466		2477	fill	cellar	early post-medieval	building
2467	2481	2374	masonry	cellar	early post-medieval	building
2468		2468	cut	pit	early post-medieval	building
2469		2469	cut	Construction	early post-medieval	building
2470		2469	masonry	latrine	early post-medieval	building
2471		2469	fill	latrine	early post-medieval	building
2472		2469	fill	latrine	early post-medieval	building
2473			layer	Oven	early post-medieval	building
2474			layer	Oven	early post-medieval	building
2475			layer	Oven	early post-medieval	building

Context	same as	Cut	Category	Feature Type	phase	group
2476		2477	masonry	cellar	early post-medieval	building
2477		2477	cut	Construction	early post-medieval	building
2478		2477	fill	construction	early post-medieval	building
2479	2424	2482	masonry	Drain	early post-medieval	enclosure
2480		2374	fill	cellar	early post-medieval	building
2481	2467	2374	masonry	cellar	early post-medieval	building
2482			cut	construction	early post-medieval	enclosure
2483			masonry	drain	early post-medieval	enclosure
2484	2525	2479	fill	Drain	early post-medieval	Enclosure
2485		2486	fill	pit	early post-medieval	building
2486			cut	pit	early post-medieval	building
2487			layer	surface	early post-medieval	building
2488			layer	surface	early post-medieval	building
2489	2560	2570	masonry	Staircase	early post-medieval	building
2490			layer	demolition	early post-medieval	building
2491	2432		cut	ditch	early post-medieval	Enclosure
2492	2439	2491	fill	ditch	early post-medieval	Enclosure
2493	2510	2491	fill	ditch	early post-medieval	Enclosure
2494		void				
2495	2459	2491	fill	ditch	early post-medieval	Enclosure
2496	2432		cut	ditch	early post-medieval	Enclosure
2497	2459	2496	fill	ditch	early post-medieval	Enclosure
2498		2496	fill	ditch	early post-medieval	Enclosure
2499		2496	fill	ditch	early post-medieval	Enclosure
2500	2433	2496	fill	ditch	early post-medieval	Enclosure
2501		2501	cut	pit	early post-medieval	Tree belt
2502		2501	fill	pit	early post-medieval	Tree belt
2503		2501	fill	pit	early post-medieval	Tree belt
2504		2506	fill	retting pit	high medieval	industrial
2505	void		void	void		
2506			cut	retting pit	high medieval	industrial
2507	2439	2496	fill	ditch	early post-medieval	enclosure
2508	2435,2408	2508	cut	ditch	early post-medieval	occupation
2509		2508	fill	ditch	early post-medieval	occupation
2510	2493,2533, 2537	2432	fill	ditch	early post-medieval	Enclosure

Context	same as	Cut	Category	Feature Type	phase	group
2511		2506	fill	retting pit	high medieval	industrial
2512		2506	fill	retting pit	high medieval	industrial
2513		2506	fill	retting pit	high medieval	industrial
2514		2506	fill	retting pit	high medieval	industrial
2515		2506	fill	retting pit	high medieval	industrial
2516		void				
2517		void				
2518		2519	fill	pit	Unknown	
2519		2519	cut	pit	Unknown	
2520		2520	cut	posthole	early post-medieval	internal
2521		2520	fill	posthole	early post-medieval	internal
2522		0	cut	pit	early post-medieval	internal
2523		2522	fill	pit	early post-medieval	internal
2524	2479		masonry	drain	early post-medieval	enclosure
2525	2484	2524	fill	drain	early post-medieval	enclosure
2526		0	cut	pit	early post-medieval	Tree belt
2527		2526	fill	pit	early post-medieval	Tree belt
2528	2397	2528	cut	ditch	post-medieval	Field boundary
2529		2528	fill	ditch	post-medieval	Field boundary
2530		2528	fill	ditch	post-medieval	Field boundary
2531		2531	cut	ditch	post-medieval	Field boundary
2532		2531	fill	ditch	post-medieval	Field boundary
2533	2510	2538	fill	ditch	early post-medieval	enclosure
2534	2458	2538	fill	ditch	early post-medieval	enclosure
2535	2459	2538	fill	ditch	early post-medieval	enclosure
2536	2439	2538	fill	ditch	early post-medieval	enclosure
2537		2538	fill	ditch	early post-medieval	enclosure
2538	2432		cut	ditch	early post-medieval	enclosure
2539		2548	fill	pond	post-medieval	pond
2540			cut	pit	unknown	
2541		2540	fill	pit	unknown	
2542			cut	pit	unknown	
2543		2542	fill	pit	unknown	
2544			cut	posthole	post-medieval	
2545		2544	fill	posthole	post-medieval	

Context	same as	Cut	Category	Feature Type	phase	group
2546			cut	posthole	early post-medieval	building
2547		2546	fill	posthle	early post-medieval	building
2548			cut	pond	post-medieval	pond
2549		2548	fill	pond	post-medieval	pond
2550		2548	fill	pond	post-medieval	pond
2551		2506	fill	Retting pit	high medieval	industrial
2552		2506	fill	Retting pit	high medieval	industrial
2553		2496	fill	ditch	early post-medieval	enclosure
2554	2564		cut	ditch	high medieval	industrial
2555		2554	fill	ditch	high medieval	industrial
2556		2557	fill	pit	Unknown	
2557			cut	pit	Unknown	
2558	2446		masonry	fireplace	early post-medieval	building
2559	2375		masonry	fireplace	early post-medieval	building
2560	2489		masonry	staircase	early post-medieval	building
2561		2562	fill	pit	unknown	
2562			cut	pit	unknown	
2563		2564	fill	ditch	high medieval	industrial
2564	2554		cut	Ditch	high medieval	industrial
2565			cut	posthole	early post-medieval	internal
2566		2565	fill	posthole	early post-medieval	internal
2567			void			
2568		2569	fill	posthole	post-medieval	
2569			cut	posthole	post-medieval	
2570			cut	construction	early post-medieval	building
2571			cut	posthole	early post-medieval	internal
2572		2571	fill	posthole	early post-medieval	Internal
2573		2571	fill	posthole	early post-medieval	internal
2574			cut	posthole	early post-medieval	enclosure
2575		2574	fill	posthole	early post-medieval	enclosure
2576	2432		cut	ditch	early post-medieval	enclosure
2577		2576	fill	ditch	early post-medieval	enclosure
2578		2576	fill	ditch	early post-medieval	enclosure
2579		2576	fill	ditch	early post-medieval	enclosure
2580		2576	fill	ditch	early post-medieval	enclosure

Context	same as	Cut	Category	Feature Type	phase	group
2581			void			
2582		2570	fill	construction	early post-medieval	building
2583			cut	construction	early post-medieval	building
2584		2586	masonry	fireplace	early post-medieval	building
2585	2449		cut	construction	early post-medieval	building
2586			cut	construction	early post-medieval	building
2587		2588	fill	posthole	early post-medieval	enclosure
2588			cut	posthole	early post-medieval	enclosure
2589			cut	posthole	early post-medieval	enclosure
2590		2589	fill	posthole	early post-medieval	enclosure
2591			fill	construction	early post-medieval	building
2592			layer	topsoil		
2593			layer	subsoil		
2594		2583	fill	construction	early post-medieval	building
2595		2599	fill	pond	post-medieval	pond
2596		2599	fill	pond	post-medieval	pond
2597		2599	fill	pond	post-medieval	pond
2598		2599	fill	pond	post-medieval	pond
2599			cut	pond	post-medieval	pond
2600		2601	fill	ditch	early post-medieval	enclosure
2601			cut	ditch	early post-medieval	enclosure
6220			finds	surface		
6221			finds	surface		
6222			finds	surface		
6223			finds	surface		
6224			finds	surface		
6225			finds	surface		
6226			finds	surface		
6227			finds	surface		
6228			finds	surface		
6229			finds	surface		
6230			finds	surface		
6231			finds	surface		
6232			finds	surface		
6233			finds	surface		

Context	same as	Cut	Category	Feature Type	phase	group
6234			finds	surface		
6235			finds	surface		
6236			finds	surface		
6237			finds	surface		
6238			finds	surface		
6239			finds	surface		
6240			finds	surface		
6241			finds	surface		
6242			finds	surface		
6243			layer	surface	Early post-medieval	
6244			layer	topsoil		
6245			layer	demolition	early post-medieval	
6246			cut	pit	early post-medieval	
6247		7246	fill	pit	early post-medieval	
6248			cut	ditch	early post-medieval	enclosure
6249		7248	fill	ditch	early post-medieval	enclosure
6250			cut	ditch	early post-medieval	enclosure
6251		7250	fill	ditch	early post-medieval	enclosure
6252		7248	fill	ditch	early post-medieval	enclosure

Appendix B. Finds Reports

B.1 Metalwork

By Chris Howard-Davies

Overall methodology

B.1.1 Every fragment was examined, assigned a preliminary identification and, where possible, a date range. Outline database entries were created, using Microsoft Access 2000 format, and the data recorded (context, small finds number, material, category, type, quantity, condition, completeness, maximum dimensions, outline identification, brief description, and broad date) serve as the basis for the comments below. The state of preservation (condition) was assessed on a broad four point system (namely poor, fair, good, excellent).

Copper Alloy Objects

B.1.2 Quantification: a minimum of 143 small fragments of copper alloy were recovered, but it should be noted that quantification is not precise, as most were small and highly corroded fragments of dress pins, almost all from a single context (midden fill 2471). Most are in poor to fair condition, with a substantial build-up of corrosion products, presumably a result of the depositional context. Their distribution between contexts is shown below in Table 7.

Context	cut	Dress pin	Sheet	Buckle	Other	Total
2444	2468	1				1
2458	2442		2			2
2460	2442			1		1
2471	2469	104	2		29	135
2492	2491	1				1
2498	2496				3	3
Total		106	4	1	32	143

Table 7: distribution of the copper alloy objects by context and function

B.1.3 ***Date range and evaluation***: the group essentially comprises small and easily-lost personal items, probably dating to the early post-medieval period, and most likely to be of sixteenth or seventeenth-century date. It is dominated by small wound-headed pins from midden fill 2471, which are very common at this date, used extensively in dress and upholstery (Margeson 1993, Courtney 2004), and easily lost. In use from the medieval period, dress pins typically get smaller through time, and few of this group are likely to have been in excess of 25mm in length, suggesting a relatively late date. Most of the pins are currently very corroded, but where visible, it can be suggested that most, if not all, have wound wire heads, perhaps crimped.

B.1.4 Buckle Sf 173 from enclosure ditch 2442 (fill 2460) is a form typical of the mid-sixteenth to mid-seventeenth centuries (Whitehead 2003, 60), and probably provides the best dating evidence from the group. Several fragments from midden fill 2471, within structure 2469, (Sfs 277, 283, 288, 1125) have been identified as lace chapes, points, or aglets. These are used to seal the ends of the laces used in clothing, and are common from the late medieval period to the early seventeenth century (Cox 1996, 56), with crimped examples, such as these, confined to the sixteenth-seventeenth century (Oakley 1979).

B.1.5 A small fragment of multi-cored twisted wire (Sf 375), again from midden fill 2471, resembles the twisted wire-work seen in Tudor and later headdresses, but the fragment is too small for confident identification.

B.1.6 The remainder of the assemblage comprises fragments of sheet, some clearly deriving from patches and vessel repairs (eg Sfs 167, 168, both from enclosure ditch 2442 (fill 2458), others, not so obvious as to function, are probably from cladding, hinges or other similar items (Sfs 347, 376, 379 from 2471, Sf 291 from enclosure ditch 2496 (fill 2498).

B.1.7 ***Conservation***: the finds are well packed and generally stable, but should be checked regularly in view of their delicate condition

Ironwork

B.1.8 ***Quantification***: in all, 182 fragments of iron artefacts were recovered, probably representing significantly fewer objects. The overwhelming majority comprises hand-forged nails (*c* 62 %) or featureless and unidentifiable fragments (*c 19.6*%). Overall the ironwork is in poor condition, with appreciable corrosion products on almost all objects, but, in most cases, the objects could be identified with moderate confidence, and thus have not yet been subject to x-ray. Their distribution is shown below in Table 8. Only one medieval context (2512) produced ironwork, with most coming from 'early post-medieval' contexts, and, to a substantially lesser extent, post-medieval contexts (2398, 2532, 2568).

Context	Cut	Nail	Blade	Spur	Other	Total
2396	2395	0	1		1	2
2398	2397	1				1
2433	2432	0			1	1
2442		9			2	11
2444	2468	8			2	10
2452		3				3
2458	2442	1			2	3
2460	2442	9			3	12
2465	2477	0			2	2
2471	2469	37	5	1	21	64
2472	2469	0	1			1
2476	2477	2				2
2483		5				5
2484	2479	1				1
2485	2486	1		1	1	3
2487		3			1	4
2488		2			3	5
2492	2491	10	2	2	4	18
2493	2491	0			1	1
2497	2496	4		1	2	7
2498	2496	1			3	4
2499	2496	2				2
2512	2506	0	1			1
2532	2531	3			1	4
2533	2538	1	1			2
2543	2542	3				3
2556	2557	0			1	1
2568	2569	3				3
2573	2571	3				3
2579	2576	0			1	1

2587	2588	2				2
Total		114	11	5	52	182

Table 8: distribution of the iron objects by context (medieval context shaded dark grey, post-medieval contexts shaded light grey)

B.1.9 ***Date range and evaluation:*** *Th*e site produced a number of fragmentary knife blades, many from the fills of latrine structure 2469 (Sfs 181, 196, 1110, 1117 from 2471, Sf 180 from 2472). Amongst these are two small bone-handled eating knives (Sfs 180, 181) with through tangs, of typically late sixteenth to early seventeenth-century appearance (Moore 1995, 11). In both cases, detail of the remaining blade fragments are obscured, and the dating cannot be further refined at this stage.

B.1.10 An almost complete whittle tang blade, lacking its handle, from medieval retting pit 2506 (fill 2512) is probably contemporary with its use, but as such utilitarian blades lack chronologically sensitive features, it is unlikely that the dating will be refined. A second complete blade comes from enclosure ditch 2538 (fill 2533) and could, again be medieval in origin. Two other fragments (Sfs 208, 209), provisionally identified as blade fragments, come from enclosure ditch 2491 (fill 2492) and a third (Sf 160) is from enclosure ditch 2395 (fill 2396).

B.1.11 A forked socketed object (Sf 195) from midden fill 2471 has been provisionally identified as a hunting arrowhead of Jessop (1996) type H, in use in the late medieval and early post-medieval periods for hunting birds.

B.1.12 Spur fragments are a feature of the assemblage, with parts of rowel spurs coming from midden fill 2471 (Sf 174), the fill (2485) of pit 2486 (Sf 194), the fill (2492) of enclosure ditch 2491 (Sf 206, Sf 216), and the fill (2497) of enclosure ditch 2496 (Sf 294). All are fragmentary and at this stage cannot be fully described, but the small rowel suggests a late medieval or early post-medieval date. Horseshoes are surprisingly uncommon on the site, with one from enclosure ditch 2442 (fill 2460) (Sf 172) and two further fragments (Sfs 217, 218) probably from the same shoe, from enclosure ditch 2491 (fill 2492). Their form suggests an early post-medieval date, and it is expected that x-radiography would enable this date to be refined.

B.1.13 Horse tack is represented by buckles from 2442 (Sf 219) and midden fill 2471 (Sfs 1109, 1115), rings from 2471 (Sfs 1113, 1123), a possible U-shaped shackle from ditch 2576 (fill 2579) (Sf 317), and a swivel loop (Sf 207) from ditch 2491 (fill 2492). In most circumstances such simple objects are not chronologically sensitive, and thus cannot contribute to the site dating.

B.1.14 A substantial part of a spade shoe (Sf 205) came from enclosure ditch 2496 (fill 2498). It bears a strong resemblance to the group recovered from the Henrician fort at Camber (Cropper *et al* 2001), falling into the 'narrow' group defined there. Item Sf 171, from enclosure ditch 2442 (fill 2460) has been tentatively identified as a woodworking gouge, although this remains to be confirmed by x-ray.

B.1.15 Other items of note are a strap hinge fragment (Sf 358) from 2433, a fill of ditch 2432; a long, slender point (Sf 166) from ditch 2442, fill 2458; and an oval loop, Sf 245, possibly a bucket escutcheon, from early post-medieval period surface 2487.

Lead and Lead Alloy objects

B.1.16 ***Quantification***: there were 20 small fragments of lead and one of lead alloy (pewter?) from Site 10, most of them can be identified as window kame. Most are in fair condition, but all are fragile. Their distribution is shown in Table 9

Context	Kame	Other	Total
2396	1		1
2452	1		1
2466		1	1
2471	2	1	3
2472	1	1	2
2488	11		11
2492	1		1
Total	16	3	20

Table 9: distribution of the lead objects by context

B.1.17 ***Date range and evaluation***: although there is cast kame from a number of contexts, it is concentrated on surface 2488. Although in poor condition, much twisted and deformed, this kame has a relatively short-H cross section, implying a late medieval or very early post-medieval date. Its condition suggests that it could have been collected and twisted into lumps for re-cycling, during the replacement of earlier leaded lights. Several small fragments of this type of kame were also found in the fills (2471, 2472) of structure 2469. In the latter it was found alongside a large fragment of solidified melted lead, again likely to be associated with recycling.

B.1.18 Fragments of (probably) milled kame were recovered from enclosure ditches 2395 (fill 2396), and 2491 (fill 2492). Literary sources suggest that production of milled kame began in the mid-seventeenth century, or possibly earlier (Knight 1986, 156), as it appears in peri-Dissolution contexts at a number of monastic sites. A fragment of kame with a long-H section, typical of the eighteenth and nineteenth centuries, came from layer 2452 within the building, and must reflect later repair or modification.

B.1.19 Other items of lead are uninformative; a small fragment of twisted wire came from midden fill 2471, and a fragment of strip, possible used in a structure on the site, was from the fill (2466) of cellar 2477.

B.1.20 There was, in addition a large curving fragment of ?pewter from enclosure ditch 2538 (fill 2533), which has been provisionally identified as the partial rim of a small bowl. Although not easy to date, this would not seem out of place in a later sixteenth or seventeenth-century context (see, for instance Weinstein 2005).

B.1.21 ***Conservation***: the find is well-packed and requires no further conservation, but should be checked regularly in view of their delicate condition

B.2 Glass Beads

By Chris Howard-Davies

B.2.1 ***Quantification*****:** a total of 15 small glass beads were recovered (Sfs 370-74), during soil samples processing, from midden fill 2471 (structure 2469). They are in good condition, but appear to show slight iridescent weathering.

B.2.2 ***Date range and evaluation***: all but one of the beads are extremely small, having a maximum diameter of 2.5 – 3mm, and a height of between 1.5 and 2mm. They all now appear to be black in colour, but this could be the result of the nature of the deposit from which they were recovered. Such small 'seed' beads were widely used in the decoration of costume and other textiles during the later sixteenth and seventeenth centuries (see for instance Courtney 2004) and continue to be popular into the twenty-first century. One larger example is globular, with a diameter of *c* 4 mm, again it is likely to have been used in the decoration of textiles.

B.2.3 ***Conservation*****:** the find are well-packed and require no further conservation.

B.3 Glass

By Helen Stocks-Morgan

Introduction

B.3.1 Archaeological works produced a moderate assemblage of 100 shards of glass weighing approximately 1.355kg. The assemblage comprises 47 shards of vessel glass weighing 0.907kg and is catalogued in Table 10. A further 34 shards of window glass was recovered form the site (weight 0.094kg) and is catalogued in Table 11.

Methodology

B.3.2 The glass was scanned and catalogued (see Table 10 and 11) and weighed as individual vessels where possible. The window glass that is not closely datable may be dated by association with the pottery and other material with which it was found, for this information see the results section and Appendix A.

Glass Catalogue

Vessel Glass						
Context	Cut	Count	Weight (kg)	Description	Date	Phase
2420	2421	1	0.078	Natural black glass, highly patinated with iron, 5mm thick	Mid 16th to mid 17th	early post-medieval
2471	2469	1	0.01	Clear, pale green glass 2mm thick. Heavily patinated. Base of cylindrical vessel	Mid 16th to mid 17th	early post-medieval
		1	0.001	Clear glass, with pale greenish blue ting, approx 1mm thick occ patination, rim of bowl	Mid 16th to mid 17th	
		1	0.015	Pale blueish green clear glass, heavy patination, 1mm thick. Neck of cylindrical bottle, twisted decoration	Mid 16th to mid 17th	
		1	0.002	Pale olive green glass, 1.5mm thick. Some iron patination Neck of cylindrical drinking vessel.	Mid 16th to mid 17th	
		1	0.003	Pale olive green glass, 1.5mm thick. Neck of cylindrical vessel	Mid 16th to mid 17th	
		1	0.004	Clear pale live green glass, 1.5mm thick. Moderate patination. Rim of cylindrical drinking cup	Mid 16th to mid 17th	
		1	0.005	Clear olive green glass, little patination. Approximately 1mm thick. Rim of cylindrical fineware vessel	Mid 16th to mid 17th	
		1	0.005	Clear olive green glass, little patination. Approximately 1mm thick. Base of cylindrical fineware vessel	Mid 16th to mid 17th	
		1	0.025	Clear, green glass, app1.5m thick some patination. Base of drinking vessel	Mid 16th to mid 17th	
		3	0.01	Clear glass, with pale greenish blue ting, approx 1mm thick occ patination, body shards	Mid 16th to mid 17th	
		1	0.001	Pale green glass, heavy patination. 1m thick. Body shard	Mid 16th to mid 17th	
2472	2469	1	0.112	Green glass, approximately 5-6mm	Mid 16th to	early post-

Vessel Glass						
				thick, heavily patinated. Base of cylindrical vessel, shallow base	mid 17th	medieval
2483		12	0.132	pale greenish yellow glass, approximately 4-5mm thick, the surface of which is heavily patinated	Mid 16th to mid 17th	early post-medieval
2485	2486	3	0.008	Pale green glass, approximately 3mm thick	Mid 16th to mid 17th	early post-medieval
2487		1	0.003	Pale olive green glass heavy patination, 2mm thick. Rim of vessel showing spout	Mid 16th to mid 17th	early post-medieval
2497	2496	1	0.006	Pale green glass, approximately 3mm thick, moderately patinated	Mid 16th to mid 17th	early post-medieval
2498	2496	1	0.306	Clear Green glass, base of cylindrical vessel, approximately 5mm thick, no patination on interior, patination on exterior	Mid 16th to mid 17th	early post-medieval
2499	2496	1	0.113	Pale green glass, approximately 3mm thick, moderately patinated Base of cylindrical vessel	Mid 16th to mid 17th	early post-medieval
2545	2544	2	0.002	pale greenish yellow glass, approximately 4-5mm thick, the surface of which is heavily patinated	Mid 16th to mid 17th	Post medieval
2551	2506	10	0.032	Pale olive green glass heavy patination, 2mm thick, 9 body shards and one shard form base of cylindrical vessel, pie crust decoration		high medieval
2556	2557	1	0.032	Clear colourless glass, approximately 4-5mm thick, no patination Base of squared cylindrical vessel	Mid 16th to mid 17th	early post-medieval
total		47	0.905			

Table 10: vessel glass

Window Glass						
Context	Cut	Count	Weight (kg)	Description	Date	Phase
2433	2432	1	0.007	Shard of pale blue glass, air bubbles present. No iridation. 1.5mm thick	Mid 16th to mid 17th	early post-medieval
		1	0.002	Irregular shards of clear, pale blue-green tinted window glass approximately 1.5mm thick with a lightly iridised surface,Mid 16th to mid 17th	Mid 16th to mid 17th	
2471	2469	2	0.013	Shard of pale green glass, 2mm thick. Edges visible with glass triangular in shape measuring measuring 98mm long and 64mm in height	Mid 16th to mid 17th	early post-medieval
		1	0.009	Shard of pale green glass, 3mm thick. Edges visible with glass measuring 7m long, unknown width	Mid 16th to mid 17th	
		14	0.039	Irregular shards of clear, pale blue-green tinted window glass approximately 1.5mm thick with a lightly iridised surface,	Mid 16th to mid 17th	
		2	0.007	Irregular shards of pale glass, with greenish tinge. Approx 1mm thick some	Mid 16th to mid 17th	

Window Glass						
				surface iridisation		
2488		9	0.01	Clear glass with pale green tinge, 1.5mm thick. Surface patination	Mid 16th to mid 17th	early post-medieval
2497	2496	1	0.005	Irregular shard of clear glass, 1mm thick	Mid 16th to mid 17th	early post-medieval
2556	2557	3	0.002	Irregular fragment of glass which is opaque heavily patinated slightly iridescent and suffering from surface loss. Its poor condition indicates it is potash or forest glass	ncd	early post-medieval
Total		34	0.094			

Table 11: window glass

B.4 Prehistoric Pottery

By Sarah Percival

Introduction

B.4.1 A total of 40 sherds weighing 281g was collected from four contexts (Table 12). The assemblage contains no rim or body sherds and is characterised by the extensive use of flint tempered fabrics which form 95% of the total assemblage. The flint rich fabrics suggest that the sherds are Post Deverel-Rimbury, probably Earlier Iron Age, though a mid-to-later Bronze Age date is also possible. One sandy sherd has been given a tentative Iron Age date.

