



## Bedford Purlieus Wood, Thornhaugh near Peterborough, Cambridgeshire

Archaeological Evaluation and Assessment of Results



Ref: 71512  
March 2010



**BEDFORD PURLIEUS WOOD, THORNHAUGH, NEAR  
PETERBOROUGH, CAMBRIDGESHIRE**

**Archaeological Evaluation and Assessment of Results**

Prepared for:  
**Videotext Communications Ltd**  
49 Goldhawk Road  
LONDON  
SW1 8QP

by  
**Wessex Archaeology**  
Portway House  
Old Sarum Park  
SALISBURY  
Wiltshire  
SP4 6EB

Report reference: 71512.01  
Path: X/projects/71512/post ex/TT Bedford Purlieus report (ed LNM)

**May 2010**

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SITE CODE	<b>71512</b>	ACCESSION CODE		CLIENT CODE	
PLANNING APPLICATION REF.		NGR		<b>504525 299984</b>	

VERSION	STATUS*	PREPARED BY	APPROVED BY	APPROVER'S SIGNATURE	DATE	FILE
01	F	SDT	KEW			TT BEDFORD PURLIEUS REPORT (ED LNM)

\* I= Internal Draft E= External Draft F= Final

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CAMBRIDGESHIRE**

**Archaeological Evaluation and Assessment of Results**

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**BEDFORD PURLIEUS WOOD, THORNHAUGH, NEAR PETERBOROUGH,  
CAMBRIDGESHIRE****Archaeological Evaluation and Assessment of Results****Summary**

An archaeological evaluation was undertaken by Channel 4's 'Time Team' within Bedford Purlieus Wood, Thornhaugh, near Peterborough, Cambridgeshire (NGR 504525 299984) to investigate a series of Roman remains first identified at the beginning of the 19<sup>th</sup> century. The site is located in an area rich in Roman archaeology, lying to the west of the town of *Durobrivae* (modern Water Newton), and with numerous sites and find spots of Roman date in the vicinity.

In 2005 and 2007 Northamptonshire Archaeology (NA) carried out an earthwork survey and evaluation within the wood which identified a north-south range of buildings bordering the western side of a possible courtyard enclosed on the northern side by an earthen bank. The survey also identified a series of large quarry pits immediately to the west of the north-south range and a second enclosure some 130m further west. A LiDAR survey of the Site by the Forestry Commission, following on from NA's work, revealed an extensive complex of remains and quarry pits.

The NA evaluation also identified areas of domestic activity around the main complex of structures with evidence of what were considered to be 'high status' elements to the buildings, with painted wall plaster and box flue tiles from a hypocaust system. To the west, the second enclosure revealed evidence of iron-working.

Eight trenches were excavated by Time Team in October 2009, to expand further on the information gained from NA's work and to investigate areas inaccessible in 2005 and 2007. The trenches were concentrated on the north-south range of buildings, the courtyard area, the northern bank and a raised platform in the south-east corner. Trenches were also excavated in the second enclosure to the west and through one of the large quarry pits.

The whole complex has been interpreted as a courtyard villa with associated iron-working. The trenches excavated through the building range revealed them to be utilitarian and basic with no 'high status' elements; they were interpreted as domestic buildings - a possible kitchen and grain store. The raised platform was possibly the site of the villa's bath-house, producing box flue tiles, painted plaster, *opus signinum* and lightweight tufa blocks for vaulting.

The western enclosure, initially interpreted by NA as industrial in nature, was confirmed as such by the identification of an iron ore-roasting floor. A trench through one of the quarry pits found evidence of iron ore extraction, the disused quarry being subsequently used as a dump for domestic waste from the villa.

The results of the Time Team evaluation have added useful information to what was known of the Site through earlier fieldwork. As such, the results would most usefully be published within an overall discussion of the Site. In the meantime, a short summary of the current project will be submitted to the *Cambridgeshire Antiquarian Journal* for inclusion in the annual round-up of archaeology in the county.

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## **BEDFORD PURLIEUS WOOD, THORNHAUGH, NEAR PETERBOROUGH, CAMBRIDGESHIRE**

### **Archaeological Evaluation and Assessment of Results**

#### **Acknowledgements**

This programme of post-excavation and assessment work was commissioned and funded by Videotext Communications Ltd, and Wessex Archaeology would like to thank the staff at Videotext, and in particular Michael Douglas (Series Editor), Jane Hammond (Production Manager), Jim Mower (Assistant Producers), Louise Ord (Researcher), Emily Woodburn and Ainsley Allen (Production Coordinators) and Kerry Ely (Location Supervisor) for their considerable help during the recording and post-excavation work.

The geophysical survey was undertaken by John Gater, Jimmy Adcock and Jess Green of GSB Propection Ltd. The field survey was undertaken by Henry Chapman, University of Birmingham. The excavation strategy was devised by Mick Aston. The on-site recording was co-ordinated by Steve Thompson with on-site finds processing by Hannah Spieler, both of Wessex Archaeology.

The excavations were undertaken by Time Team's retained archaeologists, Phil Harding (Wessex Archaeology), Tracey Smith, Raksha Dave, Ian Powlesland, Faye Simpson, and Matt Williams, assisted by Antony Maull, Carol Holmes, Tim Upson-Smith, Paul Clements, Jonathan Elston, Jason Clarke and Steve Critchley of Northamptonshire Archaeology.

The archive was collated and all post-excavation assessment and analysis undertaken by Wessex Archaeology. This report was compiled by Steve Thompson with initial historical research by Jim Mower (Videotext Communications) and specialist reports prepared by Rob Perrin (finds), Lorrain Higbee (animal bone), Lorraine Mepham (other finds), Kevin Hayward (geological identifications), Ruth Pelling and Chris Stevens (palaeo-environmental). The illustrations were prepared by Kenneth Lymer. The post-excavation project was managed on behalf of Wessex Archaeology by Lorraine Mepham.

The work benefited from discussion on site with Mick Aston (Bristol University), Phil Harding (Wessex Archaeology), Ben Robinson (Peterborough Museum), Stewart Ainsworth (English Heritage), archaeo-metallurgist Roger Doonan (Sheffield University), Antony Maull, Carol Holmes and Tim Upson-Smith (Northamptonshire Archaeology) and local geologist Steve Critchley.

Finally thanks are extended to Tim Yarnell and Hugh Mannall of the Forestry Commission and Tom Charman of Natural England for inviting Time Team to Bedford Purlieus Wood and for granting access for geophysical survey and evaluation.

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## **BEDFORD PURLIEUS WOOD, THORNHAUGH, NEAR PETERBOROUGH, CAMBRIDGESHIRE**

### **Archaeological Evaluation and Assessment of Results**

#### **1 INTRODUCTION**

##### **1.1 Introduction**

1.1.1 Wessex Archaeology was commissioned by Videotext Communications Ltd to undertake a programme of archaeological recording and post-excavation work on an archaeological evaluation undertaken by Channel 4's 'Time Team' within Bedford Purlieus Wood, Thornhaugh, near Peterborough, Cambridgeshire (hereafter the 'Site') (**Figure 1**).

1.1.2 This report documents the results of archaeological survey and evaluation undertaken by Time Team, and presents an assessment of the results of these works, focusing on the sub-surface archaeology and geophysical results with some reference to the standing earthworks. This report does not contain detailed descriptions of the standing earthworks.

##### **1.2 Site Location, Topography and Geology**

1.2.1 The Site is approximately 14km west of Peterborough and approximately 8km south of Stamford, and is centred at NGR 504525 299984 at a height of approximately 60m above Ordnance Datum (aOD). Bedford Purlieus Wood encompasses an area of 223ha within a rolling landscape; the ground slopes upwards from west to east from a height of 58m-75m aOD.

1.2.2 The Site is a designated Ancient Woodland and National Nature Reserve as well as a Site of Special Scientific Interest (SSSI). The Site is owned and managed by the Forestry Commission under the protection of Natural England. The woodland has been described as a wet wood where the soils are either poorly drained or are seasonally wet; the wood is criss-crossed by streams, with a number of springs in the vicinity

1.2.3 The immediate vicinity of the wood has seen extensive quarrying for limestone and ironstone, with quarries located to the north-west, east and south.

1.2.4 The underlying geology across the Site is a mixture of Lower Lincolnshire Limestone Formation and the clays and sandy silts of the Rutland Formation. (BGS 157)

##### **1.3 Archaeological and Historical Background**

1.3.1 The following section is largely based on information presented in the project design for the Site (Videotext Communications 2009), which in turn relied heavily on reports prepared by Northamptonshire Archaeology (NA) (NA 2005; 2008).



**Prehistoric**

- 1.3.2 Bedford Purlieus lies within an area of extensive archaeological interest with sites ranging in date from the prehistoric to modern periods; the earliest finds recovered from the immediate area include Neolithic flints. The surrounding landscape is rich in prehistoric features, including Bronze Age ring ditches and Iron Age pit alignments.

**Romano-British**

- 1.3.3 The Roman period is particularly well represented in the area around Peterborough and the Lower Nene Valley due to its proximity to Ermine Street, one of the principal roads in Roman Britain, connecting London (*Londonium*) to York (*Eboracum*). Following the invasion of AD 43, the Roman forces encountered a large and relatively prosperous native population in the Nene Valley.
- 1.3.4 The Roman road system in Britain originated in the 1st century AD as a military system centred on London. The roads linked London to the Romanised towns constructed in the native centres of the south-east and to the legionary bases and later towns to the north and west. A number of roads are located in the vicinity of the Site, including Ermine Street, which passes near the towns of Godmanchester (*Durovigutum*), Water Newton (*Durobrivae*), Great Casterton, Ancaster and Lincoln (*Lindum*); King Street, leading from Ermine Street to Lincolnshire; and the Fengate which led from Ermine Street at Castor to the heart of East Anglia. As well as the road network, the River Nene was navigable inland at high tide as far as the Fenland settlements and the Wash; the old course of the river runs approximately 17km to the south-east of the site. By the mid 2nd century AD a direct route to the northern markets was accessible by a canal system which linked the rivers of the fen edge with the Humber.
- 1.3.5 A further Roman road leading from the east (Ermine Street and Wansford) to the west and King's Cliffe forms the southern boundary to Bedford Purlieus Wood, and may be a local road connecting the local estates and industry to the nearest town of *Durobrivae*.
- 1.3.6 A small fort was erected at *Durobrivae*, approximately 7km south-east of the Site, to guard the crossing point of Ermine Street over the River Nene. Following excavations in 1961 at Longthorpe, approximately 12km east of the Site, a second fort was identified, dating to c. AD 50-65.
- 1.3.7 The fort of *Durobrivae* grew as tradesmen and craftsmen supplied the Roman soldiers and travellers on Ermine Street and a *vicus* or small town grew up around the fort. When the garrison withdrew from service to the north the military were replaced with a civil authority, and large scale colonisation and population growth occurred by the 2nd century AD. The growing population at *Durobrivae* provided a market for local industry and agriculture while the topography and geology provided ample opportunities to exploit the natural resources, this area being one of the most intensely farmed areas of Romano-British Britain (B. Robinson, pers. comm.)
- 1.3.8 The Nene Valley was an area of pottery production from before the Roman conquest, and there were a number of kilns in existence here in the 1st to mid 2nd centuries AD. Around the mid 2nd century, an industry specialising

in colour-coated wares was established in the Lower Nene Valley, centred on *Durobrivae*. The indigenous vessel forms and coarse greyware fabrics continued to be produced alongside the finewares. The Nene Valley potteries stretched westward towards Northamptonshire and along both banks of the river at *Durobrivae*, from Castor in the north to Chesterton to the south.

