Northamptonshire Archaeology

Ampthill Castle Community Archaeology Project
Ampthill Park, Woburn Road, Ampthill, Bedfordshire



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Report 11/ 135

(Revised from 10/61)

June 2011

REGISTERED IfA ORGANISATION

AMPTHILL CASTLE COMMUNITY ARCHAEOLOGY PROJECT

2010

The project was made possible through the work and cooperation of the following organisations and groups:

Ampthill Town Council
Ampthill & District Archaeological and Local History Society
Awards for All
English Heritage
Central Bedfordshire Council
The Greensand Trust
Northamptonshire Archaeology
The Aragon Day Committee
Ampthill Info

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QUALITY CONTROL

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OASIS REPORT FORM

PROJECT DETAILS		
Project name	Ampthill Castle Community Archaeology Project, Ampthill Park, Woburn Road, Ampthill, Bedfordshire, July 2009	
Short description (250 words maximum)	Limited trial trenching located linear gullies, possibly of early-middle Saxon date. Pits and ditches may be of medieval to later medieval date, perhaps contemporary with the 15th-century palatial house of Ampthill Castle. Remains of the house, recovered in one trench, were heavily robbed. The building remains had also been disturbed by activity during World War I. The exact arrangement of the house remains in doubt, as there are inconsistencies between the excavated evidence and the excavation results.	
Project type	Evaluation	
Site status	Scheduled Ancient Monument (SM 20429)	
Previous work (SMR numbers etc)	Geophysical resistance survey (Fadden & Turner 2003), Accounts of the King's Manor of Ampthill 1533-1539 (Turner 2009)	
Current Land use	Public park	
Future work	Unknown	
Monument type/ period	Middle Saxon ditches (*c*AD450-850), Late medieval manor (*c*1425-1524), Royal residence (1524-1547), Military activity (1914-1918)	
Significant finds	Pottery, building materials, metal finds, metalworking residues, animal bone, shell, charcoal and plant macro-fossils	
PROJECT LOCATION		
County	Bedfordshire	
Site address	Ampthill Park, Woburn Road, Ampthill	
Study area (sq.m or ha)	325 sq m	
OS Easting and Northing	TL 0247 3839	
Height OD	*c*110m above OD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originators	Martin Oake & Hannah Firth, Central Bedfordshire Council	
Project Design originator	Anthony Maull & Tony Walsh, Northamptonshire Archaeology	
Director/Supervisor	Jim Brown, Northamptonshire Archaeology	
Project Manager	Anthony Maull, Northamptonshire Archaeology	
Sponsor or funding body	Ampthill Town Council & The Greensand Trust through National Lottery "Awards for All" and English Heritage Regional Capacity Building	
PROJECT DATE		
Start date	July 2009	
End date	August 2009	
ARCHIVES	**Location (Accession no)**	**Content (eg pottery, animal bone etc)**
Physical	BEDFM 2009.49	Pottery, building materials, metal finds, metalworking residues, animal bone, shell, charcoal and sieved flots
Paper		Site context record, plans, section drawings, photographic record & background documentation
Digital		Mapinfo digital plans and final report PDF
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report (NA report)	
Title	Ampthill Castle Community Archaeology Project, Ampthill Park, Woburn Road, Ampthill, Bedfordshire, July 2009	
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Contents

Summary 1

1 **INTRODUCTION** by Jim Brown 2

2 **BACKGROUND** by Jim Brown 3

2.1 Historical background
2.2 Previous archaeological work
2.3 Topography and geology

3 **EXCAVATION STRATEGY** by Jim Brown 5

3.1 Aims and objectives
3.2 Methodology

4 **THE EXCAVATED EVIDENCE** by Jim Brown 7

4.1 Summary of site development
4.2 Features of possible early-middle Saxon origin
4.3 Medieval and late medieval features pre-dating the palatial residence
4.4 Remains of the late medieval palatial residence
4.5 Decay and destruction
4.6 Great War or Second World War activity

5 **INTERPRETATRION OF GEOPHYSICAL SURVEY RESULTS** 17
by Adrian Butler and Jim Brown

6 **DISCUSSION** by Jim Brown 20

APPENDIX 1: THE FINDS 23

A1.1 Worked flint by Yvonne Wolframm-Murray
A1.2 Iron Age pottery by Andy Chapman
A1.3 Roman pottery by Jane Timby
A1.4 Early-middle Saxon pottery by Paul Blinkhorn
A1.5 Medieval finds by Tora Hylton
A1.6 Medieval and early post-medieval pottery by Paul Blinkhorn
A1.7 Ceramic building materials by Pat Chapman
A1.8 Building stone by Iain Soden, Steve Critchley and Pat Chapman
A1.9 Metal finds of the 16th to 17th centuries by Tora Hylton
A1.10 Metalworking debris by Andy Chapman
A1.11 Modern pottery by Iain Soden
A1.12 Modern metal finds by Tora Hylton
A1.13 Glass by Tora Hylton
A1.14 Clay tobacco-pipes by Tora Hylton

APPENDIX 2: THE FAUNAL AND ENVIRONMENTAL EVIDENCE ... 37

A2.1 Faunal remains by Karen Deighton
A2.2 Shell by Karen Deighton
A2.3 Charred plant remains by Karen Deighton
A2.4 Charcoal by Dana Challinor

BIBLIOGRAPHY 42

APPENDIX 3: CONTEXT INDEX 45

APPENDIX 4: GEOPHYSICAL SURVEY RESULTS FROM AMPTHILL & DISTRICT ARCHAEOLOGICAL & LOCAL HISTORY SOCIETY

Resistance survey of area believed to be the site of Ampthill Castle in the County of Bedfordshire.
September 2002 & April 2003, Revised January 2011

Magnetometer Survey of the suggested Ampthill Castle Site
September 2010

Points to consider when comparing the geophysics with the excavation by the Northampton Unit
January 2011

Pseudo-sections of selected areas of the original geophysical survey carried out on the area believed to be the site of Ampthill Castle in the County of Bedfordshire
2008 & 2009

Tables

Table 1: Chronology
Table 2: Worked flint
Table 3: Saxon pottery by number and weight (g) of sherds
Table 4: Medieval and post-medieval pottery by number and weight (g) of sherds
Table 5: Quantification of roof tile
Table 6: Quantification of brick
Table 7: Quantification of floor tile
Table 8: 19th to 20th-century pottery by number and weight (g) of sherds
Table 9: Taxonomic distribution by period
Table 10: Available ageing and metrical data
Table 11: Shells by context
Table 12: Ecofacts by sample and context
Table 13: Results of the charcoal analysis
Table 14: Context index

Figures

Front cover: Archaeological remains in Trench 2

Fig 1: Site location
Fig 2: Ampthill Castle, surveyed *c*1567 (from Colvin 1982)
Fig 3: Reprocessed earth resistance survey data (from ADALHS 2011)
Fig 4: Linear grass marks in the vicinity of Trench 1, looking south, prior to excavation
Fig 5: Linear gullies in Trench 1, looking west
Fig 6: Linear gully [103], Trench 1, looking east
Fig 7: Linear gullies [114], [116] and [119], Trench 1, looking west
Fig 8: Archaeological features, Trench 1
Fig 9: Excavation of the upper layers in Trench 3
Fig 10: Pit [335] containing burnt debris, at the base of pit [332], Trench 3, looking east
Fig 11: Archaeological features, Trench 3
Fig 12: Archaeological features, Trench 4
Fig 13: Trench 4, showing natural sand and a ditch at the north-east end, bottom left
Fig 14: Trench 2 prior to excavation, looking east
Fig 15: Archaeological features, Trench 2
Fig 16: Chalk formation level, layer (254), Trench 2, looking west
Fig 17: Wall foundation [233], Trench 2
Fig 18: Brick chimney hearth [225], Trench 2
Fig 19: Extensive dark soil deposit (206), Trench 2, looking east
Fig 20: Volunteers undertaking excavation in Trench 2
Fig 21: Aerial Photograph of Ampthill Park, *c*1947
Fig 22: Aerial Photograph, *c*1947, showing the football pitch and also parallel dark soil marks, running north-south, coinciding with geophysical anomaly 3 and the robbed walls in Trench 2 (see Figs 4 and 24)
Fig 23: Earth resistance survey interpretation
Fig 24: A possible position for Ampthill Castle
Fig 25: Fragment from a silver cruciform pendant, inscribed ‘I E S’ (14mm long)
Fig 26: Jetton (1), sewing ring (2) and rumbler bell (3)
Fig 27: Early-middle Saxon pottery (1) and late medieval curfew (2)
Fig 28: Roof pegtiles
Fig 29: Ridge tile displaying crests
Fig 30: Marked tiles including a dog paw print
Fig 31: Green-glazed floor tile
Fig 32: Building stone displaying late 15th-century graffiti

Back cover: Martin Oake, Central Bedfordshire Archaeologist, talking to members of the public at the Open Day, Saturday 25 July 2009

AMPTHILL CASTLE COMMUNITY ARCHAEOLOGY PROJECT

AMPTHILL PARK, WOBURN ROAD, AMPTHILL

BEDFORDSHIRE

JULY 2009

Summary

Geophysical survey by Ampthill & District Archaeological & Local History Society provided a model for the location of the 15th–century palatial house, Ampthill Castle, as recorded in a survey of 1567. This model placed the castle on the eastern half of the site on a north-east to south-west alignment. A limited programme of trial excavation was carried out as a community project to test this model, with four trenches targeting selected areas of potential interest.

In a trench targeting the postulated north-eastern corner of the main building ranges, the only features located comprised a series of linear gullies. These produced pottery of early-middle Saxon date, attesting to early occupation of the site, but the presence of some late medieval material leaves the dating, and the function, of these gullies uncertain. The relationship of these features to the extensive pattern of linear features located by geophysical survey and the surface grass marks in this area, is also unclear.

A further two trenches produced pits and ditches of late medieval and post-medieval date, with some features perhaps pre-dating Ampthill Castle while others were contemporary with its use.

One trench produced remains of a stone-built range of the 15th-16th centuries; remnants of heavily robbed wall foundations and a brick hearth base survived. The excavated building was only 6.0m wide, suggesting that it was probably part of an ancillary range lying a little away from the main buildings, and such a wing is recorded on the survey of c*1567. The excavated building is on a near north-south alignment, which is contrary to the postulated model, but coincides with features located by geophysical survey and also visible on an aerial photograph of 1947. These include a broad linear anomaly, which is probably part of a wide ditch, seen partially in excavation, lying to the immediate west of the excavated building.*

Activity during the Great War and/or the Second World War comprised possible drainage channels or beam slots, postholes and dumps of burnt material with clinker.

Utilising the results of the trial excavation and a review of the geophysical survey results, an alternative model for the location of Ampthill Castle is proposed, placing the buildings on the western half of the site on a near north-south alignment. In this area there are surviving earthwork platforms, although these do not appear to relate to the building plan and probably derive from later landscaping. However, much building material, particularly roof tile, is present within soils exposed by rabbit burrowing on the earthwork terrace to the west of St Katherine's Cross.

Unfortunately, the excavation of only four trenches has proved to be insufficient to fully characterise the archaeological deposits, and the work has therefore failed to establish a secure model for the location and arrangement of the buildings of Ampthill Castle. However, the new evidence would make it possible to propose a number of specific locations where further investigation could lead to resolution of the current uncertainties.

1 INTRODUCTION

Ampthill Castle, a fortified stately home built by Sir John Cornwall (Lord Fanhope) in the early 15th century as a palatial residence, lay within Ampthill Park, which is situated to the west of the town of Ampthill, Central Bedfordshire (Fig 1; NGR TL 0247 3839). It was purchased by Henry VIII in 1524 and Katherine of Aragon resided there during the divorce proceedings of 1533. However, by 1555 it was reported to be in "sore decay", and planned renovations never occurred. In 1649, following the capture of Ampthill by parliamentarian forces during the Civil War, parliamentary surveyors reported that the house was "totally demolished".

Geophysical survey carried out by Ampthill & District Archaeological & Local History Society in 2002-03 (see Appendix 4), provided a possible location for the house, based on the plan form recorded in a survey of 1567 (Fig 2). The principal aim of the current project was to test the interpretation of the survey results by locating any surviving remains of the lost buildings through a programme of limited trial excavation.

The project was initiated by a steering committee comprising English Heritage, Central Bedfordshire Council and Ampthill & District Archaeological & Local History Society, with representation from other historical societies. A Brief, issued by Central Bedfordshire Council on behalf of the steering committee (NA 2009; CBC 2009), identified a scheme of work to investigate the layout of the site by characterising and defining archaeological deposits relating to Ampthill Castle, and encouraging participation in the project by members of the local community.

Ampthill Town Council and The Greensand Trust sponsored excavation at Ampthill Castle with funding from The National Lottery Awards for All and an English Heritage Regional Capacity Building grant. Northamptonshire Archaeology was commissioned to supervise the excavation in accordance with an agreed Project Design (NA 2009). The project was undertaken with the assistance of members of the Ampthill & District Archaeological & Local History Society, and volunteers from The Greensand Trust.

Following completion of fieldwork, an Updated Project Design was prepared by Northamptonshire Archaeology to summarise the results of the excavation and to present proposals for a programme of works for analysis, reporting and archive deposition (Brown 2009). A draft report was submitted in 2010, and this has gone through stages of comment from the various interested parties. The final report is the culmination of the post-excavation analysis and external review, and will form the basis of any subsequent publication notes.

The archive will be retained by Ampthill Town Council in the first instance. Should it be decided at a later date to deposit it with Bedford Museum, it has been assigned the Accession no: BEDFM 2009.49. It has been compiled in accordance with the guidelines of Appendix 3 in the English Heritage procedural document, *Management of archaeological Projects* (1991). The archive and all finds will be prepared for storage in accordance with the guidelines of the United Kingdom Institute for Conservation, the Museum and Galleries Commission and the Bedford Museum (Walker 1990; MGC 1992; BM 2003).

2 BACKGROUND

2.1 Historical background

The site is a Scheduled Ancient Monument (SAM) owned and managed by Ampthill Town Council (SM20429, HER 810). The following abbreviated history is drawn from *The History of the King's Works, Volume IV* (Colvin *et al* 1963, 40-47).

Sir John Cornwall (Lord Fanhope) built the residence in the early 15th century upon the occasion of his marriage to Henry IV's sister, Elizabeth, the widow of John, Duke of Exeter. The source of that wealth is thought to be the spoils of the war with France (McLeod 1969, 177). According to the Treaty of Buzançais, signed 14 November 1412, Sir John Cornwall exacted for himself and his household the sum of 21,375 gold *écus*, including a clause that after the larger sum of 50,000 gold *écus* had been paid to Clarence Lieutenant of Aquitaine, the hostages would remain in Cornwall's own hands until the full sum due to him had also been paid (Archives Nationales K59, No 4). Amongst these hostages was Charles of Orleans who, after having been held in other parts of England, was brought to Ampthill Castle as his prisoner between 29 December 1429 and 27 January 1430, when he was then moved to London (McLeod 1969, 177).

Ampthill Castle was a fortified stately home, built as a palatial residence, rather than a defensive castle and was described as a "sumptuous building" (Colvin *et al* 1963, 40). It was purchased by Edmond Grey of Wrest in 1454 and subsequently forfeited to Henry VII (www.adalhs.mooncarrot.org.uk/ampthillpark.html, 13/4/10). The residence must then have been sold again because Colvin's record begins with its purchase by Henry VIII in 1524 together with its wooded park and elegant position, so that Henry VIII might enjoy "marvellous good health and cleanness of air". Katherine of Aragon resided at Ampthill Castle during the divorce proceedings of 1533. Henry planned to visit in the company of Anne Boleyn, and the accounts from 1534 record repairs and alterations carried out "against His Majesty's coming".

Work continued in 1536 with new windows in the King's chambers; retiling of the Great Hall, together with the south and east wings; wall plastering in the base court and the erection of a new kitchen wing. A bowling alley was built in 1537. Pointing of the brickwork was undertaken in 1539, and the gutters, drains and privies were repaired the following year. In 1542 Ampthill was formally constituted an "Honor" by Act of Parliament and various royal estates in Bedfordshire and Buckinghamshire were annexed to it.

The castle received less attention after Henry's death and it is uncertain whether his son Edward ever visited, although he did visit Brogborough nearby. Minor repairs were undertaken in 1552, but in 1555 it was reported to be in "sore decay". No further work took place until it was surveyed for Elizabeth I in 1567 as part of a proposal for renovations (Fig 2). This work never took place. James I planned some restoration work at the castle in 1605 when looking for a suitable country lodge from which to go hunting and hawking. This short-lived scheme was also abandoned. In 1649, during the English Civil War, the parliamentary surveyors reported that the house was "totally demolished". It is not known whether this was the result of the long term neglect of the buildings or a deliberate act of destruction following the capture of Ampthill by parliamentarian forces.

2.2 Previous archaeological work

Earthworks within the scheduled area were recorded in 1988 (Fig 1). They comprise two rectangular terraces in the north-western part of the study area, lying adjacent to the steep northern scarp, which provides dramatic and extensive views to the north, with the ground dropping away less steeply to the west.

Katherine's Cross is located upon a small rise immediately to the east of a well defined rectangular terrace, measuring 40m east-west by 25m north-south. In soil disturbed by rabbit burrowing across this rectangular terrace and a little beyond, there are quantities of roof tile fragments consistent with the material recovered from deposits in Trench 2 (A Chapman and A Maull pers comm, site visit April 2011). Similar material was also evident in disturbed soil around Katherine's Cross. However, no similar material was noted in soils around Ampthill Camp Cross or across the remainder of the study area.

Around Katherine's Cross, there is a second and higher terrace, measuring 54m north-south by up to 35m east-west. To the east and south there are well defined linear scarps, but the terrace is less well defined to the west and north-west, where it meets the other rectangular terrace. This area is also quite uneven, and there is an oval depression, 20m long by 15m wide, to the south of the Cross.

The area to the east, once occupied by sports pitches, is level, while the area to the south of the recorded earthworks is uneven and undulating.

To the south the ground drops away quite abruptly to Ampthill Town Cricket Ground and the car park, with a central hollow perhaps a result of quarrying, perhaps to provide a more gradually sloped access to the summit area (Fig 1, south-east of Trench 4).

The castle is recorded in a number of documentary sources and secondary publications, such as those used to compile the *Accounts for the King's Manor of Ampthill 1533-1539* (Turner 2009).

The origins of the current project lie in the geophysical survey results from work by Ampthill & District Archaeological & Local History Society from 2002 onward. The results of these surveys are attached to this report (Appendix 4), and will be discussed below in relation to the results of the trial excavation, the first intrusive investigations conducted upon the site.

2.3 Topography and geology

The part of Ampthill Park occupied by the former castle is a public open space, currently grassland, with a small number of shrubs and trees. The ground is a fairly level plateau upon a hilltop above the 110m contour to the north-west of the town of Ampthill. The hilltop commands splendid views to the north across Marston Vale and to the south across the Flit Valley, seated upon the watershed between two rivers.

The wider parkland is included on the Register of Parks and Gardens (April 1999, D1334). The larger part of the description and its appended history is dedicated to the landscape work of the famous Lancelot "Capability" Brown, *c*1771-2 and focuses upon the present Park House, which is a Grade II* Listed Building, built for Baron Ashburnham *c*1694 and remodelled in 1769-71 by Sir William Chambers. The parkland includes a diverse range of tree-planted, open-grassed and enclosed garden environments that are enjoyed by the public and that carry the parks history far beyond that of the 15th-century building.