Context	Cut	spotdate	quantity	Weight (g)
2392	239	Earlier Iron Age	24	223
2404	2402	Earlier Iron Age	11	38
2407	2405	Earlier Iron Age	3	12
2434	2388	Earlier Iron Age	1	4
		Iron Age	1	4
		Total	**40**	**281**

Table 12: Quantity and weight of pottery by context.

B.5 Medieval Pottery

By Helen Walker

Introduction

B.5.1 A total of 778 sherds weighing 18.653kg was excavated, spanning the early 13th to 18th centuries, although most dates to the later 15th to earlier 17th centuries and is largely domestic in nature. The majority of pottery comprises locally-made red earthenwares and there are a small number of traded wares and overseas imports, some of which serve to indicate that this is a site of middling status. Much of the pottery is similar to that from excavations of the late medieval/post-medieval suburb of Moulsham Street, Chelmsford (Cunningham 1985a and b).

B.5.2 The Medieval Pottery Research Group's (MPRG) *Guide to the classification of medieval ceramic forms* (MPRG 1998) and *Minimum Standards for the Processing,*

Recording, Analysis and Publication of Post-Roman Ceramics (MPRG 2001) act as a standard. The pottery recording follows Cunningham's typology of post-Roman pottery in Essex (Cunningham 1985a, 1-16; expanded by Cotter 2000 and Drury et al. 1993). Some of Cunningham's vessel form and rim form codes are quoted in this report. The imported wares are described by Hurst et al. 1986. All percentages quoted are by weight.

B.5.3 The assemblage is recorded in the summary catalogue. The pottery and archive are curated by Oxford Archaeology East until formal deposition.

Sampling bias

B.5.4 The open area excavation was carried out by hand and selection made through standard sampling strategies on a feature by feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental remains, there has also been some recovery of pottery.

The Assemblage

B.5.5 Table 13 shows the total sherd count and weight of all fabrics, shown in approximate chronological order.

Fabric Name	No. Sherds	Weight (g)	% by weight
Early medieval ware	1	5	<0.5
Medieval coarseware	49	387	2.0
Hedingham coarseware	5	77	0.5
Hedingham fineware	3	17	<0.5
Mill Green coarseware	4	27	<0.5
Mill Green fineware	2	34	<0.5
Mill Green-type ware	11	408	2.0
Sandy orange ware	42	706	4.0
Colchester-type ware	1	11	<0.5
Tudor red earthenware	264	7329	41.0
Tudor Green ware	1	8	<0.5
Saintonge ware – plain	1	16	<0.5
Martincamp flask type I	1	9	<0.5
Langerwehe/Raeren stoneware	2	32	<0.5
Raeren stoneware	6	78	0.5
Post-medieval red earthenware	191	6331	35.0
Frechen stoneware	46	1122	6.0
Surrey-Hampshire white ware	28	171	1.0
Martincamp flask – undifferentiated	1	7	<0.5
Martincamp flask type III	45	387	2.0
Black-glazed ware	26	698	4.0
Anglo-Netherlands tin-glazed earthenware	3	19	<0.5
English tin-glazed earthenware	1	79	0.5
Jackfield ware	1	8	<0.5
Total	735	179966	

Table 13: Pottery fabrics present in the assemblage

Pottery by period

B.5.6 No Late Saxon pottery present and the medieval assemblage, spanning the 12th to 14th[h] centuries accounts for only around 3% of the total. The earliest pottery comprises a single sherd of the coarse, sandy, early medieval ware, which in central Essex spans the 11th to early 13th centuries.

B.5.7 Medieval coarseware comprises the largest component of the medieval assemblage. This typically grey-firing pottery, which is less coarse and thinner-walled than early medieval ware, spans the mid-12th to 14th centuries and was manufactured at several production sites around the county. Finds of medieval coarseware include a few examples of Hedingham coarseware made in the Hedingham area of north Essex and Mill Green coarseware made at Mill Green and other production sites to the south of Chelmsford.

B.5.8 Hedingham coarseware ware has a fine micaceous matrix and is tempered with grey, straw-coloured and whitish sands, the latter often protruding through the surface. Often there is the addition of sparse rust-coloured iron oxides. Oxidised margins are also common. However, a recent study of the Hedingham ware production sites (Walker 2012) has shown that the coarseware varies enormously in colour, coarseness and general appearance, so it is not as easy to distinguish it from other coarsewares as previously thought, especially as similar vessels types were produced at Mile End and Great Horkesley, to the north of Colchester, and further along the Colne Valley from the Hedingham area. For the purposes of this report, only those coarsewares that are very typical of Hedingham production are classified thus. Mill Green coarseware also has a fine micaceous matrix, but tends to be oxidised. Vessels in this ware are thin-walled and the fabric is tempered with more rounded sands than those used at Hedingham, which often poke through the surface giving a pimply yet smooth feel. It is noticeable that some sherds of medieval coarseware have been wheel-thrown rather than coil-built on a turntable, a change that did not take place until the mid/late 13th century (Cotter 2000, 106-7), thus indicating that some of the medieval coarseware belongs to the later end of the date range.

B.5.9 The medieval East Anglian redwares found here comprise just a few sherds of Hedingham fineware, dating from the mid-12th to mid-14th centuries, and a few sherds of the later Mill Green fineware, not present until the mid-13th century.

B.5.10 Around 48% of the total assemblage belongs to the late medieval/early post-medieval period spanning the late 14th to mid-16th centuries. Included in the category is sandy orange ware, another East Anglian redware, which like medieval coarseware was manufactured at several sites and is not particularly distinguishable, although one sherd was identified as Colchester-type ware, which is a type of sandy orange ware made in the Colchester area and here is occurring at its south-western limit of distribution. Sandy orange ware spans the 13th to 16th centuries, but apart from one or two glazed sherds that could be medieval, virtually all examples belong to the late medieval period.

B.5.11 The medieval Mill Green industry ended in the 14th century, but potting continued in the area into the later medieval period and beyond with little change except that that the fabric became harder and glaze and decoration became sparser. This late medieval version is termed Mill Green-type ware. The most frequent late medieval/early post-medieval ware, and indeed the most abundant ware in the whole assemblage, is Tudor red earthenware accounting for 41% of the assemblage overall (see Table 13). This is a fine, smooth, unglazed or very sparsely glazed redware, sometimes with reduced surfaces and slip-painting. Some may be the product of the potting village of Stock to

the south of Chelmsford, the probable successor of the Mill Green industry, although fine, smooth fabrics of this date were also made further west at Harlow. As the name suggests, Tudor red earthenware spans the late 15th to 16th centuries.

B.5.12 In addition to these locally-made red earthenwares, there are a small number of traded wares and imports belonging to the late medieval/early post-medieval period. These include 'Tudor Green' ware, a product of the Surrey white ware industry, possessing a very fine white fabric and a green glaze, which has the overall date range of c. 1380-1550, but was made principally in the late 15th century (Pearce and Vince 1988, 79-81; Pearce 1992, 1-2). A single sherd of this ware is present, an internally glazed base. There is a second base sherd in another fine white ware showing a single splash of green glaze on the exterior which has been identified as Saintonge ware – plain, made in south-western France and imported during the period 1450 to 1550. Also from France, this time northern France, is a single sherd from the body of a type I Martincamp flask dating to the period c.1475 to 1550. The remaining pottery, comprising eight sherds, comprises Raeren stoneware, the ubiquitous import from Rhineland Germany, which has the same date range as that of the Martincamp flask. However, two of the sherds may be products of the earlier Langerwehe stoneware industry as they are underfired, and are perhaps datable to the 15th century.

B.5.13 Post-medieval pottery spanning the later 16th to 17th centuries accounts for nearly 49% of the total assemblage, and is therefore of a similar size to the late medieval/early post-medieval assemblage. From the late 16th century onwards red earthenware pottery acquires a thick, lustrous all over or internal glaze, and is termed post-medieval red earthenware. While some of the fabrics are still smooth like Tudor red earthenware, there is more variation in fabric, with some examples having a harsher feel. In practice these two traditions overlap, as some post-medieval red earthenware is unglazed and some vessel forms such as small drinking jugs acquired a full glaze by the middle years of the 16th century.

B.5.14 Like the Tudor red earthenware of the previous ceramic phase, post-medieval red earthenware dominates the assemblage, accounting for 35% of the assemblage overall. The only other post-medieval wares to occur in significant amounts are black-glazed ware and Frechen stoneware. Black-glazed ware is a type of post-medieval red earthenware covered in a thick lustrous black glaze and was made from the end of the 16th century until well into the 18th century, although was most abundant in the 17th century. Frechen stoneware is another Rhenish stoneware, imported from the mid-16th to late 17th centuries. Also present are sherds from a type III Martincamp flask datable to the 17th century and a single sherd from another Martincamp flask not sufficiently diagnostic to assign a type. There are also a number of sherds of Surrey-Hampshire white ware (described by Pearce 1992), which have a similar date range to that of Frechen stoneware. One other type of ware present is Anglo-Netherlands tin-glazed earthenware, which could be either English or Netherlandish in origin, and dates to the 17th century. The late medieval/early post-medieval and the post-medieval ceramic phases have a similar composition, both in terms of wares present and their proportions.

B.5.15 Only two sherds belong to the later post-medieval period; there is a single example of plain English tin-glazed earthenware, which may be as late as 18th century and an example of Jackfield ware. The latter is a fine earthenware with a 'shining black' glaze made in Shropshire and Staffordshire. This particular piece dates from the mid-1760s.

Vessel forms

B.5.16 Looking first at medieval vessel forms, one of the Hedingham fineware sherds shows intersecting applied white strips in a chevron pattern with traces of brown slip-coating beneath and may be an example of a jug with Rouen-style decoration datable to the early to mid-13th century. Of the Mill Green fineware, the only featured sherd is a thumbed base from a jug which is not closely datable. In addition, both types of fineware produced sherds that may be from flatwares which imply a 14th century date.

B.5.17 As for the coarsewares, there is a single example of a jug fragment with an inturned rim in medieval coarseware, dating to the mid-13th to 14th centuries and a fragment of possible bowl rim. Otherwise all examples are from cooking-pot or jar rims. Cooking-pots can be approximately be dated by rim form; there is a single example of a squared rim above a short upright neck (sub-form H2), datable to the early to mid-13th century, and a single example of the H1 rim type, which is similar to the H2 rim, but is flanged rather than squared and was current throughout the 13th century and perhaps into the 14th. There are also examples of cavetto or curved over rims that have a similar date range to the H2 cooking-pot rims. All of these are in medieval coarseware. In Hedingham coarseware there is at least one example of a blocked, neckless rim (H3) datable to the late 13th to 14th centuries and an example of a flat base indicating a 14th century date. An everted flanged rim in medieval coarseware may be from a pipkin rather than a cooking-pot and probably belongs to the 14th century.

B.5.18 Looking at the late medieval to post-medieval assemblage, large wide pancheon-type bowls occur in Tudor red earthenware, with one example in sandy orange ware. The example in sandy orange ware shows a hollowed everted rim with a pouring lip and is unglazed apart from an incidental patch on the inside of the rim. One of the more complete Tudor red earthenware examples shows a rounded profile and a hollowed everted rim. It has a bead below the rim and a thin internal glaze. The remaining examples have everted flanged rims, the most complete of which has flared sides and a wide rim flange showing little change in angle between the rim and profile. It has a flat base and an internal swirl glaze and is very similar to bowls manufactured at the potting village of Stock (Cunningham 1985c, fig.50.15), although the Beaulieu example has steeper sides.

B.5.19 There are two examples of medium-sized bowls with rounded profiles, both in post-medieval red earthenware. One has a beaded rim and the other a hollowed everted rim. The latter is borderline Tudor red earthenware, showing a flat base with a thin swirl glaze and is comparable to an example in a late 16th century pit at Moulsham Street, (Cunningham 1985b, fig.44.12). A rim from a small flared bowl (or dish) with rilled sides is also present in this ware.

B.5.20 As well as flanged-rim bowls, there are examples of flanged dishes in Tudor red earthenware and a possible example in post-medieval red earthenware with an internal glaze. More unusually there is a single example in Surrey-Hampshire white ware showing a green internal glaze and a flange with a bevelled edge (cf. Pearce 1992, fig. 19.12). This is of a type first made in the late 16th century and which continued in production until the second half of the 17th. It has an unusually fine fabric more like that of 'Tudor Green' ware, which might suggest it belongs to the earlier end of this date range.

B.5.21 Other dish forms comprise part of a possible dripping dish in Tudor red earthenware, a form paralleled at Moulsham Street (Cunningham 1985a, fig.2.7) and used for catching the juices from roasting meat. There is also the rim of a post-medieval red earthenware chafing dish, a vessel used to either keep food warm at the table or as a portable

stove. The rim shows two supports (on which the vessel to be heated was placed) and there is the attachment scar from a third. At Moulsham Street this form peaked around 1560 to 1630 (Cunningham 1985b, 71).

B.5.22 There a number of upright rims, sometimes flat-topped or with an internal bevel in Tudor red earthenware ware, these are sometimes slip-painted and may be from cisterns, large storage vessels used for the storage and brewing of beer, As well as the rims there are a number of large wide handles and body sherds from large vessels, sometimes slip-painted, which might also be from cisterns. However, no accompanying bungholes were found, so it is possible that these vessels are actually from large jugs or handled storage jars. Slip-painting died out during the second quarter of the 16th century (Cotter 2000, 173), so all slip-painted sherds are unlikely to be later than mid-16th century.

B.5.23 There are a number of fragments from jars. One in sandy orange ware shows an unglazed lid-seated rim with pitted surfaces perhaps from a large pipkin and is paralleled by a Colchester-type ware example dating to the middle of the 15th century (Cotter 2000,143, fig.93.140). Also in sandy orange ware is a possible handled-jar, and jar with a hollowed everted rim and a thin partial internal glaze. The latter shows chalk flecks in the fabric and may be a Harlow product. The shoulder of a jar in Tudor red earthenware showing an everted flanged rim, which is glazed on the inside of the flange may be an example of Cunningham's jar type C4 – shouldered, cooking-pot-shaped jars. The sherd of Saintonge ware, a plain flat base sherd, may also be from a jar.

B.5.24 Jars are poorly represented in post-medieval red earthenware. There is the lower part of a jar form showing a flat base and slightly out-flaring sides, perhaps from a small cistern. Other than this, there is a fragment with a beaded rim, internal glaze and handle scar attaching at the rim, which is likely to be from a single-handle jar (although could also be from a handled-bowl). In addition, there is a black-glazed ware thickened or pad base, which is likely to be from a jar form, perhaps a chamber pot.

B.5.25 A rather more specialised jar form present is the rim and shoulder of a 17th century albarello or drug jar in Anglo-Netherlands tin-glazed earthenware. Its tin glaze is decomposed and no discernible decoration remains.

B.5.26 One sub-form worth mentioning, which may be from a jar or bowl form, is a thick-walled internally glazed sagging base in post-medieval red earthenware showing a pre-firing hole about 1cm wide just above the basal angle. It could be from a flowerpot, or a vessel concerned with drainage such as a colander.

B.5.27 Fragments from slip-painted jugs occur in Mill Green-type ware and sandy orange ware. Both the Mill Green-type ware jugs could be as early as 14th to 15th century. A sandy orange ware fragment from the shoulder of a jug shows foliage-style slip-painting in the form of a vertical 'stem' and a curving 'branch' issuing from the stem, as found on Colchester-type ware jugs of the mid-15th to first quarter of the 16th century (Cotter 2000, 173), and on a jug from a late 15th century pit at Moulsham Street (Cunningham 1985b, fig.42.6). Also present are fragments from Raeren stoneware drinking jugs with frilled bases. The single sherd of 'Tudor Green' ware present in the assemblage is likely to be from a small jug or other type of drinking vessel as these are virtually the only vessels made in this ware. The only possible jug form in Tudor red earthenware is an upright rim, beaded below, probably from a small jug (or cup) (cf. Cunningham 1985b, fig.45.28). There are a number of fragments from small drinking jugs with rounded bodies in post-medieval red earthenware from boundary ditch

segment 2491. The most complete shows a cylindrical neck, a horizontal groove below the rim and a cordon around the neck/body junction. It has an all over external glaze extending into inside of neck, and is of Cunningham's form D6AB, probably dating to the mid-to late 16th century (cf. Cunningham 1985a, 3, fig.8.47; 1985b, 70).

B.5.28 Jugs also feature in the late 16th and 17th century assemblage. There are jugs in Frechen stoneware and post-medieval red earthenware. The Frechen stoneware examples include the remains of two rounded jugs, one of which comprises a complete profile showing three moulded cordons above the base and rat's tail handle (cf. Hurst et al.1986, fig.106.333) datable to 1575 to 1600. There is also at least one example of a Bartmann (bearded man) jug, its narrow face mask indicating a 17th century date. A sherd of Raeren stoneware showing vertical strips of moulded decoration may be from a panel jug of the late 16th to beginning of the 17th century.

B.5.29 From the fill of latrine 2469 are three virtually complete and more or less identical jugs in post-medieval red earthenware showing either a rounded, or slightly shouldered, profile and a very everted rim, which is wider than the girth of the pot. There are two bands of beading below the rim and the most complete example shows there is no pouring lip. The handle attaches at the girth and just below the rim and there is a full internal glaze, but the external glaze covers the upper part of the body only. These jugs are comparable to an example from a late 16th century pit at Moulsham Street (Cunningham 1985b, fig. 45.34) and a similarly-shaped jug was found in a feature dated c.1625-50 at Colchester (Cotter 2000, fig.232.38). With their wide necks and absence of a spout of any kind, they seem rather unsuitable for the pouring of liquids. The clue to their function may be in where they were deposited, as they were found in the latrine (F2469), they may have served as pisspots or chamber pots.

B.5.30 Black-glazed ware drinking vessels with bands of rilling on the sides are present including two virtually complete flared mugs from latrine 2469. These are of Harlow-type and are paralleled by an example from an early 17th century pit at Moulsham Street (Cunningham 1985b, fig.46.63). Rather unusually, there is the base of a Surrey-Hampshire white ware mug showing all over green glaze and encrusted decoration, made up of tiny flint chippings embedded in the glaze, as found on mugs of the mid- to late 17th century (Pearce 1992, pl.3). In addition to these, there are a number of thin-walled sherds in post-medieval red earthenware with an all over glaze that may be from cup or mug forms.

B.5.31 The Martincamp flasks have round bodies and tapering necks and were also for the use of liquids, perhaps as canteens. Although the bodies of the type III flasks are spherical, documentary evidence shows they were contained in wicker baskets, much like modern-day Chianti bottles and could have been stood upright. Many fragments perhaps comprising the complete profile of a type III flask were found in latrine 2469, along with a single sherd from a second type III flask from layer 2483. There is also a body sherd from either a type II or type III flask in enclosure ditch 2601 (as well as the single sherd from a type I flask in the late medieval/early post-medieval ceramic phase).

B.5.32 Of the later post-medieval forms, there is the remains of an upright candlestick in English tin-glazed earthenware, dating from the 17th to 18th centuries. In addition, there is a hollow pedestal base in Tudor red earthenware (or unglazed post-medieval red earthenware) which may also be from a candlestick. The latest vessel is the lid, most likely from a teapot, in Jackfield ware showing engine-turned decoration providing a date of mid-1760s or later.

The assemblage in relation to archaeological features

B.5.33 Table 14 indicates the size of the assemblage within each period and phase.

Phase	No. Sherds	Weight (kg)	% of Assemblage by weight (kg)
High Medieval (1300-1500)	76	1639	9%
early post-medieval (1500-1650)	645	16176	90%
Post-medieval	4	15	<1%
Unphased	10	136	<1%

Table 14: Pottery assemblage by phase

High medieval phase (AD 1300-1500)

B.5.34 This phase accounted for only 9% of the total and has an average sherd size of 22g. Retting pit **2506** (fills 2504, 2506, 2513, 2551,and 2552) produced late medieval pottery comprising sandy orange ware, Mill Green-type ware and Tudor red earthenware. Tudor red earthenware would normally preclude a date before the late 15th century, but as some is borderline Mill Green-type ware an earlier date is possible. Forms comprise a fragment from a possible handled-jar in sandy orange ware, fragments from jugs or possible jugs in sandy orange ware and Mill Green-type ware, and fragments from large jugs, jars or cisterns in Mill Green-type ware. Several sherds are slip-painted and the shoulder of a sandy orange ware vessel (from fill 2551), probably from a jug, shows slip-painted foliage decoration under a bib of glaze and may date to the later 15th century. Top fill 2513 contained an everted flanged ? pipkin rim in medieval coarseware, which is earlier than the rest of the pottery, perhaps belonging to the late 14th century and must be residual. All fills apart from the top fill could have been deposited around the same time, perhaps the later 15th century (although no sherd linkages were noted). However, the lowest fill (2552) did not contain Tudor red earthenware and could be earlier.