- 1.3.9 As well as the pottery industry Bedford Purlieus lies within an area which witnessed a huge expansion in industrial mining and quarrying for limestone, ironstone and iron ore in the Roman period. Numerous other Romano-British iron-working sites, including quarrying, smelting, smithing and/or forging have been identified within a 10km radius of the Site including Lynch Farm, near Alwalton, and Water Newton, both in Cambridgeshire; and Bullwick, Collyweston, Laxton, King's Cliffe, Wakerley, and Nassington, all in Northamptonshire (Condron 1997, 13-16).

#### **Medieval to Post-medieval**

- 1.3.10 Bedford Purlieus Wood (formerly Thornhaugh Wood) was the largest area of woodland in the Soke of Peterborough to survive the 13<sup>th</sup> century deforestation. The wood formed part of Rockingham forest which passed in the hands of the Earls and later Dukes of Bedford during the 16<sup>th</sup> century as part of the Thornhaugh Estate. Estate papers held by the Luton and Bedfordshire Record Office and catalogued in the National Archives indicate that the wood was harvested as stock to supply the Woburn estate.
- 1.3.11 During the 19<sup>th</sup> century the northern part of the wood was likely to have been heathland or farmland. The Ordnance Survey (OS) map of 1810 shows much of the current farmland to the west as wooded; the original extent of the Bedford Purlieus Wood was much larger, perhaps covering c.412ha.
- 1.3.12 The area surrounding the wood has been used for modern military bases and activity - two former and current RAF bases are within a 12km radius, MOD North Lufenham 12km to the north-west and RAF Wittering 3km to the north of the Site. The wood itself contains anti-aircraft defences and campsites.
- 1.3.13 The wood was declared a National Nature Reserve by English Nature (now Natural England) in 2000 and is managed by the Forestry Commission.

#### **1.4 Previous Archaeological Works**

- 1.4.1 Within the wood itself the antiquarian, botanist and geologist Edmund Tyrell Artis noted and mapped Roman remains on the eastern side of the wood. This included a substantial, three-winged building. It is also reported that he investigated a Roman iron foundry in the wood in 1827, though no excavation reports survive. However, a map dated 1828 shows the three-sided enclosure or structure which Artis identified.
- 1.4.2 At Sacrewell/Thornhaugh, some 3km to the north-east of the Site, excavations in the 1940s revealed a villa complex and 18 furnaces, with a further eight furnaces found during excavations in the 1970s. The later work found evidence of simple bowl furnaces, but also a substantial stone-built shaft furnace and possible ore-roasting chamber. The furnaces were built

over the levelled outbuildings of a villa, implying that iron smelting took place in the final stages of the villa's occupation, or after its abandonment (Condron 1997, 15).

- 1.4.3 In the 1960s two bowl furnaces and 2nd to early 3rd century AD pottery were found within the wood. Investigation of the two furnaces indicated that they were too large for smelting as they were 2.05m and 2.10m wide (Condron 1997, 14).
- 1.4.4 A walkover survey of the woods was undertaken by David Hall on behalf of the Forestry Commission (Hall 2001). This identified a range of sites including modern military structures, woodland banks and ditches.
- 1.4.5 In 2004/5, a Forestry Commission Wildlife Ranger, Richard Hannah, identified a further range of Roman buildings – to be the focus of works proposed in this Project Design.
- 1.4.6 Northamptonshire Archaeology (NA) was commissioned in 2005 to carry out a survey on behalf of the Forestry Commission. Work included the recording of two earthwork and stone structures identified by David Hall in 2001 and one further site identified by the Forestry Commission. These were labelled as Sites 1, 2 and X. Each site can be summarised as follows:
- 1.4.7 Survey of Site 1 confirmed that the structure is a D-shaped walled enclosure, although the course of the curving wall is conjectured. The survey was unable to ascertain any related features except a probable late 20th century woodland boundary. No dating evidence was retrieved and the interpretation of the structure remains uncertain.
- 1.4.8 Survey of Site 2 revealed a rectangular structure with evidence of walling. This was on a similar alignment to Site X. The lack of surface dating meant that no provenance of further interpretation could be added.
- 1.4.9 Survey for Site X suggested that this could be the 'Roman Building' marked on the Ordnance Survey map for the area. Survey revealed a substantial structure (80m by 30m of the structure was available for survey). Segments of limestone walling were present as well as ceramic tile on the surface. The building appeared to consist of two wings, divided by a central structure, creating a non-symmetrical complex. The potential for further remains to the south and north emphasises the potential size of the site (Northamptonshire Archaeology 2005).
- 1.4.10 Following non-intrusive survey work conducted in 2005 NA returned to Bedford Purlieu Wood in 2007 to conduct further earthwork and geophysical survey on the sites described above and to undertake limited intrusive evaluation (**Figure 2B**). Site X above was renamed Site 3. Results of this work may be summarised as follows:
- 1.4.11 The precise function of Site 1 remained uncertain, although it was established that the feature was post-medieval in date and therefore not related to the other Roman structures in the wood.

- 1.4.12 Site 2 was found to consist of a stone revetted enclosure, perhaps with an ancillary building on top of a platform. This structure may relate to industrial activity of Roman date due to the proximity of slag and waste.
- 1.4.13 The 2005 survey had established that there was a single structure aligned north-east to south-west at Site X (now Site 3). Further survey finalised the visible extent of the structure at 133m long and 35m wide, with the northern boundary partly enclosing a courtyard. It seems likely that Site 3 and the building/enclosure seen on the Artis plan of 1828 are the same. The earthwork survey further defined the layout of the structure as a multi-celled building with two ranges connected by a bank. Geophysical work confirmed the recorded layout but was not able to define new or existing features.
- 1.4.14 Limited excavation in the southern range of Site 3 indicated that the landscape had been terraced where necessary to aid building construction. The recovery of painted wall plaster with decorative motifs and box flue tile fragments may suggest a relatively high status building. However, there was a lack of other material which might be expected from a high status building such as glass, lead, carved masonry, and tessellated flooring. This may be a result of the limited nature of the investigation. The site did not demonstrate evidence of ploughing and was assessed as potentially well preserved (NA 2008).
- 1.4.15 The earthwork survey also recorded a number of hollows interpreted as quarry pits, aligned north to south and parallel to the range of buildings.
- 1.4.16 A LiDAR survey of Bedford Purlieu Wood was produced for the Forestry Commission by Forest Research, revealing the size of the complex of earthworks and quarry pits (**Figure 2A**).

## **2 AIMS AND OBJECTIVES**

- 2.1.1 A project design for the work was compiled (Videotext Communications 2009), providing full details of the research aims and methods. This project design was written with reference to recommendations made by NA (2008). A brief summary is provided here.
- 2.1.2 The Roman sites at Bedford Purlieu Wood are of high importance due to their state of preservation and the fact that the sites are not threatened by development. The high degree of preservation provides the potential for addressing a number of questions concerning site function, social status, economy (agriculture or industry) and town-country socio-economic relationships.
- 2.1.3 The principal aims of the evaluation were to expand on previous studies conducted by NA. Recommendations from this work included the need for a range of prospection, documentary survey and intrusive works to understand both the immediate relationship (both chronological and functional) between the structures that have already been identified (principally sites 2 and 3 as previously labelled) and the local context of the site complex as a whole.

### 3 METHODOLOGY

#### 3.1 Geophysical Survey

3.1.1 Prior to the excavation of evaluation trenches, a geophysical survey was carried out across the Site by GSB Prospection Ltd, using resistance survey. The survey grid was set out by Dr Henry Chapman and tied in to the Ordnance Survey grid using a Trimble real time differential GPS system.

#### 3.2 Evaluation Trenches

3.2.1 Eight trenches, of varying sizes, were positioned primarily to answer the research aims stated in the project design (**Figure 1**).

3.2.2 The trenches were excavated using a combination of machine and hand digging. All machine trenches were excavated under constant archaeological supervision and ceased at the identification of significant archaeological remains. When machine excavation had ceased all trenches were cleaned by hand and archaeological deposits investigated.

3.2.3 At various stages during excavation the deposits were scanned by a metal detector and signals marked in order to facilitate investigation. The excavated up-cast was scanned by metal detector.

3.2.4 All archaeological deposits were recorded using Wessex Archaeology's *pro forma* record sheets with a unique numbering system for individual contexts. Trenches were located using a Trimble Real Time Differential GPS survey system and Total Station. All archaeological features and deposits were planned at a scale of 1:20 with sections drawn at 1:10. All principal strata and features were related to the Ordnance Survey datum.

3.2.5 A full photographic record of the investigations and individual features was maintained, utilising digital images. The photographic record illustrated both the detail and general context of the archaeology revealed and the Site as a whole.

3.2.6 At the completion of the work, all trenches were reinstated using the excavated soil.

3.2.7 The work was carried out between the 13<sup>th</sup> and 16<sup>th</sup> October 2009. The archive and all artefacts were subsequently transported to the offices of Wessex Archaeology in Salisbury where they were processed and assessed for this report. The archive is held under the Wessex Archaeology project code 71512.

#### 3.3 Copyright

3.3.1 This report may contain material that is non-Wessex Archaeology copyright (e.g. Ordnance Survey, British Geological Survey, Crown Copyright), or the intellectual property of third parties, which we are able to provide for limited reproduction under the terms of our own copyright licences, but for which copyright itself is non-transferrable by Wessex Archaeology. You are reminded that you remain bound by the conditions of the Copyright, Designs and Patents Act 1988 with regard to multiple copying and electronic dissemination of the report.

## 4 RESULTS

### 4.1 Introduction

4.1.1 Details of individual excavated contexts and features, the full geophysical report (GSB 2009), and full artefactual and environmental data, are retained in the archive. Summaries of the excavated sequences can be found in **Appendix 1**.

### 4.2 Geophysical Results (Figure 1)

#### *Introduction*

4.2.1 Ground conditions were far from ideal; in fact only very small areas were suitable for detailed survey and magnetic scanning was severely restricted by modern ferrous debris scattered throughout the woods. While resistance survey immediately adjacent to the trench in Area 1 succeeded in defining the line of some of the walls identified in the excavation, it was not possible to survey a larger area. Magnetic survey in Areas 2 and 5 identified ferrous material and some responses of archaeological potential. Magnetic susceptibility survey in Area 5 provided the best results: a very clear plot of a spread of metal-working slag and debris, thought to be associated with an ore-roasting area.