The geology of the site is of the Lower Greensand formation laid down during the Lower Cretaceous period (BGS 2001). It comprises medium to coarse grained glauconitic pebbly sandstones that weather to a rusty yellowish-brown. They possess a variable calcareous, ferruginous or siliceous cementation allowing some of the harder beds to be suitable for use as a building stone. The soil is of Evesham 3 association comprising slowly permeable calcareous clayey soils and fine loam over clayey soils, meeting with soils of the Frilford association on the lower slopes to the west (LAT 1983).

3 EXCAVATION STRATEGY

3.1 Aims and objectives

The general aim of the archaeological fieldwork was to develop the knowledge base of the site through research, encourage local involvement in the historic environment of Ampthill Park and to foster a sense of public ownership for the archaeological resource preserved within it. This was to be achieved through the excavation of four archaeological trenches as a community project (Fig 1).

Specific objectives

The specific set of objectives can be summarised as follows:

- to characterise the nature and define the extent of archaeological deposits relating to Ampthill Castle within and adjacent to the Scheduled area
- to determine whether the earth resistance survey identified the location of the castle and to characterise the remains of any possible earlier occupation
- to build local capacity and commitment to the preservation and championing of the historic environment by Ampthill Town Council and members of the local community. This will be achieved with practical participation from members of the Ampthill and District Archaeological and Local History Society, volunteers from the Greensand Trust, members of Ampthill Town Council and local residents, as well as through public access and interpretation during the work
- to oversee volunteers and undertake the fieldwork according to best practise as established by the standards of the Institute for Archaeologists (IfA 2008).

3.2 Methodology

Four trenches, encompassing a total of 239 square metres in area, were positioned to investigate potential archaeological features highlighted by geophysical anomalies (Figs 1 and 3). Trench 1 was T-shaped, 20m long by 3.2m wide, with a 10m long cross-piece. Trenches 2 and 4 were each 20m long by 3.2m wide, and Trench 3 was a 5m by 5m square. The dimensions and positioning of these trenches were all discussed and agreed by Central Bedfordshire Council Archaeologists and English Heritage in advance of the fieldwork.

To meet the project objectives the following specific tasks were completed:

- Identification, characterisation, recording and dating, by means of archaeological excavation, all features exposed within the settlement area thus providing detailed information on the presence or absence, area of extent, depth of burial and degree of survival of the deposits and features exposed
- Compilation of written, illustrative, digital and photographic records that form an archive for all archaeological works undertaken
- Retrieval of sufficient material evidence in the form of artefact and faunal assemblages supplemented with environmental samples to inform interpretations of the site within the context of the agricultural, domestic and industrial activities that may have been on the site and their relationship with the surrounding landscape
- Regular liaison with the archaeological officers of Central Bedfordshire and English Heritage to keep them informed of new archaeological developments as they arose during excavation for the purposes of monitoring and provision for strategic discussion as work proceeded.

Excavation areas were located using survey grade GPS (Leica System 1200). The topsoil was removed under continuous archaeological supervision using a 3CX mechanical excavator fitted with a toothless ditching bucket. Little subsoil was present upon the site. The topsoil was stacked separately from the subsoil and enclosed by Heras fencing. Movement of machinery was conducted in such a manner as to avoid impact on the archaeology.

The excavation areas were cleaned sufficiently to enable the identification and definition of archaeological features. A hand-drawn site plan of all archaeological features was made at scale 1:50 and was related to the Ordnance Survey National Grid. All archaeological deposits and artefacts encountered during the course of excavation were recorded. Recording methodology followed the standard Northamptonshire Archaeology context recording system (NA 2006). Context sheets were cross-referenced to scale plans, section drawings and photographs, both in 35mm monochrome film and on colour slides, supplemented by digital images. Deposits were described on *pro-forma* context sheets to include measured and descriptive details of the context, its relationships, interpretation and a checklist of associated finds. The record was supplemented by direct annotations of the site general plan as required. All levels were related to Ordnance Survey datum, and significant structures or areas of complex stratigraphy were planned in greater detail. Sections of sampled features were drawn at scale 1:10 or 1:20, as appropriate, and related to Ordnance Survey datum. A representative sample of all exposed archaeological features was excavated, with basal deposits of all sectioned features investigated.

All discrete features were sampled to no less than 50% of the whole. Linear features were sampled at frequent intervals to determine their function and date with interventions placed at terminals and midsections. Artefacts and soil samples were collected by hand. Hand spoil and the surface of archaeological features was scanned with a metal detector to ensure maximum finds retrieval from secure contexts.

The environmental potential of the site was reviewed on site with English Heritage during the excavations. Samples were only collected from deposits with a potential for the recovery of charcoal, carbonised plant remains and other ecofacts in secure and uncontaminated contexts. This comprised a potential charred destruction layer and a hearth deposit. A minimum of 40 litres was taken for flotation or 100% of the fill where this was less than 40 litres.

4 THE EXCAVATED EVIDENCE

All of the trenches exhibited low level activity of a non-archaeological nature caused mainly by former vegetation or animal burrowing, which probably accounts for a small number of anomalous intrusive finds. All contexts are listed in Appendix 3.

4.1 Summary of site development

The results of the trial trenching identify four specific episodes of activity.

Table 1: Chronology

Early-middle Saxon	Trench 1: pottery denotes early-middle Saxon occupation, probably associated with a series of linear gullies, perhaps forming a small ditched enclosure (but some later material also present).
Medieval/late medieval	Trench 3: a large flat bottomed pit contained accumulated thin layers and a pit containing dumped hearth debris, including charred cereal grains and pulses. All sealed by layers of late medieval date. Trench 4: linear ditch.
Late medieval palatial residence	Trench 2: Stone wall foundations, heavily robbed, and the base of a brick chimney hearth. Possibly part of the ancillary Base Court wing shown on the plan of 1567.
Great War or Second World War activity	Trench 2: many of the sealing layers that would have comprised destruction, abandonment and demolition of the residence were heavily disturbed or redeposited. Subsequent activity comprised possible drainage channels or beam slots, postholes, and dumps of burnt material with clinker.

4.2 Features of possible early-middle Saxon origin

Trench 1 was situated in the north-eastern corner of the area (Fig 1) to investigate a pattern of rectilinear geophysical anomalies (Fig 3). These linear anomalies were also partially visible as linear grass marks (Fig 4), which had been interpreted as possible remains of the main ranges of Ampthill Castle, although the coincidence of this rectilinear pattern with the position of a former football pitch had also been noted (see Appendix 4).

This trench was excavated to the top of the natural sand. In places there was a thin layer of mottled orange-brown sandy silt subsoil (107), 20-30mm thick, which was cut by some of the observed features. There was no evidence for the presence of a ditch crossing the trench, as suggested by a subsequent magnetometer survey (see Appendix 4).

Linear gullies

A linear gully, aligned south-west to north-east, ran the length of Trench 1. To the north it turned westwards through 90° at a rounded corner (Figs 5, 6 & 8). The feature was sectioned at four points (Fig 8, [103], [106], [109] & [111]]). It was 0.65-0.85m wide by 0.30-0.50m deep, with a U-shaped profile, generally steep-sided, varying between 60-80°, with a sharp break in slope to a base that was either flat or slightly rounded, (Fig 8, Sections 1-3 & 6). The fill (102, 104/105, 108, 110), was consistent across the four interventions, comprising loose orange-brown sand and light greyish-brown sandy silt containing moderate small irregular fragments of local Greensand sandstone and pebbles.

Three similar gullies on closely-spaced parallel alignments, lay perpendicular to the principal gully, joining it 7.5m south of the northern corner (Figs 7 and 8). Gully [114] had steep sides, and was 0.62m wide by 0.45m deep, with a narrow flat base, 0.27m wide. Against the north-eastern side there was a deposit of orange-brown sandy silt (113), while the general fill comprised greyish-brown sandy silt (112). Gully [116] lay 0.27m to the north, and was 0.34m wide by 0.35m deep, with a vertical edge to the south and a steeply sloping side to the north, meeting in a point at the base. The northernmost of the three features [119], was a narrow slot with vertical sides, 0.35m wide by 0.98m deep. The fill comprised deposits of loose orange-brown sandy silt (118, 117) containing moderate small fragments of Greensand.

The narrow and deep slot [119] seems likely to have held a timber wall or revetment, and the fill against one edge of gully [114] may have been an *in situ* fill that had once abutted a timber. However, the long length of excavated gully, although steep sided, provided no clear evidence that it had once held a timber sill beam and/or upright posts.

Two of the three excavated lengths of the ditch running north-south, [106] and [109] produced 12 sherds of early-middle Saxon pottery, the three other gullies [114], [116] and [119] produced a further 12 sherds, and six sherds came from the topsoil in this trench. It is suggested that this assemblage provides a sound date for these features. A single length of the main gully [103] produced a group of late medieval material, comprising four sherds of late medieval reduced ware, two sherds of Surrey "Tudor Green" (dated *c*1380-1550), a piece of glass and several pieces of roof tile. Although no later disturbance was recognised during excavation, it is suggested that the occurrence of the late medieval material in a single length of ditch, while the early-middle Saxon pottery was recovered from five lengths of ditch, suggests that it may have been intrusive within an unrecognised disturbance. The fill of gully [116] contained a medieval iron arrowhead, but this might also have been intrusive as a fired arrow can bury itself in the ground to a considerable depth.

The interpretation of these features is problematic, especially given the uncertainty as to their date. It is possible that they may have held timbers, but the only physical evidence was provided by the one exceptional deep slot [119] and by the steeply inclined primary fill against the edge of gully [114].

It is suggested by Northamptonshire Archaeology that the rectilinear pattern of geophysical anomalies, and the related grass marks in the same area, at least largely derive from the line markings of former sports pitches. However, the alignment of the excavated gully in Trench 1 is the same as that of the geophysical anomalies, and one of the grass marks appears to be on the same line as the excavated gully (Fig 5). This poses the question of whether this apparent coincidence of alignment with a grass mark is purely fortuitous or whether it indicates that some elements of the rectilinear pattern do define underlying cut features. Lacking any means to disentangle the rectilinear pattern shown by geophysical survey, this dilemma could only be resolved by further investigation to determine the below-ground character of further examples of the linear anomalies/grass marks in this area.

The one thing that the excavation of Trench 1 did establish was the lack of surviving evidence for a substantial stone building range ever having stood in this area.

4.3 Medieval and late medieval features pre-dating the palatial residence

The recovered pottery contained only a couple of sherds of medieval wares dated to the mid-13th to 15th centuries, and therefore probably significantly pre-dating the construction of Ampthill Castle.

There is late medieval and early post-medieval pottery from all of the trenches. In Trenches 3 and 4 the earliest cut features may have belonged to a period of activity immediately prior to the construction of the house, but this is uncertain given the small size of the assemblages and the lack of understanding of the organisation of the site. There was certainly activity broadly contemporary with the house.

Trench 3: a late medieval pit or ditch

Trench 3 had been positioned within an area containing a number of low resistance anomalies of uncertain character (Figs 1 & 3), possibly including some large pits (see Fig 23). It was also anticipated that it might encounter structural features pre-dating the 15th-century residence.

This rectangular area measured 5.4m east-west by 4.6m north-south. An initial surface cleaning failed to make sense of the exposed deposits, so a 1.0m-wide trench was excavated to a maximum depth of 1.6m to examine the sequence (Figs 9-11).

The earliest deposit, layer (319), was 0.27m thick and comprised soft light pinkish-brown sand containing moderate small rounded pebbles (Fig 11, Section 10). It produced no datable finds, but was overlain by a layer (318) of firm light greyish-orange and brown mottled silty sand with occasional small rounded pebbles, which produced six sherds of late medieval pottery, mainly late medieval reduced ware dated to the mid-14th to 16th centuries. These two layers were seen only in section, leaving their origin uncertain, but they may have been fills of a large pit or ditch, perhaps related to usage of the site in the late medieval period prior to the construction of the house.

These deposits were probably cut by a large pit or ditch [332], but the relationship had been removed by a later feature, pit [330] (Fig 11, Section 10). Pit [332] was over 4.36m wide with a broad slightly concave base. It contained a 0.45m depth of primary and secondary fills, but as the level of the contemporary ground surface was not established, its full depth is uncertain, but it was probably at least 1.0m deep (Fig 10).

The primary fill (329) was 90-110mm thick and comprised thin bands of pinkish-orange sandy clay, dark brownish-grey loamy sand and yellowish-orange silty sand stained with moderate amounts of charcoal; a deposit derived from dumping rather than silting. The primary fill was cut by a small pit [334], sub-rectangular in plan, 1.10m long by 0.68m wide and 0.10m deep, with steep sides and a flat base (Fig 11, Section 12). It had a fill of dark reddish-pink and black sandy clay loam (333), which contained thin dark bands of charcoal-rich soil, perhaps derived from dumped hearth debris. The charcoal is from ash roundwood and maloideae species (apple, pear etc). All of the charred seed grains recovered from the site originated from this fill, comprising mainly wheat with some barley and pulses, along with their contaminants.

Above the primary deposit and the filled pit there were further thin layers also likely to be associated with dumping. Layer (327) comprised mid-greyish-orange and brown silty sand (327) mixed with pinkish-orange sandy clay and moderate concentrations of charcoal. Fills above this (328, 325, 326, 322) comprised dumps of unevenly deposited sandy clay and silty sand in varying shades of pinkish-orange or greyish-orange and brown. Most had quite sharp boundaries and whilst charcoal flecks were evident throughout they were in lower concentrations than in the primary fills. None of the fills produced finds.

Continued use of the area was marked by a succession of smaller pits [336], [331] and [330], cut into the fills of the larger pit (Fig 11, Section 10). These cuts had moderately steep sides tapering to narrow flat bases, suggesting original dimensions of up to 1.8m wide by 0.7m deep. They contained some sandy silt (320, 322), but the fills were largely

of greyish-orange and brown silty sand with varying proportions of pebbles (317, 324, 321), probably as a result of dumping. They produced eight sherds of late medieval reduced ware, dated to the mid-14th to 16th-centuries.

Above this level there were more extensive deposits of material. Layer (302) was an accumulation of soft mid-reddish-brown, mid-greyish-orange and greyish-brown silty sand with infrequent charcoal flecks and moderate rounded pebbles or sandstone fragments. It was broadly similar in nature to layer (316), which might have filled a further recut, broad and shallow, into the earlier deposits. Layers (302) and (316) produced sixteen sherds of late medieval pottery, largely the same reduced and oxidised wares as those from the pits beneath, as well as two sherds of Raeren Stoneware, fabric P23, dated *c*1450-1550. Given the date range of the pottery from the sequence of pits in Trench 3, it is possible that the original usage may have pre-dated the construction of the house. Later recutting and deposition may also have pre-dated the house, with the more extensive upper layers perhaps related to infilling and levelling in preparing the ground for the new residence, but the date range could equally suggest that the pits were open during the lifetime of the house, with domestic refuse being dumped into them.

Trench 4: a linear ditch

Trench 4 lay largely within an area of high resistance, although the north-eastern end of the trench just impinged on a linear anomaly on a near north-south alignment. Along most of the trench the sandy natural (416) was exposed at a depth of 0.25m below ground level, although the surface was uneven and undulating, presumably indicative of former disturbances (Fig 13).

The western edge of a large ditch [412], aligned near north-south, lay at the north-eastern end of the trench (Fig 12, Section 20). It had a near vertical edge, with a rounded break onto a flat bottom, and was in excess of 2.5m wide and 1.2m deep, bottoming 1.6m below ground level. The bulk of the fill comprised homogeneous light orange-brown silty sand (411) with infrequent white chalk flecks, which produced no datable finds.

The ditch fill was overlain by a thin layer (410), 80mm thick, of greyish-brown silty sand containing infrequent charcoal and white mortar flecks. This layer may have been a former ground surface or an occupation layer associated with nearby buildings. The later feature [415], cut into the ditch fills contained roof tile and building stone, and is described below as part of the development of Ampthill Castle.

At the north-east end of Trench 4 there was also the terminal of an L-shaped feature [407] (Fig 13, Section 21). The cut was V-shaped, 0.70m wide by 0.36m deep. The primary fill comprised hard bluish-grey clay (406), flecked with some chalk. Above it lay firm mid greyish-brown silty clay (405), containing several large lumps of bluish-grey clay. Its purpose was unclear, as it does not seem likely to have been a substantial structural element. The lack of finds leaves its date undefined.

4.4 Remains of the late medieval palatial residence

The greatest concentration of stratified archaeological deposits was found within Trench 2, which was targeted on the southern end of one of the principal geophysical anomalies; a broad linear anomaly, interpreted as a ditch (see Fig 23, 3 and 24). However, due to the problems of precisely locating trenches in relation to the features identified by geophysical survey, Trench 2 appears to have taken in only the eastern part of the anomaly and mainly covered an area to the immediate east. The western end of Trench 2 did show the presence of deeper deposits, perhaps a broad ditch, but the trench also revealed a building of 15th-century origin (Figs 16-21). It is likely that the

remains belonged to one of the wings of the palatial residence, but it was unclear from the excavated remains which wing this may have been, particularly given the lack of any other recognisable building features in other trenches.

A linear ditch?

The natural sand within all four trenches was soft and prone to rapid erosion, with natural solution pits or sinkholes where water percolated through the porous ground. This would have made a generally poor foundation level for construction.

To the west of the building there was a broad hollow that continued beyond the excavated area (Fig 15, Section 17 & Fig 19). It was in excess of 5m wide and 0.5m deep (bottoming 0.90m below ground level), with the natural still deepening, suggesting that it was a broad feature, perhaps 10-12m wide. The fill comprised disturbed and dirty sand (243), which contained no finds, and was similar to the dirty natural (258) seen beneath the building. There was no stratigraphic relationship to the adjacent building, but a clay layer (244) terminated adjacent to the upper edge, and above fill (243) part of an extensive layer (206), likely to be either contemporary with the building and/or a destruction level, as described below, dipped down into the subsidence hollow. The final filling of the hollow was therefore probably broadly contemporary with the use and demise of the adjacent building.

Formation level

Beneath the building the natural sand was bright orange, soft and loose. In places the upper horizon contained solution hollows and worm castes, layer (258) (Fig 15, Section 18). Overlying it was a layer of light greyish-orange silty sand (255) with occasional chalky flecks and soft light orange-brown sandy silt (234), up to 0.24m thick, generally patchy and disturbed below the 15th-century deposits.

Above this there was a layer of chalk (254), 70-220mm thick, comprising dense crushed chalk pieces, up to 110mm in diameter, in a matrix of light orange-brown sandy silt containing infrequent small sandstone fragments (Fig 15, Section 18 and Fig 16). The chalk raft underlay the building: it terminated at the western wall trench, but it extended up to 1.7m beyond the eastern wall. The chalk layer was directly overlain by a compact layer of light orange-brown mottled sandy clay, containing frequent chalky flecks and dark charcoal smears (224, 244 & 245). This had the same extent as the underlying clay beneath and to the east of the building, but the clay also extended to the west of the building, where it was 50-150mm thick and overlay clean firm natural sand.

Wall foundations

The construction trenches for the walls cut through the chalk and clay formation levels, bottoming in the sandy natural beneath. The eastern wall was set in a steep-sided flat-bottomed trench [218], up to 0.82m wide and 0.60m deep. The western wall was set in a similar construction trench [233], at least 0.70m wide and up to 0.70m deep, but the eastern edge had been lost to a later disturbance. Both construction trenches bottomed at consistent levels of 114.45-114.50m aOD.