B.5.35 A small amount of medieval pottery was excavated from the two small ditches associated with the retting pit (**2408**(fill 2409)/**2508**(fill 2511)/**2435**(fill 2436) and **2554**(fill 2555)). These include a sherd of Hedingham fineware showing Rouen-style decoration and a medieval coarseware H2 rim, both are from ditch segment 2435 and are datable to the early to mid-13th century. Otherwise the medieval pottery comprises unfeatured sherds of medieval coarseware from ditch segments **2508** and **2554**. A sherd of sandy orange ware from ditch segment **2508** is borderline with medieval coarseware and is datable to the 14th century. Otherwise all these ditch fills also contained late medieval to post-medieval pottery comprising mainly Tudor-red earthenware including the rim of a large rounded bowl (from ditch segment **2508**), internally glazed post-medieval red earthenware bases (from ditch segments **2408**, **2554**), a sherd of black-glazed ware, and a Surrey-Hampshire white ware base sherd with a green internal glaze (from ditch segment **2508**). As the post-medieval red earthenware, black-glazed ware and Surrey white ware date from at least the later 16th century, they must be intrusive in this phase.

B.5.36 At the western side of the site, context 2410, the lower fill of hedge-line ditch **2399** produced a flat base sherd in Hedingham coarseware, which may be 14th century. Succeeding fill 2400 produced a sherd of Colchester-type ware with reduced surfaces spanning the 14th to mid-16th centuries. Ditch **2397**, a segment of the same ditch, produced sherds of medieval coarseware (from fill 2398) including an inturned jug rim,

similar in style to those found on Mill Green ware jugs, and therefore with a similar date of mid-13th to 14th centuries. All pottery from these two ditches could have been current in the 14th century.

early post-medieval (AD 1500 – 1650)

B.5.37 This was by far the largest phase accounting for 90% of the total assemblage with an average sherd weight of 25g

building

B.5.38 The fireplace produced a few sherds of medieval pottery, with layer 2474 containing an abraded sherd of Mill Green ware from a flatware rather than a jug, indicating a 14th century date. A Hedingham coarseware cooking-pot rim from succeeding layer 2473, which has the edge chipped off but is almost certainly of H3 type, could also be of 14th century date, as could an accompanying sherd of glazed sandy orange ware. The only find from the construction cut for the staircase (**2570**, fill 2582) was a very small sherd of medieval coarseware, which has flint as well as sand in the fabric and could even be prehistoric.

B.5.39 A large group of pottery weighing over 6kg was excavated from the fill of latrine **2469** (fill 2471). Finds include the following, all described in more detail above, under 'vessel forms', the Anglo-Netherlands tin-glazed earthenware albarello, the type III Martincamp flask, a Frechen stoneware rounded jug and the black-glazed ware mugs. In post-medieval red earthenware, there are the three jugs possessing out-flaring rims, the chafing dish rim, a medium-sized rounded bowl and the thick-walled base with the pre-firing hole. All could have been current during the early years of the 17th century, and therefore deposited at this date or later. Many of the vessels were probably discarded here after breakage, but the jugs, if used as pisspots, may have been dropped in accidentally. The upper fill, 2472, representing the disuse of this feature contained only two sherds, a fragment of unglazed red earthenware hollow pedestal base and a second, larger fragment of hollow pedestal base in English tin-glazed earthenware, which is almost certainly from a candlestick and dates to the 17th to 18th centuries.

B.5.40 Contexts 2466 and 2467, the fills of the construction cut for cellar **2477** produced fragments from Frechen stoneware rounded jugs, and cellar wall 2374 produced a fragment of black-glazed ware drinking vessel, finds similar to those of the latrine fill. Layer 2665, which sealed the cellar produced finds of residual medieval pottery.

Exterior building

B.5.41 Surface 2488, layer 2487, and 2452 produced similar assemblages comprising fragments of Frechen stoneware, post-medieval red earthenware and black-glazed ware, with the addition of examples of the earlier Tudor red earthenware. The latter including fragments from flanged dishes, and an upright slip-painted rim probably from a cistern in surface 2488, and the remains of a small jug or cup and possible storage jar in this ware in layer 2452. There are also one or two medieval sherds. The closest dating is provided by the base of a Surrey-Hampshire white ware mug from surface 2488 showing encrusted decoration, which belongs to the mid- to late 17th century. This is somewhat later than the suggested date of the large group of pottery from the latrine. Layer 2445, between the two surfaces produced only single sherds of residual medieval coarseware and a sherd of post-medieval red earthenware with an internal glaze dating from the 16th century onwards.

B.5.42 Finds from pit **2486** (fill 2485) include the rim from a Frechen stoneware jug, probably a Bartmann, although no facemask is present. Sherds from this jug were also found in underlying surface 2487. Finds from related pit **2468** (fill 2444) include the facemask from a second Frechen Bartmann jug, sherds of Surrey-Hampshire white ware with an internal yellow glaze and sherds from an internally glazed post-medieval red earthenware base, all probably belonging to the 17th century.

Internal pits

B.5.43 Internal pits that contained pottery comprise features **2519**, **2562**, **2565** and **2571**. All contained only small amounts. Pits **2519** (fill 2518) and **2562** (fill 2561) both contained undiagnostic sherds of Tudor red earthenware dating to the late 15th to 16th centuries, with the addition of a residual sherd of medieval coarseware in the latter feature. Pit **2565** (fill 2566) produced single sherds of residual Mill Green coarseware and Tudor red earthenware, but later glazed post-medieval red earthenware is also present including an out-flared rim showing bands of rilling, which could be from a bowl or dish. At Colchester, small hemispherical bowls with similar rilling below the rim tend to date to the early 17th century (Cotter 2000, 203, fig.139.74). Pottery was found in the upper fill of pit **2571** (fill 2573) representing the back-fill and disuse of this feature, it comprises a hollowed everted rim in Tudor red earthenware and a fragment of black-glazed ware probably from a 17th century mug.

Enclosure

B.5.44 Enclosure ditch segments that contained pottery comprise features **2395**, **2442**, **2491**, **2496**, **2538**, **2576** and **2601**. All but two segments produced pottery no later than the late 16th century, so it would seem likely that the bulk of enclosure ditch was filled in a little before the farmstead and associated features went out of use. Many fills contained a small amount of residual medieval pottery which is itemised in Table 15. Ditch segment 2491 is considered first as it contained the largest assemblage, ninety-three sherds, weighing 2611g, all from fill 2492. Here, sherds of Langerwehe/Raeren stoneware may date to the 15th century and sherds from more definite Raeren stoneware drinking jugs are datable to the late 15th to mid 16th centuries. A sherd of Frechen stoneware is also present, but lacks the mottled 'tiger ware' salt glaze of the 17th century and is more likely to date to the second half of the 16th century. As well as stoneware drinking jugs, there are a number of drinking jugs in post-medieval red earthenware, datable to the mid- to late 16th century. A large bowl with a pouring lip and a hollowed everted rim occurs in sandy orange ware and base fragments probably from large bowls also occur in Tudor red earthenware. Tudor red earthenware is the most abundant fabric in this feature and other vessel forms in this ware comprise an everted rim perhaps from a shouldered jar, and fragments from flanged dishes and probable cisterns.

B.5.45 Further north ditch segment **2442** produced thirty-two sherds weighing 519g from three fills. The earliest pottery came from backfill 2458 and fill 2462, where finds include a sandy orange ware lid-seated jar or pipkin rim datable to the mid-15th century and a fragment of slip-painted Mill Green-type ware showing a patch of glaze, which may also have a 15th century date. The latest pottery from the backfill comprises a single sherd of post-medieval red earthenware with an all over glaze, but as it has reduced margins and is not fully oxidised, it may be early. Fill 2460, produced pottery similar to that from ditch segment **2491**, in that sherds of Langerwehe/Raeren stoneware are present and there is part of a large bowl with an everted rim in Tudor red earthenware. Also present are sherds of glazed, but otherwise undiagnostic, post-medieval red earthenware and

part of a Surrey white ware flanged dish, which is likely to date to the late 16th century, although a 17th century date cannot be precluded.

B.5.46 Ditch segment **2576**, the equivalent of segment 2442, actually contained a larger assemblage, fifty-one sherds, weighing 713g (from fill 2579), but much of this total comprised fragments from a probable Tudor red earthenware cistern.

B.5.47 To the north of segment **2442**, segment **2538** produced a very modest assemblage of seven sherds weighing 367g (from fill 2533). Finds are again similar to those from other ditch segments comprising sherds of Raeren stoneware and slip-painted examples of sandy orange ware and Tudor red earthenware giving a late 15th to mid-16th century date for this segment.

B.5.48 Ditch **2496** at the north-east corner of the enclosure produced thirty-four sherds weighing 1205g from main fills 2497 and 2498. Fill 2497 produced single sherds of 'Tudor Green' ware and type I Martincamp flask, both of which could have been current during the late 15th century. Both fills also produced Tudor red earthenware, vessel forms comprising fragments from large flared pancheon type bowls, a possible slip-painted cistern fragment and the rim of a dripping dish. Both fills also produced post-medieval red earthenware, including an example of a glazed drinking vessel, which could also be 16th century. However a beaded rim from a handled bowl or jar from **2497** is likely to be 17th century, as is a fragment from a black-glazed mug in this context. However, as a sherd from the same mug occurred in backfill 2499, these later finds could be intrusive.

B.5.49 Rather more pottery, fifty-six sherds, weighing 1032g, was collectedfrom the surface (2600). As with other segments there are a number of large pancheon-type bowls in Tudor red earthenware. There is also a hollowed everted rim perhaps from a jar in sandy orange ware. Not found in other ditch segments is a sherd from a type II or III Martincamp flask dating to the 16th or 17th centuries and fragments of black-glazed ware, which while present by the late 16th century, is more likely to date to the 17th.

B.5.50 Two postholes that may relate to a drain and entranceway, **2588** and **2574**, contained pottery (in fills 2587 and 2575). The pottery is very similar to that from the ditch fills, especially that of ditch segment **2538**, comprising a Raeren stoneware rim, almost certainly from a drinking jug, and sherds of Tudor red earthenware including a flanged rim from a dish or bowl. Layer 2483, overlying the drain, produced pottery of a mixture of dates; there are several fragments from Tudor red earthenware 16th century dishes and bowls similar to those found in the enclosure ditch, and the single sherd of ? Saintonge – plain ware was found here, although this has the rather wide date range of mid-15th to mid-16th century. Pottery dating to the 17th century and similar to that from building features includes a Frechen stoneware jug handle, a sherd from a type III Martincamp flask, and a black-glazed ware base, this time from a jar form, perhaps a chamber pot, rather than a drinking vessel. There is also a glazed flanged rim in post-medieval red earthenware, most likely from a flanged dish. Drain backfill 2499 produced a similar range of fabrics and forms.

Tree belt / screen

B.5.51 Very little pottery was recovered from pits relating to the tree belt/screen. Most contained residual medieval pottery and pit **2416** produced residual prehistoric sherds. Only two pits produced material that is current with this phase; pit **2410** produced an unfeatured sherd of Tudor red earthenware (from fill 2411) and pit **2421** produced a

rounded bowl fragment with a beaded rim in post-medieval red earthenware (from fill 2420), dating from the 17th century or later.

Post-medieval

B.5.52 Only a very small amount of pottery, four sherds weighing 15g, less than 1% of the total, has been assigned to this phase. Brick pad 2393 produced residual medieval sherds and a single rilled body sherd of post-medieval red earthenware (from fill 2394) dating from the later 16th century onwards. Posthole **2544** produced a small abraded sherd of Tudor red earthenware (from fill 2545) perhaps deriving from the earlier cobbled surface (2487).

Discussion

B.5.53 The earliest pottery comprises the Hedingham fineware sherd with Rouen-style decoration and the cavetto and H2-type cooking-pot rims all dating to the early to mid-13th century. The single sherd of early medieval ware could also belong to the early 13th century. Wheel-thrown medieval coarsewares, later cooking-pot rim types, the sandy orange ware, Mill Green ware and Mill Green-type ware all indicate occupation into the 14th and 15th centuries, but the bulk of the assemblage dates from the later 15th to early 17th centuries. In contrast, the medieval assemblage is very small and much of the medieval pottery is residual in later features. Occupation may have continued a little beyond the early 17th century, but there is no evidence of significant activity beyond the 17th century.

B.5.54 The largest pottery groups were from the infilling of the enclosure ditch, which may have taken place gradually as the bulk of the pottery spans the late 15th to late 16th centuries, and from the fill of the latrine, which produced a coherent early 17th century group. The assemblage appears largely domestic although there are a relatively large number of large bowls (especially common in the enclosure ditch fills) which may have been used in diary. This may indicate that the farm was a dairy farm, but all households were largely self-sufficient often making their own cheese and butter. This is the case even in towns and large bowls are not uncommon in the suburban setting of Moulsham Street.

B.5.55 The red earthenwares which make up the bulk of the assemblage appear to be local, and many no doubt come from the potting village of Stock to the south of Chelmsford or from the related production site at Harlow, to the west. The German stonewares and the Surrey-Hampshire white wares are ubiquitous on post-medieval sites, although as here do not tend to occur in large quantities. Their presence shows that the householders would have access to local markets and perhaps to passing trade along the nearby London to Colchester road. Martincamp flasks and Anglo-Netherland tin-glazed earthenware are no so common, the former does not feature in the Moulsham Street assemblage, and could indicate that the farmstead was of middling status. The presence of Saintonge ware at an inland site may also be taken as an indicator of status. In addition, the presence of a dripping dish shows the residents could afford to roast joints of meat (boiling is more fuel efficient). In addition, the Surrey-Hampshire white ware mug with encrusted decoration, as well as being unusual, may have been relatively expensive to buy, again indicating this was a site of some status.

Pottery Catalogue

Context	Fabric	Form	Sherd Count	Sherd Weight	Context Date Range
2374	Black-glazed ware	Mug/cup	5	53	Late 16th to earlier 18th C
2394	Medieval coarseware		1	4	Later 16th C onwards
	Hedingham coarseware		1	2	+ residual medieval
	Post-medieval red earthenware		1	4	
2396	Mill Green-type ware		1	8	Later 16th C onwards
	Tudor red earthenware		5	75	
	Post-medieval red earthenware		3	29	
2398	Medieval coarseware	Jug: in-turned rim	2	13	14th C
2400	Medieval coarseware		1	1	14th C to mid-16th C
	Colchester-type ware		1	11	
2401	Hedingham coarseware		2	25	14th C
2409	Post-medieval red earthenware		14	225	Later 16th C onwards
2411	Early medieval ware		1	5	Late15th to 16th C
	Medieval coarseware		1	18	+ residual medieval
	Tudor red earthenware		1	4	
2420	Medieval coarseware	?Cooking-pot: cavetto rim	1	16	16th to 17th C
	Tudor red earthenware		1	22	
	Post-medieval red earthenware	Bowl: rounded	1	66	
2436	Hedingham fineware	Jug: Rouen-style	1	13	Early to mid-13th C
	Medieval coarseware	H2 rim	4	28	+ intrusive post-med
	Black-glazed ware		1	4	
2438	Tudor red earthenware		1	15	Later 16th C
	Post-medieval red earthenware		2	22	
2444	Frechen stoneware	Jug: Bartmann	1	24	17th C
	Surrey-Hampshire whiteware		5	31	
	Post-medieval red earthenware		7	69	
2445	Medieval coarseware		1	22	16th C or later
	Post-medieval red		1	24	+ residual medieval

	earthenware				
2452	Hedingham coarseware	Cooking-pot: H3 rim	1	24	Later 16th to 17th C
	Frechen stoneware		1	5	+ residual medieval
	Tudor red earthenware	Jug/cup	1	7	
	Tudor red earthenware	Jar: storage	2	52	
	Tudor red earthenware		7	85	
	Post-medieval red earthenware		5	47	
	Post-medieval red earthenware		1	12	
2460	Medieval coarseware		1	5	Late 16th C
	Surrey-Hampshire whiteware	Dish: flanged	18	103	+ residual medieval
	Langerwehe/Raeren stoneware		1	28	
	Tudor red earthenware	Bowl: concave sided	3	158	
	Tudor red earthenware		1	28	
	Post-medieval red earthenware		3	76	
2462	Sandy orange ware		1	14	14th to mid-16th C
	Mill Green-type ware		1	33	
2465	Hedingham fineware		1	3	Late 15th to 16th C
	Medieval coarseware		7	32	+ residual medieval
	Mill Green coarseware		3	23	
	Tudor red earthenware		1	4	
2466	Medieval coarseware		6	18	17th C
	Frechen stoneware	Jug: rounded	12	230	
	Frechen stoneware		1	3	
	Post-medieval red earthenware		1	5	
2467	Frechen stoneware		2	29	Later 16th to 17th C
	Raeren stoneware		1	9	
2471	Anglo-Netherlands tge	Albarello	2	11	Early 17th C
	Anglo-Netherlands tge		1	8	
	Frechen stoneware	Jug: rounded	9	507	
	Black-glazed ware	Mug: flared	6	311	
	Black-glazed ware	Mug: flared	7	183	

	Martincamp flask type III	Flask: globular	44	383	
	Post-medieval red earthenware	Jug: rounded	9	1132	
	Post-medieval red earthenware	Jug: rounded	23	1117	
	Post-medieval red earthenware	Jug: shouldered	26	927	
	Post-medieval red earthenware	Chafing dish	3	258	
	Post-medieval red earthenware	Bowl: rounded	5	298	
	Post-medieval red earthenware	Jar	22	913	
	Post-medieval red earthenware	Base with hole	1	102	
	Post-medieval red earthenware		5	64	
2472	Tudor red earthenware	Pedestal base	1	12	17th to 18th C
	English tin-glazed earthenware	Candlestick	1	79	
2473	Hedingham coarseware	Cooking-pot : ?H3 rim	1	26	14th C
	Sandy orange ware		1	6	
2474	Mill Green fineware	?Flatware sherd	1	9	?14th C
2476	Frechen stoneware	Jug	1	38	Later 16th to 17th C
2483	Frechen stoneware	Jug	1	24	Early 17th C
	Saintonge ware - plain		1	16	
	Martincamp flask type III		1	4	
	Tudor red earthenware	Dish: flanged	3	75	
	Tudor red earthenware		10	214	
	Post-medieval red earthenware		2	67	
	Black-glazed ware		1	86	
2485	Frechen stoneware	Jug:? Bartmann	2	50	17th C
	Tudor red earthenware		2	7	
2487	Frechen stoneware	Jug	8	73	17th C
	Frechen stoneware		1	8	
	Tudor red earthenware		2	14	
	Black-glazed ware		1	15	

2488	Sandy orange ware		1	16	Mid- to late 17th C
	Tudor red earthenware	Cistern	1	129	+ earlier
	Tudor red earthenware	Dish: flanged	5	154	
	Post-medieval red earthenware		15	87	
	Frechen stoneware		2	15	
	Surrey-Hampshire whiteware	Mug	4	31	
2492	Medieval coarseware	Cooking-pot: H1 rim	5	98	Mid-to late 16th C
	Langerwehe/Raeren stoneware		1	4	+ residual medieval
	Raeren stoneware	Drinking jugs	3	28	
	Frechen stoneware		1	14	
	Sandy orange ware		5	106	
	Sandy orange ware	Bowl: large with pouring lip	3	96	
	Tudor red earthenware		45	1750	
	Tudor red earthenware	Jar: shouldered	1	58	
	Tudor red earthenware	Dish: flanged	1	54	
	Tudor red earthenware	Cistern	1	22	
	Post-medieval red earthenware	Jug: small rounded	3	126	
	Post-medieval red earthenware	Jug: small rounded	6	79	
	Post-medieval red earthenware	Jug: small rounded	15	148	
	Post-medieval red earthenware		3	28	
2497	Medieval coarseware		1	11	Mainly late 15th to mid-
	Martincamp flask type I		1	9	16th C, + some 17th C
	Tudor Green' ware		1	8	
	Tudor red earthenware		16	515	
	Post-medieval red earthenware	?Drinking vessel sherd	1	8	
	Post-medieval red earthenware		2	204	
	Post-medieval red earthenware	Beaded rim	1	31	
	Black-glazed ware	Mug	1	10	

2498	Tudor red earthenware		5	163	Later 16th C
	Tudor red earthenware	Bowl: pancheon type	2	174	
	Tudor red earthenware	Dish: dripping	1	26	
	Post-medieval red earthenware		2	46	
2499	Tudor red earthenware	Bowl: pancheon type	9	355	17th C
	Tudor red earthenware		12	282	
	Frechen stoneware	Jug: Bartmann	4	102	
	Black-glazed ware	Mug	1	7	
2500	Tudor red earthenware	Cistern	1	34	16th C
	Tudor red earthenware		10	242	
	Post-medieval red earthenware		1	2	
2503	Medieval coarseware		3	4	Mid-12th to 14th C
2504	Sandy orange ware	?Handled jar	1	163	Late 15th to 16th C
	Mill Green-type ware		4	131	
	Tudor red earthenware		1	59	
2511	Medieval coarseware		1	11	13th to 15th C
	Medieval coarseware		1	5	+ intrusive post-med
	Sandy orange ware		3	18	
	Surrey-Hampshire whiteware		1	6	
	Tudor red earthenware	Bowl: rounded	2	112	
	Tudor red earthenware		7	152	
2513	Medieval coarseware	?Pipkin: everted rim	3	28	14th C
2518	Tudor red earthenware		1	30	Late 15th to 16th C
2533	Raeren stoneware	Drinking jug	1	34	Late 15th to mid-16th C
	Sandy orange ware		2	22	
	Tudor red earthenware		4	311	
2545	Tudor red earthenware		1	5	Late 15th to 16th C
2551	Mill Green-type ware		1	12	Later 15th C
	Mill Green-type ware	Jug	1	170	
	Sandy orange ware	?Jug	3	45	
	Sandy orange ware		3	20	

	Tudor red earthenware		4	241	
2552	Sandy orange ware		5	53	14th to 16th C
	Mill Green-type ware	Jug	1	11	
2555	Medieval coarseware		3	18	13th to 14th C
	Post-medieval red earthenware		2	54	+ intrusive post-med
2561	Tudor red earthenware		1	10	Late 15th to 16th C
	Medieval coarseware		1	31	+ residual medieval
2566	Mill Green coarseware		1	4	?Early 17th C
	Tudor red earthenware		1	5	+ residual medieval
	Post-medieval red earthenware	?Bowl with rilled rim	1	34	
	Post-medieval red earthenware		3	18	
2573	Tudor red earthenware		1	29	Most likely 17th C
	Black-glazed ware	Mug	1	7	
2575	Tudor red earthenware		1	8	Late 15th to mid-16th C
2579	Mill Green-type ware		2	43	Late 15th to mid-16th C
	Tudor red earthenware	Cistern	47	645	
	Tudor red earthenware		2	25	
2581	Tudor red earthenware		1	35	Late 15th to 16th C
2582	Medieval coarseware		1	1	Mid-12th to 14th C
2587	Raeren stoneware	Drinking jug	1	7	Late 15th to mid-16th C
	Tudor red earthenware		1	44	
2600	Medieval coarseware		2	5	Mainly 16th C
	Sandy orange ware	?Jar	13	110	Latest is 17th C
	Martincamp flask type II or III		1	7	+ residual medieval
	Black-glazed ware		2	22	
	Tudor red earthenware	Bowl: flared	7	370	
	Tudor red earthenware		26	465	
	Tudor red earthenware	Bowl: medium sized	5	53	
Total			**735**	**17966**	

Table 15: Pottery catalogue (sherd weight is in grams)

B.6 Clay Tobacco Pipe

By Helen Stocks-Morgan

Assemblage

B.6.1 The archaeological excavation produced a small assemblage of clay tobacco pipe totalling 0.087kg in weight. A single fragment of clay tobacco pipe had a partial bowl with surviving heel from a pipe with a relatively upright bowl, suggesting a post-1680 date and conforming most closely to a pipe illustrated by Crummy, which she describes as a type 9. All other fragments from the excavation were stems which were plain, having no marks or decoration and is therefore not closely datable, other than to say it is post-1580.