#### *Area 1*

4.2.2 Resistance survey immediately adjacent to Trench 1 identified some of the walls unearthed in the excavation and other potential foundations. Unfortunately, due to the dense undergrowth, it was not possible to survey a larger area and provide a wider context for the archaeological remains. As such, the ground plan of the Roman building in this area has not been resolved.

#### *Area 2*

4.2.3 Detailed magnetic survey in a small area which had been cleared of vegetation identified a number of strong magnetic responses. Given the context of known iron workings at the site, it was felt that the observed anomalies had archaeological potential even though some of the responses were ferrous-like. It was decided to investigate one of the responses near to an earthwork bank; excavation found remnants of an old barbed wire fence, although some metalworking remains, such as slags, were also recovered. The presence of the barbed wire highlighted some of the difficulties encountered when carrying out scanning in the woodland (see below, **4.2.5**)

#### *Area 3*

4.2.4 Initially magnetic survey in this small clearing, and along an adjacent footpath, identified a concentration of anomalies close to wall foundations which had been originally noted in a trial excavation carried out by NA. Unfortunately the presence of trees prevented further survey with the gradiometer, so magnetic susceptibility readings were collected using the MS2 coil. These showed a very clearly defined area of enhanced readings which suggested the presence of highly burnt / fired material – the highest readings were located between two trees, so these could not be investigated for the presence of a possible small furnace. Clearance of leaves and undergrowth identified a very distinct area of burnt soil and a spread of slag

material. The excavation of Trench 7 confirmed large quantities of slag material; all the evidence points towards some form of ore-roasting activity.

### **Scanning**

- 4.2.5 The high density of trees and thick undergrowth severely restricted the areas available for survey; the inability to establish a survey grid through the trees (due to the short time on site) prevented the use of wide-scale magnetic susceptibility sampling. Attempts were made to carry out free-ranging scanning with gradiometers, but the presence of large quantities of ferrous debris (like the barbed wire fences and stray ammunition / shrapnel from World War II activity) also rendered this approach pointless.

### **Ground Penetrating Radar (GPR)**

- 4.2.6 Radar transects were attempted along some of the trackways but the results were inconclusive; there are simply too many near surface nonconformities in the bedrock to be able to interpret any potential archaeological responses - without carrying out a much more extensive survey. As such, the results have not been included in this report.

## **4.3 Evaluation Trenches**

### **Trench 1 (Figure 3)**

- 4.3.1 Trench 1 was located at the southern end of Area 1 and positioned to investigate the structures observed in Test Pit 3 and the cells J, F and E from the earthwork survey undertaken by NA (2008; **Figure 2B**). The backfill material of this test pit was removed prior to further works.
- 4.3.2 Reworked natural material (124/125) represented the earliest recorded archaeology with Trench 1; it had been redeposited during the construction of the first phase of building, represented by wall stub (123). Wall (123) had been heavily truncated and appeared to be overlain by layer (124), which had been subsequently cut through by the construction cut for wall (105), part of the second phase of building.
- 4.3.3 Walls (105), (106), (109) and (110) formed a small room measuring at least 2.3m wide and over 2.3m long (**Figure 3, Plates 1 & 2**). The walls appeared to be built in dry stone but utilised the natural yellow clay of the area as bedding and bonding material. The entrance was through a doorway formed between walls (109) and (110), across foundation/threshold (128) into a possible courtyard area to the east. Wall (105) was built in two distinct building styles - plain horizontal coursing, and horizontal coursing with pitched, herringbone coursing. The herringbone coursing corresponded with the point at which the wall changed from a single-stepped footing to a double-stepped footing. This need for a more substantial footing occurred where the ground sloped quite steeply away to the east into the courtyard area of the structure.
- 4.3.4 Within the room, a disturbed and partially robbed flagged floor (107) was set into bedding layer (108), which partially overlay the stepped foundation of wall (105). Overlying the floor was (119), a possible occupation layer. A very similar deposit (120/121) was recorded outside the room, in the courtyard area.

- 4.3.5 Constructed on top of occupation debris (121) was a possible oven (122). The structure had been heavily disturbed and demolished; a burnt limestone rubble layer (129) derived from this demolition.
- 4.3.6 The third phase of building comprised the addition of a limestone block wall (113) on the northern side of wall (105), this structure was only revealed in a small sondage and its nature is not fully understood.
- 4.3.7 A certain amount of robbing must have occurred prior to the complete demolition of the building which gave rise to deposits (114), (117) and (118). These robbing layers were sealed by rubble layer (103/111/112/116/126) following the complete collapse of the building.

#### ***Trench 2 (Figure 4)***

- 4.3.8 Trench 2 was located at the northern end of Area 1 to investigate a possible perimeter wall to the complex. This was observed on the LiDAR survey and in the earthwork survey by NA as earthwork W (**Figure 2A and 2B**).
- 4.3.9 Reworked natural layer (205/207) was cut through by the foundation trench (206) for an east-west wall (203). No related floor surfaces were observed and (203) was interpreted as a free-standing structure, not part of a building. Wall (203) was overlain by demolition layer (202/204), collapsed stone work from the wall (**Figure 4, Plate 3**).

#### ***Trench 3 (Figure 5, Plate 4)***

- 4.3.10 Trench 3 was positioned to investigate high anomalous readings from the magnetic susceptibility survey within an area interpreted as a possible courtyard.
- 4.3.11 The natural geology (303) was observed at 0.26m below the current ground surface and overlain by reworked natural layer (302), which may have been utilised as a surface. Evidence of ironstone inclusions indicated that the ground was disturbed, as this stone does not occur naturally in this part of the Site (S. Critchley pers. comm.). Overlying layer (302) was the current ground surface material (301) which contained a coil of modern barbed wire. This had given the high anomalous readings in the magnetic susceptibility survey.

#### ***Trench 4 (Figure 6)***

- 4.3.12 Trench 4 was positioned between rectangular cells S and Q from the NA earthwork survey (**Figure 2B**), which were interpreted as forming a rectangular building. The trench was positioned centrally within that building in an attempt to ascertain its function, and perhaps to reveal an internal wall.
- 4.3.13 It quickly became apparent that the earthwork separating S and Q was not the remains of an upstanding wall but rubble collapse.
- 4.3.14 The earliest stratified archaeology comprised the rammed earthen floor of the building (406) (**Figure 6, Plate 10**). There was no evidence of tiles or stone flags. The surface was compact and had been heat affected following the burning of the structure and the collapse of the burning roofing timbers. Floor surface (406) was overlain by a mix of occupation debris and burnt roof timbers (405) (**Figure 6, Plate 9**). A sample of (405) was taken which



showed that the deposit was predominantly composed of cereal grain with only a small fraction of charcoal. The high proportion of charred cereal grains recovered from such a small sample suggests that the building was used for grain storage.

- 4.3.15 Layer (405) was in turn sealed by the collapsed roof material (404), a thick layer of broken ceramic building material comprised entirely of *tegula* and *imbrex* fragments (**Figure 6, Plate 8**). This was then sealed by the collapsed material from the walls of the building which were recorded as rubble layers (402/403) (**Figure 6, Plate 7**).

**Trench 5 (Figure 5, Plate 5)**

- 4.3.16 Trench 5 was positioned to investigate a north-south earthwork to the west of cell U from the NA earthwork survey (**Figure 2B**). A large rubble deposit sloping from west to east was recorded as (502) and interpreted as collapsed wall material, this overlay the natural geology (504) and was sealed by subsoil and ground surface material (502) and (501). No *in situ* structural remains were observed. This trench again showed that not all of the upstanding earthworks represented the lines of former walls, but were in fact collapsed deposits from walls.

**Trench 6 (Figure 7)**

- 4.3.17 Trench 6 was positioned on a rectangular mound where a scatter of brick/tile and painted wall plaster was visible on the surface. This area was inaccessible when NA carried out the earthwork survey in 2007. The archaeological deposits within Trench 6 were only partial revealed.
- 4.3.18 A wall (604) aligned roughly east-west was the earliest archaeological deposit. Only the southern portion of this wall was revealed in plan, but a small sondage against the southern elevation showed the wall to be plastered with pale buff lime material with a pinkish hue. Butting the south side of the wall was a rectangular structure (605), made up of four courses of rectangular ceramic tiles; this too had the remains of plaster on the west-facing elevation. Interpretations of (604) and (605), which were not fully exposed, remain uncertain (**Figure 7, Plates 11 and 12**). No floor level was ascertained.
- 4.3.19 One possibility is that (605) is a *pila*, part of the structure of a hypocaust system, supporting a suspended floor (now removed). This was supported by the suggestion that the plaster on walls (604) and (605) was reddened by the heat from the furnace or *praefurnium*.
- 4.3.20 Alternatively, (605) could have been an above-floor structure, perhaps a seating bench or a respond for an internal ornamental arch within the building. It would be unusual for walls or supporting *pilae* below floor level to be rendered or plastered, as these would not be visible. Therefore (604) would have been above floor layer and the floor was sealed beneath later collapse deposits. The pinkish hue of the plaster could be explained by the small amounts of brick/tile crushed within the mortar used, rather than by heat-reddening.
- 4.3.21 Wall (604) and structure (605) were covered by a rubble deposit (603), predominantly composed of degraded mortar and plaster with small

limestone fragments and occasional small tufa blocks (from possible lightweight vaults), which was derived from the collapsed walls of the building. A certain degree of robbing of useable stonework had presumably occurred. Deposit (603) also contained some distinct structural elements - a distinct collapse of limestone blocks (606) from the wall, a concentration of smashed box flue tiles (607), and a deposit of collapsed wall plaster (608).

- 4.3.22 Altogether, the evidence from Trench 6 – box flue tiles, painted wall plaster, possible tufa vaulting material, and a possible hypocaust *pila*, lead to the suggestion that the room was heated and therefore perhaps part of a bath-house.

**Trench 7 (Figure 5, Plate 6)**

- 4.3.23 Trench 7 was located within an area of high magnetic susceptibility, close to the rectangular structure in Area 5 (**Figure 2B**). A large spread of heat-affected material was observed on the surface, beneath the overlying leaf litter, and covering an area of at least 5m by 5m. A large mature tree was growing at the centre of this spread and therefore excavation was limited to a small trench.
- 4.3.24 Clay and limestone fragment surface (704) was the earliest identified deposit, and this was interpreted as an iron ore-roasting floor, perhaps a hollow excavated into the ground similar to a charcoal burning pit, for the removal of the water content of the ore and to break down larger lumps of ore. Surface (704) had been heat-affected but did not show evidence of extreme temperatures, as one might expect from a furnace, but the process of ore-roasting apparently did not heat the ore to high temperatures (R. Doonan pers comm).
- 4.3.25 Sealing (704) was a dump of iron ore debris (703) which was in turned sealed by a probable demolition layer (702).