The walls themselves had been heavily robbed, with even most of the foundations dug out and removed, but at the base of each robber trench some remnants of the former stone walls survived. The remnant of the eastern wall (264), comprised five large dark russet-brown iron-rich local Greensand sandstone blocks, each measuring 320mm by 210mm by 90mm (Fig 15, Section 18). The stone was roughly dressed but was unfinished. Two courses survived, bonded crudely with large amounts of hard yellowish-cream sandy mortar. The western wall (251) was similar, with five to six courses remaining (Fig 15, Section 17).

The two walls define a building range 6.3m wide in total, with rooms 4.7m wide.

Floors and a brick chimney fireplace

No intact floor levels had survived, with the clay layer (224/245) directly overlain by both the brick fireplace and elsewhere by demolition deposits. Several glazed floor tiles were recovered from later deposits in Trench 2, perhaps indicating that a tiled floor and its mortar bed had been stripped out following abandonment.

Abutting the face of the eastern wall was the rectangular brick base of a fireplace [225], (Fig 15). It was 1.44m long by 0.62m wide, comprising a single course of handmade red bricks (220mm x 115mm x 45mm deep – 8¾ x 4½ x 1¾ inches), in alternating lines of two whole bricks and then a whole and a half brick. There was a raised kerb along the front comprising bricks set on edge length-wise (Fig 18). At the northern end there were three courses of a chimney surround, built upon the brick base using an English bond, but the equivalent wall to the west had been lost. All of the bricks were bonded with soft light creamy-white mortar with pinkish flecks. There was light surface scorching upon *c*25% of the bricks, concentrated towards the centre.

A stakehole, 60mm wide by 270mm deep, was set flush with the face of the brick kerb, 0.26m from the northern end of the fireplace.

The hearth was not dismantled during excavation; and was reburied *in situ* after cleaning and recording.

An extensive deposit of dumped debris

At the north-west end of Trench 2 there was an extensive layer (206) of compacted dark black-brown silty sand, which was charcoal-rich, containing abundant fragments up to 30mm in size (Figs 16 and 20). Occasional roof tile fragments were present and the deposit produced ten iron nails, together with an iron hook, a buckle and part of inscribed silver alloy cross pendant. The latest pottery fabrics included two sherds of Cisterian ware, dated *c*1470-1550, one sherd of Brill/Boarstall “Tudor Green”, dated *c*1450-1600 and a sherd of 16th-century Red Glazed Earthenware. The iron artefacts within the deposit may have been attached to odd pieces of timber when deposited, while the silver alloy artefact may be a casual loss.

The layer was presumably a surface dump of waste to the immediate west side of the building, perhaps contemporary with its use and its demolition. The charcoal within the deposit was almost entirely of roundwood from a variety of species.

The top of the deposit was slightly higher than the top of the clay layer within the building, suggesting that it would have been about level with the lost floor surface.

A possible garden feature

To the east of the building there was a broad but shallow linear feature [236], which was 1.8-2.0m wide by 0.24-0.36m deep (Fig 15), cutting a pre-building soil horizon (234). It lay 2m to the east of the building and ran parallel with it. The sides were generally ragged and ill defined, and heavily disturbed in places, with variations in the natural sand formed by possible root hollows.

The fill comprised soft light orange-brown sandy silt with very occasional patches of burning, few charcoal inclusions, grit. The lack of the broken roofing tile, which was plentiful elsewhere in post-building deposits, suggests this feature was probably associated with the use of the building range, and it is very tentatively suggested that it may have been a garden feature, perhaps a planting bed.

4.5 Decay and destruction

It is not known exactly when the residence was finally abandoned: accounts for repairs and maintenance exist for 1524-1540 and the residence was reported in "sore decay" in 1555. It was surveyed in 1567 and was considered for renovation in 1605, so it was still a substantial standing structure at that time, but in neither instance is there any indication it was either inhabited or inhabitable. The parliamentary surveyors reported the site "totally demolished" in 1649.

The destruction and abandonment deposits contained abundant materials from the usage of the building, but nothing to verify a more precise date for the demolition. The majority of the pottery assemblage comprises late medieval wares that were in use to around the middle of the 16th century, and a little that could have run as late as the end of that century. From the material available, there seems to have been little activity from the later 16th century onward.

Robber trenches

Both walls were very extensively robbed, leaving just isolated blocks of the mortared foundations *in situ*. The technique of robbing was well shown on the western wall. A ramp had been excavated into the sandy natural from outside the building to expose the foundation courses, which had been dug out, leaving just a little stone in the base of the construction trench and against the eastern, inner, face of the construction trench (Fig 15, Section 17). On the eastern wall the construction trench had not been similarly disturbed, so here they presumably worked along the line of the wall foundations.

Two artefacts date later than the 16th-century occupation. One is a sherd of 20th-century mass-produced white earthenware, and the other is a piece of clay tobacco-pipe stem, both of which derived from contamination by a modern, wartime, drainage gully [253], which ran the length of the western wall (Fig 15, Section 17 & plan).

Demolition and post-demolition layers

There were post-demolition layers over the levelled remains of the building in Trench 2, sealing the backfilled robber trenches. These deposits had been much disturbed by modern activity, especially within the confines of the building.

A substantial spread of mixed material (207), lay over the building and also extended to the west, where it sealed the dark layer (206) (Fig 15, Section 17). The soil texture was usually gritty or sandy loam and the colouration varied from orange-brown towards dark greyish-brown or blackish-grey as the content of charcoal and degraded humus increased. It was generally lighter within the building, where it had been most heavily disturbed, and at its darkest to the west, where it directly overlay layer (206). The equivalent deposit to the east of the building, layer (214), was also generally lighter in hue, more sandy, and contained more roof tile than the other deposits.

These deposits, where undisturbed, were consistently 200mm thick. In all cases the most common material was ceramic roof tile, together with some brick fragments, pottery and iron artefacts, and six fragments of floor tile. These layers were cut by the 20th-century features and this probably accounts for the presence of some intrusive clay tobacco-pipe stems of 19th-20th-century date in layers (206) and (207).

The absence of floor levels and collapsed building material, suggests that anything of value for re-use was stripped from the shell of the building after its abandonment and/or demolition and levelling, with only broken ceramic roof tiles being discarded in significant quantities.

Trench 4, possible building levels

At the north-eastern end of Trench 4, a linear ditch [415], was cut along the western edge of an earlier ditch [412], on a near north-south alignment (Fig 12). The feature had steep to near vertical sides and a flat base, 1.3m wide by 0.64m deep. The fill (414) was of mixed greyish-brown sandy silt and contained fragments of ceramic roof tile and building stone. A layer of similar material, (402), 0.18m thick, extended to the north.

These deposits may be demolition or destruction layers relating the demolition of the house. The upper fill of the ditch (414) was a layer of dark orange and greyish-brown silty sand (413), 0.23m thick.

Above the demolition deposits there was a layer (409), 0.12-0.24m thick, of firm dark greyish-brown silty sand (409). The high humus content that made it appear almost black in contrast to other deposits. This could be a post-demolition abandonment deposit laid down by vegetation and wild growth. A similar layer was observed in Trench 3; a soft greyish-brown silty sand (315), some 0.32m thick (Fig 11, Section 10).

Deposits in Trench 2 contained much higher quantities of residual materials than the upper layers in Trenches 3 and 4, and whilst their dark hues implied some accumulation of humic matter at the surface, their overall deposition was probably not the gradual accumulations suggested by layers (315) and (409). Post-abandonment vegetation was probably patchy across the site.

4.6 Great War or Second World War activity

In the early part of the 20th century the site was used for various activities related to wartime, with the excavated evidence indicating the presence of some temporary structures, indicated by the cutting of linear gullies or beam gullies and postholes, with related activities including ovens and hearths, as they also left behind dumps of burnt material with clinker.

During the Great War, 1914-1918, the park was used as an army training camp and it seems probable that the hilltop may have been used in connection with this (www.ampthilltowncouncil.org.uk/tourism-history/ampthill-park.html, 13/4/10). During the Second World War there was a Prisoner of War camp at the foot of the hill, just below the site, and an aerial photograph from 1947 depicts a football pitch on the hilltop (Figs 21 & 22). The excavated evidence is thought more likely to originate from the Great War, which is consistent with the discovery of Dundee Marmalade jar fragments, *c*1870-90.

Linear gullies and shallow pits

Gully [261] was steep-sided and flat bottomed (Fig 15, Section 18). It was 0.25m wide and would have been at least 0.5m deep, but the excavated northern end was truncated by pit [266] and here the gully was no more than 016m deep.

Pit [266] was broad and ill-defined, forming a gentle depression *c*3.25m long by 0.48m deep (Fig 15, Section 18). The primary fill comprised loose black charcoal-rich silty clay (223), 40-70mm thick, with the charcoal comprising roundwood from a mixture of species, perhaps the sweepings from fires. It was overlain by up to 160mm of light orange-brown sandy silt (248), flecked with red and white inclusions, above which there was a small dump of red tile fragments (247). The upper fill of the pit was firm dark brown silty clay (219) containing occasional small stones, fragmented tile and chalky flecks. The tile fragments indicate that a proportion of the fill was redeposited from the underlying levels and features.

Two narrow linear features [231/241 & 253] were aligned roughly north to south. They were cut from directly beneath the topsoil (201). Gully [231] cut the fills at the western edge of the shallow pit [266], as well as earlier deposits, while gully [253] was cut along the eastern edge of the wall construction trench [233] (Fig 15). Both gullies/slots were 0.25-0.33m wide, with vertical or near vertical sides and narrow flat bases. Gully [231] was 0.48m deep, and a side branch [241] was slightly shallower, at 0.42m deep. Gully [253] was 0.8m deep.

The fills of these features comprised a mixture of redeposited up-cast, largely residual late medieval or early post-medieval material, mixed with dark charcoal stained greyish-brown silty sand. None of them contained ceramic drainage pipes *in situ*, although gully [231] did produce a modern frogged brick and a couple of fragments of drain pipe.

An irregularly shaped pit, [222], was cut from below the topsoil and truncated earlier deposits along the eastern wall of the earlier building (Fig 15). The pit was 0.70m wide by 0.48m deep, with sharp sloping sides and a sharp break to an irregular uneven base. The fill comprised mid- brownish-yellow sandy clay (221) containing moderate small stones and fragments of tile, chalk and charcoal. It contained a piece of 20th-century iron wire.

Square postholes

Four square postholes [211, 227, 239 & 260], cut from below the topsoil, cut the fill (219) of pit [266], and earlier deposits (Fig 15). They formed a rectangle 2.7m long by 1.5m wide, aligned parallel to linear gullies [261] and [253]. The postholes were roughly the same size, 0.26-0.36m long by 0.20-0.28m wide and 0.37-0.52m deep. They probably held posts supporting a small structure.

Other pits

Cut into the upper layers and below the topsoil within Trench 3, there were three shallow pits or hollows [307, 309 & 312] and a deeper pit [305] (Fig 11).

The shallow hollows were generally diffuse, occasionally with undercutting edges extending into narrow irregular hollows. The fills generally comprised mid greyish-brown silty sand with darker patches, worm castes and occasional fragments of sandstone. Finds included residual bone and roofing tile. These surface disturbances may well relate to vegetation or rabbit burrowing.

Pit [305], in the west face of Trench 3, was 0.45m wide by 0.42m deep, with near vertical sides that curved into a rounded base (Fig 11, Section 19). It was filled with dark greyish-brown sandy silt (304) that contained large quantities of clinker, occasionally adhering to mass-produced white earthenware, and vitrified glass.

Modern levelling

For the most part there was little distinct evidence of the site having been levelled, although the level area of the former sports pitch on the eastern side of the Scheduled Ancient Monument does suggest that limited landscaping may have truncated the tops of features in Trenches 1 and 2.

Conversely, Trenches 3 and 4 contained levelling layers (303) and (408), comprising loose mid- greyish-brown and orange-brown silty sand, 120-220mm thick. These layers contained frequent residual finds which were mixed with modern 20th-century finds. This suggests that the soils were derived from other parts of the site and redeposited.

Topsoil

For the most part there was little or no subsoil. The modern topsoil was fairly even at 200-350mm thick. It comprised soft to firm mid- greyish-brown sandy loam (101, 201, 301 & 401) with occasional small rounded pebbles and light grit. It was grassed at the surface and showed signs of having been rolled and marked out for sports pitches in the past.

5 INTERPRETATION OF GEOPHYSICAL SURVEY RESULTS

by Adrian Butler and Jim Brown

The earth resistance survey at Ampthill Castle was undertaken by Kevan Fadden and Michael Turner of Ampthill & District Archaeological & Local History Society (ADLHS), in September 2002 and April 2003 (see Appendix 4). The fieldwork was conducted during dry weather following a period of rain and the ground conditions were generally dry. This resulted in a higher overall soil resistivity level than might otherwise have been expected. The survey data was collected with a TR/CIA resistance meter. It was deployed in twin probe configuration with mobile probe spacing of 0.5m and the remote probes were spaced at a similar distance apart. Data, to a precision of 0.1 Ohms (Ω), was collected within 20m grid units at a spatial resolution of 1.0m by 1.0m. Thus each complete survey grid contained 400 data points. The entire survey was composed of approximately 82 grids.

For reprocessing by Northamptonshire Archaeology, the original data was transferred into Surfer v.8 (Golden software), in which it was High Pass filtered using a 9-point kernel, to remove the background data and emphasise smaller anomalies. A grey tone plot of the results (Scale -1000 to 2000 Ω) was mapped onto the Ordnance Survey (Fig 3), and an interpretative diagram was constructed upon the map base highlighting the major anomalies (Fig 23).

The original report by ADLHS describing the earth resistance survey highlighted five key anomalies (see Appendix 4, Part 1). Below, these are briefly restated and alternative interpretations are considered, taking into account the principal results of the excavation.

Other features are also noted.

Key anomaly 1: "A large rectangular area defined by wide lines of low resistance which may represent ditches or a dry moat… The buried earthwork certainly seems to suggest a small medieval castle or at least a defended house". (Fig 23: 3, 5, 6 & 7)

A broad line of low resistance, some 5m wide, forms an anomaly aligned north to south through the centre of the survey area (3). It is recorded for a distance of some 90m, with a well-defined terminal to the south. Running parallel with this broad anomaly, there is a narrow negative anomaly less than 10m to the east. It is unclear from the survey results alone what this feature represents, but further interpretation can be suggested utilising the results of excavation in Trench 2. The broad anomaly can be equated to the deeper soil deposits seen at the western end of Trench 2, where there was a maximum depth of 0.90m (see Fig 15). This would tend to confirm the interpretation of this feature as a broad linear ditch, although the excavation does not indicate that this is on the scale of a moat. The parallel narrow anomaly to the east might equate with the robbed eastern wall of the building recorded in Trench 2. Although not previously noted, the aerial photograph of 1947 shows a pair of narrow parallel soil marks that may also denote the walls of this building (Fig 22), and this evidence will be reviewed in the final discussion.

There are other low resistance linear anomalies further to the west suggesting the presence of further subsurface features, but perhaps masked by levelling deposits making distinct features hard to define (Fig 23: 4, 5 6 & 7). They form generally rectangular patterns, with a line running roughly parallel to anomaly (3), 55m to the west, and a further anomaly at right angles and running westward (5). To the south, two short parallel features, set at an angle to the others, are perhaps further broad ditches (Fig 23: 6 & 7).

Key anomaly 2: "dark and light lines running roughly east west can be seen, equally spaced apart. They are of similar spacing to mediaeval ridge and furrow…"

A series of broad stripes of alternating higher and lower resistance, at intervals of *c*6m, and spanning an area some 40m north-south, lie in the north-east of the survey area (Fig 23, 1). These seem most likely to derive from ploughed out ridge and furrow cultivation, as suggested in the original interpretation.

Key anomaly 3: "a number of low resistance lines define a large rectangle… This reflects the shape of the plans drawn in 1567…the fit is remarkable…Some of the lines of this rectangle could be attributed to a football pitch…"

A rectilinear pattern of low resistance anomalies lie on north-east to south-west and north-west to south-east alignments (Fig 23, 2). The plan form is broadly consistent with the layout of a football pitch depicted on an aerial photograph of *c*1947 (Fig 22), with the multiple lines potentially deriving from movement of a few metres in the line positions at periodic re-establishments of the pitch. It is also possible that some of the lines might derive from a rugby pitch laid out on a similar plan.

The misidentification of sports pitch lines for buried ditches is well recognised (Gafney and Gater 2003, 91-392, figs 42-43). The phenomenon derives from the repeated marking of the lines with lime, which has increased the moisture-retaining capacity of the soil making it more electrically conductive, this is also reflected in the same lines showing as linear grass marks of more luxuriant growth.

Whether the geophysical anomalies derive entirely from the lines of a football pitch, or whether they also record a linear gully excavated in Trench 1, and perhaps other cut features beyond this, is difficult to determine. There are grass marks showing the same overall pattern as the linear anomalies on the geophysical survey, and there appears to be a close coincidence of line between one of these and an excavated gully in Trench 1 (see Figs 5 & 6).

However, it is clear is that the excavation of Trench 1 provided no evidence for the former presence of any substantial stone building in this part of the site.

A more extensive programme of trial trenches or test pits, in which the grass marks and the plotted anomalies could be correlated to any coincident sub-surface cut features, would be the only effective means of testing these relationships and of further exploring the linear cut features in this part of the site.

Key anomaly 4: "A rectangle shows consistently high readings … could suggest a lining to a courtyard (say cobbles, rubble, gravel or deep sandy area." (Fig 4, 10)

Large rectangular areas containing concentrations of high resistance readings are present between the lower resistance features (Fig 23: 8, 9 &10). It is possible that these may relate to sandy or gravel courtyard areas, perhaps enclosed by robbed out stone structures and associated ditches or garden features. Area 10 in particular could be interpreted as including an entrance flanked by two elongated rectilinear anomalies that could represent either cellared buildings or ditches (Fig 23, 6 & 7). However, there was little evidence for this in Trench 4, which showed the presence of sandy natural, which might account for the high readings.

Key anomaly 5: "Another area with consistently high readings and indications of a ditch surrounding. At this point the edge of the plateau gives way to a pronounced downward slope comprising very soft sand." (Fig 23, 11)

Area 11, to the south, may indicate a parched sandy area, perhaps a well drained garden or a sand quarry, positioned on the south slope of the hill.

In addition to the features discussed above, the lines of the public footpaths are identified on north-east to south-west and east-west alignments (Fig 23, 12). There are also scattered discrete low resistance anomalies that may indicate substantial pits (Fig 23, 13), and one of these was excavated in Trench 3 (see Fig 11). Some of these anomalies may also be former trees (eg Fig 23, 14). The mowing lines of the modern parkland areas show around the edges of wooded copses, matching with Ordnance Survey data (Fig 23, 15).

Ampthill & District Archaeological & Local History Society have also provided a series of 'pseudo sections' across key features of the site. The results are available in Appendix 4, but are not discussed in detail within this report.

6 DISCUSSION

Ampthill Castle is a multi-period site. Prior to the present investigation it was thought to have been occupied for around 200 years between the construction of the palatial residence in the 15th century until its decay and final abandonment at the beginning of the 17th century. What has become clear as a result of the community excavation is that the archaeological record preserves a much longer sequence of occupation, both before and after the late medieval and Tudor buildings. Distinct episodes are evident, although much remains unclear and in need of future clarification. Excavation in Trench 1 produced linear gullies that may be of early-middle Saxon date and, at the least, the pottery assemblage attests to occupation on the hill in this period. At the other extreme, Trenches 2 and 3 produced evidence for activity during the Great War, probably including the erection of temporary buildings.