B.6.2 The presence of the clay tobacco pipe fragments may indicate casual losses post-1580, although taken alongside the glass assemblage discussed elsewhere (see results section) their presence supports a post-16th century date for the material recovered.

Context	Cut	Count	Weight (kg)	Description	Date	Phase
2444	2468	3	0.008	Stem is plain	NCD	Early Post-med
2471	2469	1	0.005	Partial bowl with surviving heel, relatively upright bowl	NCD	
2472	2469	2	0.009	stem is plain	NCD	
2487		2	0.008	Stem is plain	NCD	
2549	2548	1	0.003	Stem is plain	NCD	
6233	-	6	0.033	fragment, not closely identifiable	NCD	
6237	-	1	0.021	Oswald type 6	1660 - 1680	

table 16: clay tobacco pipe

B.7 Worked Stone

By Ruth Shaffrey

Assemblage

B.7.1 Three pieces of stone were retained during excavations at Site 10. These comprise two fragments of lava rotary quern (2409, 2513) and a whetstone fragment. Neither of the lava quern fragments retain any diagnostic features or survive sufficiently well for their original size to be determined. The whetstone is the central portion of a rectangular sectioned fine-grained micaceous sandstone.

Function	Lithology	Notes	Size	SFNO	Weight (g)	Ctx	Phase
Rotary quern fragment	Lava	Sharp broken edges, no original faces	Indeterminate size		150	2409	'early post-medieval'
Whetstone fragment	Cream coloured micaceous fine grained sandstone	Central portion of rectangular sectioned whetstone with sharp slightly facetted arrises	Measures > 58 x 39 x 27mm		116	2465	'early post-medieval'

Rotary quern fragment	Lava	Flat faces, tooled, possible original edge. But it is all a bit worn and not possible to say much about it	Measures 31mm thick	357	421	2513	'early post-medieval'

Table 17: Worked stone catalogue

B.8 Ceramic Building Material

By Cynthia Poole

Introduction

B.8.1 A sample of the ceramic building material recovered amounting to 28 pieces weighing 26496g, was submitted to the specialist for recording and assessment. The sample was selected from 18 contexts to provide a full range of forms and fabrics. This material was recovered predominantly from contexts relating to the building and its enclosure ditch dating to the early post-medieval phase of 1500-1650, apart from two fragments of brick from ditch 2408 related to the retting pit (2506). The assessed assemblage was dominated by brick with only a few fragments of roof and floor tile (Table 18). Preservation was generally good with several complete or near complete bricks from in situ structures producing a high mean fragment weight of 946g. Abrasion tended to be absent or low, though pieces from demolition and disuse layers tended to be somewhat more abraded. The assemblage is wholly late medieval – early postmedieval (14th-16th century), though assigning a date is an imprecise art. The assemblage is summarised and quantified by context in table 19.

Methodology

B.8.2 The part of the assemblage made available for assessment has been fully recorded on an Excel spreadsheet in accordance with guidelines set out by the Archaeological Ceramic Building Materials Group (ACBMG 2007). The record includes quantification, fabric type, form, surface finish, forms of flanges, markings and evidence of use/reuse (mortar, burning etc). Fabrics were characterised with the aid of x20 hand lens. In addition to this there remains a further 113.5kg that has been quantified subdivided into brick and tile (Table 18).

Forms

Bricks

B.8.3 Brick accounted for the majority of the assemblage (52% count, 78% wt). Much of the brick recovered was sampled from in situ brick structures, including a cellar, fireplace and latrine. They occur in a number of orange and red sandy fabrics (Q, QFe and QFI) containing moderate densities of quartz sand, ferruginous inclusions and flint grits. All were roughly hand made with a crude finish and irregular surfaces. One had organic impressions on the base, typical of medieval brick. Several had a vitrified dark grey surface and one was clearly distorted and overfired suggesting all these resulted from overfiring rather than deliberate salt glaze for diaper work. This suggests the bricks may have been produced locally, fired in brick clamps. Evidence of possible Tudor brick clamps has been identified at Site 3. Complete bricks varied in size from 60x120x228 mm up to 70x125x265mm. Thickness varied from 52 to 70mm and width from 105 to 125mm. The thicker examples appear to be earlier in date, probably late medieval,

from their general character and finish, whilst thinner examples are more typical of the Tudor/Stuart period.

Roof Tile

B.8.4 Only a small proportion of the roof tile was seen for assessment from context 2600 and comprised flat tile and peg tile 11-15mm thick. A significant quantity of material, not yet recorded, logged as tile, is probably all varieties of roof tile, though may included some other forms. The roof tile was made in orange and red sandy fabrics ranging from very fine (fabric D) to fine sandy fabrics (Cf). These occasionally contained small flint or quartzite grits or clay pellets and very rarely chalk grit. The general finish is fairly crude. Peg holes were circular, cylindrical, punched from the top and measured *c* 13 mm diameters narrowing to the base, centred between 20-30mm from the top edge and 40mm from the side edge.

B.8.5 Other roof tile forms are hinted at by the presence of curving tile, which is probably ridge tile. More ornate roof furniture does not appear to be present.

Floor Tile

B.8.6 Three fragments of plain glazed floor tiles of Flemish type were found in contexts 2466 and 2600. Another tile from 2487 logged as having a black glaze may also be floor tile. They were made in an orange red sandy fabric (Q) containing frequent medium-coarse quartz sand. They had cut bevelled edges and plain unkeyed bases. They measured 26-28mm thick, but no complete widths survived. Two had a thick bottle green glaze and poorly finished, one with striations across the surface under the glaze and both with damage where adjacent tiles had stuck during firing. The tile from context 2600 had splashes of amber glaze on a red vitrified surface. This tile had a small oval nail hole in the corner, a feature often indicative of genuine Flemish imports, though this feature can also be found on local products.

	Form	**Nos**	**Wt (g)**
Assessed	Brick	18	25472
	Roof: flat	3	102
	Roof: peg	4	122
	Floor	3	800
	Subtotal	*28*	*26496*
Not assessed	Brick	312	83834
	Tile unspecified	253	24150
	Roof	28	3092
	Floor	2	363
	Indet	11	1972
	Subtotal	*606*	*113411*
	Total	**634**	**139907**

Table 18: Quantification of CBM by form

Id	**Cntxt**	**Spot Date**	**Nos**	**Wt (g)**	**Class**	**Fab Gp**	**Fab**	**TH**	**W**	**L**
1	2374	C14-C16	1	2463	Brick	Sandy	Q Fe	67	116	>210
2	2409	EPM	1	386	Brick	Sandy	Qfe	59	0	0
21	2409	Tudor/Stuart	1	297	Brick	Sandy	QFl	53	0	0

3	2433	C14-C16	1	2907	Brick	Sandy	OF ?QFl	60	120	228
4	2433	Tudor/Stuart	1	562	Brick	Sandy	C	52	110	0
5	2462	Tudor/Stuart	1	1705	Brick	Sandy	OF	56-62	105	>160
6	2466	C15-C16	2	426	Floor: Flemish type	Sandy	Q	26, 27	>100	0
7	2467	C15-C16	1	1640	Brick	Sandy	QFl	60	113	>175
8	2467	C14-C16	1	2536	Brick	Sandy	QFl/Fe	60	120	240
9	2470	C14-C16	1	3129	Brick	Sandy	QFl	63	120	250
10	2490	C14-C16	1	943	Brick	Sandy	QFl	61	113	?95
22	2490	C14-C16	1	949	Brick	Sandy	QFl/Fe	62	112	>130
11	2547	C14-C16	1	1667	Brick	Sandy	QFl	66	120	>160
12	2547	C14-C16	1	1750	Brick	Sandy	QFe	64	123	>170
13	2558	C14-C16	1	3423	Brick	Sandy	QFe	70	125	265
14	2561	C14-C16	1	515	Brick	Sandy	QFe	>38	118	>125
15	2600	Tudor	1	374	Floor: Flemish type	Sandy	Q	28	>80	>100
16	2600	Tudor	3	600	Brick	Sandy	Qfe	61	>100	>60
17	2600	LMed-EPMed	2	72	Roof: flat	Sandy	Cf	13, 14mm	0	0
18	2600	LMed-EPMed	1	30	Roof: flat	Sandy	D	14mm	0	0
19	2600	EPMed	2	61	Roof: peg	Sandy	D	11-14mm	0	0
20	2600	Lmed	2	61	Roof: peg	Sandy	Cf	15mm	0	0
		Total	28	26496						

Table 19: Summary of assessed ceramic building material record by context

Cntxt	Phase	Nos	Wt (g)	Class	Form	Comments
2374	AD1500-1650	1	1601	Brick		
2398	AD1500-1650	4	500	CBM	Misc	
2400	AD1500-1650	1	9	Brick		Orange
2404	U	1	7	CBM	Misc	
2409	AD1300-1500	1	440	Tile	Roof?	orange tile
2411	AD1300-1500	2	270	Tile	Roof?	orange red tile
2413	AD1500-1650	6	612	Tile	Roof?	orange red tile
2417	AD1500-1650	6	1420	Brick		orange sandy brick
2420	AD1500-1650	3	138	Tile	Roof?	orange tile
2422	AD1500-1650	2	106	Tile	Roof?	red and grey core
2424	AD1500-1650	5	835	Brick		red orange brick
2433	AD1500-1650	1	710	Tile	Roof?	nice tile
2434	AD1500-1650	2	130	CBM	Misc	
2438	U	1	38	Tile	Roof?	red and grey core
2444	AD1500-1650	43	1193	Brick		Assorted orange brick
2444	AD1500-1650	11	545	Tile	Roof?	orange
2445	AD1500-1650	57	10124	Brick		dark red, red & orange brick
2452	AD1500-1650	63	6771	Brick		Orange & red brick
2452	AD1500-1650	2	118	Roof	Peg	red/orange
2452	AD1500-1650	11	1150	Tile	Roof?	orange / red; orange with grey core

2458	AD1500-1650	6	5554	Brick		dark red, orange red, pink red
2458	AD1500-1650	3	477	Roof	peg	orange tile and one with peg
2460	AD1500-1650	2	253	CBM	Misc	
2461	AD1500-1650	2	109	Tile	Roof?	dark red tile
2462	AD1500-1650	6	1571	Brick		red brick, orange brick
2462	AD1500-1650	2	901	CBM	Misc	
2465	AD1500-1650	3	350	Tile	Roof?	
2470	AD1500-1650	10	13989	Brick		
2471	AD1500-1650	0	181	CBM	Misc	
2472	AD1500-1650	2	149	Tile	Roof?	orange black core tile
2474	AD1500-1650	1	27	Tile	Roof?	red tile
2476	AD1500-1650	6	367	Brick		
2481	AD1500-1650	3	4284	Brick		
2485	AD1300-1500	24	1803	Brick		orange brick
2487	AD1300-1500	25	638	Brick		orange brick
2487	AD1300-1500	1	42	Floor tile / brick?		
2487	AD1300-1500	29	2854	Tile	Roof?	orange & red tiles; orange with grey core
2488	AD1300-1500	8	1354	Brick		Orange & orange red brick
2488	AD1300-1500	61	3652	Tile	Roof?	orange , red, orange with grey core tile
2488	AD1300-1500	1	129	Roof tile	Ridge?	curving tile
2490	AD1300-1500	2	1611	Brick		
2490	AD1300-1500	0	0	Tile	Roof?	
2492	AD1500-1650	1	519	Tile	Roof?	
2497	AD1500-1650	3	6495	Brick?		
2497	AD1500-1650	8	772	Tile	Roof?	orange , red, orange with grey core tile
2497	AD1500-1650	1	560	Tile	Roof?	red and mica temper
2497	AD1500-1650	5	461	Roof tile	flat/peg	orange
2499	AD1500-1650	3	3355	Brick		dark red burnt
2499	AD1500-1650	1	1236	Tile	Roof?	orange
2499	AD1500-1650	12	866	Roof	peg	orange tile and peg
2499	AD1500-1650	2	195	Tile	Roof?	other
2500	AD1500-1650	4	3668	Brick		orange brick
2500	AD1500-1650	13	1534	Tile	Roof?	
2503	AD1500-1650	1	39	Tile	Roof?	orange tile
2504	AD1650-1800	2	403	Tile	Roof?	
2511	AD1500-1650	3	0	Tile	Roof?	
2513	AD1500-1650	1	239	Tile	Roof?	orange tile
2515	AD1650-1800	2	87	Tile	Roof?	red and grey core
2518	U	2	459	Tile	Roof?	
2521	AD1650-1800	10	1922	Tile	Roof?	Orange; red and grey core
2523	AD1500-1650	15	949	Tile	Roof?	dark red tile; orange sandy; orange with grey core tile
2523	AD1500-1650	1	62	Tile	Roof?	orange and chalk temper tile
2523	AD1500-1650	2	466	Roof tile	ridge?	curving tile
2525	AD1500-1650	9	824	Tile	Roof?	red tile; 1x burnt
2541	AD1500-1650	1	65	Tile	Roof?	dark red b
2543	U	6	190	Tile	Roof?	orange sandy

2545	AD1650-1800	1	19	Tile	Roof?	
2547	AD1500-1650	1	1431	Brick		red brick
2549	AD1500-1650	1	56	Tile	Roof?	orange sandy
2551	AD1500-1650	5	806	Tile	Roof?	red orange; 2x grey core
2551	AD1500-1650	3	575	Roof tile	peg	orange
2552	AD1500-1650	4	400	Tile	Roof?	all
2553	AD1500-1650	4	911	Tile	Roof?	
2558	AD1500-1650	3	7263	Brick		
2559	AD1500-1650	2	3071	Brick		
2560	AD1500-1650	2	4848	Brick		
2561	U	2	110	Tile	Roof?	orange tile
2581	AD1500-1650	1	321	Roof/Floor tile		thick tile
2763	U	4	102	Tile	Roof?	orange sandy
2777	U	11	223	Brick		
Totals		606	113411			

Table 20: Summary of contexts producing ceramic building material not included in the assessment record

B.9 Worked bone and Ivory

By Chris Howard-Davies

B.9.1 ***Quantification*****:** although a total of two fragments of worked bone and 19 of ivory were recovered, they probably represent no more than two separate items, both coming from midden fill 2471 (structure 2469). One is a simple double-sided comb, the other either a two-tined hair or headdress pin, or a lucet, used in braid-weaving. Both are in good condition, if fragmentary.

B.9.2 ***Date range and evaluation***: neither item is particularly tightly dated, although bone and ivory combs of this form are known from a number of sixteenth and seventeenth-century contexts (Margeson 1993, 66).

B.9.3 It is likely that Sf 182, and Sfs 367, 368 are all parts of the same comb. It appears to be a plain double-sided comb, basically rectangular, with fine teeth cut on one side, and coarser teeth on the other. The teeth appear to have been cut at a slight angle to the plane of the comb, a phenomenon noted by MacGregor (1985, 82), who suggested that it was a response to the laminar nature of ivory.

B.9.4 Although not joining, Sfs 363 and 364 seem most likely to come from a single decorative object. It clearly has two long tines and a decorative head, with nicked edges, and a well-executed but rather irregularly-placed series of ring-and-dot motifs. A similar fragment, of unidentified purpose, from Norwich (Margeson 1993, object 1881) was recovered from a context dated broadly to the seventeenth century. Whilst there are few parallels available, this could be a robust decorative pin or ‘hair fork’ or it could be a lucet, used to weave braids. Neither identification can be dated with any confidence, but the context suggests an early post-medieval date is most likely.

Conservation: *the finds are well-packed and require no further conservation.*

B.10 Wood

By Matthew Brooks

Introduction and Methodology

B.10.1 In total 12 pieces of timber were recovered from two features. 221, 306, 295, 304 and 238 where recovered from the basal fill of a large later Medieval waterhole or industrial pit/tank. 222 was recovered from the top fill of a linked, later Medieval ditch. The pit's use is currently dated by finds assemblages at c. 1350-1450.

Timber Number	context	Feature type	Count	Provisional date
221	2504	pit	1	high medieval
222	2497	ditch	1	high medieval
238	2508	pit	1	high medieval
295	2504	pit	1	high medieval
304	2504	pit	1	high medieval
306	2504	pit	1	high medieval

Table 21: quantified wood

B.10.2 This small assemblage was hand excavated and drawn on site within 2 days of exposure and subsequent conservation was applied as recommended by English Heritage guidelines.

B.10.3 Species identification was not entirely obvious using basic magnification, further identification would be necessary using a cellular microscope to establish beyond doubt the species. At this stage all pieces are provisionally identified as oak.

Timber 221 is a square plate, possibly apart of larger post. Measurements 170mm x 200mm x 40mm. No obvious use - should be treated as debris.

Timber 222 is a sub rectangular heavily damaged plank. Single rivet/drill hole is evident without dowel in situ. Measurements 1078mm x 194mm x 29mm.

Timber 306 is a damaged sub rectangular plank. No obvious purpose, should be treated as debris. Measurements 370mm x 140mm x 80mm.

Timber 295 is a rectangular plank, with damage from excavation and antiquity. 5 rivet/drill holes varying in size, dowels not in situ. At least 5 abrasion marks. Further analysis recommended to understand purpose/cause of abrasion. Measurements 580mm x 120mm x 20mm.

Timber 304 is a rectangular post/plank squared off at edges and rounded at one side. Purpose is not clear, requires further analysis. Measurements 300mm x 160mm x 120mm.

Timber 238 is a rectangular plank damaged in antiquity. 4 rivet/drill holes evident, 2 dowels still in situ and recovered. Holes are uniform in size and shape. Recommend further analysis to establish use and species identification of recovered dowels. Measurements 612mm x 80mm x 30mm.

B.11 Leather

By Quita Mould

Methodology

B.11.1 This assessment report is based on examination of the wet leather undertaken in June 2015. The leather has been identified and a basic record for the site archive has been made including measurement of relevant dimensions and species identification where possible. The information gathered has been correlated with the available contextual information and summarized below. Working drawings have been made of significant items.

B.11.2 All measurements are in millimetres (mm). No allowance has been made for shrinkage. Any shoe sizing has been calculated according to the modern English Shoe-Size scale, continental sizing is given in brackets. The shoe terms employed are those in common use in the archaeological literature, seams and constructions are fully described in Grew and de Neergaard 1988 and Mould, Carlisle and Cameron 2003 for example.

B.11.3 Leather species were identified by hair follicle pattern using a low-powered magnification. Where the grain surface of the leather was heavily worn identification was not always possible.

Condition

B.11.4 The leather was wet and had been washed, a small amount of additional cleaning was undertaken before examination. The majority is currently stored wet in double self-sealing polythene bags in air-tight plastic containers, a small amount of leather recovered toward the end of the excavation is stored in single self-sealing polythene bags. While most of the leather is robust and in good condition, a small amount of the leather from shoe uppers is fragile and liable to further fragmentation.

Provenance, quantification and dating

B.11.5 Leather was recovered from three lower fills (2504, 2551, 2552) of a large, sub-rectangular, steep-sided watering hole [2506]. The leather comprised 42 registered finds representing at least 16 shoes, an archer's bracer, a cut down panel and scrap leather from an unknown item. The range of the shoe parts found and secondary cutting present on four shoes and the cut down panel indicate that the assemblage includes cobbling waste discarded once re-usable leather had been salvaged. The leather can be independently dated by the shoe styles present; all is of later medieval date dating to the second half of the fourteenth and beginning of the fifteenth centuries (Grew and de Neergaard 1988; Volken 2014).

Range of material

The shoes

B.11.6 The remains of at least 16 shoes are present, broken shoe parts indicate that as many as 22 shoes may be represented. Nine shoes were found with parts of their uppers present providing evidence of the shoe styles worn. Three distinct shoe styles are represented, with one style being made using two differing cutting patterns. These shoe styles can be independently dated by comparison with other English and NW European examples.

The archer's bracer

B.11.7 A simple archer's bracer (SF235) probably made from leather recycled from a shoe sole was recovered from context 2504. Such bracers have been found at a small number of excavations and provide examples of a low cost and what must have been a very common item in the late medieval period, though few have been published. While it may be associated with hunting in the deer park comparable examples have been recovered from urban situations where archery practice in churchyards as well as designated butts was common place.

Other objects

B.11.8 A rectangular-shaped piece (SF286) with a single butted edge/flesh seam remaining has been cut down from a larger item, similarly fragments of cattle hide torn from an unidentified item [SF226 (2504) and SF266 (2551)] that have no diagnostic features remaining to allow identification.

Appendix C. Environmental Reports

C.1 Faunal Remains

By Angelos Hadjikoumis

Introduction

C.1.1 The size of the faunal assemblage is of moderate size, with 727 mammal, 52 avian and two fish remains identified in the hand-collected samples. Faunal remains were also recovered in the residues (combined >2 mm fractions) of bulk samples. For the purposes of this assessment, all residues have been scanned and only general comments concerning their faunal composition are provided (see 'Results' and 'Further Work and Methods Statement').

C.1.2 The faunal assemblage recovered from site 10 of derives, almost in its entirety, from contexts attributable to the early post-medieval phase, which chronologically falls mainly in the 16th century. Moreover, a very small number of faunal remains were recovered in earlier (high medieval) and later (post-medieval) contexts, while an even smaller number from contexts that could not be reliably attributed to a phase. Moreover, for the largest sub-sample of the assemblage (i.e. that of the early post-medieval phase), the spatial distribution of faunal remains has also been explored through additional analyses.

C.1.3 The main aims of this assessment are, to evaluate the overall quality of the faunal assemblage, presenting its faunal composition and other general characteristics, as well as assess its research potential and recommend possible further work.

Methodology

C.1.4 The faunal material has been processed at the facilities of Oxford Archaeology East in Bar Hill. During data recording, obvious new breaks were refitted in an effort to improve identifiability. Identification of anatomical element and species (or more general taxonomic category) was attempted on every specimen with the aid of published osteological atlases for macromammals (*e.g.* Barone 1976; Pales and Garcia 1981; Schmid 1972). The most generic level of anatomical identification involved attributing each fragment to one of three broad anatomical categories; 'flat/cubic bone' (e.g. scapula, pelvis, astragalus, vertebrae, ribs) and 'long bone' (e.g. humerus, radius, femur). The most generic level of taxonomic identification employed was a three-size scheme for mammals ('large': e.g. cattle/equids, 'medium': e.g. sheep/fallow deer and 'small': e.g. rabbit/cat), and a four-size scheme for birds ('size 1': e.g. sparrow/songthrush, 'size 2': e.g. pigeon/crow, 'size 3': e.g. chicken/pheasant and 'size 4': e.g. goose/peafowl). Size subdivisions were not attempted on fish remains.

C.1.5 The distinction between sheep and goat remains was attempted on postcranial elements following Boessneck *et al.* (1964) and on mandibular cheek teeth following Halstead *et al.* (2002) and Payne (1985). The distinction between equids (i.e. horse, donkey or mule/hinny) was attempted based on criteria from several authors summarised in Johnstone (2004: 165, table 4.1), while the distinction between fallow and red deer followed Lister's criteria (Lister 1996).