**Trench 8 (Figure 8)**

- 4.3.26 Trench 8 was a machine-excavated slot through a backfilled quarry pit identified on the LiDAR survey and the NA earthwork survey (NA 2008; **Figure 2B**).
- 4.3.27 Only the western slope of the quarry pit (805) was observed within the trench, with clear pick and adze marks visible on the pit edge. The pit was irregular in plan with undulating sides. It is unclear exactly what material was being extracted, but it is likely to have been iron ore, as this pit is one of a series of pits dividing the area of domestic activity from the area of ore-roasting and smelting.
- 4.3.28 Infilling the pit were a number of fills comprising deliberately deposited domestic and possible industrial material interspersed with natural silting events. The lowest fill was recorded as (804), sealed by (803) with upper fill (802) sealed beneath the current ground surface.

## 5 FINDS

### 5.1 Introduction

5.1.1 Finds were recovered from all eight of the trenches excavated, although finds from Trenches 3, 5 and 7 were minimal. The assemblage is apparently entirely of Romano-British date, with no earlier or later material at all recovered.

5.1.2 All finds have been quantified by material type within each context, and totals by material type and by trench are presented in **Table 1**. Following quantification, all finds have been at least visually scanned, in order to ascertain their nature, probable date range, and condition. Spot dates have been recorded for datable material (pottery, ceramic building material). This information provides the basis for an assessment of the potential of the finds assemblage to contribute to an understanding of the Site, with particular reference to the construction and use of the Romano-British buildings.

### 5.2 Pottery

5.2.1 The site is located within 10km of many of the known kiln sites which collectively comprised one of the major Roman pottery production centres, the Lower Nene Valley; a number of the other kilns of the industry lie further afield (eg Stanground). The major Roman north-south road, Ermine Street, is less than 10 kilometres to the east and a minor Roman road, which linked to Ermine Street, runs just to the south. The Roman small town of *Durobrivae* is some 15 kilometres to the south east. Using a basic range of fabrics, the potters working at the kilns produced a range of colour coated, grey and cream wares. The industry probably started in the second quarter of the 2<sup>nd</sup> century and continued to the end of the Roman occupation of Britain. Many of the kiln sites have been published (Stanground: Dannell *et al* 1993; Water Newton: Gillam 1999; Sulehay: Hadman and Upex 1975; Chesterton: Webster 1999; Stibbington: Upex 2009; short summaries of the pottery industry have also been produced (Hartley 1960; Wild 1973, 1974)). Pottery in shell gritted ware was also produced locally throughout the Roman period.

5.2.2 The Roman pottery was recorded using the simple Lower Nene Valley classifications – Lower Nene Valley colour coated ware (LNVCC) , Lower Nene Valley grey ware (LNVGW) and Lower Nene Valley cream ware (LNVCW), augmented by other local, non local and imported wares. These comprised shell gritted ware (shell), Bourne/Greetham shell gritted ware (BG shell: Bolton 1968, Whitwell and Wilson 1968), Black burnished ware (BB1), other grey or oxidised wares (misc grey, oxid), Central Gaulish samian ware (CGS) and Dressel 20 amphora (Dr 20).

5.2.3 **Table 2** shows the pottery assemblage by main ware type. The Central Gaulish samian ware comprises one example each from a form 18/31 or 31, a form 45 mortarium and a large form 37. The latter is represented by a complete base which appears to have been trimmed around the edge. The rectangular shape of the only sherd from a Dressel 20 amphora might suggest that it had had a secondary function. The recognisable shell gritted ware forms are all jars of various types, including one large storage jar, but there is also a less common type of bowl with a flat topped rim. One of the

jar bases has a post-firing hole in its base. The single sherd in Bourne/Greetham shell gritted ware is most likely to be from a jar. The BB1 sherds comprise a globular jar and three flanged bowls; there is also a sherd with obtuse lattice decoration. The few sherds of apparently non local oxidised ware are from a small or miniature jar or beaker, a curved sided dish with a curved rim and a possible flagon. The kilns at Verulamium are a possible source, but pottery in fabrics similar to Verulamium was also produced in the Upper Nene Valley and near Godmanchester (Evans 2003); these sherds could, however, also be variants of local fabrics. Some of the sherds of miscellaneous grey wares could also be local variants, especially those from the quarry pit which have slip which has not covered all the surface; this was a feature of some of the vessels from kiln A2 at Water Newton (Gillam 1999, 23, nos. 14-18, 21-2). The other grey ware sherds comprise jars and a dish and may have been produced in kilns further up the Nene Valley to the west, particularly those located around Northampton such as Ecton (Johnston 1969).

- 5.2.4 The range of forms occurring in LNVCC is wide, comprising imitations of samian ware forms 31, 36 and 37, beakers including folded and 'funnel' neck types, Castor boxes, flanged bowls, wide mouthed jars or bowls, plain, bead and curved rimmed dishes, jars and flagons; one of the latter is clearly modelled on a metal prototype. In addition, there are body sherds with rouletted, underslip barbotine and overslip painted decoration. Some of the LNVCC has a grey colour coat similar to vessels made at Stanground and the fabric of some beaker sherds is reminiscent of products of the Chesterton kilns.
- 5.2.5 The LNVGW occurs principally as various jars, dishes and bowls; the latter include a possible flanged bowl and another which may be an imitation of a samian ware form 36. There are sherds from eight LNVCW mortaria in the assemblage. Four of these have bead rims with curved, grooved or reeded flanges, one is closer to a hammerhead type and one is of a wall sided variety. The latter and one of the bead rim, curved, grooved flange mortaria have an incised wavy line between the grooves. The colour of the mortaria ranges from cream to buff to reddish yellow and two have a reddish yellow slip or wash. Where visible, the grits comprise black ironstone. The LNVCW other than mortaria comprises jars and flagons, together with a probable imitation samian ware form 36. One of the jars is an unusual very large, curved rim, narrow mouthed vessel and one of the bases, probably from a flagon, has a post-firing hole in its base. The probable imitation samian ware form 36 has red painted diagonal lines on the rim, similar to vessels made at Stibbington (Perrin in Upex 2009, illus. 25-6) and another sherd also has traces of external red painted decoration.
- 5.2.6 Little of the pottery would appear to date to the 2nd century. The Central Gaulish samian and the Dressel 20 amphora would have been manufactured in the 2nd century and the BB1 sherds from a globular jar are probably also of 2nd century date. A similar date can be given to some of the shell gritted ware sherds, including that from the Bourne/Greetham area, and some of the LNVGW, LNVCW and non local grey and oxidised sherds could also be of 2nd century date. A plain rimmed LNVCC beaker with underslip barbotine decoration is of a type which was manufactured from the middle of the 2nd century into the 3rd century.

- 5.2.7 Third and 4th century forms are far more plentiful. The folded beakers, the funnel neck beaker and the beaker with overslip painted decoration in LNVCC are all well-known 3rd century types and the fragments of LNVCC Castor boxes have angular characteristics which fit a 3rd century date. The kilns at Stanground, from which some of the grey LNVCC sherds may have come, were operating in the first part of the 3rd century. One of the BB1 flanged bowls is of an early to mid 3rd century type, while the others and the sherd with obtuse lattice decoration are of later 3rd to 4th century in date. The flat topped shell gritted ware bowl may be of 3rd century rather than 4th century date and a shell gritted ware jar with a slightly undercut rim is probably of late 3rd to mid 4th century date. The Chesterton kilns, which may have been the source of some of the LNVCC beaker sherds, are dated to the first quarter of the 4th century. The imitations of samian ware forms, the wide mouthed jars or bowls, the flanged bowls and plain rimmed dishes in LNVCC and the LNVCW mortaria are all types which began to be produced in the later 3rd century and continued throughout the 4th century. The Stibbington kiln which produced LNVCW imitation samian forms with painted decoration is dated to the mid to late 4th century.
- 5.2.8 Neither the sherds from what may be the earliest layers (124 and 503), nor the oven layer (703) are diagnostic. The roof collapse (404) contained a LNVCC imitation samian ware form 36, a type produced in the 3rd and 4th centuries. Unfortunately, a closer date cannot be given as the rim on this vessel is missing. Of the possible occupation layers (119-121), 120 contains the complete, trimmed, samian ware form 37 base, a BB1 flanged bowl, a BB1 sherd with obtuse lattice decoration, various LNVCC beaker sherds including one with overslip white paint decoration and a LNVCC imitation samian ware form 36. A mid 3rd to 4th century date is suggested. Layer 121 contains LNVCC including an angular Castor box lid, the flagon modelled on a metal prototype, a beaker and a possible flanged bowl, together with the edge of a LNVCW mortarium flange. The pottery could all date to the 3rd century. Most of the other layers are not sealed and the joining sherds from different contexts suggest some mixing or disturbance has taken place. The feature least likely to have been disturbed is the quarry pit (805; fills 802-4). This contained pottery mainly of later 2nd to mid 3rd century date, including a LNVCC plain rimmed beaker with underslip barbotine dots and LNVCC beaker sherds with rouletting or underslip barbotine dots and scrolls, a curved rim grey LNVCC beaker similar to Stanground products, two LNVGW bead rim dishes or bowls, a large LNVGW bowl with a chamfer, the very large LNVCW curved rim, narrow mouthed jar and LNVCW flagon sherds. The wall sided mortarium with a wavy line between the grooves could, however, be later in date.
- 5.2.9 **Table 3** shows the amount of pottery by trench. The eight trenches produced a relatively small amount of pottery, 410 sherds weighing a little over 9kg, giving a high average sherd weight of 22.5g. Trenches 1 (the villa area) and 8 (the backfilled quarry pit) accounted for around 80% of the pottery. There were a number of joining sherds from contexts in trench 1 (102, 111, 115; 103, 121; 111, 112; 112, 120), trench 4 (402, 403), trench 6 (601, 602) and trench 8 (803, 804).
- 5.2.10 **Table 4** shows the contexts within each trench with over 500 gms of pottery. Context 102 is the current ground surface, while 111, 112 and 114 are all

rubble/demolition layers. Layer 120 is a build up of material outside a building which might relate to possible occupation. 802 and 803 are two of the quarry pit fills.

- 5.2.11 The fabric proportions, the range of vessel forms and the high average sherd weight reflect the nature of the Site as having some pretensions to status.

### 5.3 Ceramic Building Material (CBM)

- 5.3.1 The assemblage of CBM is entirely of Romano-British date. A rigorous discard/retention policy was adopted for the CBM. The whole assemblage was quantified by type (*imbrex*, *tegula*, etc) within each context, with features such as paw prints, 'signatures' and selected dimensions also recorded. Most pieces were then discarded, retaining only those with distinctive features such as paw prints, and a few other fragments as representative samples of the range of types. Fabric type was not recorded, as the majority of the assemblage comprised fragments in non-distinctive hard-fired, slightly sandy fabrics firing orange-red.