Medieval settlement

Trench 1 investigated part of a series of rectilinear geophysical anomalies that were also partly represented by grass marks. The model postulated by Ampthill & District Archaeological & Local History Society as a result of their geophysical survey (see Appendix 4), was that this pattern incorporated elements of recent sports pitches but with these near coincident with the layout of the former house.

Early-middle Saxon pottery was recovered from the linear features in Trench 1, and the localised occurrence of later material is considered to be intrusive. The presence of settlement in the early-middle Saxon period has added a new dimension to the site, and one that would require further work to determine its nature and extent.

Ampthill Castle

While the later material in the gullies in Trench 1 may leave some doubt about the date of these features, they are clearly not part of a substantial stone building of the 15th century, and no residual finds of building materials came from this trench. This alone throws doubt on the model postulated by Ampthill & District Archaeological & Local History Society for the location of the house on the eastern half of the site on a north-east to south-west alignment. As a result, it is suggested that the rectilinear pattern of anomalies across the eastern half of the site largely derive from the line markings of former sports pitches. However, there is the added, and currently unexplainable, coincidence of alignment between the main linear gully in Trench 1 and a surface grass mark even though the basic pattern of the grass marks are appropriate for a football pitch. It would need further fieldwork to resolve the conflicting evidence provided by this apparent coincidence of grass mark and cut feature.

Medieval activity for the Saxo-Norman period, 11th-12th centuries, is not visible amongst the artefacts present from the site. Although there was some substantial late 14th-century levelling, evidence for an earlier castle was largely absent.

There is a possibility that ditches and pits recorded in Trenches 3 and 4 may have had a medieval origin, pre-dating the construction of the palatial residence in the 15th century. However, these features were not securely dated and they could have been contemporary with the house, perhaps as garden or landscape features. The documentary accounts refer to the expenses of the building renovations but do not contain any information on the maintenance of the grounds of the “Great Park”, although some landscaping would probably have accompanied the beautification of the building for Henry VIII (Turner 2009).

It was only Trench 2 that demonstrated the presence of extensive below-ground remains of former buildings of Ampthill Castle, although heavily robbed, with the floor levels gone

and the walls robbed to below ground level. The building located was aligned north-west to south-east, but the narrow width of this structure suggests that it is more likely to have been part of an ancillary range rather than part of the main house.

The alignment of these building remains also coincides with the broad trend of the geophysical anomalies across the western half of the site (Fig 23: 3, 4 and 5), and it has also been noted that the earthwork platforms to the west of Katherine's Cross contain much building material, particularly ceramic roof tile, although the platforms themselves probably derive from later landscaping, incorporating residual building materials from the demolished house.

Utilising this information, the plan of Ampthill Castle has been aligned with the recorded building remains and the trend of the geophysical anomalies, on the assumption that they formed part of the Base Court (see Fig 2), placing the entire structure on the western half of the site. The resulting plan shows that this model is feasible, although to the north in particular the building lies uncomfortably close to the scarp edge (Fig 24).

Recent land use

There was no evidence to suggest an impact on the hilltop by the 18th-century landscape works of Lancelot Brown. Activity on the hilltop during the period of the Great War was confirmed in Trenches 2-3 where it was also clear that earlier period remains have been subjected to vertical truncation by drains or beam slots. A degree of horizontal truncation or redeposition may be expected in parts of the scheduled area through the digging of pits, the disposal of burnt refuse and the creation of the sports pitches. It is not known how widely the activities may have spread, but the complete absence of 20th-century material in Trench 1 would suggest that they may be confined to focal areas.

Community involvement

The project as a whole was well received during the excavations. Ampthill and District Archaeological and Local History Society, as the originators of the geophysical survey, also took an active role as volunteers during excavation. A total of fifty-two volunteers took part over a period of seven days, with The Greensand Trust and English Heritage helping to organise volunteer staff. We apologise to those who wished to take part and were unable to do so given the number of archaeologists available to supervise. We were pleased to offer a fieldwork opportunity to those seeking to further their own archaeological studies at university or for a career, as well as those seeking to extend their existing knowledge.

The Open Day, which was held on Saturday 25th July 2009 to coincide with the Aragon Day celebrations, attracted a respectable audience to hear presentations and site tours given by archaeologists from Central Bedfordshire Council and Northamptonshire Archaeology. Further voluntary work was undertaken during post-excavation, assisting in the washing and preparation of the finds archive.

The future

As a result of the geophysical surveys and limited trial trenching a new understanding of Ampthill Castle is emerging. Unfortunately, the excavation of only four trenches was insufficient to characterise the arrangement of the buildings, and there are now conflicting models centred respectively on the western and eastern halves of the hill, with differing building alignments. Given the limitations of interpretation from geophysical survey results alone, the conflicting models for Ampthill Castle and the broader story of the utilisation of the hill top, both before and after the castle, could only be resolved by further fieldwork. The results of the present study would inform the preparation of any future proposals for further investigation. Future work would either need to be on a

larger scale or very carefully targeted to text specific points of conflict within the interpretations offered by Northamptonshire Archaeology and Ampthill and District Archaeological and Local History Society.

APPENDIX 1: THE FINDS

A1.1 Worked flint by Yvonne Wolframm-Murray

Three pieces of worked flint were recovered from the topsoil and as residual finds from later contexts. The flints comprised one flake and two blades. Post-deposition edge damage consisted of occasional nicks on all three pieces. The raw material was a vitreous flint of a light greyish-brown and a dark grey colour. The small amount of cortex present on both artefacts was mid brown and light grey coloured. The flake was squat with a broad cortical striking platform and soft hammer struck. One blade also had a broad striking platform and was hard hammer struck, whereas the other blade was soft hammer struck. The worked flints are not directly dateable but their technological characteristics suggest a Neolithic to early Bronze Age date.

Table 2: Worked flint

Context	Feature	Form	Material	Cortex	Comments
102	timber slot 103	blade	vitreous dark grey	light grey	broad striking platform
206	charcoal layer	blade	vitreous light greyish-brown	none	
401	topsoil	flake	vitreous light greyish-brown	mid- brown	broad cortical striking platform

A1.2 Iron Age pottery by Andy Chapman

A single sherd of pottery weighing 31g came from ditch [114] in Trench 1. The sherd has a sandy fabric, with a grey-brown core and inner surface. It is orange-brown on the external surface. The surface is decorated with faint linear striations characteristic of middle Iron Age scored ware from the midland counties. The striations were probably made by brushing with organic material, rather than combing.

A1.3 Roman pottery by Jane Timby

Excavations produced three sherds of Roman pottery weighing 32g. All the pieces are redeposited in later levels from Trenches 2 and 3. There are two unfeatured sherds of local greyware and one rim from a Lower Nene Valley colour-coated plain-rimmed dish. This type was made from the later 2nd century onwards, although most are of 4th-century date. The slight bevelling at the junction between the wall and the base might suggest this is a later vessel (Perrin 1999, 101). Two of the three pieces are of moderate size with abraded edges.

A1.4 Early-middle Saxon pottery by Paul Blinkhorn

The medieval and post-medieval pottery assemblage comprised 149 sherds with a total weight of 1782g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference for the whole post-Roman assemblage was 0.57. Two main phases of activity were clear; the early-middle Saxon period, *c*AD450-850, and the 15th-16th centuries (see section A1.6). A few small groups of early 20th-century material were also noted and these are discussed by Iain Soden (see section A1.11).

Fabric

The codings and chronology of the Bedfordshire County Archaeology Service type-series were used (Baker and Hassall 1979).

A02:	Early/middle Saxon coarse sandy ware.	24 sherds, 147g, EVE = 0.06
A07:	Early/middle Saxon fine quartz.	6 sherds, 33g, EVE = 0
A19:	Early/middle Saxon quartz and organic.	2 sherds, 35g, EVE = 0

Early-middle Saxon sherds

The assemblage comprised 32 sherds with a total weight of 215g (EVE = 0.06) (Table 3). The range of fabric types are fairly typical of sites in the region, and can be paralleled at a number of centres, such as Bedford (Baker and Hassall 1979).

Table 3: Saxon pottery by number and weight (g) of sherds

Fabrics		**A02**		**A07**		**A19**	
Context	**Feature**	**Sherds**	**Wt (g)**	**Sherds**	**Wt (g)**	**Sherds**	**Wt (g)**
101	topsoil	6	28				
104	timber slot 106	5	48	1	7		
108	timber slot 109	5	27	1	4		
112	timber slot114	1	9			1	22
115	timber slot 116	3	10				
117	timber slot 119	3	10	2	10		
118	timber slot 119			2	12		
402	surface cleaning					1	13
413	Robbing 415	1	15				
Totals		**24**	**147**	**6**	**33**	**2**	**35**

The pottery comprised entirely plain bodysherds, apart from a single rimsherd from a jar (Fig 27, 1). None of the sherds showed any form of surface enhancement other than four sherds in fabric A07, all of which were burnished. Dating small assemblages of hand-built pottery of this type is extremely difficult, other than to within the broad early-middle Saxon period, *c*AD450-850. It is generally only possible to identify early Anglo-Saxon pottery of the 5th-6th centuries by the presence of applied, incised or stamped decoration, which was rarely used in the 7th century or later (Myres 1977). No sherds of this type occurred at this site, but as decorated pottery only usually comprises less than 5% of a domestic assemblage, such as at Mucking in Essex (Hamerow 1993), its absence in a group as small as this cannot be taken as conclusive. The lack of relatively common middle Saxon wares, such as Maxey-type ware, fabric A11, suggests a *terminus ante quem* of around the mid-7th century for the assemblage, although this cannot be advanced with confidence. The majority of the early-middle Saxon pottery occurred in the features in Trench 1.

The presence of the early-middle Saxon hand-built wares and associated structures are of significance in terms of the archaeology of Ampthill, as it is the first find of a substantial, dated early-middle Saxon settlement in the vicinity of the modern town. A larger pottery assemblage would have the potential to enhance the understanding and refine the chronology of this site. The absence of decorated wares and Maxey-type wares suggests a fairly short-lived settlement, perhaps dating to the first half of the 7th century; a much larger assemblage of pottery would be required to allow this date to be suggested with confidence.

Illustration

Fig 27, 1 Rimsherd from a jar, early-middle Saxon coarse sandy ware. Dark grey fabric with black surfaces. Robber trench [415].

A1.5 Medieval finds by Tora Hylton

An arrowhead

A complete arrowhead was recovered from slot [116] in Trench 1. The arrowhead is triangular in shape and comprises a tapered socket flanked by opposing fins. It measures 54mm long by 26mm wide and the socket has a diameter of 16mm. Typologically this arrowhead displays similarities to Jessops Type M2 (1996), a military form that would have functioned as a warhead and would have been effective against early forms of armour and body protection. Such arrowheads often referred to as javelin heads would have been mounted on longbow shafts (Ottaway and Rogers 2002, 2969). Examples dating from the *c*11th-16th centuries are well recorded, and they include 11th to 12th-century (*c*AD1080-1150) examples from Goltho, Lincolnshire (Goodall 1987, fig 160, 172-175), 13th to 14th-century (*c*AD1280-1356) examples from Faccombe Netherton, Hampshire (Goodall 1990, fig 9.11, 599-602) and 15th to 16th-century arrowheads from Fishergate, York (Ottaway and Rogers 2002, 15134-8).

Jewellery

Part of a silver alloy cross pendant was recovered from an extensive area of burning in the north-west end of Trench 2, (206); it comprises the suspension loop and part of the vertical arm (Fig 25). The arm expands (flares) towards the terminal and stylistically it appears to represent part of a cross pendant with arms of equal proportions, like examples from Beachamwell, Norfolk (DCMS 1998-1999, 172) and Grendon, Northamptonshire (DCMS 2003, 211), which date to *c*1300. The arm carries part of an inscription in Lombardic script, the letters are 'I E S', which represents part of the word 'IESUS', with the 'I' in Latin being used instead of the English 'J', hence the word 'JESUS'. A similar inscription is seen on an example from Long Marston, North Yorkshire (PAS: YORM-763D18; Treasure: 2007 T515) which dates to *c*1300-1400; the arms are also of equal length and it is inscribed with '+ IESVSN' on the vertical arms and 'AZAREN' on the horizontal arms (Jesus of Nazareth).

Costume fittings

There is a buckle frame and a rumbler bell from cleaning layers overlying Trench 2 (202, 204) and a buckle-plate from topsoil deposits overlying Trench 4. The buckle-frame is incomplete, only the outer edge survives, but originally it would have had a cast oval frame with ornate outside edge. This type of buckle is distinctive; the outside is furnished with mouldings which flank a constriction, around which a revolving sheet cylinder (roller) is wrapped. Buckles of this type date to the late 12th to late 14th centuries and similar examples are known from Lyveden, Northamptonshire (Steane and Bryant 1975, fig 42, 17) and London (Egan 1991, fig 46, 317). The buckle-plate is small, it represents a one-piece type and it is made from folded sheet metal; it would have been secured to a leather strap by means of three domed headed rivets (extant). The terminal of the plate is tri-lobed (trefoil) and there is a slot for the pin and the side of the plate is recessed to accommodate the buckle. A not dissimilar example dating to the 13th century is known from Germany (Fingerlin 1971, 545).

There are two buckles from layer (206) in Trench 2.

The rumbler bell is made from sheet metal, it measures 15mm in diameter and it has been manufactured in four pieces (Fig 26, 3), the loop, two halves of the body and the

iron pea). The strap loop would have been used for suspension, generally from items of clothing (Pritchard 1991, 336-337). A similar example from London was recovered from a late 13th to mid 14th-century deposit (*ibid* 1991, fig 221, 1645).

A sewing ring

The sewing ring, 20mm in diameter and 10mm high, is slightly tapered and furnished with four concentric rows of irregular hand-punched circular indentations (Fig 26, 2). In contrast to thimbles, which were used for fine work, sewing rings were generally used for heavy duty work like tailoring (Holmes 1988). This particular example with its hand-punched indentations may date to the 15th century.

Horse snafflebit

A complete snafflebit was recovered from within an animal burrow that had been dug under the edge of chalk layer (254). The piece comprises a mouthpiece with adjoining circular cheek pieces which together measure *c*270mm across. The two mouthpiece links are from a Ward-Perkins Type II mouthpiece (1993, fig 19b), solid forged with a rectangular or square cross-section and the ends of the links are pierced to accommodate the cheek pieces. The cheek pieces are circular with a circular cross-section and equate to Ward-Perkins Type A (1993, fig 19a). Stylistically the simple ring snaffle and the ordinary two-link mouthpiece represent universal types which would have been used from the early medieval through to the post-medieval and modern periods, and are therefore difficult to date with any certainty.

Horseshoes

A horseshoe was recovered from layer (224) in Trench 2, which was the clay floor surface on the outer side of wall [218] and was deposited contemporary with the late medieval palatial residence.

A single horseshoe nail was recovered from layer (303) in Trench 3. It has a trapezoid head and curved profile, indicating that it had been used (Clark 1995, fig 66). Nails of this type were in use from the 13th century onwards.

Nails

Four objects were recovered from layers (302) and (315) in Trench 3. The finds comprise three nails and a U-shaped staple. The nails are hand forged with rectangular or square-sectioned shanks and complete examples measure up to 73mm in length. Two types are represented, a wedge-shaped nail with no distinct head and a nail with a domed head. The former would have been used on timber; it would have been hammered into the wood so the head was flush with the surface. The latter may have been used to attach iron fittings or to provide a decorative effect on items such as doors or chests. The U-shaped staple would have been driven into timbers and the protruding end would have formed a fixing point for such items as chains, rings or hasps.

The extensive burnt deposit in the north-west end of Trench 2 (206) produced fourteen finds. There are also four nails from the wall foundation in Trench 2 (229, 246) and two undiagnostic fragments of iron from the post-demolition dumping in Trench 4 (413, 414).

The finds recovered from the burnt deposit (206) include nine nails, a hook and an undiagnostic strap fragment. These may have been attached to pieces of discarded or burnt timber. The nails are forged with square/rectangular cross-sections, only one is complete (35mm) and the remainder are incomplete and measure up to 42mm in length. Five of the nails retain their heads, four with flat sub-circular heads and one with a flat burred L-shaped head; both types would have been hammered into the wood so the head was flush with the surface.

A1.6 Medieval and early post-medieval pottery by Paul Blinkhorn

The medieval and early post-medieval assemblage comprised 94 sherds with a total weight of 1162g (EVE = 0.51), with a potential date range of the 15th-16th centuries.

Fabrics

Most wares are types which are well-known in the region and, where appropriate, the Bedfordshire County Archaeology Service type-series were used (Baker and Hassall 1979). The only noted fabric not in the Bedfordshire type-series is Bourne 'D' ware, *c*1450-1637 (McCarthy and Brooks 1988, 409), which was manufactured in the eponymous south Lincolnshire village. It is fairly hard, smooth, brick-red fabric, often with a grey core and sparse calcitic inclusions up to 2mm in diameter. Full range of late medieval to early post-medieval vessel forms, jugs, pancheons, cisterns etc are known. Vessels often have a thin, patchy exterior white slip, over which a clear glaze has been applied.

Fabric code	Fabric name (date range)	Sherd count	Weight (g)	EVE
C10	Potterspury ware (mid 13th-15th centuries)	1	7	0
C09	Brill/Boarstall ware (mid 13th-15th centuries)	1	79	0
E01	Late medieval reduced ware (mid 14th-16th centuries)	59	711	0.39
E02	Late medieval oxidized ware (mid 14th-16th centuries)	19	213	0
P12	Cistercian ware (*c*1470-1550)	3	18	0
P13	Surrey 'Tudor Green' type ware (*c*1380-1550)	2	30	0
P23	Raeren Stoneware (*c*1450-1550)	5	56	0
C66	Brill/Boarstall 'Tudor Green' type (*c*1450-1600)	2	11	0.12
P01	Glazed Red Earthenware (16th century?)	1	27	0
---	Bourne 'D' ware (c1450-1637)	1	10	0
Totals		**94**	**1162**	**0.51**

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 4. Each date should be regarded as a *terminus post quem*. Most of the pottery types are well-known in the county, although the sherd of Bourne 'D' ware from south Lincolnshire is a rare find in other than the east of the county. It is testament to the importance of the castle in the late medieval period that it was able to attract trade, direct or otherwise, from such a distant source.