C.1.6 Besides anatomical and taxonomic identification, age-at-death was estimated based on dental eruption and wear, as well as the epiphyseal fusion state of selected postcranial anatomical elements. Eruption and wear of mandibular dental remains were recorded following Payne (1973; 1987) for sheep and goats, Grigson (1982) and Halstead's

(1985) adaptation of Payne for cattle, and Grant (1982) and Bull & Payne (1982) for pig. Age-at-death based on epiphyseal fusion mainly follows Silver (1969) for sheep, goat, cattle and pig and Carden and Hayden (2006) for fallow deer. Moreover, each fragment was recorded in terms of its potential to yield information related to sex, biometry, pathology, butchery and fragmentation state. Taphonomic information (*e.g.* carnivore/rodent gnawing, burning and copper staining) was also recorded to gain an understanding of which agents affected the formation of the assemblage prior to its excavation. The extent of erosion/abrasion on bone surfaces was graded from 0 (unaffected) to 5 (heavy erosion across whole surface) using a simplified version (see caption of Table 28) of Brickley & McKinley's scheme for human remains (2004, 14-15).

Quantification

C.1.7 All identifiable specimens contributed to the Number of Identified Specimens (NISP), which is the main quantification unit for species frequencies. In addition, the Minimum Number of Individuals (MNI) was calculated for the 'early post-medieval Medieval' phase only, based on specimens identified to a taxonomic level more specific than the size categories (both for mammals and birds). Its calculation was based on the most abundant anatomical element and taking into account the side of the body and other attributes (e.g. age).

Results

Taxonomic composition

C.1.8 The raw taxonomic data obtained from the study of the assemblage are presented in Table 22. Only the early post-medieval sample is sufficiently large to be considered reliable in terms of faunal composition and thus percentages (instead of raw numbers only) are also provided. The main characteristic of the sample is a particularly high percentage of fallow deer and relatively low percentages of domestic animals. Among the latter, horse, cattle, sheep, pig, cat and rabbit were positively identified. It cannot be excluded, however, that additional species of equids (donkey), equid hybrids (mule/hinny) or caprines (goat) were present. Moreover, the high frequency of gnawing marks can be considered as indirect but reliable evidence for the presence of dogs at site 10. This assumption is also strengthened by the extensive evidence for hunting at the site.

Phase	**High medieval**	**early post-medieval medieval**		**Post-medieval**	**unknown**	**total**
mammals	**NSIP**	**NSIP %**	**MNI**	**NSIP**	**NSIP**	**NSIP**
Equid		42 (9.8%)	4		1	43
Cattle	2	61 (14.3%)	4	3	2	68
Fallow deer	1	275 (64.4%)	10	20	3	299
Sheep/goat		29 (6.8%)	7		1	30
pig	3	16 (3.7%)	3		1	20
cat		1 (0.2%)	1			1
rabbit		3 (0.7%)	1			3
total	6	427	30	23	8	464
Large mammal		77		3	4	84
Medium mammal	1	174		2	1	178

Small mammal		1				1
total	1	252	N/a	5	5	263

Table 22: Mammal taxa frequencies for each phase, Hand-collected material only

C.1.9 In order to achieve more reliable comparisons between species, certain corrections were applied to the data presented in Table 22. The corrections involved the elimination of elements that are not present in all the animal species involved (e.g. antler, horncore, fibula) and a proportionate adjustment of the numbers of each type of foot bone (metapodia and phalanges I-III) to match the single-digit equid foot. For example, for every two cattle first phalanges, only one was counted. The main reason for these corrections, however, was the obvious 'inflation' caused by fallow deer antler fragments and a concomitant suppression of the numbers of other taxa. Moreover, there is strong evidence for the collection of shed antlers (around the end of April for mature males), which did not involve the hunting and consumption of fallow deer. With the corrections applied (Table 23), taxonomic composition changes substantially but the main characteristics remain the same. Fallow deer remains by far the most abundant species, although the cumulative percentages of domestic animals now surpass 50%. Fallow deer, however, is the defining characteristic of the assemblage and the hunting and consumption of this animal at (or near) the site is undisputed. Taking into account carcass sizes, cattle appears to have also played a central role in human diet at the site.

phase	**early post-medieval medieval**	
Mammals	**NSIP (%)**	**MNI**
equid	42 (14.6%)	4
cattle	60 (20.9%)	4
Fallow deer	136 (47.4%)	10
Sheep/goat	29 (10.1%)	7
pig	16 (5.6%)	3
cat	1 (0.3%)	1
rabbit	3 (1.0%)	1
total	287	30

Table 23: Corrected frequencies of mammal for the 'early post-medieval phase. Hand-collected material only

C.1.10 Beyond the hand-collected samples presented above, the scanning of the residue from bulk soil samples suggests that small mammals (e.g. cat, rabbit) may have been somewhat, although not dramatically, more abundant than the quantification of hand-collected samples suggests. Micromammals (e.g. rodents), however, are absent from hand-collected samples but are definitely present in the residues, although again not in large numbers.

C.1.11 Bird remains were relatively abundant in the hand-collected material of the 'early post-medieval Medieval' phase. In fact, all recorded bird remains derived from this phase. For the purposes of this assessment, they were were divided into four size categories (see 'Methodology'). The most abundant category was size 3 (Table 24), which corresponds to species that are of similar size to chicken. Although further study with the use of an appropriate comparative collection is necessary to reliably identify these bird remains, it is clear that chicken was present and probably the most abundant bird species. Goose and pigeon/woodpigeon remains were also identified but, almost certainly, the number of species present will increase upon further study. Although the

residues of bulk samples were rapidly scanned and are only briefly mentioned in this assessment, they contain bird remains and their further study is expected to provide a more nuanced picture of human-bird interactions at site 10.

early post-medieval	
size	**NISP**
Size 4	6
Size 3	42
Size 2	4
Size 1	0
Total	52

*Table 24: Breakdown of bird remains of the early post-medievalphase. See 'Methods' for details on sizes. Hand-collected material only. * present in flotation residues*

C.1.12 In addition to the mammal and bird remains presented above, two fragments of fish bone were also recorded in the hand-collected samples. These fragments were not missed during excavation due to their relatively large size but it is certain that the total number of fish remains will increase significantly once the residues of bulk samples are studied in more detail.

C.1.13 The sample of the 'early post-medieval Medieval' phase derived from two distinct types of contexts, explored separately in order to identify possible patterns in the spatial distribution of faunal remains. Faunal remains were divided into those recovered in the interior of the 'building' and the external cobbled surface adjacent to it, and those recovered from contexts further away from the 'building' (mainly ditches forming the enclosure). Despite small sample size for some of the taxa, this analysis suggests a spatial pattern in the disposal of animal remains (Table 25). For some of the species, there is a clear tendency for their remains to occur predominantly in one of the two areas. For example, equid remains were recovered almost exclusively from contexts outside the 'building' and the only fragment that was recorded as being in the interior actually derives from a context in the cobbled surface adjacent on the south end of the 'building'. There is also a tendency for cattle and sheep/goat remains to occur outside the 'building', while pig remains appear to have a more balanced distribution but the sample size is too small to be reliable. The same holds true for the observation that all three rabbit bones were recovered from the 'latrine' area in the interior of the 'building'. The overwhelming majority of bird remains were also recovered from the interior of the 'building' (exclusively from the 'latrine' area). Interestingly, most of the remains of larger bird species (size 4, see Table 24) were recovered outside the 'building'. Concerning the fallow deer, if the antler fragments were included in this analysis, then the percentages would change to approximately 70-30% in favour of outside spaces. This suggests that either antlers were more likely to be discarded outdoors or they ended up being more fragmented in contexts outside the 'building'. Excluding antler fragments (Table 25), the representation of fallow deer remains between the two areas is balanced.

C.1.14 These patterns are currently tentative and should be further explored to be confirmed, refuted or further refined. For example, it can be explored whether access by scavengers to discarded faunal remains in areas outside the 'building' has contributed to this pattern (and to what degree concerning each taxon). Moreover, there may also be patterns in the anatomical distribution of the remains of each species. The processing of the residues may also reveal further patterns, taxonomic and/or anatomical, concerning smaller animals (birds, micromammals, fish and amphibians).

early post-medieval medieval				
area	**Interior NISP**	**Interior NISP%**	**Outside NISP**	**Outside NISP%**
Equid	1	2.4	41	97.6
cattle	21	34.4	40	65.6
Fallow deer	87	31.6	188	68.4
Sheep/goat	8	27.6	21	72.4
pig	9	60	6	40
cat	0	0	1	100
rabbit	3	100	0	0
birds	47	90.4	5	9.6

Table 25: Spatial distribution of the identified taxa. Hand-collected material only.

Age-at-death

C.1.15 In order to approach, at least on a general level, the management strategy of the most common species (i.e. fallow deer) at site 10, epiphyseal fusion data were also analysed. Three anatomical elements fusing at different ages were selected for this analysis. The results (Table 26) suggest that there is an age structure in this population, with a tendency to avoid killing animals younger than a year and probably those between 1-2 years. Most animals even survived beyond 3-4 years, with some mortality between 2-4 years. Such a pattern indicates that there was a preference towards hunting fully mature animals, perhaps due to their fully developed set of antlers in the case of males and to promote reproduction in the case of females. Further data collection and analysis on dental/eruption and wear will confirm or refute this pattern. Moreover, the recording of biometric measurements might shed light into the male: female ratio of the hunted animals and further enhance our understanding of fallow deer management strategy at the site.

Anatomical element (age in months)	**Fused**	**Fused %**	**unfused**	**Unfused %**
Proximal radius (5-8)	9	100	0	0
Distal humerus (13-18)	12	92	1	8
Distal radius (39-45)	4	67	2	33

Table 26: Age-at-death for fallow deer dating to the early post-medieval phase based on the epiphyseal fusion state of selected anatomical elements.

C.1.16 All equid remains (presumably mostly, if not all, horse) were fully fused, which suggests that all animals died at a fully mature age. Cattle provided limited evidence, which tentatively suggests some mortality in from the second year onwards, while the evidence for sheep/goat is even scantier and not revealing (Table 27). Interestingly, the remains of newborn calves (NISP= 1), lambs/kids (NISP= 5) and piglets (NISP= 4) were also recorded and were not included in Table 27. Furthermore, all newborn remains, except that of the calf, were recovered from the 'latrine' area inside the 'building'.

Cattle	**Fused**	**Fused %**	**Unfused**	**Unfused %**
7-10 months	5	100	0	0
18 months	3	100	0	0
24-36 months	5	71	2	29

36-48 months	1	20	4	80
Sheep/goat	Fused	Fused %	Unfused	Unfused %
6-10 months	7	100	0	
13-16 months	0	N/a	0	N/a
18-28 months	2	100	0	
30-42 months	0	N/a	0	N/a

Table 27: Age-at-death for cattle and sheep/goat dating to the early post-medieval phase based on epiphyseal fusion state.

Preservation

C.1.17 The overall condition of the material is very good to excellent. In order to quantify the extent of erosion, the condition of all postcranial elements has been analysed for the most common taxonomic categories, on the basis of a 0-5 scale (Table 28). A comparison between the taxa does not suggest any major differences in the extent of erosion.

	0	**1**	**2**	**3**	**4**	**5**	**NISP**
Equid	7%	39%	43%	7%	4%	0%	28
Cattle	21%	40%	29%	9%	0%	2%	58
Fallow deer	27%	48%	20%	5%	1%	0%	122
Sheep/goat	26%	26%	37%	11%	0%	0%	27
pig	55%	27%	0%	18%	0%	0%	11

Table 28: Extent of erosion on postcranial elements (all phases combined). Erosion grades (simplified version of Brickley & McKinley 2004, 14-15): 0 (surface morphology clearly visible, fresh appearance), 1 (light and patchy surface erosion), 2 (more extensive surface erosion than grade 1), 3 (most of bone surface affected by some degree of erosion, 4 (all of bone surface affected by erosive action), 5 (heavy erosion across whole surface, completely masking normal surface morphology).

C.1.18 The extent of carnivore gnawing on the remains of different taxa was also explored (Table 29). Besides an overall lower occurrence of gnawing marks on equid remains, there are no striking differences between the rest, although the samples are relatively small. Indications of other processes acting on this assemblage such as copper staining, burning, rodent gnawing have also been recorded, although in small numbers and hence were not analysed in detail.

	Gnawed %	**NISP**
Equid	17	29
Cattle	22	58
Fallow deer	27	123
Sheep/goat	32	28
pig	27	11

Table 29: Occurrence of gnawing marks on postcranial elements.

Contamination

C.1.19 No indications of contamination were noted during the study of this faunal assemlage.

Sampling Bias

C.1.20 Recovery through hand collection was relatively efficient and did not cause serious biases in faunal composition concerning medium and large mammals. The rapid scanning of residues (combined >2 mm fractions) of bulk samples, however, indicate that the numbers of smaller mammals (e.g. the already identified rabbit and cat), birds, micromammals (generally rodents), fish and amphibians were underestimated to varying degrees.

C.1.21 The extensive signs of gnawing in this assemblage also suggests that attrition by scavengers may have also contributed to a dearth of small animals and small body parts of larger animals.

Context	Cut	Feature	Weight (g)	Number of frags	Taxon
2396	2395	ditch	165	12	Fallow deer
			4	1	Indet
			456	10	Medium mammal
			4	1	Pig
			3	1	Sheep/Fallow
			2	1	Sheep/Goat
2398	2397	ditch	103	6	Fallow deer
2404	2402	pit	1	16	Indet
2417	2416	pit	12	1	Large mammal
2424	2425	pit	26	1	Large mammal
			7	1	Medium mammal
2433	2432	ditch	317	2	Equid
			370	11	Fallow deer
			4	1	Felis catus
			70	2	Large mammal
			81	1	Pig
2434	2388	posthole	1	5	Indet
2444	2468	pit	26	2	Fallow deer
			8	1	Goat?
			1	20	Indet
			0	1	Lagomorph
			8	16	Medium mammal
2445		layer	2	1	Medium mammal
2452		layer	300	3	Cattle
			76	3	Fallow deer
			30	1	Large mammal
2458	2442	ditch	161	2	Cattle
			44	3	Fallow deer
			12	1	Large mammal
2460	2442	ditch	463	5	Cattle
			62	1	Equid
			403	10	Fallow deer

			8	1	Large bird
			100	2	Large mammal
2462	2442	ditch	86	1	Fallow deer
2465	2477	cellar	4	5	Indet
			2	1	Medium mammal
2466			3	1	Medium mammal
			13	1	Pig
2467			1	1	Small mammal
2471	2469	latrine	525	8	Cattle
			1991	59	Fallow deer
			2	2	Fish
			0	1	Indet
			24	2	Large bird
			86	36	Medium bird
			211	60	Medium mammal
			18	5	Medium/large bird
			2	3	Medium/small bird
			22	8	Pig
			5	2	Rabbit
			17	3	Sheep
			14	2	Sheep/Goat
			1	1	Small bird
2472			28	1	Cattle
			29	2	Fallow deer
			0	1	Indet
			85	3	Large mammal
			1	1	Medium mammal
			1	1	Rabbit
2474		Layer: oven	86	1	Cattle
			10	1	Fallow deer
2476	2477	cellar	1	1	Medium mammal
			0	1	Small bird/micromammal
2483		drain	186	3	Cattle
			68	3	Fallow deer
			234	2	Horse
			172	4	Large mammal
			18	2	Sheep/Goat
2484	2479	drain	24	1	Fallow deer
			2	3	Indet
			0	1	Lagomorph
2485	2486	pit	15	1	Cattle
			43	1	Equid

			16	1	Fallow deer
			18	1	Fallow deer
			0	1	Indet
			11	2	Large mammal
			5	4	Medium mammal
			0	1	Micromammal
			42	1	Pig
			0	1	Rodent
2487		layer	5	1	Cattle
			28	1	Equid
			40	2	Fallow deer
			19	2	Indet
			21	2	Large mammal
			9	3	Medium mammal
2488		surface	582	7	Cattle
			440	16	Fallow deer
			37	8	Indet
			121	5	Large mammal
			52	12	Medium mammal
			18	1	Sheep
			5	1	Sheep/Goat
2492	2491	ditch	1	3	amphibian
			502	10	Cattle
			17	1	Equid
			1718	52	Fallow deer
			0	1	Fish
			2	8	Indet
			10	2	Large bird
			189	7	Large mammal
			71	11	Medium mammal
			0	5	Micromammal
			29	2	Sheep
			5	1	Sheep/Fallow/Roe
			32	3	Sheep/Goat
			0	1	Small carnivore
2493			50	2	Cattle
			75	1	Equid
			203	5	Fallow deer
			156	1	Horse
			8	1	Large mammal
2497	2496	ditch	839	6	Cattle
			823	72	Fallow deer

			2900	26	Horse
			202	20	Large mammal
			1	1	Medium bird
			10	2	Medium mammal
			93	2	Pig
			22	3	Sheep/Goat
2498			190	2	Cattle
			5	1	Chicken
			119	3	Equid
			195	8	Fallow deer
			434	3	Horse
			122	4	Large mammal
			7	3	Medium mammal
			13	1	Sheep
2499			68	1	Cattle
			20	2	Equid
			194	9	Fallow deer
			1255	8	Horse
			80	5	Large mammal
			21	5	Medium mammal
			10	1	Sheep
			2	1	Sheep/Goat
2500			50	2	Fallow deer
			21	1	Sheep/Goat
2504	2506	pit	0	1	Medium mammal
			84	1	Pig
2518	2519	pit	42	2	Large mammal
			1	1	Medium mammal
			20	1	Sheep/Goat
2523	2522	pit	5	1	Fallow deer
			6	2	Medium mammal
2532	2531	ditch	224	3	Cattle
			293	13	Fallow deer
			75	3	Large mammal
			11	2	Medium mammal
2533	2538	ditch	109	1	Cattle
			23	1	Fallow deer
			16	1	Large mammal
			15	1	Medium mammal
			2	1	Pig
2541	2540	pit	74	1	Horse
2545	2544	posthole	3	1	Fallow deer

2551	2506	pit	153	2	Cattle
			70	1	Fallow deer
			7	1	Medium mammal
			34	1	Pig
2552			4	1	Pig
2556	2557	pit	144	1	Cattle
			58	2	Fallow deer
			49	1	Large mammal
2561	2562	pit	82	1	Cattle
			7	1	Cattle
			10	1	Large mammal
2573	2571	posthole	37	2	Fallow deer
			4	2	Medium mammal
2579	2576	ditch	17	1	Fallow deer
2587	2588	posthole	36	1	Cattle
			84	4	Fallow deer
			1	1	Fish
			2	17	Indet
			0	1	Medium bird
			7	4	Medium mammal
			58	1	Pig
			11	1	Sheep/goat/Fallow
			2	1	Small bird/micromammal
			0	2	Small mammal
2600	2601	ditch	215	6	Cattle
			311	3	Equid
			538	36	Fallow deer
			26	2	Large mammal
			103	13	Medium mammal
			32	3	Sheep
			18	3	Sheep/Goat
			14	3	Sheep/Goat/Fallow

Table 30: animal bone catalogue

C.2 Shell

By Alexandra Scard

Introduction and Methodology

C.2.1 A total of 4.136kg of marine mollusca shell was recovered from twenty-seven contexts during the excavation. This shell was quantified and examined in order to assess the diversity and quantity of the ecofacts, as well as their potential to provide useful data as part of archaeological investigation.

Species	Common name	Habitat	Total weight (Kg)	Total number of contexts
Ostrea edulis	Oyster	Estuarine and shallow coastal water	4.109	27
Cerastoderma edule	Cockle	Intertidal, salt water,	0.016	3
Mytilus edulis	Mussel	Intertidal, salt water	0.011	2

Table 31. Overview of identified, quantified shell

C.2.2 The assemblage is the result of shell collected by hand on site, as well as specimens recovered during the processing of environmental samples.

C.2.3 Only shell umbones/apices were counted in order to obtain the minimum number of individuals (MNI) present for each species, noting that, with regards to most species, each individual originally had two umbones or one apex (bivalves vs gastropods). With this in mind, the MNI was arrived at by different means, depending on the species.

C.2.4 *Ostrea edulis* (oysters) have a defined left and right valve. The left is more concave in shape and displays radiating ribs on the outer surface. The right is generally more flat and lacks the formerly described ribs, though concentric growth rings are often visible (Winder 2011, 11). To obtain the MNI for oyster shell, the number of left and right valves with umbones were counted. The largest number was then taken as the MNI.

C.2.5 In the case of *Cerastoderma edule* (cockles) and *Mytilus edulis* (mussel), it is much more difficult to identify the left and right valves and so the MNI was calculated by taking the full amount of valves and then halving it.

C.2.6 All bivalve shells are unhinged. Umbones are noted in all three species, along with the number of left and right oyster valves. The left and right valves are not observed to be matching in any of the contexts.

C.2.7 In order to obtain the average size of shell per species, the length of each shell from its umbo to the ventral margin has been measured, the average measurement per context and species has then been recorded.

C.2.8 Size is significant with regards to shell, as it can be telling of the age of each species upon harvest.

C.2.9 Details of interest, for example man-made damage such as 'shucking': the process of prising open the oyster for consumption, or evidence of parasitic activity, such as polychaete worm infestation (PWI), have also been noted.

Results

C.2.10 Below. Tables of quantification for each of the three species recovered: oyster, mussel and cockle, can be seen.

Context	Cut number	Feature type	Phase	Weight (kg)	Left valve (kg and quantity)	Right valve (kg and quantity)	MNI	Average Size (cm)	Comments
2396	2395	Ditch	early post-medieval	0.188	0.168/7	0.020/3	7	5.5	PWI on one left valve: Cliona

									celate sponge.
2420	2421	Pit	early post-medieval	0.025	0.025/1	-	1	6.8	-
2424	2425	Pit	early post-medieval	0.011	-	0.011/1	1	5	-
2438	2432	Ditch	early post-medieval	0.012	-	0.012/1	1	6.6	-
2444	2468	Pit	early post-medieval	0.056	0.052/4	0.004/1	4	6.4	Visible shuck marks.
2452	-	Layer	early post-medieval	0.108	0.046/3	0.062/7	7	5.6	One left valve contains large hole: natural/taphonomic.
2465	2477	Cellar/building	early post-medieval	0.010	-	0.010/2	2	5.2	PWI present.
2466	2477	Cellar/building	early post-medieval	0.010	-	0.010/1	1	5.3	Shell from sample <437>.
2471	2469	latrine/building	early post-medieval	1.027	0.618/45	0.409/41	45	6.2	Total shell combined including from samples <438> and <439>. Left valves contain attached young and baby oysters ('spat'). Some black valves: iron sulphides. One left valve has 'cultch'/imprint of cockle shell on it. PWI (Polydora ciliata) and barnacles/barnacle scares present.
2483	-	Drain/masonry layer	early post-medieval	0.144	0.080/8	0.064/10	10	5.6	Polydora ciliata present (PWI) on left valve as well as perforation on right valve: 1cm x 0.2cm (see photo). A result of shucking with a knife?
2485	2486	Pit	early post-medieval	0.003	0.003/0	-	1	U/K	Frags, no umbones.
2487	-	Surface layer	early post-medieval	0.025	0.007/1	0.018/1	1	6	Polydora ciliata present.
2488	-	Surface layer	early post-medieval	0.048	0.019/1	0.029/4	4	6.6	Possible shuck mark and PWI present.