- 5.3.2 **Table 5** gives the breakdown of CBM types. The assemblage included roof tiles (*tegulae* and *imbrices*) and box flue tiles from a hypocaust heating system. A significant proportion comprised flat fragments lacking diagnostic features on which to assign them to specific tile or brick types; these were divided into those less than 30mm in thickness, and those of a greater thickness; the former are likely to represent further examples of *tegulae*, *imbrices* and box flue tiles, while the latter probably derive from bricks of various forms, including those utilised in the *pilae* (supporting columns) of underfloor heating systems.

- 5.3.3 No complete dimensions were noted amongst the *tegulae*, although it was apparent that thickness, as well as flange width and height, varied. Flange height is generally considered to be roughly twice the tile thickness – in this instance it ranged from 37 to 50mm; flange profile was either squared or curved. Several cut-aways were observed, both on top and underneath the *tegulae*; the three bottom cut-aways comprise two of Brodrigg's type 1, and one of type 5 (1987). Two *tegulae* carried finger-smear 'signatures', and one of these also had paw prints.

- 5.3.4 Most box flue fragments carry some form of keying for mortar. This is generally in the form of combing, either linear (often cross-hatched) or curvilinear. Box flue tile fragments were found in such small quantities that it is difficult to ascertain whether they represent evidence of hypocaust systems in the areas of the Site where the fragments were found. Only in Trench 6 could the presence of a hypocaust system be implied.

### 5.4 Wall Plaster and Opus Signinum

- 5.4.1 Wall plaster was recovered from Trench 6 only, and mainly from topsoil. All fragments could form part of a single simple decorative scheme, comprising red zones and stripes, and narrow grey/green stripes, on a white background. This included one right-angled corner from a rectangular 'panel' outlined by a red stripe.

5.4.2 Four fragments of *opus signinum* were also recovered, all from Trench 4. This cement-like material was used to line water tanks, and for flooring.

## 5.5 Stone

5.5.1 The stone consists entirely of building materials, largely fragments of probable roofing slabs in shelly oolitic limestone and sandy limestone. The shelly oolitic limestone may be from the local Blisworth limestone (Middle Jurassic), while the sandy limestone is from an undetermined source, probably from the nearby local Middle or Upper Jurassic. One tile from context 115 appears to be almost complete (280 x 165mm), subrectangular in shape with a convex upper edge and with a single nail hole located off-centre at the top.

5.5.2 A few fragments of tufa from Trench 6 topsoil and context 602 have no obvious signs of working, but could have been used as structural materials; these are from Holocene river bed deposits (the nearest outcrops would be by the Rivers Nene or Welland).

5.5.3 Interestingly, there is no evidence from the Site for the use of local high quality stone, e.g. Barnack or Weldon, which would tend to suggest a relatively low status site, in contrast to some of the other artefactual and structural materials.

5.5.4 A large block from context 112 could be either a saddle quern or rubstone; this is in a hard, micaceous sandstone, probably from a Lower Cretaceous outcrop c. 20-25 km to the south-east (e.g. Greensand).

## 5.6 Metalworking residues

5.6.1 Only a small amount of metalworking residues were recovered (just under 2kg), over half of which came from Trench 7, the area of the possible ore-roasting floor. All of the residues comprised ironworking slag, relatively dense and slightly vesicular.

## 5.7 Metalwork

### *Iron*

5.7.1 Most of the ironwork consists of nails (47 examples); other identifiable finds comprise an ox goad and a latchlifter (both from context 102), and a chisel (context 112).

## 5.8 Animal Bone

5.8.1 Eighty-three fragments of animal bone were recovered from the Site during the normal course of hand-excavation. Conjoining fragments from individual bones have been counted once therefore the total count is likely to be lower than that given in the general finds quantification table. Bone preservation is good to fair, and the frequency of gnaw marks is relatively low at only 6%.

5.8.2 Bone was recovered from nine Roman layers located in trenches 1 and 4, a Roman quarry pit located in Trench 8 and from the modern ground surface (102) in trench 1. The Trench 1 layers include deposits of rubble and occupation debris from the interior (103 and 119) and exterior (111, 112, 120 and 121) of the villa.

- 5.8.3 The assemblage was rapidly scanned and quantified (for method see Davis 1992). Non-countable fragments of long bone shaft, rib and vertebra from large (35%) and medium (16%) sized mammals, and small unidentifiable splinters (37%) are common. Only ten fragments (12% of the total) can be identified to species and element. Cattle (N = 3), sheep/goat (N = 3), pig (N = 1), horse (N = 1) and red deer (N = 1) have been identified from the Roman assemblage. A single sheep/goat bone was identified from the fragments collected from (102).
- 5.8.4 External rubble layer (114) includes possible evidence for small-scale craft activity in the form of off-cuts of bone and antler waste.
- 5.8.5 The quantity of detailed information relating to the age, size and conformation of species is extremely limited. Epiphysial fusion data is available for two post-cranial bones, biometric data is available for three specimens and tooth eruption/wear data is available for one pig mandible (MWS = B or 2-7 months; after Hambleton 1999, 65). Butchery marks were noted on one cattle radius.

## 5.9 Other Finds

- 5.9.1 Other finds comprise a small quantity of fired clay (undiagnostic fragments of uncertain date and function) and oyster shell.

## 5.10 Potential and Recommendations

- 5.10.1 The Site produced a relatively small assemblage, and a restricted range of material types; only pottery and CBM occurred in any significant quantity. The pottery has already served to provide the chronological framework for the Site, and it is unlikely that further analysis could refine that preliminary dating. The ceramic building material has demonstrated the former presence of substantial buildings on the Site, commensurate with its interpretation as a villa, but much of this material came from demolition deposits (as did the stone building material) and cannot now be related to *in situ* structures. Despite the obvious industrial nature of part of the Site, only a small quantity of ironworking debris was recovered, insufficient to characterise the whole range of processes taking place on the Site.
- 5.10.2 The evidence for 'high status' structures (flue tiles, painted wall plaster) is slim and somewhat ambiguous in its interpretation as relating to a possible bath-house. Overall, the interpretation of status from the finds evidence is somewhat contradictory – the pottery assemblage, with a relatively high proportion of tablewares, suggests some pretensions to status, while the building stone suggests the opposite.
- 5.10.3 The finds have already been recorded at least to minimum archive level, and no further analysis is required. Full details can be found in the Site archive.

## 6 PALAEO-ENVIRONMENTAL SUMMARY

### 6.1 Introduction

- 6.1.1 Two bulk samples were taken, for the recovery of charred plant remains and other biological material. One sample was taken from a burnt layer (context 405) sealed below the collapsed roofing material (406) and rubble in Trench



4 associated with the burnt building. The second sample was taken from a deposit rich in roasted iron ore fragments within an iron ore-roasting floor within Trench 7.

- 6.1.2 Bulk samples of 25 and 23 litres respectively were processed by standard flotation methods; the flot retained on a 0.5 mm mesh, residues fractionated into 5.6mm, 2mm and 1mm fractions and dried. The coarse residues (>4.5mm) were sorted, weighed and discarded. Flots were scanned under a x10 – x40 stereo-binocular microscope and the presence of charred remains quantified. Abundant grain was present in the sample from context 405, forming the bulk of the flot. A small amount of charcoal present in the 4mm sieve was removed from the flot. A fraction of 5% of the remaining flot was examined in more detail. Grain was counted and the range of species noted recorded. Chaff and weed seeds were extracted, identified and quantified. The results are given in **Table 6**. Identifications of weed and wild taxa follow the nomenclature of Stace (1997).

## **6.2 Iron ore-roasting floor (703)**

- 6.2.1 The sample from floor (703) produced no charred plant remains. The flot, measuring 180ml in volume, was dominated by roots, with occasional modern seeds (bramble, sedges and violets), worm capsules and fragments of metallurgical residue. Small amounts of fragmented charcoal were present (c.10ml). This sample was not examined further and provided no information about fuel use in the iron ore-roasting process.

## **6.3 Burnt deposit (405)**

- 6.3.1 The large burnt deposit from context (405) produced a flot of 1100ml in volume which was dominated by charred cereal grain. Charcoal formed only a very minor component of the deposit, suggesting that a relatively pure deposit of cereal grain was burnt at the time the building was destroyed and was well sealed beneath the wall rubble and roofing material. The small fragments of charcoal incorporated in the deposit are presumably derived from structural timbers and wooden implements within the building.
- 6.3.2 A sub-sample of 5% of the deposit by volume was taken from each sieve (0.5mm, 1mm and 2mm). Grain was counted without being extracted from the flot. While this is likely to result in a slight underestimation of the total grain, it is notoriously difficult to obtain precise counts when dealing with very large numbers of grain. A total of 685 grain was counted in 5% of the total flot. This would suggest that the total flot contained something in the region of 11,700 to 14,000 charred grains, or c. 548 - 560 grain per litre of deposit. The majority of the grain was well preserved, retaining both good gross morphology and testa and conformed to the range of 'typical' spelt wheat (*Triticum spelta*) grain described in Jacomet (2008), or less well preserved hulled wheat, spelt/emmer (*Triticum spelta/dicoccum*). One grain of emmer wheat (*Triticum dicoccum*) was noted and occasional (fewer than 10) grains of hulled barley (*Hordeum vulgare*) and oats (*Avena* sp.) were present.
- 6.3.3 Chaff was present, entirely composed of hulled wheat glume bases and spikelet forks. The majority of chaff was identified as spelt or as emmer/spelt (*Triticum spelta/dicoccum*). Two glume bases were identified as emmer

(*Triticum dicoccum*). In total the equivalent of 254 glume bases were counted (where one spikelet fork is equivalent to two glume bases). Given the differential survival of chaff and grain this figure is likely to be significantly under-representative of the original total. As such it is possible that the grain is derived from whole spikelets in which the grain is still held within its glumes, the most stable form for storage.

- 6.3.4 Weed seeds were particularly rare in the deposit. In the 5% examined in more detail only one seed of fat hen (*Chenopodium album*) was identified. Rare oats (*Avena* sp.) may also represent weeds. The majority of weeds appear to have been removed prior to the grain entering the building.
- 6.3.5 Spelt wheat is the cereal most closely associated with Romano-British agriculture and as such it is expected on sites of this period. Spelt wheat is a hulled wheat in which the grain is held tightly in glumes or hulls, the bases of which are dense and woody and therefore survive burning events more readily than the chaff of free-threshing wheat. While the chaff of free-threshing wheat is separated from the grain by threshing, sieving and winnowing, the glumes of hulled wheat are retained through these processes, requiring additional pounding or similar treatment if they are to be removed. Hulled wheats, then, are more likely to enter a settlement and be stored in their glumes, which provide the grain with additional protection from fungal or insect attack. The rarity of weed seeds in the deposit indicates some level of processing took place prior to the burning event, presumably involving threshing, winnowing and sieving to remove the bulk of the weeds. The hulls could then be removed by pounding prior to hand milling, or possibly left on if the grain was to be milled (they could be removed from milled flour by sieving). Given the nature of the structure, it is much more likely that the grain was burnt in storage rather than in some sort of roasting process in which chaff may have been used as fuel. It is therefore most likely that the deposit represents stored, processed spikelets of spelt wheat (with occasional impurities) which was burnt during the fire which destroyed the building.
- 6.3.6 The extent of the spread of grain is unknown, and it is not, therefore, possible to establish the scale of grain storage taking place in the building. The grain represented in the deposit may derive from a single sack of stored grain. The burning of such a deposit is a chance event resulting in a single exceptional assemblage rather than the result of repeated routine activities and cannot therefore be taken as representative of the Site or activities on the Site. The location of the Site close to a Roman road and relatively near to Ermine Street is, however, of interest. It is possible that grain was stored here prior to redistribution along the road system to supply the fort at *Durobrivae* or elsewhere. Alternatively, the grain may simply have been stored for the occupants of the Site, where the main activity was predominantly ironworking.