Table 4: Medieval and post-medieval pottery by number and weight (g) of sherds

Fabrics	C10 Potterspury		C09 Brill/Boars'll		E01 Late med'l reduced		E02 Late med'l oxidised		Bourne 'D'	
Context / feature	**No**	**Wt (g)**	**No**	**Wt (g)**	**No**	**Wt (g)**	**No**	**Wt (g)**	**No**	**Wt (g)**
101 / topsoil	--	--	--	--	1	1	--	--	--	--
102 / 103	--	--	--	--	4	18	--	--	--	--
206 / layer	--	--	--	--	1	57	--	--	--	--
207 / layer	--	--	--	--	--	--	3	45	--	--
214 / layer	1	7	--	--	1	23	--	--	--	--
215 / layer	--	--	--	--	3	57	--	--	--	--
220 / layer	--	--	1	79	--	--	--	--	--	--
230 / 231	--	--	--	--	1	11	--	--	--	--
301 / topsoil	--	--	--	--	5	77	5	61	1	10
302 / layer	--	--	--	--	2	38	--	--	--	--
303 / layer	--	--	--	--	9	105	4	69	--	--
316 / layer	--	--	--	--	12	184	2	13	--	--
317 / 330	--	--	--	--	4	59	--	--	--	--
318 / layer	--	--	--	--	5	15	1	5	--	--
324 / 336	--	--	--	--	4	23	--	--	--	--
402 / cleaning	--	--	--	--	5	29	2	17	--	--
413 / 415	--	--	--	--	1	10	2	3	--	--
414 / 415	--	--	--	--	1	4	--	--	--	--
Totals	**1**	**7**	**1**	**79**	**59**	**711**	**19**	**213**	**1**	**10**

Table 4: Medieval and post-medieval pottery by number and weight (g) of sherds (continued)

Fabrics	P13 Surrey Tudor Green		P12 Cistercian ware		P23 Raeran ware		C66 Brill/Boars'll Tudor Green		P01 Glazed red Earthernw'e	
Context / feature	**No**	**Wt**	**No**	**Wt**	**No**	**Wt**	**No**	**Wt**	**No**	**Wt**
101 / topsoil	--	--	--	--	--	--	--	--	--	--
102 / 103	2	30	--	--	--	--	--	--	--	--
206 / layer	--	--	2	8	--	--	1	1	1	27
208 / 209	--	--	1	10	--	--	--	--	--	--
230 / 231	--	--	--	--	--	--	1	10	--	--
301 / topsoil	--	--	--	--	2	26	--	--	--	--
302 / layer	--	--	--	--	1	4	--	--	--	--
303 / layer	--	--	--	--	1	3	--	--	--	--
316 / layer	--	--	--	--	1	23	--	--	--	--
Totals	**2**	**30**	**3**	**18**	**5**	**56**	**2**	**11**	**1**	**27**

Forms

The bulk of the assemblage comprises jars (EVE = 0.24) and jugs (EVE = 0.17) in late medieval reduced and oxidized wares, usually the most common pottery types found at sites of this period in Bedfordshire. A few other vessel types were noted, mainly bodysherds from drinking pottery such as Cistercian ware cups and Raeren Stoneware mugs, but a tiny fragment of a rim from a Brill/Boarstall ware 'Tudor Green' type cup and

a sherd from a small bowl or skillet in the same fabric were also noted. The latter vessel type is often found at places were mass catering was necessary in the late medieval period, such as Eynsham Abbey in Oxfordshire (Blinkhorn 2003).

Perhaps the most unusual sherd was a fragment from the rim of a late medieval reduced ware curfew or fire-cover (Fig 27, 2). Such vessels are very rare in this fabric and there is no mention of them being present amongst the manufacturing waste in the initial reports on the excavations of the Bedfordshire production sites at Everton (Hassall 1976) or Flitwick (Mynard *et al* 1983), or at more distant reduced ware manufactories such as Higham Ferrers in Northamptonshire (Blinkhorn 2007). This vessel could have been made as a 'one-off' commission. The sherd does not show any sign of internal sooting, which is common on vessels of this type, but is scorched and crazed around the rim, suggesting it was used to cover a charcoal fire.

Overall, this is a very typical assemblage of the late medieval period, and is exactly what one would expect to see in any sizeable town in the midlands at that time, comprising mainly local utilitarian wares in the form of coarseware jugs and jars with smaller quantities of finer wares from Oxfordshire, Lincolnshire, Surrey and Germany.

The pottery assemblage from the castle is relatively small, but is exactly what one would expect from a settlement of this type. Little pottery occurred which could be related to later activities surrounding the castle. There are a number of distinctive pottery types that are notable by their absence which date to this period and are well-known in the county. It seems likely that these apparent gaps may be the result of the vagaries of limited trial excavation.

Chronology

Earlier wares, particularly medieval shelly ware (Fabric B07), are entirely absent, indicating that there was perhaps little activity during the Saxo-Norman period. Early features may be either a lot earlier (potentially middle Saxon) or were present only shortly prior to the construction of the castle in the early 15th century. Such pottery is quite common in most of Bedfordshire before that time.

The range of wares present suggest activity from the time the castle was built until the later 15th/early 16th centuries, after which there was a sharp drop-off in pottery deposition, with Red Earthenware, a common pottery type of the mid 16th-17th centuries, represented by just one sherd. There is very little evidence from the pottery for activity during the reign of Queen Elizabeth I or the reported demolition of the castle by 1649, in the Stuart period.

Illustration

Fig 27, 2 Rim from a curfew with incised wavy lines on the outer surface, late medieval reduced ware. Grey with orange patches on the surface, rim and *c*20mm of internal surface scorched and crazed. Ditch [330].

A1.7 Ceramic building materials by Pat Chapman

Roof tile

There is an assemblage of *c*1137 roof tile sherds, weighing 109.4kg. With the exception of one ridge tile, they are all from flat peg tiles. The tiles are fragmented, not only from re-deposition but from also from weathering. The quantity of tile sherds given is approximate as some sherds have a tendency to break and laminate further during handling. The sherds are typically about 90mm by 90mm, or smaller. By far the largest quantity of tile sherds, 247 (*c*20%), came from layer (214) with a further 20% from destruction layer (206) and dumping/levelling deposit (303).

There are no complete tiles, however, a few width dimensions survive from the top, middle and bottom of the tiles, which appear to reflect two sizes; six examples at 140-150mm wide (5½ to 6 inches) and five examples at 160-180 mm wide (6¼ to 7 inches). They are typically 13-18mm thick, with a few examples at 10-12mm thick.

Each tile has two pegholes, with the left hole usually closer to the edge than the right-hand one. The vast majority are large round holes 12-15mm in diameter. A few have two square holes orientated as diamonds, usually 12mm square. Wooden pegs were used with round holes *c*1250, while iron nails generally came later and used the square holes (Drury 1981, 127). However, there was evidence of iron nails used in the pegholes of the flat shouldered roof tiles from the 12th-century Abbey of St James in Northampton (P Chapman pers comm). The lack of nibs may be an indicator of a medieval rather than post-medieval date.

The tiles are all unglazed with two exceptions; one has a very worn green glaze on one surface and another has green glaze splashed along an edge. Remnants of soft white lime mortar survive on a few tiles, either as a thin skin or the occasional lump.

The fabric is virtually all one type, hard coarse sandy clay fired from orange to red sometimes with a reduced grey core. About 3.5% are overfired to dark grey and black with a rare inclusion of sub-rounded gravel up to 18mm. A few sherds were made from Gault clay, which is a finer pale clay. References to tile kilns at Ampthill from the 16th century imply that they had been around earlier, and would account for the uniformity of the assemblage (Baker and Hassall 1979, 254).

The variable colours of the clay and the probable deliberate overfiring to black could have been used to create patterns on roofs in the way that overfired bricks were used for diaper patterns on walls (Fig 28).

There is one large crested ridge tile from layer (206) that has a surviving length of 280mm, is at least 180mm wide at the base, and is 12-20mm thick. The low crests ran along the apex of the tile starting from the end, although the first is lost and presumably would have continued for the length of the tile. The two crests that survive on this large remnant are 80mm long, 20mm wide at the base and rise *c*15mm above the apex. The surface was originally covered with a white slip (Fig 29).

Marks on the tiles include one dog pawprint belonging to a relatively large animal that was made while they were laid out to dry. There are two other unexplained marks, perhaps tool marks (Fig 30).

The overall uniformity of the roof tiles suggest that they were manufactured at about the same time, probably from a local kiln. The use of pegs to suspend the tiles and the lack of nibs suggest a medieval date, while the width of the tiles sits comfortably within the specification of 10½ by 6½ by ½ inches set by Act of Parliament in 1477. The technology is consistent with the period in which Ampthill Castle existed.

Table 5: Quantification of roof tile

Context / feature	No	Wt (g)	Description
101 / layer	2	43	
102 / slot 103	11	342	Alongside Surrey “Tudor Green”
201 / topsoil	4	566	
202 / layer	15	2543	
204 / layer	45	2988	Top width 150mm
205 / layer	16	630	Top width 140mm; green glaze splashed on edge and top.
206 / charcoal layer	122	10709	Top width 150mm; mid width 180mm; very worn green glaze. Crested ridge tile
207 / rubble layer	84	10849	
208 / gully 209	3	332	
210 / posthole 211	70	4405	Close-set pointed marks on fragment, toolmarks?
212 / charcoal layer	9	821	
214 / rubble layer	247	33100	Top width 175mm; mid width 160mm. 2 half tops edge to between holes 80mm so 160mm wide; dog paw print
215 / layer	12	934	
217 / pit 265	16	1962	
219 / layer	16	2854	Bottom width 150mm
220 / rubble layer	33	2585	
221 / pit 222	16	1852	
223 / charcoal fill of pit 266	25	3462	
224 / surface	13	786	
226 / posthole 227	3	31	
229 / timber slot 233	8	1876	Top width 145mm, tops of four others, one at least 170mm wide
230 / gully 231	76	5992	2 semi-circular tiles with whitish surfaces, and thinner, possible drainpipes
234 / layer	3	218	
236 / layer	11	593	
238 / posthole 239	12	692	
301 / topsoil	47	3856	
302 / levelling layer	1	100	
303 / levelling layer	146	9062	Curved mark on fragment
308 / pit 309	17	706	
316 / layer	1	127	
317 / ditch 330	1	41	
401 / topsoil	48	3286	Top width 140mm
402 / rubble layer	17	1710	
413 / robbing 415	7	522	
414 / robbing 415	1	114	
Totals	**1037**	**109394**	

Brick

Of the twenty-seven bricks found, twenty-five are early handmade bricks, the other two are modern and include the only complete brick found that did not form part of the chimney hearth. The early bricks are generally made from bright orange sandy clay which is quite friable; a few are made from a finer sandy denser non friable clay, and one fragment had been fired to hard purplish-brown. Some of these bricks had been badly mixed and have cracked where they had not properly bonded in the mould. Many of the

surfaces are rough, maybe from exposure and therefore erosion, and one has a domed top. There are a very few traces of white lime mortar.

It was possible to measure the width of fourteen fragments, which are between 73mm and 125mm wide (3-5 inches), with eight that are 105-110mm wide (*c* 4¼ inches). Nineteen have measurable thicknesses of 40-50mm (1½ to 2 inches) and twelve fragments are 50mm thick. The dimensions and appearance of the fragments suggest an early date for their manufacture in the 15th-17th centuries.

The two modern bricks are white, made from Gault clay with added chalk. The fragment, from layer (219), is well made with smooth sides, 112mm wide and 63m thick, and has a lump of slag stuck on one edge. The complete brick, from drainage gully [231], measures 225mm long by 105mm wide and 68mm thick. At the top is a margin 18-22mm wide and 8mm deep to a surface in which a rectangular frog with sloping sides 92mm by 30mm by 5mm has been stamped. There are circular marks on the top and bottom at each end, possibly from stacking in the drying yard or kiln. It has been blackened along one stretcher and header. The dimensions of these bricks suggest an early 20th-century date as they differ from the 1969 British Standard size.

Table 6: Quantification of brick

Context / feature	Number	Dimensions (mm/inches)	Comment
206 / charcoal layer	5	40-50mm thick,105-112mm wide 1½-2 inches thick, 4⅛-4¾ inches wide	Sandy friable orange, one purplish
207 / rubble layer	10	40-50mm thick, 73-110mm wide 1½-2 inches thick, 3⅞-4⅜ inches wide	Sandy, friable and hard orange; one purplish
208 / gully 209	1	50mm thick 2 inches thick	Sandy friable orange
214 / rubble layer	3	45-48mm thick, 105mm wide 1¾-1⅞ inches thick, 4⅛ inches wide	Sandy, friable and hard orange
215 / layer	1		Sandy friable orange
219 / layer	1	63mm thick, 112mm wide 2½ inches thick, 4¾ inches wide	Modern Fine white, well made, smooth sides, lump of slag on edge
230 / gully 231	1	225 by 105 by 68mm 8⅞ by 4⅛ by 2⅝ inches	Modern Complete, fine white clay, frogged
303 / levelling layer	5	1-50mm thick 2 inches thick	4 fragments, all sandy orange
Totals	**27**		

Floor tile

There are just a few fragments of floor tile, thirteen in all, which include one sherd broken into four pieces. Eight of these are plain but glazed in both light and dark green. The single sherd from layer (219) in Trench 2 cross-joins with the broken sherds residual within drainage gully [231] and together they have a strip of white mortar along the top. One sherd from this feature is decorated, although the glaze has all but gone and the

pattern is very worn. The decoration appears to comprise four concentric arcs with a width of 8mm and triangular inserts (Fig 31).

The fabrics comprise hard sandy orange, fine sandy pink to buff and hard fine white clays, similar to the brick and tile. The floor tiles are 25mm thick, except for one white fabric tile from levelling layer (303), which is 30mm thick.

Table 7: Quantification of floor tile

Context / feature	Number	Dimensions	Comment
206 / charcoal layer	1	25mm thick	Plain, no glaze
219 / layer	1		Joins with 230, light green glaze
220 / rubble layer	1	25mm thick	White, dark green glaze
230 / gully 231	3	25mm thick	One sherd in 4 pieces dark green glaze; another similar
			One sherd with design
303 / levelling layer	7	25mm thick	2 white with green glaze, 4 orange- 3 with green glaze
		1-30mm thick	
Total	**13**		

Drain tiles

Two sherds, from drainage gully [231] in Trench 2, are semicircular with a diameter of *c*80mm, 12mm thick and harsh pink with grit, both surfaces are cream, but patchily covered with sand. Their size and shape suggests that they were drainpipes or field drains.

A1.8 Building stone by Iain Soden, Steve Critchley (geology) and Pat Chapman (tile)

The chalk clunch comprise harder horizons, such as examples from Totternhoe in Bedfordshire, found within the Cretaceous chalk beds, some of which are laterally persisted allowing them to be used for correlation between outcrops. Technically termed marls, some of these have shown on analysis to represent the input of volcanic ash into the chalk seas during a period of worldwide tectonic and subsequent volcanic activity.

Most of the fragments are amorphous lumps, one or two having a single ashlar face or exhibiting signs of tooling.

A single piece from topsoil (301) in Trench 3 is 270mm long and probably came from a doorway or possibly a mullion or window embrasure, involving a gothic splay. Incised into it, as a doodle or graffiti are unrelated vertical lines, dots and two very deliberate crosses-pommé (Fig 32). Although a straightforward later medieval variation on a normal Christian symbol, this particular cross-type was employed for fashioning hybrid arrow/gun loops in castle walls in the later 15th century. Its observation here suggests a familiarity in the mind of the carver with that form, which is more elaborate than a straightforward cross. It is therefore suggested that the carving post-dates the late 15th century. The block into which the crosses are cut is not otherwise datable.

A piece from layer (402) in Trench 4, comprises smashed fragments of a cylindrical shaft or part thereof; whether freestanding or engaged is not evident. It is accompanied by approximately half of the funnel and pouring gate for a metal-casting mould. Roughly rectangular, it measures *c*70mm by 40mm by 40mm and is scorched and smoke-blackened. There is no indication of the nature of the mould to which it once joined or the object being cast.

Stone roof tile by Pat Chapman

There are nine small fragments of limestone, three have perforated peg holes. There is an almost complete tile, 130mm by 90mm, from gully [211]. The tile is made from a fossiliferous limestone, with a 10mm diameter peg hole. Two very small fragments made from fine grained limestone, with 8mm diameter peg holes, come from the topsoil (301) and levelling layer (303). The latter was accompanied by undiagnostic fragments. The remaining small pieces of limestone, no larger than 100mm by 90mm, are from layer (219) and pit [307]. They appear to have been shaped, but that is all.

A1.9 Metal finds of the 16th to 17th centuries by Tora Hylton

A German Nuremburg stock jetton issued by Hans Krauwinckel and dating to the 16th-17th century (Fig 26, 1; Barnard 1916, plate XXXIII, 84) and a single lead shot were recovered from deposits in Trench 2 (204, 205) that were both probably residual. The lead shot measures 13mm in diameter, indicating that it could have been used for both pistols and muskets (Egan 2005, 202); there are no impact marks and the presence of a vestige of the sprue suggests that it was never used.

A1.10 Metalworking debris by Andy Chapman

Post-medieval

There is a single fragment, weighing 123g, of ferrous tap slag from an abandonment/demolition deposit (207), likely to be of 17th century date.

20th-century smithing

There is a total of 8.05kg of miscellaneous ferrous slag from dumped layer (219) and the drainage gully [231], both dated to the 20th century. In addition, there is slag adhering to a fragment of an unfrogged brick.

The assemblage comprises pieces of highly vesicular slag, forming amorphous lumps from a few tens of millimetres in diameter up to a block 200mm long. Some of the material has quite fluid surfaces and occasionally it is glassy. Occasional small lumps of dark grey vesicular material are probably the remains of burnt coke fuel, and occasional pebble inclusions were perhaps introduced with the fuel.

The assemblage is all consistent with debris from a coke-fired smithing hearth lined with firebricks.

A1.11 Modern pottery by Iain Soden

The bulk of the modern pottery appears to date to the late 19th or early 20th century, and is most likely the result of activity during the Great War.

Fabric

P56: Mass-produced White Earthenware (19th-20th century), 23 sherds, 405g, EVE = 0

Table 8: 19th to 20th-century pottery by number and weight (g) of sherds

Context / feature	Sherds	Weight (g)
204 / cleaning	1	1
220 / rubble layer	1	33
229 / robbing	1	5
230 / gully 231	3	65
304 / pit 305	17	301
Totals	**23**	**405**

Summary

This pottery comprises a majority of material which has been thrown onto a bonfire or similar conflagration. Nineteen sherds are fire-damaged, cracked, split and warped, with much soil and other material adhering. They are undatable other than to say they are of 19th or early 20th-century origin.

Sherds from a Dundee Marmalade jar suggest a date *c*1870-90 for layer (220) and gully [231] in Trench 2, during which the product was at its greatest popularity.

6.12 Modern metal finds by Tora Hylton

The majority of the metal finds dated to the 20th century were located within dumping and cleaning layers over demolition deposits in Trench 2 (202, 203, 204, 205, 214, 220), layers in Trenches 3 and 4 (313, 403), topsoil and pit [305] in Trench 3. Pit [305] produced ferrous strap fragments, nails and a heel iron, the presence of the latter suggesting a 19th-century date, but could easily have been used into the early 20th-century.

Overall nails dominate the group (31 examples) and they are represented by both forged and wire strung nails. The former may be residual from earlier occupation, the latter are certainly of modern origin. Of interest is a small group that relate to wartime activities. There are a range of blank bullet casings (0.303mm, 7.62mm and 8mm) and two general service buttons decorated with the Royal Arms that stylistically date to *c*1896-1918, matching the period of the Great War.

6.13 Glass by Tora Hylton

The assemblage comprises undiagnostic fragments of vessel glass and window glass, some displaying signs of lamination and dehydration. A small undiagnostic sherd of colourless glass, 20mm by 27mm in size, came from the fill (102) of slot [103]. Other individual fragments were recovered from cleaning layers (204, 205) in Trench 2, demolition layer (402) in Trench 4 and topsoil (301) in Trench 3. The majority of fragments that have been subjected to extreme heat, were recovered from pit [305] in Trench 3. The entire assemblage from pit [305] comprises undiagnostic bodysherds and amorphous lumps which have undergone transformation in heat. Diagnostic fragments represented within the assemblage include a 19th-century wine bottle neck from layer (402) in Trench 4 and a clear glass marble from the neck of a codd bottle (Codds were patented by Hiram Codd in 1872) from topsoil overlying Trench 3.