2492	2491	Ditch	early post-medieval	0.971	0.638/52	0.333/32	52	6.8	Total shell combined including from samples <451>. Young oysters as well as spat attached. Shuck marks and PWI present, as well as a profound mark on exterior of one valve: 4.9cm x 0.8cm at widest. Does not look natural but has no clear purpose: damage during excavation with trowel or mattock? See photo.
2497	2496	Ditch	early post-medieval	0.104	0.070/3	0.034/4	4	6.5	PWI and possible shuck mark present.
2499	2496	Ditch	early post-medieval	0.133	0.067/6	0.046/8	8	5.2	Clear shuck marks and some PWI.
2500	2496	Ditch	early post-medieval	0.008	-	0.008/1	1	5.1	-
2504	2506	Retting pit	high medieval	0.065	0.058/2	0.007/1	2	7.3	Blackish orange in colour: iron sulphides present. Clear shuck mark in left valve.
2511	2508	Retting pit	high medieval	0.045	0.016/3	0.029/2	3	6	Fossilised oyster present, not included in quantification. PWI evident.
2513	2506	Retting pit	high medieval	0.066	0.025/1	0.041/3	3	6.9	Spat on left valve. Polydora ciliate present.
2533	2538	Ditch	early post-medieval	0.007	0.007/1	-	1	4.8	Spat present.
2551	2506	Retting pit	high medieval	0.329	0.212/9	0.117/11	11	6.5	Shucking and PWI present, including 'worm-tubes'. Spat also present.
2552	2506	Retting pit	high medieval	0.199	0.118/7	0.081/9	9	6.7	Clear shuck marksand prominent PWI

									present. Spat attached to left valve.
2575	2574	Posthole	early post-medieval	0.009	0.009/1	-	1	5.6	-
2578	2576	Ditch	early post-medieval	0.191	0.092/6	0.099/11	11	6.2	Shuck marks visible as well as a little PWI.
2587	2588	Posthole	early post-medieval	0.125	0.025/3	0.100/9	9	5.5	Total shell combined including from sample <464>. Shuck mark and PWI visible.
2600	-	Surface finds	-	0.190	0.066/6	0.124/16	16	5.8	Spat attached to left valves. Some shuck marks present.

Table 32. Quantified oyster shell

Context	Cut number	Feature type	Phase	Weight (kg)	Total umbones	MNI	Average Size (cm)	Comments
2483	-	Drain/masonry layer	early post-medieval	0.004	1	1	3.1	-
2578	2576	Ditch	early post-medieval	0.002	0	1	U/K	Small fragment with no umbo.
2587	2588	Posthole	early post-medieval	0.010	2	1	2.8	Total shell combined including from sample <464>.

Table 33. Quantified cockle shell

Context	Cut number	Feature type	Phase	Weight (kg)	Total umbones	MNI	Average Size (cm)	Comments
2551	2506	Retting pit	high medieval	0.004	1	1	5.8	-
2552	2506	Retting pit	high medieval	0.007	3	2	4.8	-

Table 34. Quantified mussel shell

C.2.11 As shown in the tables of quantification, shell was recovered from a variety of features: ditches, pits, retting pits, building layers, and post holes. These features range from the high medieval to the 'early post-medieval' period (AD 1200 – 1650).

C.2.12 Oyster predominates the assemblage of Beaulieu, accounting for 99.3% of the shell assemblage. Cockle comprises 0.4% of the assemblage and mussel contributes to 0.3% of the total amount of shell recovered.

C.2.13 Regarding the size of the specimens, the oyster shells recovered are all around 5-7cm in size, the smallest shell being 4.8cm, the largest at 7.3cm big. The average size of cockle shell is 2.95cm and the average size of mussel shell is 5.3cm.

C.2.14 Preservation of the shell assemblage is generally good, with specimens remaining strong and fairly complete. There is consistent evidence throughout the oyster shell assemblage of PWI and shucking, as well as one valve containing damage, most probably caused during excavation.

Discussion

C.2.15 As previously established, oyster shell predominates Beaulieu's assemblage. Given the popularity of oyster during the Medieval period, this result is unsurprising. It is possible that the presence of cockle and mussel shell can be explained as being contaminants of oyster harvest as, whilst these shellfish were consumed during the period in question, perhaps not as often as oysters were.

C.2.16 The presence of shell in a variety of features suggests, most probably, unintentional inclusions within backfill. With regards to the consumption of shellfish, one would expect to find pits containing masses of shell, reflecting middens on site. Whilst some pits did contain shell, the quantity present is not enough to suggest deliberate discard within purpose built features. Ditch **2491** contained a substantial amount of the shell assemblage, yet this is, again, not reflective of intentional deposition but, more likely, suggestive that the material used to backfill this particular ditch happened to contain a fair amount of oyster shell, or, like-wise, that the waste was disposed of wherever was seen fit, given that it would have produced an unpleasant smell in large quantities. In comparison, the greatest amount of shell came from feature **2469**, a suspected latrine. This is more likely to be the result of deliberate discard, with a latrine being a good place to dispose of all waste and unpleasant material. It is possible that the lime content of the shell may even have masked the unpleasant odours.

C.2.17 With regards to the phasing of the features containing shell on site, as previously established, all were dated to the high medieval or early post-medieval period, AD 1200-1650. During this time, oyster consumption was particularly high, thus the assemblage is reflective of this.

C.2.18 Whilst preservation of the shell assemblage is good, evidence of taphonomic factors is present, primarily with a couple of valves being black/blackish-orange in colour, indicative of iron sulphides being present in the surrounding geology. Furthermore, one valve from within ditch **2491** contained a profound cut mark, 4.9cm long by 0.8cm at its widest point. The mark is on the external side of the left valve and, whilst evidently not natural, there is no obvious purpose for the cut. Upon further inspection, the edges of the cut are flaky, making the damage look somewhat recent. It therefore seems most probable that it was caused during excavation, perhaps with a trowel or mattock.

C.2.19 The average size of shell recovered from Beaulieu is indicative of consumption. Using oysters as an example, the oyster shells found are of fairly uniform size, suggesting that they were harvested at the same, rather particular time. As a rule, the larger the oysters, the longer they have been left before harvesting. Smaller oysters might suggest a greater need for food or perhaps a period of bad harvest. Generally speaking, the favoured size of oyster for consumption will be when they are of medium size, around 6cm: c.3-4 years old (Hagen 1995, 172). This is reflected in the shell assemblage, given that the average size of oyster shell is 5.8cm.

C.2.20 Evidence of shucking is present throughout the assemblage: Shucking is the process of prising off the right valve of the oyster to reveal the meat inside the left valve for

consumption. The process uses a knife, which is placed into the 'hinge' of the oyster or mussel, the implement is pushed in and twisted until the valves are prised apart. Such activity is known to leave a mark on oyster (and mussel) shell, primarily as a small 'u-shaped' cut along the ventral margin of the shell, as present on many of the specimens of this assemblage. Occasionally, shucking can leave a larger mark: a longer, more obvious hole, usually found on the right valve. This occurs when the knife protrudes through the oyster, piercing the valve.

C.2.21 No shuck marks were observed to be on any of the mussel shells, supporting the notion of these specimens being a contaminant of an oyster harvest.

C.2.22 During the shucking process of oysters, when the right valve is prised off it is sometimes discarded separately. A total of 170 left valves and 179 right valves occur in the assemblage. This fairly equal number of left and right valves may suggest that the oysters were being prepared and eaten together on site.

C.3 Environmental samples

By Rachel Fosberry

Introduction

C.3.1 Twenty-nine bulk samples were taken during excavations at the Site 10, Beaulieu, Essex from three phases of activity. Three prehistoric pits were sampled for dating evidence in addition to any plant remains that may be preserved. Two ditches and a possible retting-pit dating to 13th/14th century activity are possibly related to flax retting. Samples were taken from the main phase of activity (16th Century) that included a latrine and associated features within a building. A single sample was taken from a post-medieval pond.

C.3.2 The purpose of this assessment is to determine whether plant remains are present, their mode of preservation and whether they are of interpretable value with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal.

Methodology

C.3.3 For this initial assessment, one bucket (approximately 10 litres) of each of the samples was processed by tank flotation using modified Siraff-type equipment for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds. The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table 1. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Stace (1997). Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

C.3.4 For the purpose of this initial assessment, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories

= 1-5, ## = 6-10, ### = 11-50, #### = 51+ specimens ##### = 100+ specimens

Items that cannot be easily quantified such as charcoal, magnetic residues and fragmented bone have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Key to tables: m=mineralised, w=waterlogged

C.3.5 Preservation of by plant remains is by carbonisation, mineralisation and waterlogging. The results are discussed by phase:

Prehistoric

C.3.6 Three prehistoric pits were sampled (**2388**, **2402**, **2440**). All three pits contained moderate amounts of charcoal.

Sample No.	Context No.	Cut No.	Volume processed (L)	Flot Volume (ml)	Charcoal <2mm	Charcoal > 2mm	Marine molluscs	Pottery
431	2434	2388	8	20	+++	+++	0	##
432	2404	2402	8	65	+++	+++	0	#
435	2441	2440	8	50	++++	+++	#	0

Table 35: Samples from prehistoric pits

High Medieval

C.3.1 Samples were taken from three of the fills within pit **2506**. All three samples (Sample 453 and 458 from fill 2404 and Sample 459 from fill 2552) contain plant remains that have been preserved by waterlogging and include seeds, roots and stems, ostracods and insect fragments. Both the dried flots and the wet-sieved material were meticulously checked for evidence of flax retting. Comparative modern flax seeds, stems, leaves and capsules were used to assist in the identification of the numerous small fragments of waterlogged material. There were no flax seeds present in any of the samples but there are occasional fragments of what could possibly be flax stems and capsule-cases in Sample 458 from fill 2504. Nettle (*Urtica dioica*) seeds are present in all of the samples and the stem fragments could be this instead. Watercress (*Nasturtium officinale*) seeds are common. Seeds of bramble (*Rubus fructicosus* spp.), docks (*Rumex* spp.), fat hen (*Chenopodium album*), knotgrass (*Polygonum aviculare*) and cow parsely (*Anthriscus sylvestris*) suggest a disturbed, waste ground area around the pit. A small fragment (approx 1cm square) of what appears to be matted moss may represent a cleaning cloth.

C.3.2 The single sample from ditch **2399** (fill 2401, Sample 430) contains a charred cornflower (*Centaurea cyanus*) seed.

Sample No.	Context No.	Cut No.	Feature Type	Sample Size (L)	Comments	Volume processed (L)	Flot Volume (ml)	Charred weed seeds	W/L seeds	W/L insects	Ostracods	Charcoal <2mm
430	2401	2399	Ditch	20	Bottom fill of large ditch.	7	1	#	0	0	0	+
453	2504	2506	Retting pit	20	Lower fill, waterlogged.	8	40	0	++	+	0	0
458	2504	2506	Retting pit	60	Waterlogged fill containing leather and wood.	8	30	0	+++	+++	+++	0
459	2551	2506	Retting pit	20	Middle fill of watering hole.	8	50	0	++++	+++	0	0

Table 36: Samples from high medieval features

Early post-medieval

C.3.1 Twenty-one samples were taken from 16th Century features. Structure 2437 was situated within enclosure ditch **2432**.

post-medieval

C.3.2 Layers 2465 (Sample 436), 2466 (Sample 437) and 2476 (Sample 443) were taken from layers within cellar **2374** and were not not productive in terms of preserved plant remains.

C.3.3 Two samples were taken from layers within alcove **2448**, to the west of fireplace **2446** Layer 2474 (Sample 441) was unproductive but layer 2475 (Sample 442) contains occasional berries that have not been identified. They are untransformed and the mode of preservation is not clear (possibly a modern rodent cache)

C.3.4 Eight samples were taken from lower fill 2471 of latrine **2470**. Two bulk samples (438 and 439) contain plant and insect remains that have been preserved by mineralisation that include straw, cherry/sloe (*Prunus cerasus/avium/spinosa*) inner kernals, bramble seeds and grape (*Vitis vinifera*) pips along with several fly pupae. Three coprolites were also recovered from Sample 438. They do not appear to contain large fragments of bone and are possibly human in origin. Six sequential samples (444 to 449) taken at 10cm intervals from 0.08m to 0.58m all contain similar assemblages that are comprised of mineralised straw and insects with a large charcoal component. Seeds of grape and fig (*Ficaria verna*) and cherry/sloe kernals are present along with occasional mineralised seeds of weeds such as corn gromwell (*Lithospermum arvense*). Occasional charred grains of oats were also noted.

C.3.5 Remains of mineralised straw were also found in the eastern slot **2491** (fill 2444, Sample 451) of enclosure ditch **2432** along with waterlogged seeds of nettle, pondweed (*Potamogeton* sp,) and water-dropwort (*Oeanthe crocata*). Egg cases of water-flea (*Daphnia* sp.) suggest that this ditch was deep enough to contain water and the deposit has remained waterlogged. Two samples were taken from the fills within slot **2432** in the northern section of the enclosure ditch; Sample 433, fill 2433 and Sample 434, fill 2438 both contain waterlogged assemblages containing numerous seeds of plants that would

have been growing on the banks of the ditch such as nettles, docks, buttercups (*Ranunculus* sp.), henbane (*Hyoscyamus niger*), meadow-rue (*Thalictrum flavum*) and bittersweet (*Solanum nigrum*). Plants that would have been growing in the water-filled ditch include pondweed, sedges (*Carex* spp.) and duckweed (*Lemna* sp.).

Sample No.	Context No.	Cut No.	Feature Type	Volume processed	Flot Volume	Cereals	Chaff	Legumes	Weed Seeds	Small Bones	Charcoal <2mm	Charcoal > 2mm	Flot comments
433	2433	2432	Ditch	8	35	0	0	0	###w	0	0	0	Diverse seed assemblage
434	2438	2432	Ditch	7	20	0	0	0	###w	0	0	0	Diverse seed assemblage
436	2465	2374	cellar	7	5	0	0	0	0	0	+	0	Sparse charcoal only
437	2466	2374	Building	8	20	#	0	0	0	0	+++	+	Single wheat grain
443	2476	2374	Building	9	1	0	0	0	0	0	0	0	No preservation
438	2471	2470	Building	9	80	0	#m	0	0	0	+++	++	Mineralised stems, cessy, seeds and insects
439	2471	2470	Building	10	120	0	###m	0	0	0	++	++	Mineralised stems, cessy, seeds and insects
444	2471	2470	Building	8	80	#	##m	0	0	##	+++	++	Cessy – mineralised stems
445	2471	2470	Building	8	180	0	###m	0	#m	##	++	+	Cessy – mineralised stems
446	2471	2470	Building	8	160	#	###m	0	#m	##	+++	+++	Cessy – mineralised stems
447	2471	2470	Building	8	190	0	###m	0	#m	##	++++	++++	Cessy – mineralised stems, good insects
448	2471	2470	Building	9	180	0	###w	0	#u	##	+++	+++	Cessy – mineralised stems
449	2471	2470	Building	10	190	0	##m	0	#m	##	++	++	Cessy – mineralised stems
450	2483	2479	Drain	9	25	0	0	0	0	0	++	0	Sparse charcoal only
451	2492	2491	Ditch	8	30	0	#m	0	##w	0	+++	++	Cessy –

													mineralised stems
456	2444	2468	Pit	9	25	0	0	0	0	0	0	0	Charcoal rich
457	2485	2486	Pit	8	15	0	0	0	0	0	0	0	Sparse charcoal only
464	2587		Post hole	8	30	0	0	0	0	0	+++	++	Charcoal only
466	2461	2442	Ditch	8	5	0	0	0	0	0	+	+	Sparse charcoal only
441	2474		Oven	1	5	0	0	0	0	0	+	+	Sparse charcoal only
442	2475		Oven	2	1	0	0	0	#w	0	0	0	Indet berries

Table 37: Environmental samples from 16th Century deposits

Post-Medieval

C.3.6 A single sample (455) was taken from fill 2539 of pond **2548**. It contains a moderate assemblage of waterlogged plant remains that include aquatic plants such as water-dropwort, pondweed, sedges and seeds of plants that would have been growing nearby such as nettles, meadow-rue, prickly sow-thistle (*Sonchus asper*) and docks.

Discussion

C.3.7 The environmental samples from Site 10 have produced assemblages of plant remains that have been preserved by a range of different methods, each of which favours different types of plants. Mineralisation occurs when the organic component of a seed or fruit is replaced my minerals such as calcium phosphate. This process will also only occur under certain conditions, most commonly when mixed with wet waste that is rich in calcium and phosphates (Green 1982, 41) and only certain types of plant remains commonly become mineralised. Carbonisation only occurs under certain conditions when plant material is incompletely burnt and reduced to pure carbon and waterlogging is the survival of organic remains in an anoxic environment in which oxygen is excluded. Each of these methods of preservation therefore have the potential to provide information on different types of organic remains.

C.3.8 Mineralised remains such as fruit stones/pips and straw when mixed with insect remains and fish bones are clear indicators of faecal material commonly referred to as cess. Assemblages with these components are usually considered to represent human faecal waste, particularly if the fish bones show evidence of mastication. The mineralised plant remains present in latrine **2470** are predominantly the inner kernals of cherry/sloe stones, grapes and figs, all of which are typical components of a medieval diet. Most of these items are likely to have passed through the digestive system and been excreted into the pit. Straw components had probably originated as floor material that had been re-used to cover the latrine waste to suppress noisome odours and encourage composting (after Grieg 1981), similarly charcoal was used for this purpose and hearth/oven fuel was probably utilised.

C.3.9 Waterlogged plant remains have been recovered from two phases of activity at this site. The proposed flax-retting pit **2504** contains preserved organic material in the form of roots, stems and seeds but none of these have been positively identified as flax. A bulk sample was not taken from the basal fill of this feature (although a monolith was taken) and it is probable that any evidence of flax retting could have sunk to the bottom of the pit. The pit cuts the terminus of ditch **2554** which was not sampled but could

have been used as a conduit bringing water to the pit. Ditch **2408** was not connected to pit **2504** but it is possible that this is due to truncation. It is possible that the pit was located in the corner of these two ditches which could have provided a flow of water.

C.3.10 Waterlogged plant remains have also been recovered from enclosure ditch **2432**. These plant species indicate that the ditch was water-filled and represent the flora growing on the bank side and in the local area. There is only slight variation in the assemblage of plants from the post-medieval pond **2548**.

C.3.11 Carbonised remains are mainly in the form of wood charcoal as evidence of burning. No coal fragments were noted. Charred cereal grains are notable in their scarcity as they are normally present in abundance on Medieval sites. This suggests that cereals were not being cooked as whole grains; flour was probably brought in.

C.4 Pollen

By Mairead Rutherford

Introduction

C.4.1 Two sub-samples were rapidly assessed for pollen from three features at Beaulieu, Essex. The data and results of the assessment are presented in the table below:

7	Medieval pit	10	<463> (2504)	0.03-0.04	Cereal-type, Poaceae, *Rumex, P. lanceolata, Brassica*-type, Apiaceae, Asteraceae, Rubiaceae, Chenopodiaceae, Fabaceae, *Alnus* Charcoal present Fungal spores	Mixed	**YES**
8	Medieval pit	10	<463> (2552)	0.23-0.24	Cereal-type, Poaceae, *Rumex, P. lanceolata, Brassica*-type, Apiaceae, Asteraceae, Chenopodiaceae, *Fraxinus, Ulmus* Charcoal present Fungal spores	Mixed	**YES**

Table 38: Pollen sample results

C.4.2 Rapid assessment demonstrated a rich pollen assemblage, dominated by cereal-type pollen and grasses (Poaceae). Herbs associated with disturbance and waste ground are commonly recorded, including taxa such as ribwort plantain (Plantago lanceolata), docks/sorrels (Rumex), pollen of the carrot family (Apiaceae), a broad group including plants such as pignuts, burnet-saxifrages and fool's parsley, daisy-family (Asteraceae, another large group comprising for example, sow-thistles, burdocks and oxeye daisies) and goosefoot family (Chenopodiaceae), a further large group comprising taxa such as fat-hen, many-seeded goosefoot and fig-leaved goosefoot) and cabbage family

(Brassicaceae, also a large group including plants such as garlic mustard, winter-cresses and shepherd's-purses). Fungal spores including cellulose decomposing types and spores that host on animal dung are recorded. Pollen preservation was found to be mixed, with some grains obscured or deteriorated, although most pollen was reasonably well preserved.

Appendix D. Site 10 West Finds and Environmental Reports

D.1 Glass

by Carole Fletcher

D.1.1 Archaeological works produced 20 shards of vessel glass, representing a minimum number of five vessels (MNV). The most significant find was recovered from demolition layer 6245, which produced 16 shards of a single 17th century English shaft and globe bottle that may have contained wine or spirit. The remainder of the glass recovered are single shards, most likely the result of casual loss or manuring. The layer from which the glass was recovered also produced a 17th century clay tobacco pipe (*c.*1660-1680), which may indicate that the bottle is a later 17th century shaft and globe bottle. This association means it is possible that these items were not only broken and discarded at the same time but were broken and discarded by the same person or group of persons.

Context	Count	Weight (kg)	MNV	Form	Description	Date
6226	1	0.025	1	Utility vessel-wine bottle	Curved body shard of natural black- dark green glass, the surface patinated and pitted with some degree of surface loss. Although not closely datable, the condition of the glass suggests 17th or early 18th century. 6mm-9.7mm thick.	Not closely datable but likely 17th or early 18th century.
6230	1	0.007	1	Utility vessel-bottle	Irregular shard of curved, dark olive-green glass with dull surfaces. 4.5mm-6.7mm thick.	Not closely datable but likely 18th century or later.
6245	16	0.312	1	Utility vessel-wine or spirit bottle (English shaft and globe)	Fragmented English shaft and globe-type bottle, exact date is uncertain due to fragmentation both pre- and post -burial. There is a large shard from the relatively small rounded base, however, it is unclear if this is a *c.*1640-60 or later *c.*1680-95 bottle (Van den Bossche 2001). Recent breaks show it to be green glass (natural black glass) The glass is heavily patinated with dull and iridescent areas and where this has flaked off there is some loss of the original surface, 1mm or more in depth. A near complete lip, everted or flared, (7mm thick) with a slightly oval bore (20-22mm) and partial string rim of ?rounded trail type survive; the loss of surface make the identification tentative. Part of a long flared neck, body sherds, one recorded as SF1207, and a large fragment of basal angle and part of kick (recorded as SF1206) were recovered. The base is extremely thick at 15mm, the wall at the base is 13mm, the base and wall are very rounded and the kick is shallow and appears small, although little survives.	.1640-1660 or *c.*1680-1695
	1	0.012	1	Utility vessel-bottle	Triangular, curved, heavily patinated shard of glass. If held to the light the glass is pale olive green and does not appear to be part of the shaft and globe-type bottle also recovered from this context. 4.7mm-4mm thick.	Not closely datable but may be 17th century
6249	1	0.007	1	Utility vessel-bottle	Irregular body or possibly a neck shard of a natural black glass bottle. Heavily patinated, iridescent glass, similar level of abrasion and patination as found on the glass in context 6245, suggesting they are of a similar age.	Not closely datable but may be 17th century
	20	**0.363**				

Table 39: Glass

D.2 Medieval pottery

by Helen Walker

D.2.1 A total of 26 sherds weighing 0.358kg was excavated. The bulk of the assemblage is high medieval. The medieval assemblage comprises mainly undiagnostic coarsewares and a single sherd of Mill Green ware. There is some post-medieval pottery present dating to the 16th to 17th century.