## **7 DISCUSSION**

### **7.1 Introduction**

- 7.1.1 The Site was identified as a Roman villa complex with associated iron workings. Refinement of the chronological sequence was possible through the recovery of datable finds from stratified deposits with Trench 1, where a

number of phases of construction were identified. The earliest pottery dated to the early Roman period (2<sup>nd</sup> century AD), whereas the majority of recovered finds were late Roman in date (3<sup>rd</sup> to 4<sup>th</sup> century AD). This places the Site within the period of the rise of the Nene Valley pottery industries and the growth of the town of *Durobrivae*.

- 7.1.2 The evaluation was also successful in identifying the broad function of a number of structures, confirming the hypotheses put forward by NA after earlier fieldwork, and in identifying a certain degree of spatial separation of activity within the complex of buildings.

## 7.2 Site layout

- 7.2.1 The entire complex including the villa and courtyard, possible bath-house and rectangular enclosure to the east covers an area of some 4.3 hectares. Although the Time Team evaluation was relatively small-scale, it was able to expand on the earlier work by NA, whose earthwork survey and limited evaluation identified a north-south range of buildings with a possible courtyard to the east possibly bordered by a perimeter wall to the north. The earthwork survey identified a second building some 130m to the west of the main complex of buildings.
- 7.2.2 The Time Team evaluation enabled the confirm zones of activity within the complex: domestic to the east and industrial to the west.
- 7.2.3 The main complex of structures (Area 1) could be described as a courtyard villa - a single range of buildings with a domestic use, as indicated by the amounts of pottery recovered in Trench 1, the potential grain store in Trench 4, the dumping of domestic refuse in Trench 8, and the lack of industrial activity within these buildings. To the east of the range was an area of open ground interpreted as a courtyard, delimited by an earthwork at the northern end. This earthwork was investigated in Trench 2 and identified as a wall with no associated floor and therefore interpreted as a free-standing boundary wall.
- 7.2.4 The full extent of the courtyard (Area 2) was not ascertained due to the disturbance of the ground by recent track-ways through the wood and the large modern limestone and iron stone quarry immediately to the east.
- 7.2.5 In what was potentially the south-east corner of the courtyard was a rectangular raised area with brick/tile, painted wall plaster, and shaped stone work visible on the surface. Trench 6 in this area revealed the possible location of the villa's bath-house.
- 7.2.6 The interior of the courtyard was investigated in Trench 3, where redeposited natural material appeared to have formed a rammed earthen surface, incorporating small fragments of ironstone, probably deliberately brought in from the quarry pits to the west.
- 7.2.7 This series of quarry pits separated the area of domestic activity from the industrial processes of iron-working to the west, and had been used for the dumping of domestic waste from the villa, as shown in Trench 8.

7.2.8 In Area 5 NA had identified a stone revetted enclosure interpreted as an area of iron-working, from the presence of slag and waste on the surface. Although this structure was not investigated in the current programme of works, an iron ore-roasting floor found to the south, in Trench 7, confirmed the earlier interpretation.

### 7.3 Site function

#### ***Domestic***

7.3.1 The activity which took place within the domestic structures of the villa complex could not be clarified due the lack of artefacts providing a specific use. However food storage and possible cooking evidence was revealed within Trenches 1 and 4. It was also clear that the buildings investigated were utilitarian, with simple flagged or rammed earthen floors, although fragments of *opus signinum* from Trench 4 may indicate flooring of that material.

7.3.2 No evidence of 'high status' structures were identified *in situ*, and only small amounts of possible 'high status' finds (box flue tiles, painted wall plaster) were recovered from the demolished building remains. The work by NA in 2007 identified similar tiles and plaster in trenches excavated within cells A, B and C, just to the north of Trench 1.

7.3.3 The building within Trench 1 contained a small, heavily disturbed oven (122), possible evidence of a kitchen block.

7.3.4 Trench 4 produced evidence for grain storage in the form of a burnt deposit sealed beneath collapsed building material, which contained considerable amounts of processed spelt wheat and grains of emmer and barley. This deposit was found in the centre of a room within the villa complex. The extent of the room and therefore the extent of the spread of grain were not fully revealed, and it was not possible to establish the scale of grain storage taking place here - it may have been a single sack of stored grain or the site of the villa's granary. It is possible that the grain represented a surplus which was being stored prior to redistribution in the local area, or it is perhaps more likely that it was being stored for use by the occupants of the site. This deposit also suggested that fire could have played a part in the destruction of part of the villa.

#### ***Industrial***

7.3.5 Trenches 7 and 8 revealed evidence of industrial activity, which was known to have been taking place within the wood. From Artis' initial work at the beginning of the 19<sup>th</sup> century, to the rescue excavations of the 1960s and the survey, geophysics and limited evaluation in the 2000s, all work indicated iron-working in this area.

7.3.6 The identification of two large bowl furnaces in the 1960s, the large number of quarry pits revealed on the LiDAR survey and NA survey, and the ore-roasting floor found in Trench 7, all point to the use of the Site for the early processes of iron-working - extraction of the ore, roasting and ultimately smelting (as indicated by the recovery of slag by NA). No evidence of further processing was observed, but that is not to say that it was not taking place.

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## **8 RECOMMENDATIONS**

- 8.1.1 The results of the Time Team evaluation have clearly added useful information to the understanding of the Site as previously known through antiquarian investigation and more recent fieldwork by NA. As such, the results would most usefully be published within an overall discussion of the Site. In the meantime, a short summary of the current project will be submitted to the *Cambridgeshire Antiquarian Journal* for inclusion in the annual round-up of archaeology in the county.

## **9 ARCHIVE**

- 9.1.1 The project archive was prepared in accordance with the guidelines outlined in Appendix 3 of *Management of Archaeological Projects* (English Heritage 1991) and in accordance with the *Guidelines for the preparation of excavation archives for long term storage* (UKIC 1990). The excavated material and archive, including plans, photographs, written records and digital data, are currently held at the Wessex Archaeology offices under the project code 71512. It is intended that the archive should in due course be deposited with Peterborough Museum.

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**Table 1: Finds totals by material type and by trench (number / weight in grammes)**

<b>Material</b>	<b>Tr 1</b>	<b>Tr 2</b>	<b>Tr 3</b>	<b>Tr 4</b>	<b>Tr 5</b>	<b>Tr 6</b>	<b>Tr 7</b>	<b>Tr 8</b>	<b>TOTAL</b>
Pottery	268/4632	27/612	5/20	28/686	2/10	18/634	14/128	48/2490	410/9212
Ceramic Building Material	117/14,946	51/7964	1/110	16/2574	13/3370	18/7549	-	45/6013	261/42,526
Wall Plaster	-	-	-	-	-	40/8701	-	-	40/8701
Fired Clay	6/126	-	-	65/924	-	-	-	1/28	72/1078
Opus Signinum	-	-	-	4/717	-	-	-	-	4/717
Stone	15/13,427	-	-	40/485	-	6/1656	-	1/263	62/15,831
Slag	1/186	1/270	-	-	-	3/71	18/1289	5/134	28/1950
Metalwork (no. objects)	44	1	-	8	-	2	1	1	57
Animal Bone	69/704	1/1	-	14/252	-	-	-	8/14	92/971
Marine Shell	5/50	-	-	-	-	-	-	2/37	7/87



**Table 2: Pottery totals by ware type**

<b>Fabric</b>	<b>Rim</b>	<b>Body</b>	<b>Base</b>	<b>Total</b>	<b>%</b>	<b>Wt. (g)</b>	<b>%</b>
LNVCC	30	142	21	193	47.07	2942	31.94
LNVGW	14	81	14	109	26.58	2064	22.41
LNVCW	3	12	1	16	3.90	560	6.08
LNVCW (mortaria)	7	4		11	2.68	1032	11.20
BB1	6	2	1	9	2.19	212	2.30
Shelly ware	11	24	1	36	8.78	1258	13.66
BG shelly ware		1		1	0.24	10	0.11
Misc greywares	2	18	1	21	5.12	354	3.84
Misc oxidised	2	4		6	1.46	68	0.74
C Gaulish samian	1	5	1	7	1.70	162	1.76
Dr 20 amphora		1		1	0.24	550	5.97
<b>TOTALS</b>	<b>76</b>	<b>294</b>	<b>40</b>	<b>410</b>		<b>9212</b>	

**Table 3: Pottery totals by trench**

<b>Trench</b>	<b>Rim</b>	<b>Body</b>	<b>Base</b>	<b>Total</b>	<b>%</b>	<b>Wt. (g)</b>	<b>%</b>
Trench 1	59	185	24	268	65.37	4632	50.28
Trench 2	1	23	3	27	6.59	612	6.64
Trench 3	1	4		5	1.22	20	0.22
Trench 4	4	20	4	28	6.83	686	7.45
Trench 5		2		2	0.49	10	0.11
Trench 6	3	14	1	18	4.39	634	6.88
Trench 7	2	12	0	14	3.41	128	1.39
Trench 8	6	34	8	48	11.71	2490	27.03
<b>TOTALS</b>	<b>76</b>	<b>294</b>	<b>40</b>	<b>410</b>		<b>9212</b>	

**Table 4: Contexts in each trench with over 500g of pottery**

<b>Context</b>	<b>Rim</b>	<b>Body</b>	<b>Base</b>	<b>Total</b>	<b>%</b>	<b>Wt. (g)</b>	<b>%</b>
102	11	20	1	32	7.80	640	6.95
111	5	19	0	24	5.85	696	7.56
112	15	41	4	60	14.63	1038	11.27
114	5	40	1	46	11.22	680	7.38
120	4	18	16	38	9.27	540	5.86
802	1	10	5	16	3.90	746	8.10
803	3	18	3	24	5.85	1244	13.50
<b>TOTALS</b>	<b>76</b>	<b>294</b>	<b>40</b>	<b>410</b>		<b>9212</b>	

**Table 5: CBM totals by type**

<b>CBM type</b>	<b>Number</b>	<b>Weight (g)</b>
Box flue	19	3838
Imbrex	38	5089
Tegula	48	11527
Flat frags <30mm	66	7222
Flat frags >30mm	28	13596
Undiagnostic	62	1254
<b>TOTAL</b>	<b>261</b>	<b>42526</b>