6.14 Clay tobacco-pipes by Tora Hylton

A small group of six clay tobacco-pipe fragments were recovered from Trenches 1 and 2. Only stem fragments were recovered, two from the topsoil in Trench 1 and four from stratified deposits in Trench 2 (206, 207, 229). No example measures was more than 26mm long and the size of the bore (4/64's) suggests that the fragments date to the 19th- and early 20th-century. The fragment from the boundary of (229) preserves the vestige of a makers' name and the town where he worked incuse on the stem (KIFF ST ALBA). The manufacturer was George Kiff who worked in St Albans, 1886-1917 (Oswald 1975, 174).

APPENDIX 2: THE FAUNAL AND ENVIRONMENTAL EVIDENCE

A2.1 Faunal remains by Karen Deighton

Animal bone weighing 11.9kg was collected and assessed to ascertain the condition of the bone, the species present and potential contribution to the understanding of the site.

Method

The animal bone was scanned and identifiable elements were noted following Halstead (1985) after Watson (1979). Preservation and modification were also noted (Binford 1981). Any available biometrical data (von den Driesch 1976) was noted as was any available ageing data. Ageing data included the state of fusion (Silver 1969) and tooth eruption and wear (Payne 1973 for *Ovicaprid*; Halstead 1985 and Payne 1973 for *Bos*).

Results

The fragmentation was fairly heavy and surface abrasion was moderate. Nine examples of canid gnawing were noted which suggests the presence of dogs or foxes at the site. The low frequency of both surface abrasion and canid gnawing (9.5%) could suggest bone was rapidly buried after disposal. Eight examples of butchery were observed including possible sawing on cattle bones and knife marks on antler fragments. No evidence of burning was noted, indicating that this was not a preferred method of disposal.

Table 9: Taxonomic distribution by period

Taxa	Saxon	Medieval	Tudor	Tudor or Stuart	Stuart	World Wars
Cattle (*Bos)*	4	12	--	4	2	15
Sheep/Goat (*Ovicaprid)*	1	4	--	2	5	7
Pig (*Sus)*	--	1	--	--	2	3
Dog (*Canid)*	--	--	--	--	--	1
Rabbit (*Orictolagus cuniculus)*	--	--	--	--	1	5
Chicken (*Gallus)*	--	--	--	--	2	--
Large ungulate	--	6	2	1	1	9
Small ungulate	--	--	--	--	1	2
Unidentified bird (*Avis* sp.)	--	--	--	1	--	--
Totals	**5**	**23**	**2**	**8**	**13**	**42**

Layer (205), posthole [239] and pit [305] had indeterminate bone fragments only. No particular concentration of bone was noted. The material accumulated during the Stuart period produced the most diverse range of material, in keeping with abandonment and demolition layers being turned over and acquiring residual artefacts from earlier occupation.

Ageing and metrical data

Ageing data was restricted to the level of epiphyseal fusion of long bones. These were the articular ends of the bone fused to the bone shafts, in the process of fusing or still separate bone elements. Bone fusion data is less reliable than eruption and wear data from teeth due to the variability ages at which it can occur for any given bone element and therefore no concrete statements would be possible without a larger assemblage. No metrical data was available due to heavy fragmentation.

Table 10: Available ageing and metrical data

Taxa	Cattle (*Bos*)	Sheep or goat (*Ovicaprid*)	Pig (*Sus*)
Fusion	14	9	2

Discussion

The mixed nature of the anatomical elements and taxa observed suggest that the material represents domestic waste, resulting from consumption. Little more can be said of the animal economy or status of the site during any single period due to the paucity of material. There is a reasonable level of preservation and most bones could be identified, the distribution of material by period is too thin for further analysis to be meaningful.

A2.2 Shell by Karen Deighton

Five contexts produced a total of 127g of shell. The shells were analysed to discern the environmental conditions in which they lived and whether they were wild or cultivated. Preservation, ornamentation, size and the thickness of the shells were noted.

Preservation and ornamentation

Flaking was present in all contexts and fragmentation was heavy. Five valves exhibited ribbing. There was no evidence for parasites. The dominant taxa present is the marine oyster (*Ostrea edulis).*

Table 11: Shells by context

Context / feature	**Taxa**	**Upper valve**	**Lower valve**	**Fragment**	**Total**
207 / layer	marine oyster	1	--	1	2
214 / layer	whelk	--	--	--	1
223 / layer	marine oyster	--	1	--	1
303 / layer	marine oyster	4	3	4	11
316 / layer	marine oyster	2	1	1	4
Totals		**7**	**5**	**6**	**19**

Observations

The saltwater origin of all the shellfish recovered strongly emphasises coastal trade. The small size of the oyster shells suggests them to be harvested from wild beds, as opposed to cultivated. Ribbing is usually associated with the higher levels of sunlight encountered in shallower water and they could have been collected from an inter-tidal zone.

A2.3 Charred plant remains by Karen Deighton

Three bulk soil samples were collected during the excavation. This material was analysed to ascertain the presence, nature and level of preservation of ecofacts. The potential contribution to the understanding of the site along with any future sampling strategies was considered.

Method

The samples were processed using a modified siraf tank fitted with a 250micron mesh and flot sieve. Any resulting flots were dried and examined under a microscope at 10x magnification. Identifications were made with the aid of the author's reference collection and seed atlases (Schoch *et al* 1988; Cappers *et al* 2006).

Preservation

Plant remains were preserved by charring only and were fragmentary and abraded. This adversely affected the identification of ecofacts. The taxa present are listed below.

Table 12: Ecofacts by sample and context

Period		**Saxon or medieval**	**Tudor or Stuart**	**World Wars**
Feature		Pit [334]	Layer (206)	Fill (223) in Pit [266]
Sample		2	1	3
Volume		10	40	10
Charcoal		300-500	1,000+	1,000+
cf Bread wheat	*Triticum aestivum*	1		
Wheat	*Triticum* sp.	3		
Barley	*Hordeun* sp.	2		
Wheat/barley	*Triticum/Hordeum*	80		
Cereal	*Cerealia*	15		
Sheep sorrel	*Rumex acetosella*	5		
Small pulse	*Leguminosae*	8		
Indeterminate weeds		3		

Discussion

Charred cereal grains and weed seeds were observed in Sample 2 only. The cereal types were bread wheat and barley, both of which were common crops for the early medieval period. Wild or weed taxa were limited to sheep sorrel, which is a common crop weed.

The absence of chaff and the paucity of weed seeds suggest grain prepared ready for consumption. Its presence could be the result of accidental burning and possibly represents a palimpsest of such incidents.

Conclusion

This small assemblage has a paucity of charred plant remains. It indicates that there is, generally, good preservation of ecofacts in deeply buried and undisturbed contexts. The high degree of multi-period activity indicates that the sampling of such contexts should be undertaken with caution.

A2.4 Charcoal by Dana Challinor

Four contexts produced identifiable charcoal. Layers (206) and (223) generated massive floated samples with weights of more than 2kg and nearly 5kg respectively. Layer (206) was thought to be a destruction deposit relating to the Tudor or Stuart period and layer (223) represented fire sweepings containing finds from the 20th-century World Wars. A rapid assessment of these samples revealed that both assemblages were of diverse taxonomic composition, and more detailed analysis was undertaken. The sample from pit [334] was much smaller in size, with small fragments. This, and some hand-collected charcoal from layer (303), was rapidly scanned to provide a broad characterisation of the assemblages.

The charcoal was put through a stack of sieves to ensure that a size range (10mm, 4mm and 2mm) was represented. The pieces were fractured and sorted into groups based on

the anatomical features observed in transverse sections at 7x to 45x magnification. Representative fragments from each group were then selected for further examination using a Meiji incident-light microscope at up to 400x magnification. Identifications were made with reference to Schweingruber (1990), Hather (2000) and modern reference material. Classification and nomenclature follow Stace (1997).

Results

The charcoal was exceptionally well-preserved, with large roundwood fragments, including whole stems with bark. A wide range of ten taxa were positively identified: *Acer campestre* (field maple), *Carpinus betulus* (hornbeam), *Corylus avellana* (hazel), *Fagus sylvatica* (beech), *Fraxinus excelsior* (ash), Maloideae (hawthorn, pear, apple etc), *Populus/Salix* (poplar/willow), *Prunus* sp (cherry/blackthorn), *Quercus* sp (oak), *Viburnum* sp (viburnums). It was not always possible to distinguish between genera of the same family, but all of the specimens were consistent with native taxa.

Layers (206) and (223) were dominated by roundwood fragments. Much of the oak came from the smaller fraction (2mm) suggesting a greater degree of fragmentation rather than an accurate quantification. A selection of complete stems with bark was measured and growth rings counted which showed that there was variability in diameter (between 9-24mm) but a fairly narrow age range of 6-14 years. Branch wood is significantly narrower when charred (Gale & Cutler 2000).

Table 13: Results of the charcoal analysis

Period		**Saxon or medieval**	**Tudor**	**Tudor or Stuart**	**World Wars**
Feature		pit [334]	Layer (303)	Layer (206)	Fill (223) in Pit [266]
Sample		2	-	1	3
Fagus sylvatica L.	beech	--	--	3r	1
Quercus sp.	oak	--	--	12r	13r
Carpinus betulus L.	hornbeam	--	--	7r	13r
Corylus avellana L.	hazel	--	--	6r	5r
Populus and Salix	poplar and willow	--	-	4r	4r
Prunus sp.	cherry and blackthorn	--	+r	--	--
Maloideae	hawthorn, pear, apple etc.	+	+	2r	--
Acer campestre L.	field maple	--	--	3r	1r
Fraxinus excelsior L.	ash	+	--	3r	3r
Viburnum sp.	viburnums	--	+	--	--
Totals		**+**	**+++**	**40**	**40**

Key: r = roundwood; + = present, +++ = common

Discussion

The charcoal in layer (206), Trench 2, was dominated by roundwood fragments likely to represent spent fuel and was a deposit of probable Tudor or Stuart date. The interpretation of fill (223) as fire sweepings is appropriate for the types of young branch wood of mixed species occurring in the deposit. In general, firewood in the medieval and post-medieval periods was gathered from underwood species, and occasional branches of valuable timber trees such as oak and ash, which were bound into faggots with twisted hazel rods (Rackham 2006). This charcoal is consistent with the use of underwood species from managed woodland.

There is a striking similarity between the assemblages of layers (206) and (223), at odds with their contrasting dates, which calls into question the taphonomy of the charcoal. Since finds of 20th-century date were recovered from layer (223), the charcoal is probably residual and has been disturbed.

The assemblages from layer (303) and pit [334] were too small to merit detailed analysis. The assemblage from layer (303) was dominated by diffuse porous taxa, including hawthorn, viburnum and cherry. All of these are shrub species and suggest trimmings from hedgerows or gardens.

The charcoal is generally extremely well preserved but the high incidence of 20th-century activity introduces taphonomic issues and problems with residuality upon the site. Hand-excavated charcoal is of little use and sample sizes of 10-20 litres are adequate, especially from charcoal rich layers. More detailed analysis would require a greater range and quantity of suitable feature or deposit types for sampling than was available in the 2009 excavations.

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APPENDIX 3: CONTEXT INDEX

Context	Type	Field interpretation	Probable date
Trench 1			
101	Topsoil	Grass country park	Modern
102	Fill of 103	Fill	Medieval
103	Slot	Linear gully aligned NW-SE	Medieval
104	Fill of 106	Upper fill	Saxon/medieval
105	Fill of 106	Lower fill	Saxon
106	Gully	Linear slot aligned SW-NE, same as 109 & 111	Saxon
107	Subsoil	Weathered horizon of natural sand	-
108	Fill of 109	Fill	Saxon
109	Gully	Linear slot aligned SW-NE, same as 106 & 111	Saxon
110	Fill of 111	Fill	No dating
111	Gully	Linear slot aligned SW-NE, same as 106 & 109	No dating
112	Fill of 114	Upper fill	Saxon
113	Fill of 114	Lower fill	Saxon
114	Gully	Linear slot aligned NW-SE, parallel to 116 & 119	Saxon
115	Fill of 116	Fill	Saxon/medieval
116	Gully	Linear slot aligned NW-SE, parallel to 114 & 119	Saxon/medieval
117	Fill of 119	Upper fill	Saxon
118	Fill of 119	Lower fill	Saxon
119	Gully	Linear gully aligned NW-SE, parallel to 116 & 119	Saxon

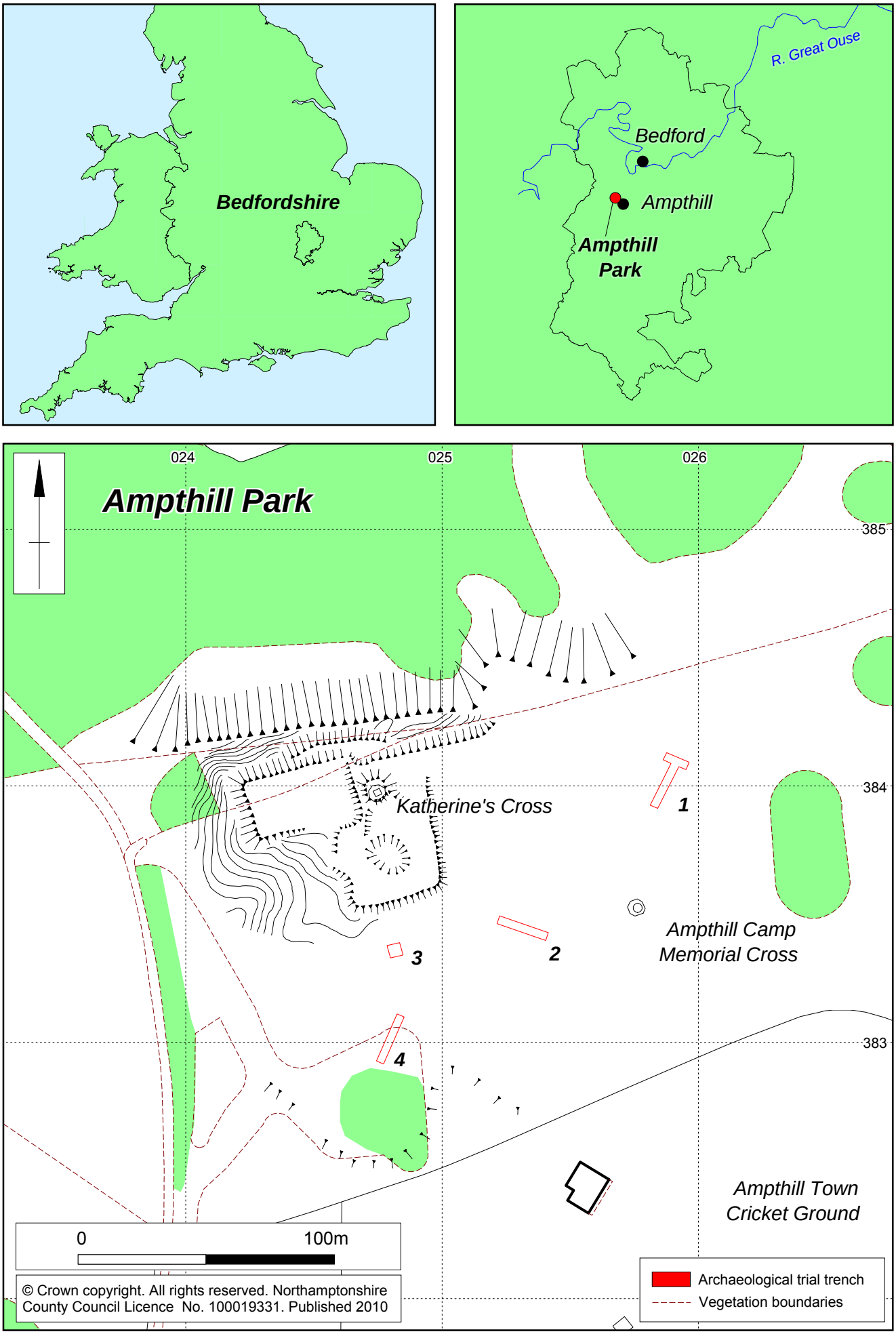
Context	Type	Field interpretation	Probable date
Trench 2			
201	Topsoil	Grass country park	Modern
202	Cleaning	Above 214	World Wars
203	Cleaning	Above 217	World Wars
204	Cleaning	Above 219	World Wars
205	Cleaning	Above 220	World Wars
206	Charcoal	Destruction deposit	Tudor/Stuart
207	Rubble	Demolition deposit	Tudor/Stuart
208	Fill of 209	Fill	World Wars
209	Ditch	Drainage gully	World Wars
210	Fill of 211	Packing material	World Wars
211	Posthole	Rectangular posthole, Group with 227, 239 & 260	World Wars
212	Charcoal	Dumping	World Wars
213	-	-	-
214	Rubble	Redeposited demolition material	World Wars
215	Silty clay	Rain wash	World Wars
216	-	-	-
217	Fill of 265	Fill	World Wars
218	Cut	Wall construction trench	Tudor

Context	Type	Field interpretation	Probable date
219	Silty clay	Dumping	World Wars
220	Rubble	Redeposited demolition material	World Wars
221	Fill of 222	Fill	Stuart
222	Pit	Robbing activity	Stuart
223	Charcoal	Fire sweepings	World Wars
224	Layer	Clay	Tudor
225	Surface	Base of fireplace	Tudor
226	Fill of 227	Upper fill	World Wars
227	Posthole	Rectangular posthole, Group with 211, 239 & 260	World Wars
228	Fill of 227	Lower fill	World Wars
229	Fill of 233	Robbing activity	Stuart
230	Fill of 231	Fill	World Wars
231	Ditch	Drainage gully	World Wars
232	Fill of 233	Robbing activity	Civil War
233	Cut	Wall construction trench	Tudor
234	Silty sand	Levelling layer	Stuart
235	-	-	-
236	Sandy clay	Dumping	World Wars
237	-	-	-
238	Fill of 239	Packing material	World Wars
239	Posthole	Rectangular posthole, Group with 211, 227 & 260	World Wars
240	Fill of 241	Fill	World Wars
241	Ditch	Drainage gully	World Wars
242	Fill of 211	Silty void of timber post	World Wars
243	Sand	Disturbed natural with worm castes	-
244	Layer	Clay	Tudor
245	Layer	Clay	Tudor
246	Fill of 233	Robbing activity	Stuart
247	Rubble	Redeposited demolition material	World Wars
248	Rubble	Redeposited demolition material	World Wars
249	-	-	-
250	Fill of 239	Silty void of timber post	World Wars
251	Wall	Stone wall foundation for main building	Tudor
252	Fill of 253	Fill	World Wars
253	Ditch	Drainage gully	World Wars
254	Layer	Chalk layer	Tudor
255	Silty sand	Levelling layer	Tudor
256	Fill of 261	Plaster and limewash residue	Tudor
257	Fill of 218	Robbing activity	Stuart
258	Sand	Disturbed natural with worm castes	-
259	Fill of 260	Fill	World Wars
260	Posthole	Rectangular posthole, Group with 211, 227 & 239	World Wars
261	Ditch	Plaster and limewash channel	Tudor
262	Silty sand	Disturbed natural with worm castes	-