D.2.2 The Medieval Pottery Research Group (MPRG) A *guide to the classification of medieval ceramic forms* (MPRG 1998) and *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics* (MPRG 2001) act as a standard. The pottery recording follows Cunningham's typology of post-Roman pottery in Essex (Cunningham 1985, 1-16; expanded by Cotter 2000 and Drury *et al.* 1993). Some of Cunningham's rim form codes are quoted in this report. All percentages quoted are by weight.

D.2.3 The assemblage is recorded in the summary catalogue. The pottery and archive are curated by Oxford Archaeology East until formal deposition.

High Middle Ages c.1200 to 14th century

D.2.4 The site produced a total of 19 sherds weighing 206g, all from surface finds (6221-6225, 6228), the pottery consisting primarily medieval coarseware and Hedingham coarseware spanning the mid-12th to 14th centuries. None is diagnostic but fragments from a semi-wheelthrown medieval coarseware vessel are likely to be of 13th century date. Context 6222, however, produced a fragment of Mill Green ware, almost certainly from a jug, in a slightly sandy version of this ware decorated with slip-panting under a partial greenish splash glaze, which is datable to the mid/late 13th to 14th centuries.

Post-medieval

D.2.5 Site 10 produced six sherds of post-medieval pottery, weighing 152g. Examples of post-medieval red earthenware are again present, diagnostic sherds comprising the foot from a tripod base belonging to a pipkin or cauldron (6238) dating from the late 16th to 17th centuries and a hollowed everted rim from a jar form of some kind showing an all over glaze, which again dates to the late 16th to 17th century. Surface find 6227 and layer 6245 both produced sherds from a Frechen stoneware jug or jugs showing a mottled 'tiger ware' salt glaze characteristic of the late 16th to 17th centuries. There is no evidence for occupation after the 17th century.

Context	*Fabric*	*Form*	*Sherd Count*	*Sherd Weight*	*Context Date range*
6220	Post-medieval red earthenware		2	18	later 16th to 19th C
6221	Hedingham coarseware		2	27	mid-12th to early 14th C
6222	Mill Green ware		2	9	mid-13th to 14th C
6223	Hedingham coarseware		1	8	13th C
	Medieval coarseware		10	109	
6224	Hedingham coarseware		3	34	mid-12th to 14th C
6225	Hedingham coarseware		1	10	mid-12th to 14th C
6227	Frechen stoneware		1	6	later 16th to 17th C

Context	*Fabric*	*Form*	*Sherd Count*	*Sherd Weight*	*Context Date range*
6228	Medieval coarseware		1	9	later 12th to early 14th C
6238	Post-medieval red earthenware	jar with tripod base	1	75	late 16th to 17th c
6245	Frechen stoneware	jug	1	40	late 16th to 17th c
6251	Post-medieval red earthenware	jar	1	13	late 16th to 17th c

Table 40: Medieval pottery catalogue from Site 10 West

D.3 Clay Tobacco Pipe

by Carole Fletcher

D.3.1 Six examples of white ball clay tobacco pipe stem and a single pipe bowl (weighing 0.025kg) were recovered from six contexts. The pipe bowl, from demolition layer 6245, is an incomplete Oswald type 6 (Oswald 1975, 37–41) with a date range of *c.*1660-80, which fits neatly with the 17th century English shaft and globe bottle recovered from the same context. The majority of the clay tobacco pipe stems recovered have undergone reworking and represent what is most likely casual loss, rather than deliberate deposition. The pipe indicates the consumption of tobacco on or in the vicinity of the site after the mid 17th century, dating them by the presence of the Oswald type 6 pipe bowl. The plain and fragmentary nature of the assemblage means it is of little significance.

D.3.2 Terminology used is taken from Oswald's simplified general typology (Oswald 1975, 37–41) and Crummy and Hind (Crummy 1988, 47-66). A quantification table for the clay pipes can be found at the end of this report, based on the recording methods recommended by the Society for Clay Pipe Research (http://scpr.co/PDFs/Resources/White%20BAR%20Appendix%204.pdf). Stem bore diameter recording has not been undertaken on this assemblage due to its limited size. The following catalogue acts as a full record and the clay tobacco pipe may be deselected prior to archive deposition unless the context is significant. No further work is required.

Context	Form	Weight (kg)	No. of stem fragments	No. of complete bowls	Description	Date
6232	Fragment of pipe stem	0.004	1		Length of stem 44mm, slightly tapering, slightly oval stem, trimmed and well finished mould seams.	Not closely datable
6233	Fragment of pipe stem	0.010	1		Length of stem 68mm, tapering, stem, 10.8mm-9.3mm diameter, one trimmed mould seam, the other still visible.	Not closely datable
6234	Fragment of pipe stem	0.005	1		Length of stem 38mm, tapering, slightly oval stem, knife trimmed area around one mould seam, second seam slight but still visible.	Not closely datable
6235	Fragment of pipe stem	0.004	1		Length of stem 49mm, tapering, stem, 8mm-7.6mm diameter, one trimmed mould seam, the other still visible.	Not closely datable
6237	Fragment of pipe stem	0.006	1		Length of stem 50mm, tapering, stem, 10.8-9.3mm diameter, both mould seams trimmed.	Not closely datable
6245	Fragment of pipe stem	0.004	1		Length of stem 43mm, tapering, stem, 8.7mm- 8.1mm, one trimmed	Not closely datable

Context	Form	Weight (kg)	No. of stem fragments	No. of complete bowls	Description	Date
					mould seam, the other still visible.	
	Oswald type 6	0.021		1	Length of stem to edge of a flat, sub-rounded heel 46mm, slightly oval maximum diameter (away from pipe bowl) 11mm. Well formed bowl broken on right side and at back of bowl, missing lip in these areas. Neatly rouletted below rim. Mould seam on back of bowl and stem is trimmed but still visible on stem. The front seam is neatly trimmed on bowl but poorly trimmed on heel, resulting in an angled heel and untrimmed on stem. A similar pipe is illustrated in Crummy and Hind (Crummy and Hind p49-50 fig 55, 2272).	*c.*1660-80
Total		**0.054**	**6**	**1**		

Table 41: Clay Tobacco Pipe

D.4 Faunal Remains

By Zoe Ui Choileain

Introduction

D.4.1 Twenty-six fragments of bone weighing 2229g were found at Site 10 West, Beaulieu.

Methodology

D.4.2 All identifiable elements were recorded using a version of the criteria described in Davis (1987). Identification of the assemblage was undertaken with the aid of Schmid (1972) plus use of the OAE reference collection. Preservation condition was evaluated using the 0-5 scale devised by McKinley (Brickley and McKinley 2004, 14-15). Age was determined as adult or juvenile based on epyphiseal fusion. Results are displayed in the table (42) below.

Results

Context	Element	No of frags	Taxon	Erosion	Butch-ery	Age	Weight (g)
6227	Pelvis	1	Equid	2 (more extensive & deeper)	-	Adult	134
6227	Metacarpus	1	Sheep/Goat	2 (more extensive & deeper)	-	Adult	20
6228	Scapula	1	Cattle	2 (more extensive & deeper)	-	No	104
6229	Femur	1	equid	2 (more extensive & deeper)	-	Juvenile	79
6229	PH1	1	equid	1 (slight patchy erosion)	-	No	48
6229	Radius	1	equid	1 (slight patchy erosion)	-	Juvenile	104
6229	Tibia	1	equid	1 (slight patchy erosion)	-	Adult	278
6229	Long bone	1	Large mammal	1 (slight patchy erosion)	-	No	68
6231	Long bone	3	Medium mammal	1 (slight patchy erosion)	-	No	2
6236	Long bone	1	Large mammal	2 (more extensive & deeper)	Yes	No	8
6240	Vertebra	1	Large mammal	2 (more extensive & deeper)	-	No	38
6245	Horncore	1	Cattle	2 (more extensive & deeper)	-	No	25
6245	Humerus	1	Cattle	2 (more extensive & deeper)	-	Adult	172
6245	Metapodial	1	Cattle	3 (most surface)	-	No	16

Context	Element	No of frags	Taxon	Erosion	Butch-ery	Age	Weight (g)
6245	Radius	1	Cattle	2 (more extensive & deeper)	Yes	Adult	174
6245	Tibia	1	Cattle		-	No	81
6245	Femur	1	equid	2 (more extensive & deeper)	Yes	Adult	252
6245	Loose mand cheek tooth	2	equid	2 (more extensive & deeper)	-	Adult	124
6245	Tibia	1	equid	2 (more extensive & deeper)	-	Adult	169
6245	Tibia	1	equid	2 (more extensive & deeper)	-	Juvenile	221
6245	Humerus	1	Large mammal	1 (slight patchy erosion)	-	No	55
6245	Rib	1	Large mammal	2 (more extensive & deeper)	-	No	2
6245	Tibia	1	Large mammal	3 (most surface)	-	No	51
6245	Long bone	1	Medium mammal	2 (more extensive & deeper)	-	No	19
6245	Metapodial	1	Roe deer	1 (slight patchy erosion)	-	No	15
6245	Horncore	1	Sheep/Goat	2 (more extensive & deeper)	-	No	31
6245	Humerus	1	Sheep/Goat	2 (more extensive & deeper)	-	Adult	18
6245	Metacarpus	1	Sheep/Goat	1 (slight patchy erosion)	-	Adult	11
6245	Metacarpus	2	Sheep/Goat	1 (slight patchy erosion)	-	Adult	36
6245	Tibia	1	Sheep/Goat	1 (slight patchy erosion)	Yes	No	28
6251	Radius	1	Cattle	2 (more extensive & deeper)	-	Adult	6251

Table 42: Faunal Remains from Site 10 West *Erosion grades are a simplified version of Brickley & McKinley 2004, 14-15

D.4.3 The faunal remains primarily consists of cattle, equid (horse) and sheep/goat. A single roe deer metapodial was recorded. Both adult and juvenile specimens are present within the cattle and sheep/goat remains. Four examples of butchery are present (see Table 42) in the form of V-shaped cut marks of the type usually created by a knife.

D.5 Shell

By Zoe Ui Choileain

Introduction

Context	Taxon	No of fragments	Weight (g)
6245	Oyster	6	78

Table 43: Shell from Site 10 West

Appendix E. Bibliography

ACBMG,	2007	Ceramic building material, minimum standards for recovery, curation, analysis and publication
Barone, R.,	1976	*Anatomie comparée des mammifères domestiques* (Paris: Vigot Freres)
Boessneck,J.,Müller, H., & Teichert, M.,	1964	'Osteologische unterscheidungmerkmale zwischen schaf (Ovis aries Linné) und zeige (Capra hircus Linné)', *Kühn-Archiv* 78 (1-2), 1-129
Brickley, M., & McKinley, J., (eds.),	2004	Guidelines to the standard for recording human remains. IFA Paper 7 (Reading: IFA/BABAO)
Bull, G., & Payne, S.,	1982	'Tooth eruption and epiphysial fusion in pigs and wild boar', in Wilson, B., Grigson, C., & Payne, S., (eds.), *Ageing and sexing animal bones from archaeological sites*, 55-71 (Oxford: British Archaeological Reports)
Burgess, & Rance (eds),	1988	*Boreham – History, Tales and Memories of an Essex Village.* (Boreham Histories Project Group)
Cappers, R.T.J, Bekker R.M, and Jans, J.E.A.,	2006	Digital Seed Atlas of the Netherlands Groningen Archaeological Studies 4, Barkhuis Publishing, Eelde, The Netherlands. www.seedatlas.nl
Carden R., F., & Hayden T., J.,	2006	'Epiphyseal fusion in the postcranial skeleton as an indicator of age at death of European fallow deer (*Dama dama*, Linnaeus, 1758)', in Ruscillo, D., (ed.), *Recent advances in ageing and sexing animal bones*, 227-236 (Oxford: Oxbow)
Cotter, J.,	2000	*Post-Roman pottery from excavations in Colchester, 1971-85.* Colchester Archaeological Trust
Courtney, P.,	2004	Small Finds, in K Rodwell and R Bell *Acton Court. The evolution of an early Tudor courtier's house*, London, 365-96,
Cox, A.,	1996	Post-medieval dress accessories from recent urban excavations in Scotland, *Tayside and Fife Archaeol Journ*, **2**, 52-59
Cropper, C., Higgins, D., and Scott, I.,	2001	in M Biddle, J Hiller, I Scott, and A Streeten, *Henry VIII's Coastal Artillery Fort at Camber Castle, Rye, East Sussex. An archaeological, structural and historical investigation*, Oxford, 257-300
Crummy, P.,	1997	*City of Victory: the story of Colchester - Britain's first Roman town* (Colchester: Colchester Archaeological Trust)
Cunningham, C. M.,	1985 a	'A typology for post-Roman pottery in Essex', in Cunningham, C. M. and Drury, P. J., *Post-medieval sites and their pottery: Moulsham Street, Chelmsford*, Chelmsford Archaeol. Trust Rep. 5, Counc. Brit. Archaeol. Res. Rep. 54, 1-16
Cunningham, C. M.,	1985 b	'The pottery', in Cunningham, C. M. and Drury, P. J., *Post-medieval sites and their pottery: Moulsham Street, Chelmsford*, Chelmsford Archaeol. Trust Rep.5, Counc. Brit. Archaeol. Res. Rep.54, 63-78
Cunningham, C. M.,	1985 c	'The Stock pottery', in Cunningham, C. M. and Drury, P. J., *Post-medieval sites and their pottery: Moulsham Street, Chelmsford*, Chelmsford Archaeol. Trust Rep.5, Counc. Brit. Archaeol. Res.

Rep.54, 83-8

Drury, P.J., 1978 *Excavations at Little Waltham, 1970-71*, CBA Res. Rep. 26, London

Drury, P. J., 1980 'The early and middle phases of the Iron Age in Essex', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500,* CBA Research Report 34

Drury, P. J., Cunningham, C. M., Kilmurry, K. and Walker, J. S. F., 1993 'The later Saxon, medieval and post-medieval pottery', in Rodwell, W. J. and Rodwell, K. A., *Rivenhall: Investigations of a villa*, *church and village, 1950 - 1977*, Chelmsford Archaeol. Trust Rep. 4.2. Counc Brit. Archaeol. Rep. 80, 78 – 95

Drury, P. J. & Rodwell, W., 1986 'Settlement in the Later Iron Age and Roman periods', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500*. CBA Research Report 34

English Heritage, 1995 Guidelines for the care of waterlogged archaeological leather. Scientific and Technical Publications Guideline 4.

English Heritage, 2006 Management of Research Projects, The MoRPHE Managers' Guide

English Heritage, 2008 Management of Research Projects, PPN3: Archaeological Excavation

English Heritage, 2012 Waterlogged Organic Artefacts Guidelines on the Recovery, Analysis and Conservation.

Gearey, B.R., Hall, A.R., Bunting, M.J., Lillie, M.C. Kenward, K. & Carrott, J., 2005 Recent palaeoenvironmental evidence for the processing of hemp (cannabix stiva l.) in eastern England furing the medieval period. Mediaeval archaeology pp 317-322

Grant, A. 1982 'The use of tooth wear as a guide to the age of domestic ungulates', in Wilson, B., Grigson, C., & Payne, S., (eds.), *Ageing and sexing animal bones from archaeological sites*, 91-108 (Oxford: British Archaeological Reports)

Greig, J. R. A., 1991 *The British Isles*, pp. 299-334 in Van Zeist, W., Wasylikowa, K. and Behre, K.-E. (eds), *Progress in Old World palaeoethnobotany*. Rotterdam/Brookfield: Balkema.

Green, F.J., 1982 'Problems of Interpreting Differentially Preserved Plant Remains from Excavations of Medieval Urban Sites', *Environmental Archaeology in the Urban Context*, edited by A.R. Hall and H.K. Kenward (London, 1982), p. 40-4

Grew, F. and de Neergaard, M. 1998 Shoes and Pattens, Medieval finds from excavations in London: 2 London HMSO

Grigson, C., 1982 'Sex and age determination of some bones and teeth of domestic cattle: a review of the literature', in Wilson, B., Grigson, C., & Payne, S., (eds.), *Ageing and sexing animal bones from archaeological sites*, 7-23 (Oxford: British Archaeological Reports)

Hagen, A., 1995 *A second handbook of Anglo-Saxon food & drink, production and distribution* (Norfolk: Anglo-Saxon Books).

Halstead, P., 1985 'A study of mandibular teeth from Romano-British contexts at Maxey', in Pryor, F., French, C., Crowther, D., Gurney, D., Simpson, G., & Taylor, M., (eds.), The Fenland Project: archaeology and

environment in the Lower Welland Valley, volume 1. *East Anglian Archaeology Report* 27, 219-224

Halstead, P., Collins, P., & Isaakidou, V., 2002 'Sorting the sheep from the goats: morphological distinctions between the mandibles and mandibular teeth of adult Ovis and Capra', *Journal of Archaeological Science* 29, 545-553

Hedges, J., 1984 'The Neolithic in Essex', in Buckley, B. G., (eds), *The Archaeology of Essex to AD 1500*. CBA Research Report 34

House, J., 2010 *Prehistoric and Roman Remains at Beaulieu Park, Chelmsford.* Oxford Arch. East Report No, 1309 (unpublished)

Hunter, J., 2003 *Field systems in Essex.* (Essex Society for Archaeology and History, Colchester)

Hurst, J. G., Neal, D. S. and Beuningen, H. J.. 1986 *Pottery Produced and Traded in North-West Europe 1350 – 1650* (Rotterdam Papers VI)

Jacomet, S. 2006 Identification of cereal remains from archaeological sites. (2nd edition, 2006) IPNA, Universität Basel / Published by the IPAS, Basel University.

Jessop, O., 1996 A new artefact typology for the study of medieval arrowheads, *Medieval Archaeol*, **20**, 192-205

Johnstone, C., 2004 'A biometric study of equids in the Roman World'. unpublished Ph.D. thesis, University of York. Available: http://www.york.ac.uk/depts/arch/pgstudents/Johnstone.html. Accessed: 12 April 2016

Kemble, J., 2001 *Prehistoric and Roman Essex* (Shroud: Tempus)

Knight, B., 1985 Cames, in JN Hare, Battle *Abbey. The Eastern Range and the Excavations of 1978-80*, HBMC England Archaeol Rep, **2**, 154-5

Levine, M., 1982 'The use of crown height measurements and eruption-wear sequences to age horse teeth', in Wilson, C., Grigson & Payne S., (eds.), *Ageing and sexing animal bones from archaeological sites*, 223-250 (Oxford: BAR British Series)

Lister, A., M., 1996 'The morphological distinction between bones and teeth of fallow deer (*Dama dama*) and red deer (*Cervus elaphus*)' *International Journal of Osteoarchaeology* 6, 119-143.

MacGregor, A,, 1985 Bone, Antler, Ivory, and Horn. The Technology of Skeletal Materials Since the Roman Period, London

Margeson, S,, 1993 *Norwich Households. Medieval and Post-Medieval Finds from Norwich Survey Excavations, 1971-1978*, East Anglian Archaeol, 58, Norwich

Moore, S,, 1995 *Table Knives and Forks*, Prices Risborough

Mortimer, R., 2014 *Method Statement for Excavation.* Oxford Arch. East Tender Ref No, 13149 (unpublished)

Mould, Q. Carlisle, I. and Cameron, E. 2003 Craft, Industry and Everyday Life: Leather and Leatherworking in Anglo-Scandinavian and Medieval York. The Archaeology of York: The Small Finds 17/16. York: CBA

MPRG,	1998	*A Guide to the Classification of Medieval Ceramic Forms.* Medieval Pottery Research Group Occasional Paper I
MPRG,	2001	*Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics.* Medieval Pottery Research Group Occasional Paper 2
Oakley, G.E.,	1975	Lace tags, in JH Williams, *St Peter's Street, Northampton. Excavations 1973-1976*, 262-3
Pales, L., & Garcia, M.,	1981	*Atlas ostéologique pour servir à l'identification des mammifères du Quaternaire, II. Les membres Herbivores* (Paris: CNRS)
Payne, S.,	1973	'Kill-off Patterns in Sheep and Goats: the Mandibles from Aşvan Kale', *Anatolian Studies* 23, 281-303.
Payne, S.,	1985	'Morphological distinctions between the mandibular teeth of young sheep, Ovis, and goats, Capra', *Journal of Archaeological Science* 12, 139-147
Payne, S.,	1987	'Reference codes for wear states in the mandibular cheek teeth of sheep and goats', *Journal of Archaeological Science* 14, 609-614
Pearce, J. E.,	1992	*Post-Medieval Pottery in London, 1500 - 1700 Volume 1 Border Wares*, (London, HMSO)
Pearce, J. E. and Vince, A. G.,	1998	*A Dated Type-Series of London Medieval Pottery Part 4: Surrey Whitewares* Trans London Middlesex Archaeol. Soc. special paper no.10
Pocock, M.,	2008	Archaeological Evaluation at Greater Beaulieu Park, Chelmsford, Essex. Essex County Council Archaeological Field Unit Report No 1905 (unpublished)
Reaney, P.H.,	1933	*Place names of Essex.* (Cambridge)
Schmid, E.,	1972	*Atlas of animal bones* (Amsterdam and New York: Elsevier)
Silver, I. A.,	1969	'The ageing of domestic animals', in Brothwell, D. R., & Higgs, E. S., (eds.), *Science in Archaeology: a comprehensive survey of progress and research*, 283−302 (London: Thames & Hudson)
Stace, C.,	1997	*New Flora of the British Isles*. Second edition. Cambridge University Press
Stocks-Morgan, H.,	2013	*Iron Age and Medieval Remains on land at Phase 1, Beaulieu, Chelmsford.* Oxford Arch. East Report No, 1473 (unpublished)
Stocks-Morgan, H.,	2013 a	*Iron Age Remains at Site 5 and Area A1, Phase 1, Beaulieu, Chelmsford.* Oxford Arch. East Report No, 1541 (unpublished)
Stocks-Morgan, H.,	2013 b	*Medieval Remains at Beaulieu (zone D) Chelmsford.* Oxford Arch. East Report No, 1544 (unpublished)
Stocks-Morgan, H.,	2014	Early Iron Age and Medieval Remains at Zone A Housing, Beaulieu, Chelmsford. Oxford Arch. East Report No, 1591 (unpublished)
Tuckwell, T.,	2006	*New Hall and its School* (Kings Lynn)
Tyler, S. & Major, H.,	2005	The Early Anglo-Saxon Cemetery and Later Saxon Settlement at Springfield Lyons, Essex. Essex. East Anglian Archaeology Report No. 111