**Table 6: Charred plant remains present in burnt deposit 405**

	Sample	1
	Context	405
	Trench	4
	Sample Volume (litres)	25
	Flot Volume (ml)	1100
	Fraction sorted	5%
<i>Triticum spelta</i> L.	Spelt wheat grain	++++
<i>Triticum spelta/dicoccum</i>	Emmer/Spelt wheat grain	+++
<i>Triticum dicoccum</i> L.	Emmer wheat grain	+
<i>Hordeum vulgare</i> sl.	Hulled barley grain	+
<i>Avena</i> sp.	Oats, grain	+
<i>Triticum spelta</i> L.	Spelt wheat glume bases	89
<i>Triticum spelta</i> L.	Spelt wheat spikelet fork	3
<i>Triticum dicoccum</i> L.	Emmer wheat glume base	2
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer wheat glume base	135
<i>Triticum spelta/dicoccum</i>	Spelt/Emmer wheat spikelet fork	11
<i>Chenopodium album</i> L.	Fat hen seed	1
Total Grain in 5%		585
Estimated grain per litre		468
Charcoal >4mm (ml) in total flot		60

## APPENDIX 1: TRENCH SUMMARIES

bgl = below ground level

CBM = ceramic building material (brick and tile)

TRENCH 1		Type:	Hand Dug
Dimensions: 7.90 x 4.90		Max. depth: 0.62	
context	Description	depth	
101	<i>Fill</i>	Modern backfill of 2007 Northamptonshire Archaeology (NA) trench (104). Mid grey-brown silty sandy loam, mix of all excavated deposits from earlier work backfilled into trench. All material removed to expose earlier revealed structure.	
102	<i>Ground surface</i>	Current ground surface. Light grey-brown humic silty loam with occasional small sub-angular fragments of limestone <0.05m, contains pottery and CBM. Current ground surface cut through by excavation of NA trench (104). Overlies rubble deposits (103), (111), (112) and (126).	
103	<i>Layer</i>	Demolition/collapse deposit, mid to light grey silty loam with abundant limestone fragments derived from collapsed walls (105), (106), (109) and (110). Material equivalent to (112) and (126), but concentrated within confines of room formed by walls (105), (106), (109) and (110). Substantial deposit with limited robbing.	
104	<i>Trench</i>	Cut of 2007 NA trench; cuts through (102), in-filled with (101). 4m long by 1m wide and 0.68m deep. Corresponds to NA's Trench 3.	
105	<i>Wall</i>	Second phase, roughly east-west wall, constructed of roughly shaped limestone blocks, in apparent dry-stone build, though probably using yellow natural clay bedding in some places. 6.70m long by 0.52m wide and 0.60m high max. Built in two differing styles: western end is 3 horizontal courses over single horizontal 0.10m wide stepped foundation (blocks c. 0.25m by 0.20m by 0.11m). Approximately 2m from western end of trench changes to 2 horizontal courses over single pitched (herringbone) course, overlying a further horizontal course. This sits on two stepped footing courses. Change in building style corresponds to a distinct drop in underlying geology to the west, reflected in change from (108) to (119). (105) is butted on southern side by walls (109) and (128), forming room to the south. Constructed in the same manner as perimeter wall (203) in Trench 2. Recorded as (308) in NA (2008).	
106	<i>Wall</i>	Second phase, roughly east-west wall constructed of shaped limestone blocks, in apparent dry stone build. 2.40m long by 0.56m wide and 0.66m high; 6 horizontal courses of blocks c. 0.25m by 0.18 wide and 0.10m with no clear stepped footing. (106) is parallel to (105); bonded at eastern end to wall (110) to form rooms to the north and south. Only revealed in plan except for within re-excavated NA trench. Recorded as (305) in NA (2008).	
107	<i>Surface</i>	Second phase, possible remains of limestone flagged floor. Irregular shaped, flattish limestone blocks of room formed by walls (105), (106), (109) and (110). Laid on bedding layer (108); overlain by (119). Recorded as (312) in NA (2008).	
108	<i>Layer</i>	Bedding layer for floor surface (107). Light to mid yellow silty clay with occasional small limestone inclusions; banked up against inside of wall (105). Overlies the natural.	
109	<i>Wall</i>	Second phase, roughly north-south wall; butts south side of wall (105) to form room to west. Sits on foundation (128) to form the doorway/threshold into the room (with 110). 0.48m long by 0.43m wide and 0.35m high. Stratigraphically later than (105), but same phase.	

110	<i>Wall</i>	Second phase, roughly north-south wall; only revealed in plan but clearly bonded into the eastern end of wall (106). 1.40m long by 0.60m wide and 0.10m high. Aligns with (109) to form doorway/threshold into room. Unexcavated.	0.10m high
111	<i>Layer</i>	Mid grey-brown silty loam with common-abundant limestone blocks derived from the surrounding walls. Rubble/demolition material to north of wall (105), possibly external to building. Sealed by (102) and overlies (113). Equivalent to (103), (112) and (126) - arbitrary division for finds retrieval.	0.30m thick
112	<i>Layer</i>	Demolition/collapse deposit, mid to light grey silty loam with abundant limestone fragments derived from collapsed walls (105), (106), (109) and (110). Equivalent to (103) and (126); concentrated on exterior of building to east of walls (109), (128) and (110). Arbitrary division for finds retrieval.	0.25m
113	<i>Wall</i>	Third phase, north-south limestone block wall; butts northern side of wall (105). 1.02m long by 0.54m wide and 0.30m high, 2 courses of small, roughly worked limestone blocks. Poorly built in comparison with (105). Stratigraphically above (115); sealed by (114).	0.30m high
114	<i>Layer</i>	Rubble deposit below (112); seals (122). Light to mid yellow-brown with dark grey patches. Earlier collapse deposit derived from collapsed walls and possibly collapsed oven/kiln structure (122). Possibly identical to (117).	0.17m thick
115	<i>Layer</i>	Build up material to exterior of wall (105); butts up against wall. Mid yellow compact sandy silt; overlain by (113). Revealed in sondage excavated through rubble layer (111).	0.14m thick
116	<i>Layer</i>	Unexcavated layer of mid grey-brown silty clay with common limestone blocks on northern side of wall (105) and west of wall (113). Overlies (113). Similar collapse material to (103) etc.	-
117	<i>Layer</i>	Rubble deposit revealed in sondage excavated through (112) to south of (105) and east of (109). Located on exterior of structure; overlies (120).	0.13m thick
118	<i>Layer</i>	Spread of material within interior of room, mid yellow sandy silt layer below (103) and above (119).	0.15m thick
119	<i>Layer</i>	Possible occupation layer revealed within interior of room formed by walls (105) and (106). Dark grey brown silty loam. Overlies (109), (128) and (107). Very similar to (120) and (121); exterior of the building. Not fully excavated.	0.10m thick
120	<i>Layer</i>	Possible occupation layer, dark grey-brown silty loam with common small flecks of limestone, build up material outside building; overlaps (128) and (109). Equivalent to (121) and possibly also to (119). Not fully excavated.	0.04m +
121	<i>Layer</i>	Possible occupation layer, dark grey-brown silty loam with common small flecks of limestone, build up material outside building; overlies (125) and overlain by possible kiln/oven structure (122). Equivalent to (120) and possibly also to (119). Not fully excavated.	0.12m thick+
122	<i>Structure</i>	Possible limestone oven/kiln. Heavily disturbed and almost fully demolished. Base of structure comprises large flat limestone blocks with tile base. Main body of the structure has collapsed to form deposit (129). Structure not fully investigated; visible within west facing section of Trench 1.	0.25m high
123	<i>Wall</i>	First phase wall. Heavily truncated wall stub, difficult to ascertain alignment. Single course of limestone blocks; 0.60m long by 0.40m wide and 0.10m high. Appears to sit directly on the natural geology; overlain by layer (124).	0.10m high +
124	<i>Layer</i>	Reworked natural geology layer revealed in small sondage to the north of wall (105). Appears to have been disturbed during the first phase of construction and then reworked with demolition of wall (123)	0.10m thick

		and building of wall (105). Cut through by (127).	
125	Layer	Reworked natural geology layer revealed in small sondage excavated through rubble deposit (114), adjacent to (122). Possibly equivalent to (124). Overlain by occupation deposit (121).	0.16m thick
126	Layer	Rubble deposit, equivalent to (103) but concentrated to south of wall (106). Unexcavated.	-
<b>127</b>	<b>Cut</b>	<b>Construction cut for wall (105), only revealed cutting (124).</b>	-
128	Structure	Foundation for wall (109) which also acts as the threshold into the room formed by walls (105), (106), (109) and (110).	
129	Layer	Rubble layer derived from collapse of oven structure (122). Formed entirely of burnt limestone blocks. Located to south of oven (122).	0.25m thick

<b>TRENCH 2</b>			Type:	Hand Dug
<b>Dimensions:</b> 5.80m x 1.30m		<b>Max. depth:</b> 0.42m		
context	Description			depth
201	Ground surface	Current ground surface; trench located across forest trackway, with very disturbed ground. Mid yellow-brown compact silty clay with occasional small limestone fragments. Seals rubble collapse deposits (202) and (204).		0-0.30m
202	Layer	Rubble collapse deposit, derived from wall (203). Equivalent to (204) but concentrated to north of wall (203). Mid yellow-brown silt clay with abundant limestone blocks.		0.30m thick
203	Structure	East-west limestone block wall; 1.30m long and 0.60m wide and 0.40m high. Constructed of roughly hewn limestone blocks; 2 upper horizontal courses overlying course of pitched (herringbone) stones over lower horizontal course. Constructed in the same manner as the eastern end of (105) in Trench 1, with foundation trench cut (206). No floor surface or corresponding parallel wall identified to suggest wall was part of a building; interpreted instead as perimeter wall to whole complex.		0.40m high
204	Layer	Rubble collapse deposit, derived from wall (203). Equivalent to (202) but concentrated to south of wall (203). Mid yellow-brown silt clay with abundant limestone blocks.		
205	Layer	Reworked natural deposit, light yellow-brown, through which construction cut (206) excavated for wall (203). Equivalent to (207). Overlies natural.		0.10m thick
<b>206</b>	<b>Cut</b>	<b>Construction cut for wall (203), excavated through reworked natural layer (205/207).</b>		-
207	layer	Reworked natural deposit, light yellow-brown, through which construction cut (206) excavated for wall (203). Equivalent to (205). Overlies natural.		0.10m thick

<b>TRENCH 3</b>			Type:	Machine excavated
<b>Dimensions:</b> 3m x 1.30m		<b>Max. depth:</b> 0.44m		
context	Description			depth
301	Ground surface	Current ground surface of area of open ground within the woodland. Mid yellow-brown with orange compact silty clay.		0-0.26m
302	Layer	Disturbed natural layer, reworked natural, possibly as result of human activity within woodland. Mixed mid yellow-brown silty clay with dark brown patches. Mixed limestone and ironstone inclusions suggest human activity, as ironstone does not occur in this area of the site.		0.26m +
303	Natural	Bands of natural sand below disturbed natural layer (302). No archaeology observed.		-