Context	Type	Field interpretation	Probable date
263	-	-	-
264	Wall	Stone wall foundation for main building	Tudor
265	Pit	Fire waste pit	World Wars
266	Layer	Dumping of redeposited and modern material	World Wars

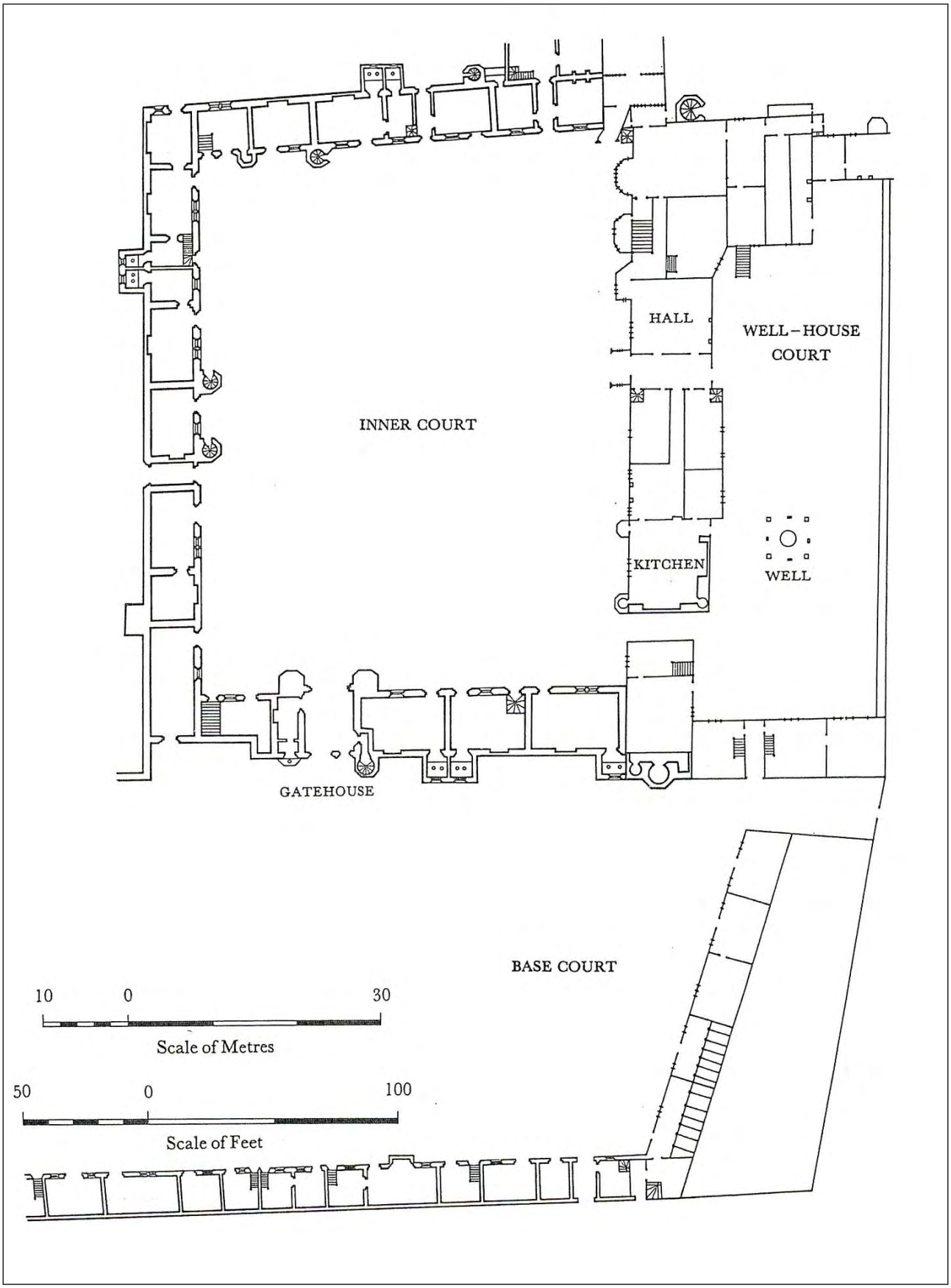
Context	Type	Interpretation	Probable date
Trench 3			
301	Topsoil	Grass country park	Modern
302	Fill of 332	Upper fill	Medieval
303	Fill of 332	Dumping with root intrusions and surface disturbances	Tudor
304	Fill of 305	Waste dumped from craft processing	World Wars
305	Pit	Pit	World Wars
306	Fill of 307	Fill	Medieval
307	Pit	Surface disturbance, possible root action	Medieval
308	Fill of 309	Fill	Medieval
309	Pit	Surface disturbance, possible root action	Medieval
310	Fill of 307	Lower fill	Medieval
311	Fill of 312	Fill	Medieval
312	Pit	Surface disturbance, possible root action	Medieval
313	Fill of 314	Fill	World Wars
314	Pit	Pit	World Wars
315	Silty sand	Layer	Medieval
316	Silty sand	Layer	Medieval
317	Fill of 330	Silting deposit, fill	Medieval
318	Silty sand	Early layer cut by pit 330	Medieval
319	Sand	Early layer cut by pit 330	Medieval
320	Fill of 332	Fill material	Medieval?
321	Fill of 331	Silting deposit, fill	Medieval
322	Fill of 332	Fill material	Medieval
323	Fill of 332	Fill material	Medieval
324	Fill of 332	Fill material	Medieval
325	Fill of 332	Fill material	Medieval
326	Fill of 332	Fill material	Medieval
327	Fill of 332	Fill material	Medieval
328	Fill of 332	Fill material	Medieval
329	Fill of 332	Fill material	Medieval
330	Pit	Pit/ditch visible in section, below levelling layers	Medieval
331	Pit	Pit/ditch visible in section, below levelling layers	Medieval
332	Pit	Large pit or ditch	Medieval
333	Fill of 334	Sandy clay	Medieval
334	Pit	Shallow pit	Medieval
335	Sand	Disturbed natural with worm castes	-

Context	Type	Interpretation	Probable date
Trench 4			
401	Topsoil	Grass country park	Modern
402	Rubble	Demolition deposit	Tudor/Stuart
403	Fill of 404	Single fill	Modern
404	Pit	Root disturbance	Modern
405	Fill of 407	Upper fill	Tudor
406	Fill of 407	Lower fill	Tudor
407	Terminal	Drainage gully or narrow construction trench	Tudor
408	Rubble	Levelling layer	World Wars
409	Dark soil	Abandonment deposit	Tudor/Stuart
410	Silty sand	Demolition deposit	Tudor/Stuart
411	Fill of 412	Backfill material	Medieval?
412	Ditch?	Large ditch	Medieval?
413	Fill of 415	Robbing activity	Tudor/Stuart
414	Fill of 415	Robbing activity	Tudor/Stuart
415	Cut	Possible wall construction trench	Tudor
416	Sand	Disturbed natural with worm casts	-



Scale 1:2000

Site location Fig 1



Ampthill Castle, surveyed *c*1567 (from Colvin 1982) Fig 2


Scale 1:1250
Reprocessed earth resistance survey data Fig 3
025
026
384
383
Katherine's Cross
Ampthill Camp
Memorial Cross
Ampthill Town
Cricket Ground
Wooded or former wooded area
Resistance / Ω
-1000 Ω
0
2000 Ω
0
50m
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Linear grass marks in the vicinity of Trench 1, looking south, prior to excavation Fig 4



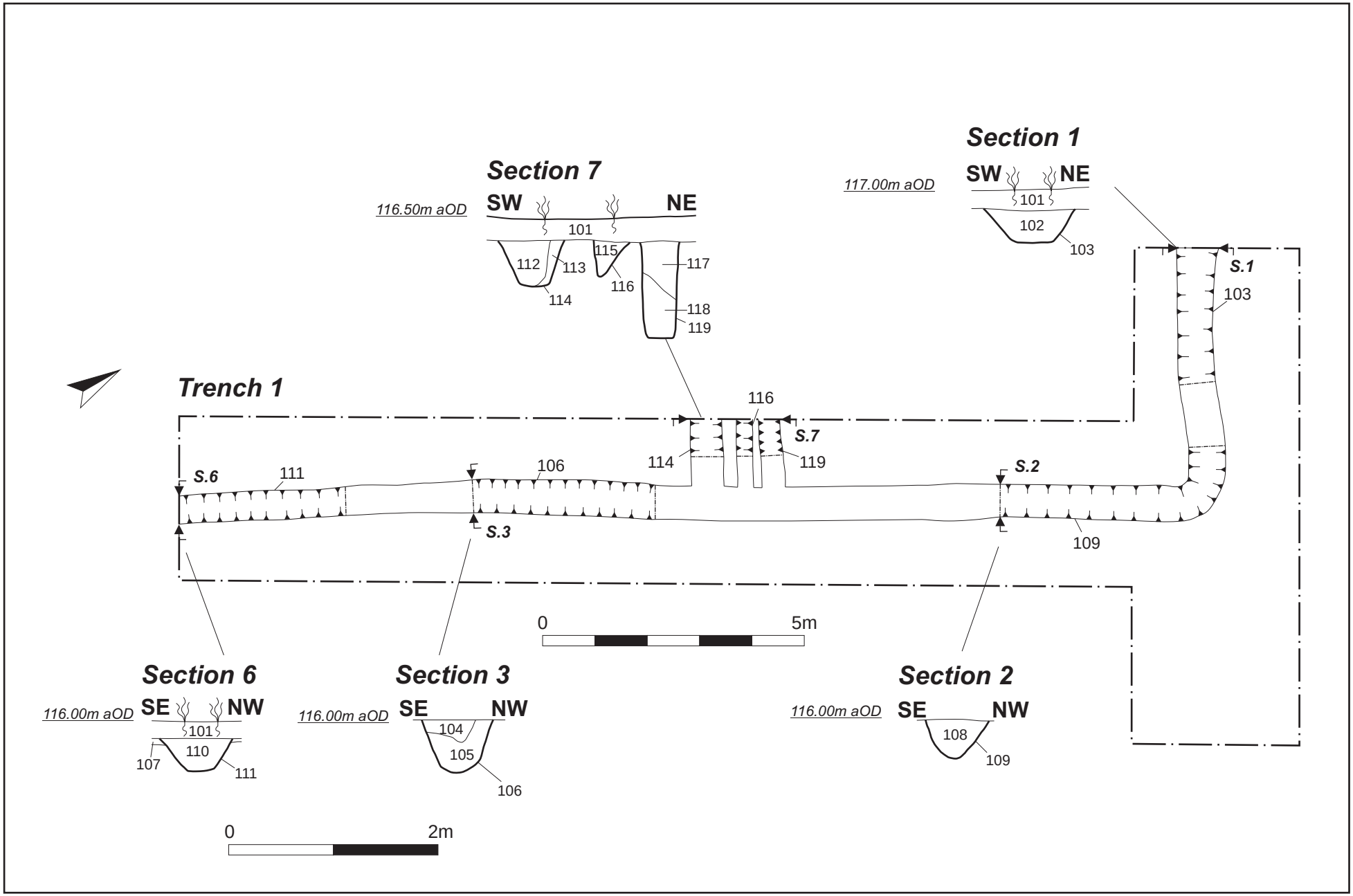
Linear gullies in Trench 1, looking south Fig 5



Linear gully [103], Trench 1, looking east Fig 6



Linear gullies [114], [116] and [119], Trench 1, looking west Fig 7



Scale, Trench 1:100, Sections 1:50

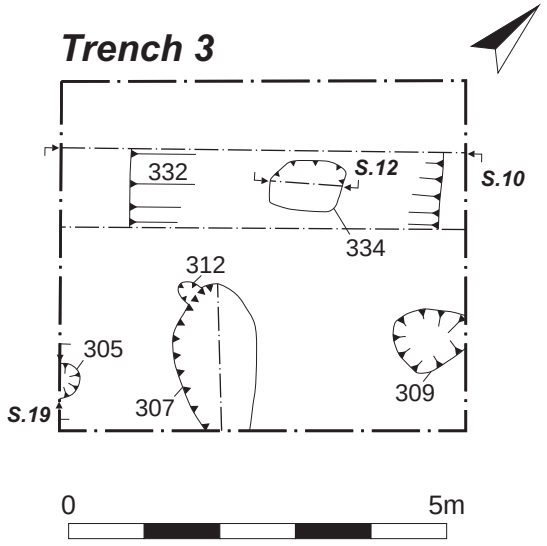
Archaeological features, Trench 1 Fig 8

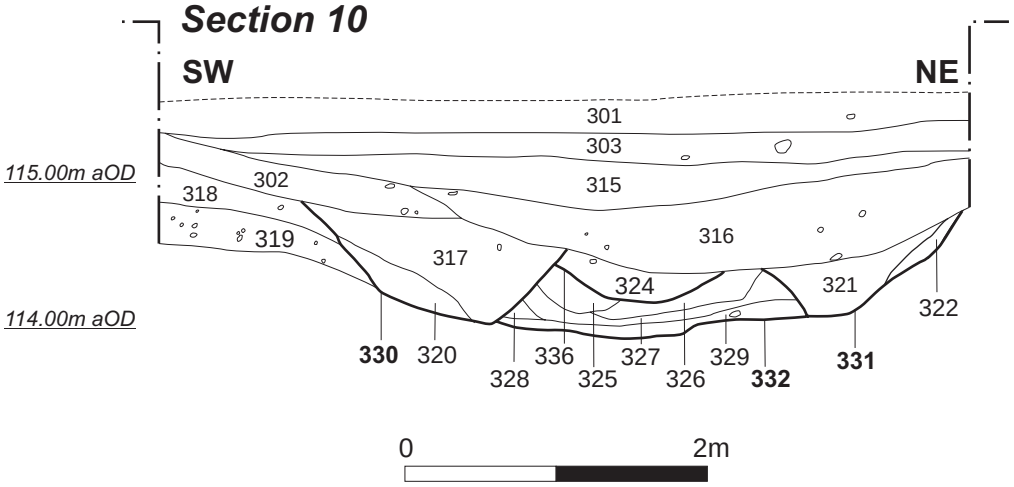


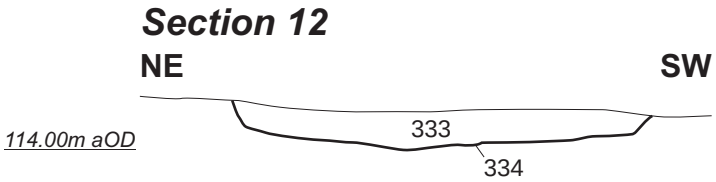
Excavation of the upper layers in Trench 3 Fig 9

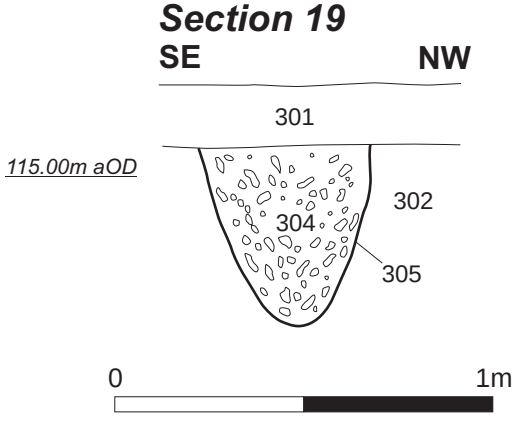


Pit [335] containing burnt debris, at the base of pit [332], Trench 3, looking east Fig 10