URS,	2013	*Beaulieu Park, Chelmsford, Essex: Archaeological Investigation and Mitigation Strategy.* (Unpublished Archaeological Design)
Volken, M.,	2014	Archaeological Footwear. Development of shoe patterns and styles from Prehistory till the 1600's. Zwolle: Stichting Promotie Archeologie Uitgevers
Von den Driesch, A.	1976	*A Guide to the measurement of animal bones from archaeological sites* (Harvard: Peabody Museum)
Walker, H.,	2012	*Hedingham Ware: a medieval pottery industry in north Essex; its production and distribution*, E. Anglian Archaeol. 148
Weinstein, R.,	2005	Pewter vessels, in M Biddle, *Nonsuch Palace. The Material Culture of a Noble Restoration Household*, Oxford, 328-334
Whitehead, R.,	2003	*Buckles 1250-1800*, Witham
Winder, J.M.,	2011	*Oyster Shells from Archaeological Sites, A brief illustrated guide to basic processing.* Available at http://oystersetcetera.wordpress.com/category/archaeological-shells/ Accessed 30.03.16.
Zohary, D., Hopf, M.	2000	Domestication of Plants in the Old World – The origin and spread of cultivated plants in West Asia, Europe, and the. Nile Valley. 3rd edition. Oxford University Press

Maps Consulted

British Geological Survey, 1993 Sheet 241, England and Wales 1:50,000

Websites consulted

http:www.old-maps.co.uk/maps.html. 1897 1:2500 Essex Viewed 22/06/11

Appendix F. OASIS Report Form

Project Details

OASIS Number	oxfordar3-245935		
Project Name	Ste 10, beaulieu, chelmsford		
Project Dates (fieldwork) Start	07-04-2015	Finish	15-05-2015
Previous Work (by OA East)	Yes	Future Work	Yes

Project Reference Codes

Site Code	SPBP15	Planning App. No.	09/01314/EIA
HER No.	SPBP15	Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPG15

Please select all techniques used:

☐ Field Observation (periodic visits)	☐ Part Excavation	☐ Salvage Record
☒ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☐ Recorded Observation	☐ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☐ Open-Area Excavation	☐ Salvage Excavation	☐ Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
RETTING PIT	Medieval 1066 to 1540	POTTERY	Medieval 1066 to 1540
BUILDING	Post Medieval 1540 to 1901	ANTLER	Post Medieval 1540 to 1901
ENCLOSURE	Post Medieval 1540 to 1901	POTTERY	Post Medieval 1540 to 1901

Project Location

County	ESSEX	Site Address (including postcode if possible)	LAND OFF WHITE HART LANE, CHELMSFORD ESSEX
District	CHELMSFORD		
Parish	SPRINGFIELD		
HER	SPBP15		
Study Area	3.3HA	National Grid Reference	TL 7290 1042

Project Originators

Organisation	OA EAST
Project Brief Originator	ALISON BENNET (ESSEX CC)
Project Design Originator	IAIN WILLIAMSON (AECOM)
Project Manager	RICHARD MORTIMER (OA EAST)
Supervisor	HELEN STOCKS-MORGAN (OA EAST)

Project Archives

Physical Archive	Digital Archive	Paper Archive
CHELMSFORD MUSEUM	OA EAST	CHELMSFORD MUSEUM
SPBP15	SPBP15	SPBP15

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☐	☐
Ceramics	☒	☐	☐
Environmental	☒	☐	☐
Glass	☒	☐	☐
Human Bones	☐	☐	☐
Industrial	☐	☐	☐
Leather	☒	☐	☐
Metal	☒	☐	☐
Stratigraphic		☐	☐
Survey		☐	☐
Textiles	☐	☐	☐
Wood	☒	☐	☐
Worked Bone	☒	☐	☐
Worked Stone/Lithic	☒	☐	☐
None	☐	☐	☐
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☐ GIS	☒ Context Sheet
☐ Geophysics	☐ Correspondence
☐ Images	☐ Diary
☐ Illustrations	☒ Drawing
☐ Moving Image	☐ Manuscript
☒ Spreadsheets	☒ Map
☒ Survey	☐ Matrices
☐ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☒ Photos
	☒ Plans
	☐ Report
	☒ Sections
	☐ Survey

Notes:

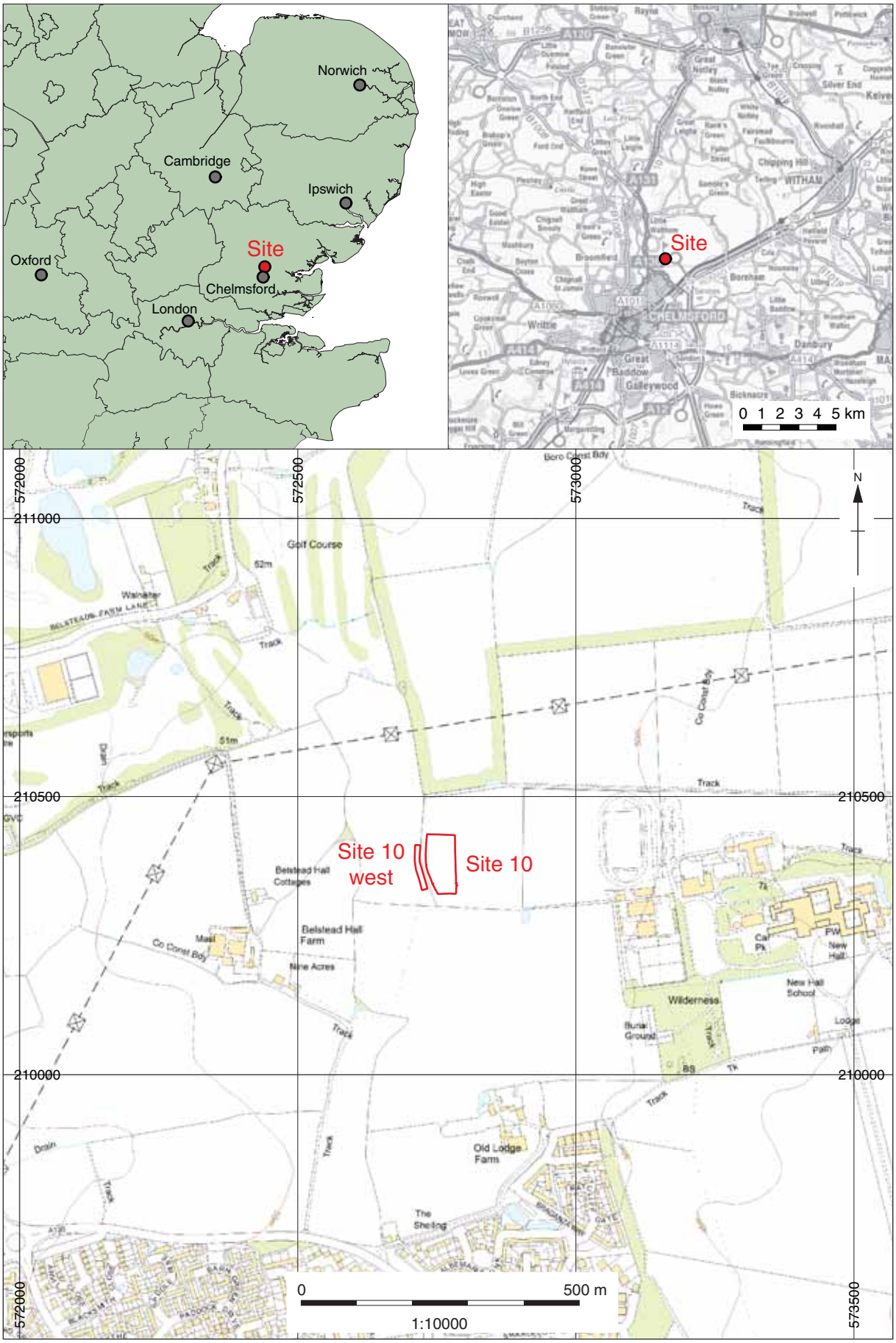

Figure 1: Site location showing development area (red)

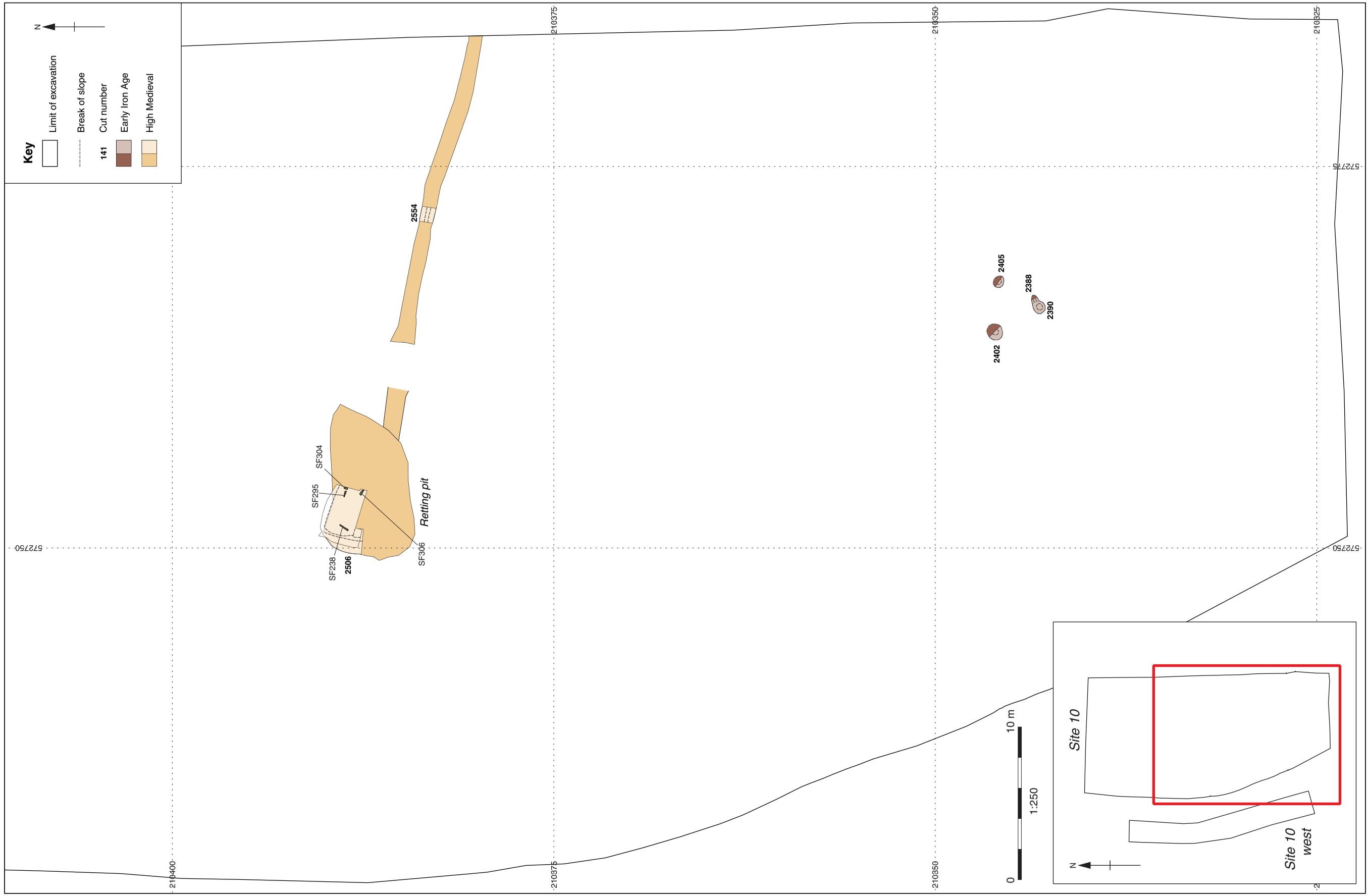

Figure 2: Site plan: early Iron Age and high medieval

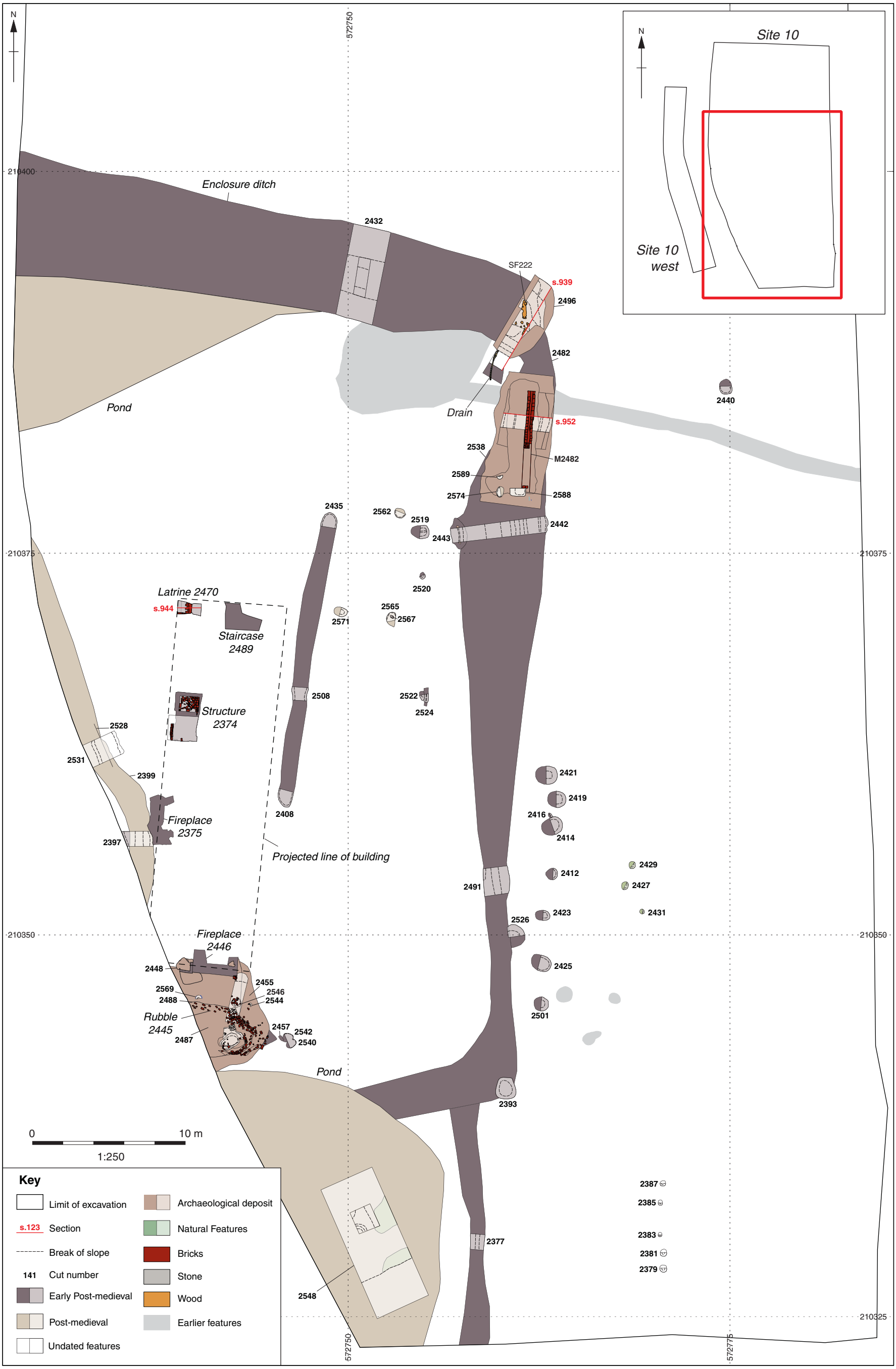

Figure 3: Site plan: Early Post-medieval, Post-medieval and Undated features

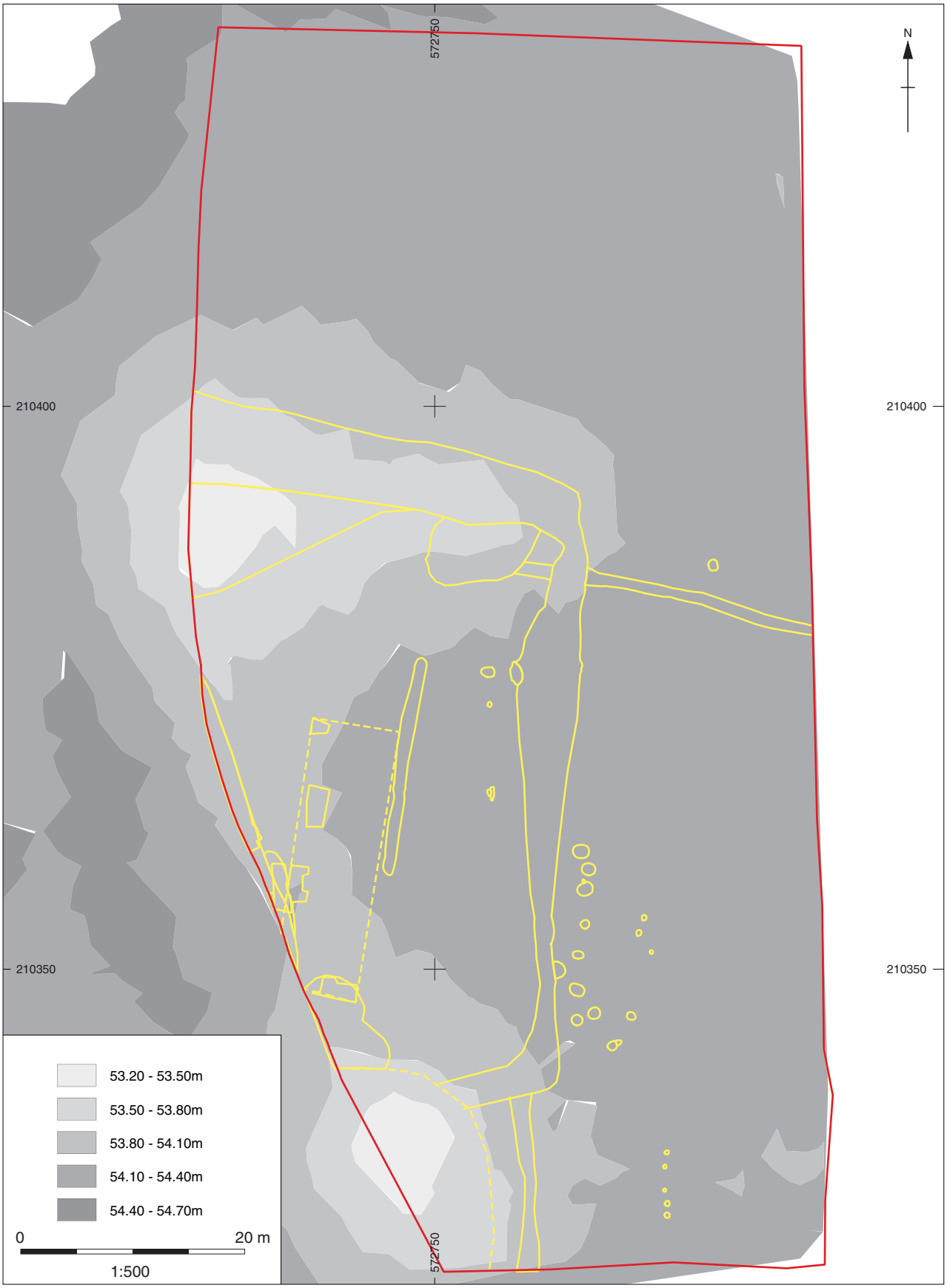

Figure 4: Contour survey

Figure 5: Site 10 West archaeological remains

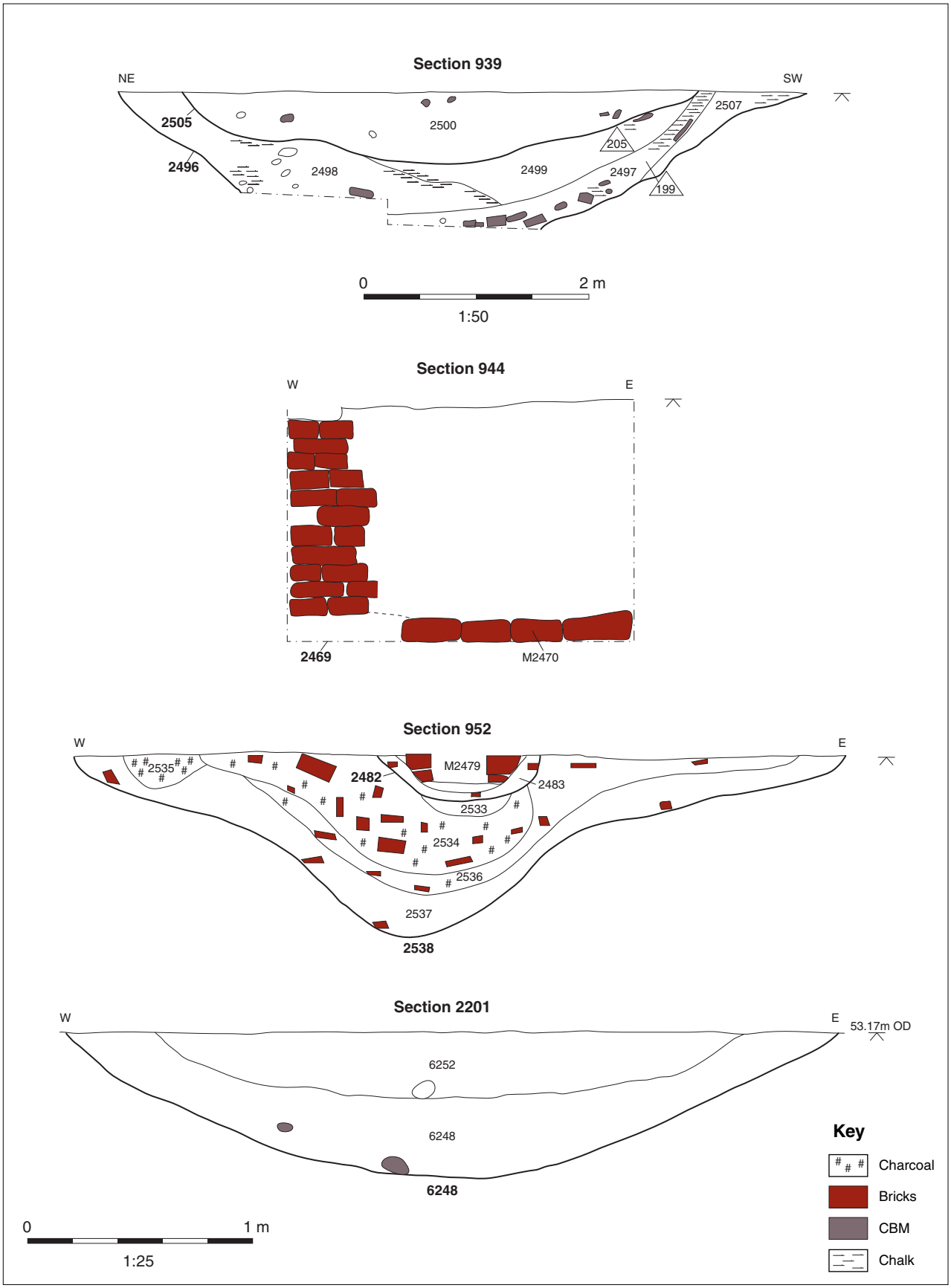

Figure 6: Selected Sections

Plate 1: Pit **2506**, from north

Plate 2: Cellar **2374**, from north

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