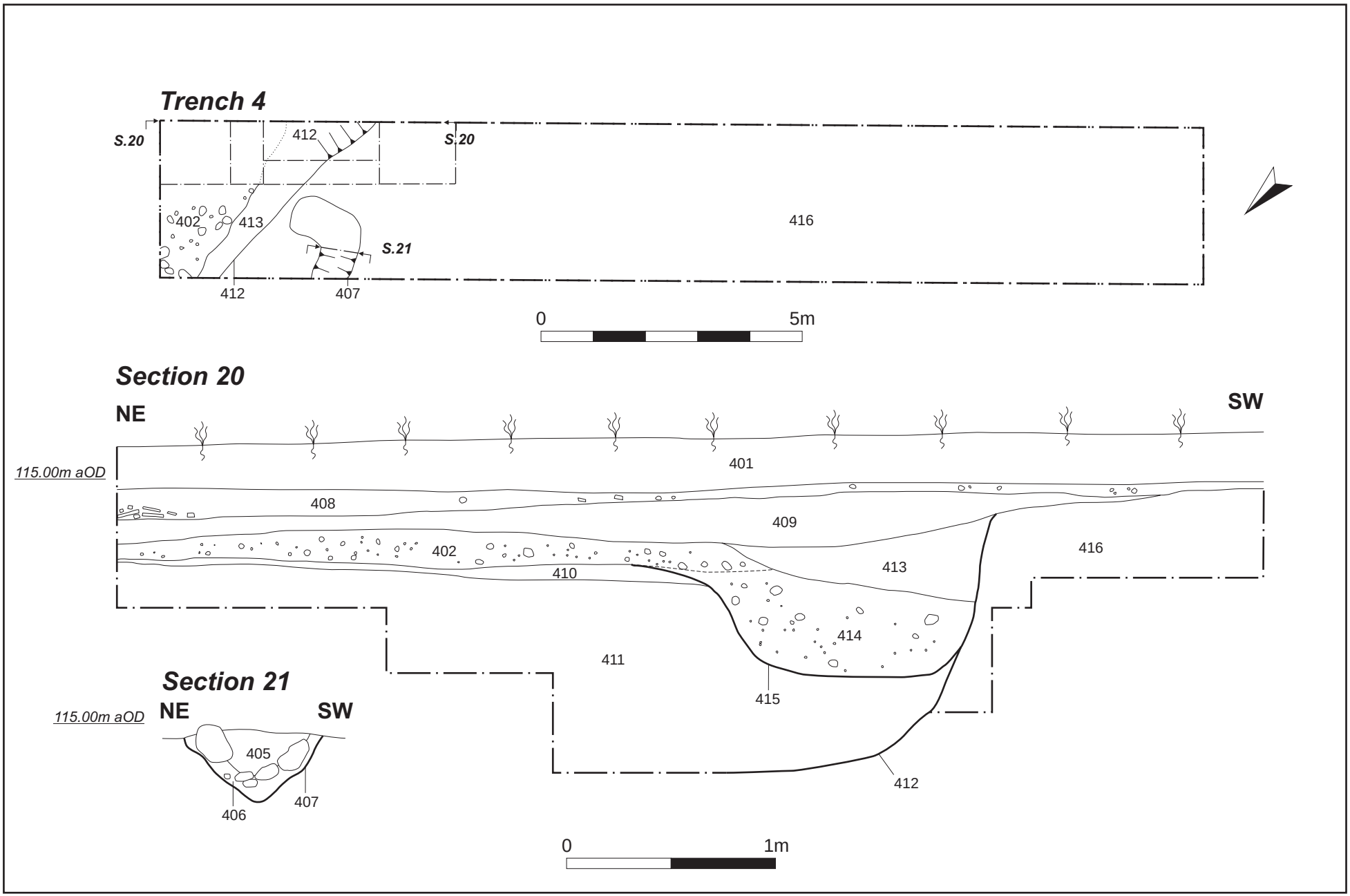








Scale Trench 1:100, Sections 1:50, 1:20 Archaeological features, Trench 3 Fig 11



Scale, Trench 1:100, Sections 1:25

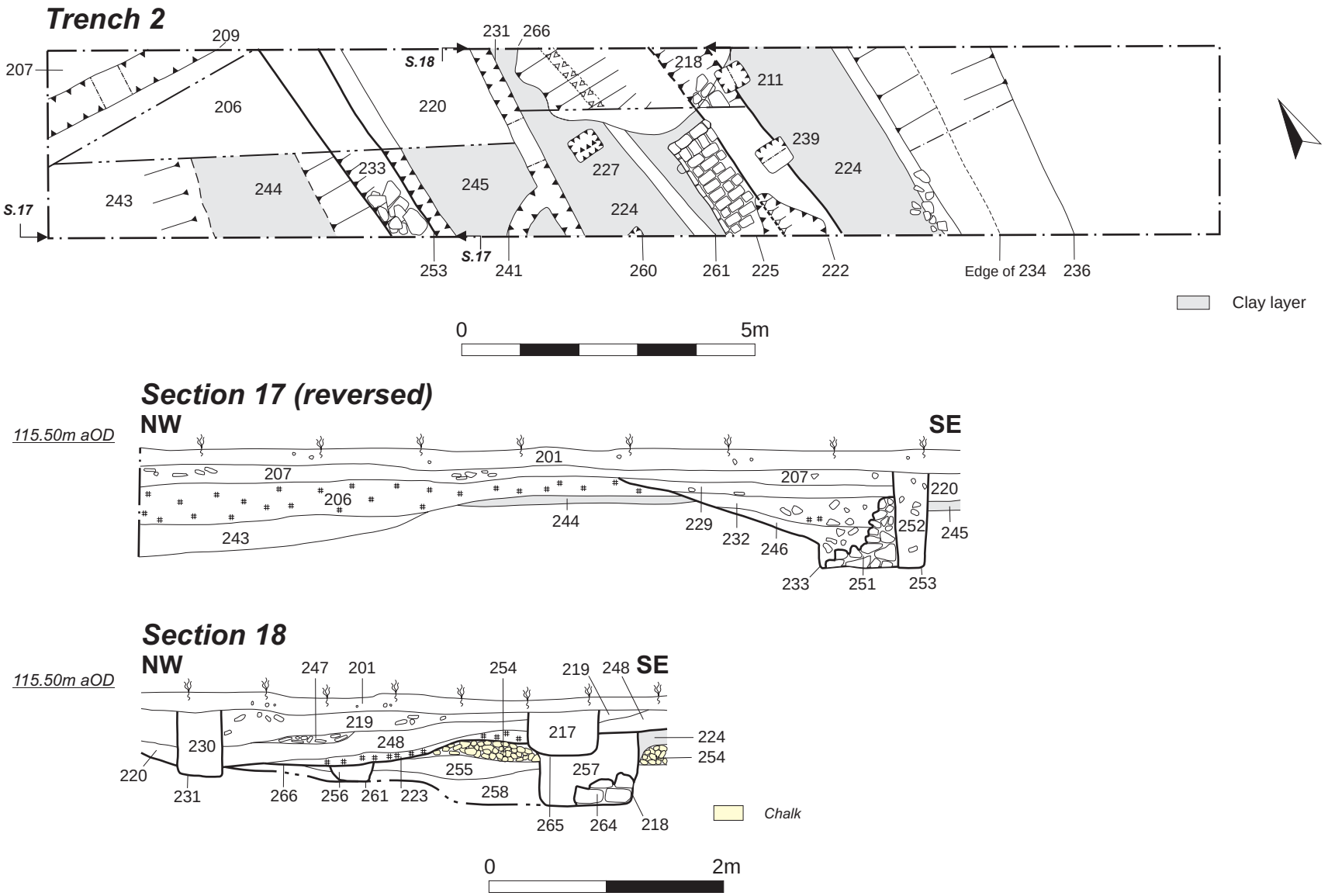
Archaeological features, Trench 4 Fig 12



Trench 4, showing natural sand and a ditch at the north-east end, bottom left Fig 13



Trench 2 prior to excavation, looking east Fig 14



Scale, Trench 1:100, Sections 1:50

Archaeological features, Trench 2 Fig 15



Chalk formation level, Layer (254), Trench 2, looking west Fig 16



Wall foundation [233], Trench 2 Fig 17



Brick chimney hearth [225], Trench 2 Fig 18



Extensive dark soil deposit (206), Trench 2, looking east Fig 19



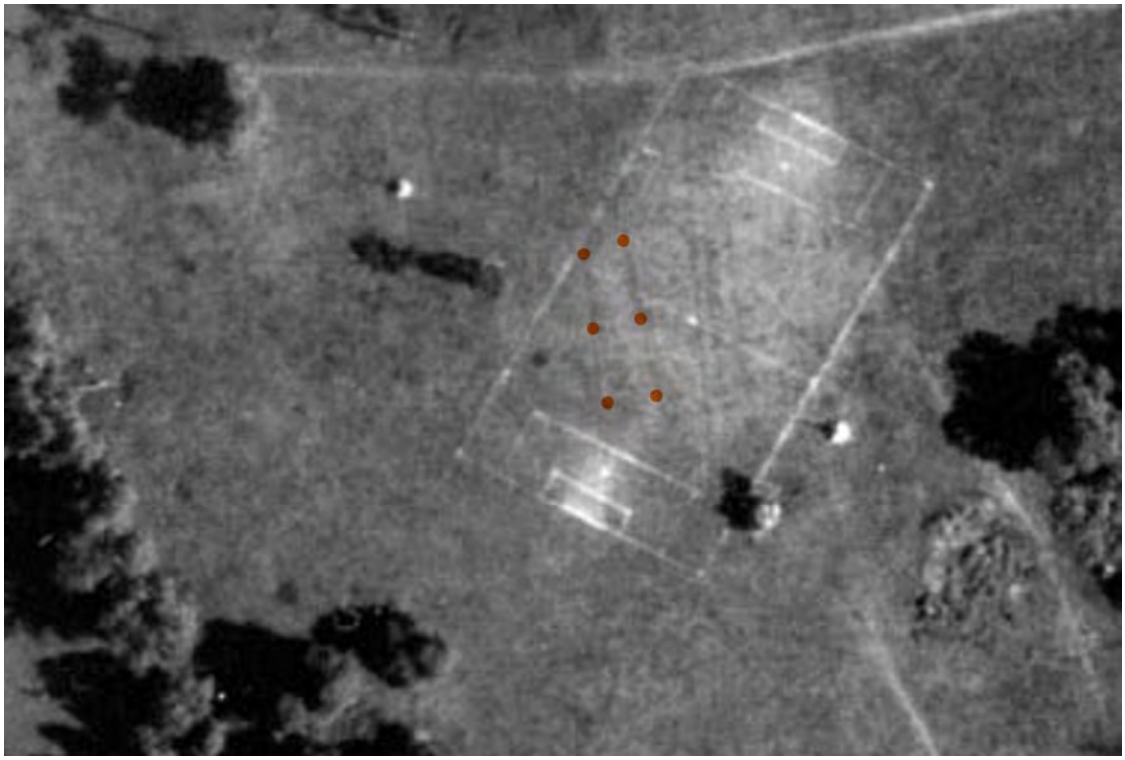
Volunteers undertaking excavation in Trench 2 Fig 20



Aerial Photograph of Ampthill Park, *c* 1947 Fig 21



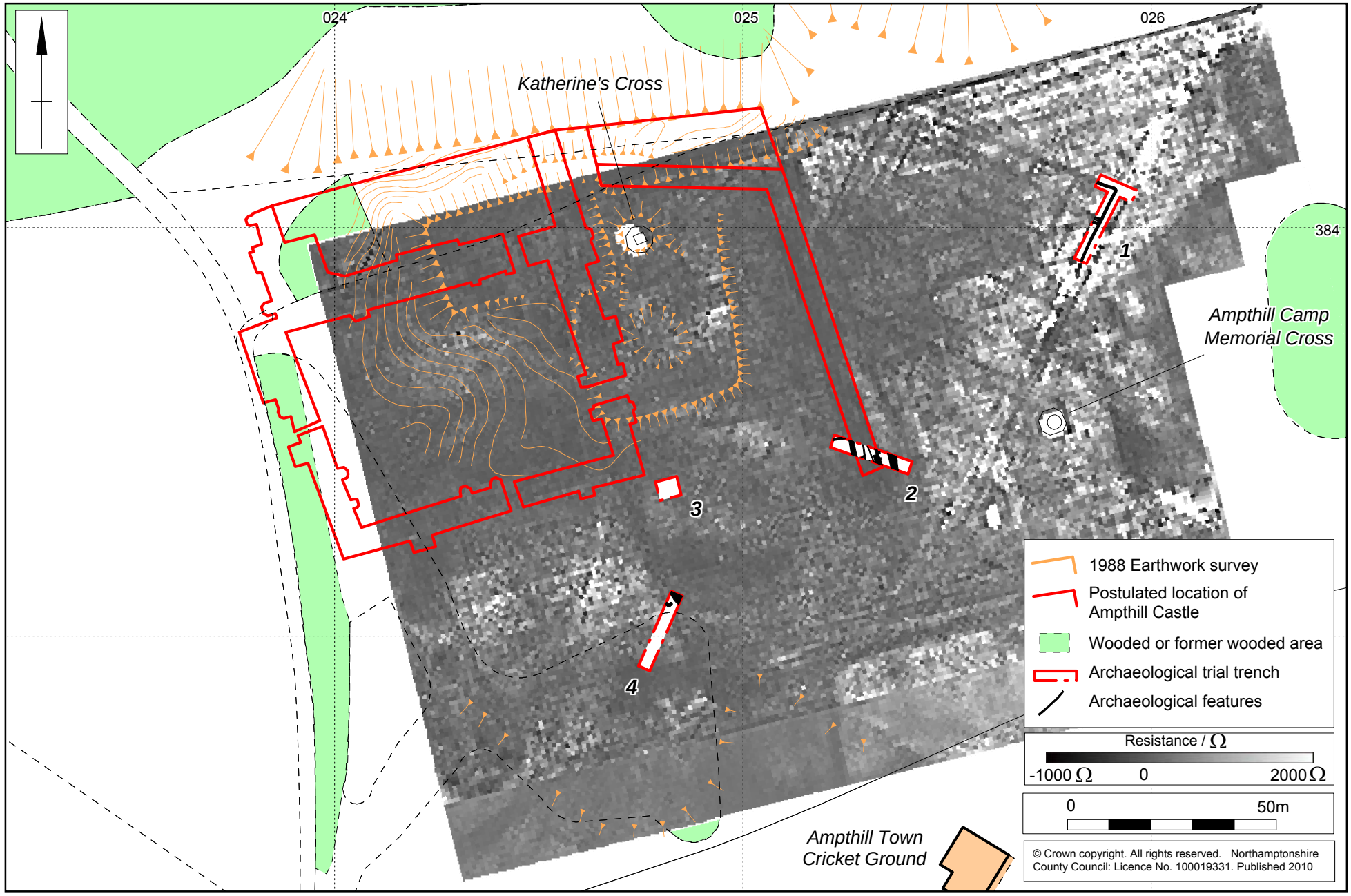
Aerial photograph *c*1947, showing the football pitch and also parallel dark soil marks running north-south (crossing the halfway line to the left of centre, as marked on copy image below) which coincide with geophysical anomaly 3 and the robbed walls in Trench 2 (see Fig 4) Fig 22



Scale 1:1250



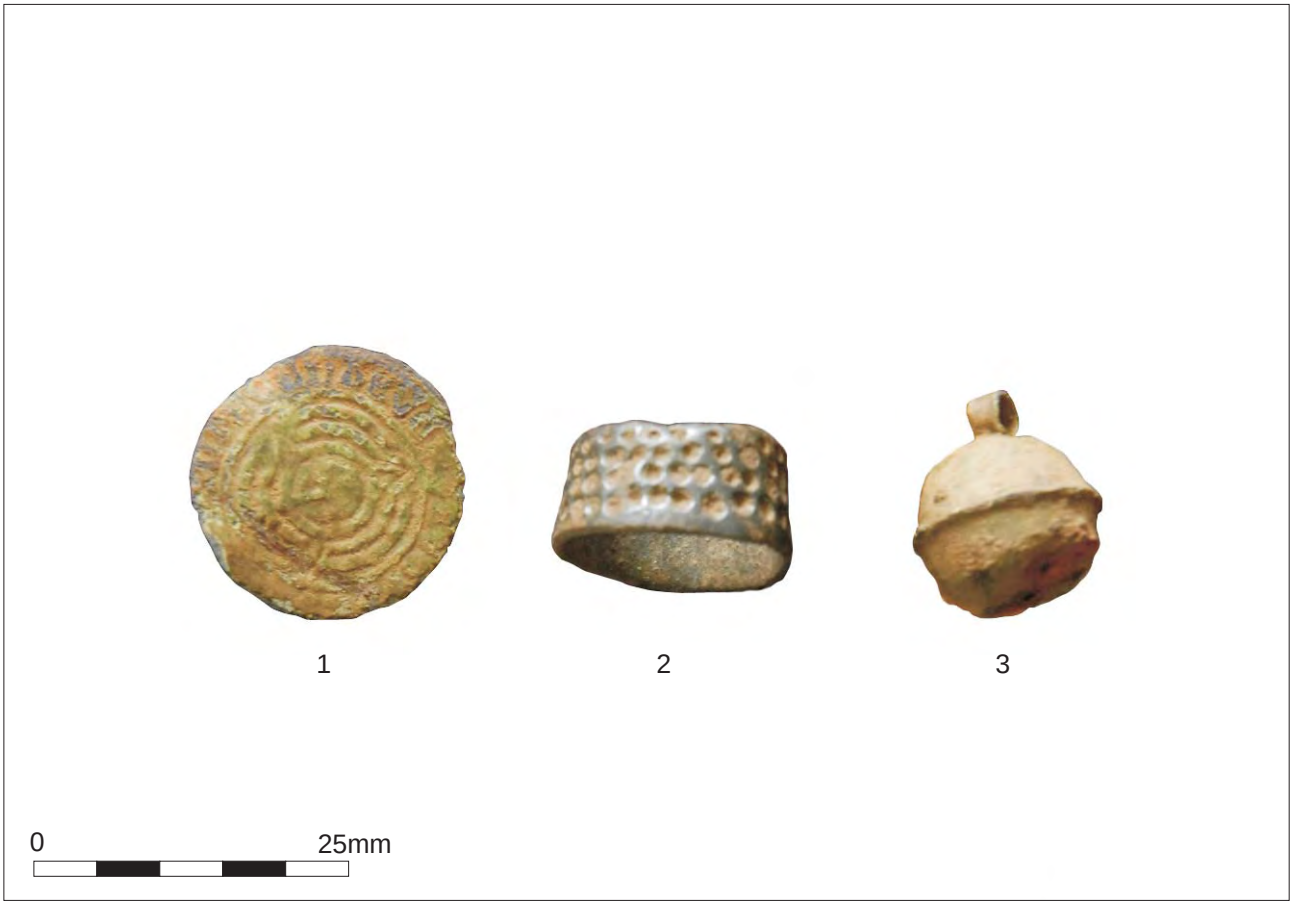
Earth resistance survey interpretation Fig 23



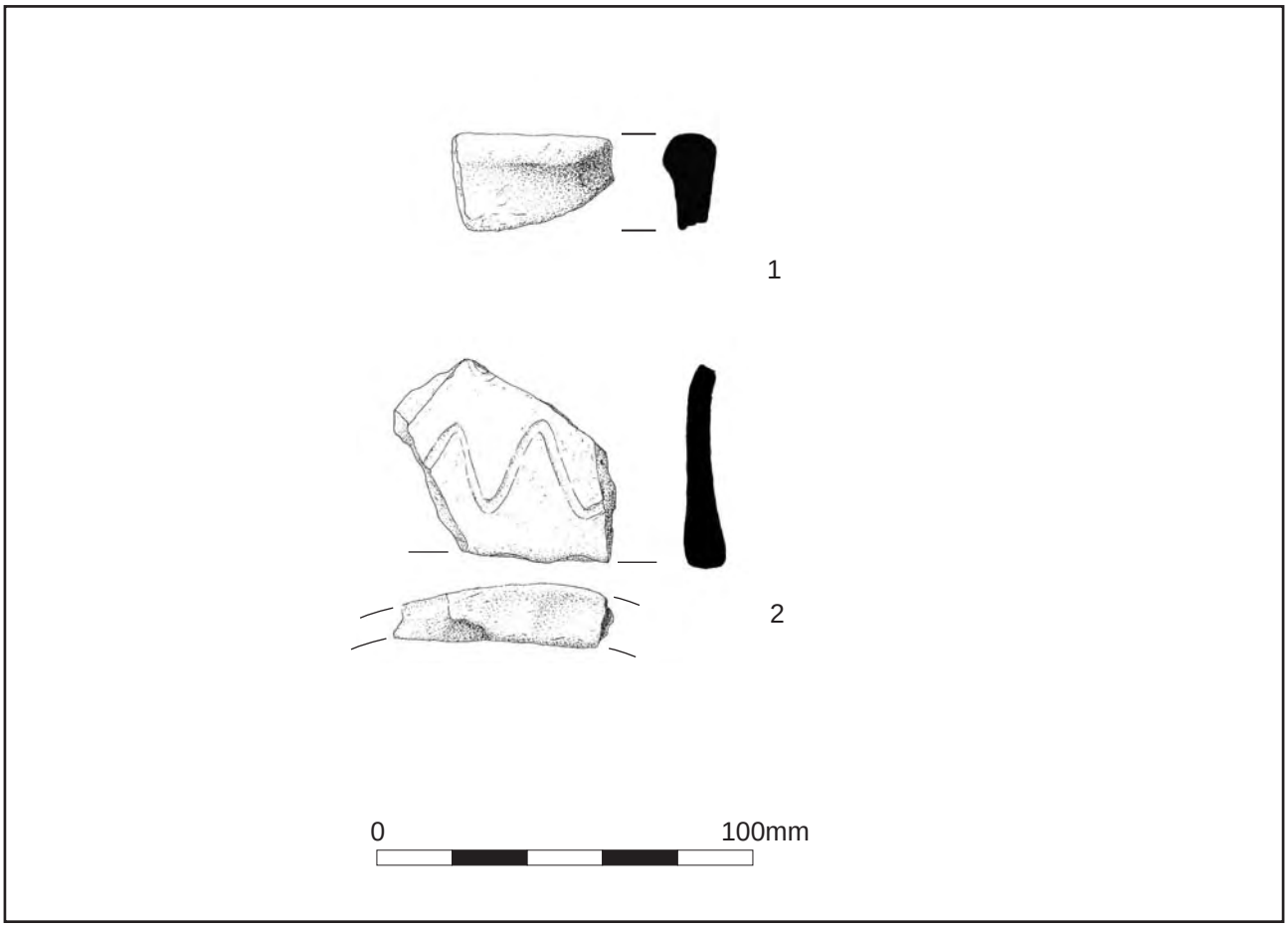
A possible position for Ampthill Castle Fig 24



Fragment from a silver cruciform pendant, inscribed “I E S” (14mm long) Fig 25



Jetton (1), sewing ring (2) and rumbler bell (3) Fig 26



Scale 1:2 Early middle Saxon pottery (1) and late medieval curfew (2) Fig 27



Scale: 100mm

Roof peg tiles Fig 28



Scale: 20mm

Ridge tile displaying crests Fig 29



Scale 10mm Marked tiles including a dog paw print (bottom) Fig 30



Scale 10mm Green-glazed floor tile Fig 31



Scale 200mm

Building stone displaying late 15th-century graffiti Fig 32