<b>TRENCH 4</b>			Type:	Hand Dug
<b>Dimensions:</b> 2.80m x 1.30m		<b>Max. depth:</b> 0.65m		
<b>context</b>	<b>Description</b>		<b>depth</b>	
401	<i>Ground surface</i>	Current ground surface of area of woodland. Dark grey-brown silty loam, leaf litter rich. Overlies (402).	0-018m	
402	<i>Layer</i>	Rubble layer, result of collapse or demolition of wall to west. Dark grey-brown silt loam with abundant limestone blocks. Equivalent to (403); separated for finds retrieval. Overlies (403); sealed by (401).	0.18-0.34m	
403	<i>Layer</i>	Rubble layer, result of collapse or demolition of wall to west. Dark grey-brown silt loam with abundant limestone blocks. Equivalent to (402); separated for finds retrieval. Overlies (404); sealed by (402).	0.34-0.44m	
404	<i>Layer</i>	Collapsed roofing material, composed entirely of broken <i>tegula</i> and <i>imbrex</i> tiles. Very dark brown-black silty loam. Evidence of fire which caused roof to collapse into interior of building. This then sealed by collapsing walls as they fell. Sealed by (403) and overlies (405).	0.44-0.57m	
405	<i>Layer</i>	Burnt layer, mix of burnt roofing timbers deposited as roof fell in, mixed with probable occupation debris on floor of building. Very dark brown-black silty loam. Overlies (406) and sealed by (404).	0.57-0.61m	
406	<i>Surface</i>	Beaten/rammed earthen floor. Natural geology utilised as floor surface within building. No evidence of tiles or stone flags. Floor surface is very compact, mix of day-to-day use and the result of fire which brought building down, firing the natural clayey material of the geology. Mid yellow-brown with pinky patches, silty sandy clay.	0.61m+	

<b>TRENCH 5</b>			Type:	Hand Dug
<b>Dimensions:</b> 5m x 1.30m		<b>Max. depth:</b> 0.40		
<b>context</b>	<b>Description</b>		<b>depth</b>	
501	<i>Ground surface</i>	Current ground surface of area of woodland. Dark grey-brown silty loam, leaf litter rich. Overlies (503).	0-0.10m	
502	<i>Layer</i>	Rubble layer, derived from collapsed wall nearby. No trace of wall observed in trench. Mid grey-brown silty loam with common limestone blocks. Overlies (504) and sealed by (503).	0.0.15-0.40m	
503	<i>Layer</i>	Subsoil layer, mid grey-brown fine sandy loam layer. Overlies (503) and sealed by (501).	0.10-0.15m	
504	<i>Natural</i>	Natural basal geology, light yellow-brown sandy silt. No archaeology observed.	0.40m +	

<b>TRENCH 6</b>			Type:	Machine excavated
<b>Dimensions:</b> 5.20m x 3.70m		<b>Max. depth:</b> 0.60m		
<b>context</b>	<b>Description</b>		<b>depth</b>	
601	<i>Ground surface</i>	Current ground surface of open area in woodland. Mid brown humic silty loam with abundant limestone fragments and abundant CBM.	0-0.22m	
602	<i>Layer</i>	Rubble deposit. Large scale demolition/collapse layer, mix of limestone blocks from walls, including painted wall plaster and roofing material and box flue tiles.	0.22-0.55	
603	<i>Layer</i>	Mortar-rich rubble collapse material, mix of abundant mortar fragments, mixed with crushed wall plaster, revealed below rubble layer (602). Stone fragments included limestone with rare tufa fragments (implies material was slumping off walls prior to their collapse, and possible robbing of material from within building). Only partial investigated and not fully removed. Incorporated into (603) were number of distinct collapse deposits, each given individual context numbers; includes (606), (607) and		

		(608). At southern end of trench a void was visible in this layer, potentially up to 1m deep. This along with the box flue tiles indicated the likelihood of a hypocaust system. Sealed by (602); overlay structures (605) and (604).	
604	Wall	Roughly east-west wall; 3.18m long by 0.36m wide and 0.30m high+. Only southern elevation of wall was partially exposed. Limestone block wall with pale pinkish lime mortar bedding and bonding material. Southern face rendered and has reddish hue. One suggestion is that the wall was actually below floor layer and formed part of hypocaust system - reddish hue result of heating. However, would be unusual for such a structure to be rendered if not visible.	0.30m + high
605	Structure	Rectangular structure; 1.08m long by 0.57m high and 0.25m high; constructed of ceramic tiles (0.42m long by 0.28m wide and 0.04m thick). Four courses of 6 tiles; bonded in pale buff lime mortar. Butts southern side of wall (604). Trench 6 was not fully excavated and work ceased within the rubble layer (603); interpretation of (605) therefore difficult. Could be the remains of a <i>pila</i> (supporting structure for floor of heated room); this is dependent on floor having been robbed. Would be unusually large for a <i>pila</i> , and no other possible <i>pilae</i> identified in Trench 6. Alternatively, could be bench for seating within building and thus above floor surface. As (605) has remains of rendering on outer face, this interpretation as an above-floor structure perhaps more likely.	
606	Rubble	Part of rubble collapse (603). Distinct block of limestone rubble which has fallen from wall (604).	-
607	Rubble	Part of rubble collapse (603). Distinct concentration of smashed box flue tiles collapsed from wall (604).	-
608	Rubble	Part of rubble collapse (603). Distinct concentration of collapsed wall plaster from wall (604).	-

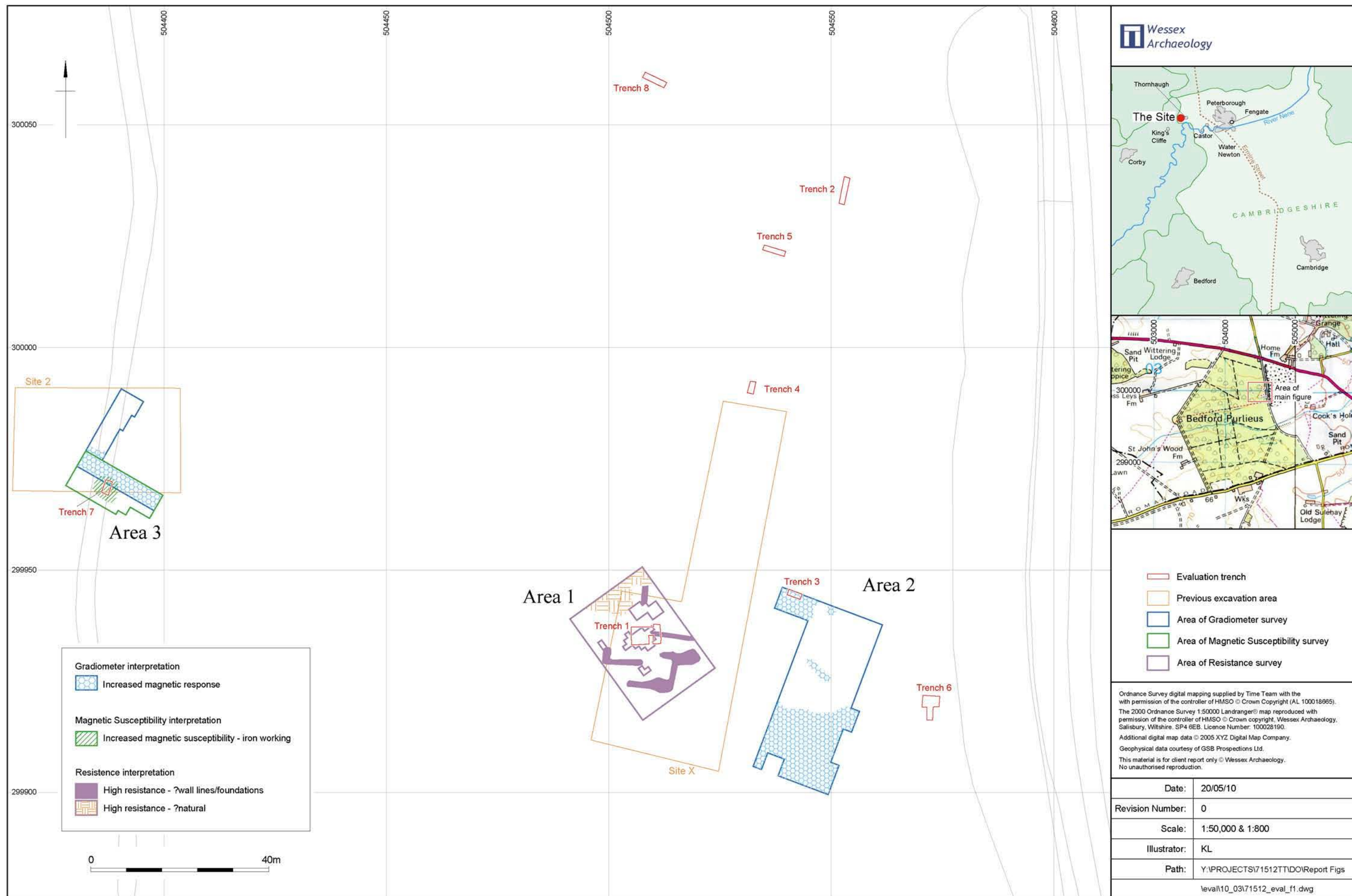
<b>TRENCH 7</b>			Type:	Hand Dug
<b>Dimensions:</b> 3.20m x 1.40m		<b>Max. depth:</b> 0.41m		
<b>context</b>	<b>Description</b>		<b>depth</b>	
701	Ground surface	Current ground surface within woodland. Mid grey-brown clay loam with rare small angular limestone inclusions.	0-0.13m	
702	Layer	Spread of demolition rubble, reddish-brown silty clay loam with common large angular limestone blocks, derived from probable iron ore-roasting oven. Overlain by (701) and seals (703).	0.13-0.31m	
703	Layer	Deposit of large roasted iron ore fragments within a reddish-brown clay loam; overlies the clay base of the roasting structure.	0.31-0.41m	
704	Surface	Heavily heat-affected surface from base of iron ore-roasting oven. Pinky-white, heated-affected clay, with limestone fragments.	0.41m+	

<b>TRENCH 8</b>			Type:	Machine excavated
<b>Dimensions:</b> 5.30m x 1.20m		<b>Max. depth:</b> 1.70		
<b>context</b>	<b>Description</b>		<b>depth</b>	
801	Ground surface	Current ground surface within large backfilled quarry pit, mid yellow-grey-brown silty clay loam.	0.50m thick	
802	Fill	Upper fill of large quarry pit (805), dark grey-brown clay silt fill, mix of deliberate depositions of material over time, mixed with natural silting events to create homogenous deposit.	0.35m thick	
803	Fill	Fill of (805). Dark grey-brown silty clay fill, very similar if not identical to (802).	0.20m thick	
804	Fill	Lowest recorded fill of (805), dark grey-brown silty clay fill, mix of	0.90m thick	

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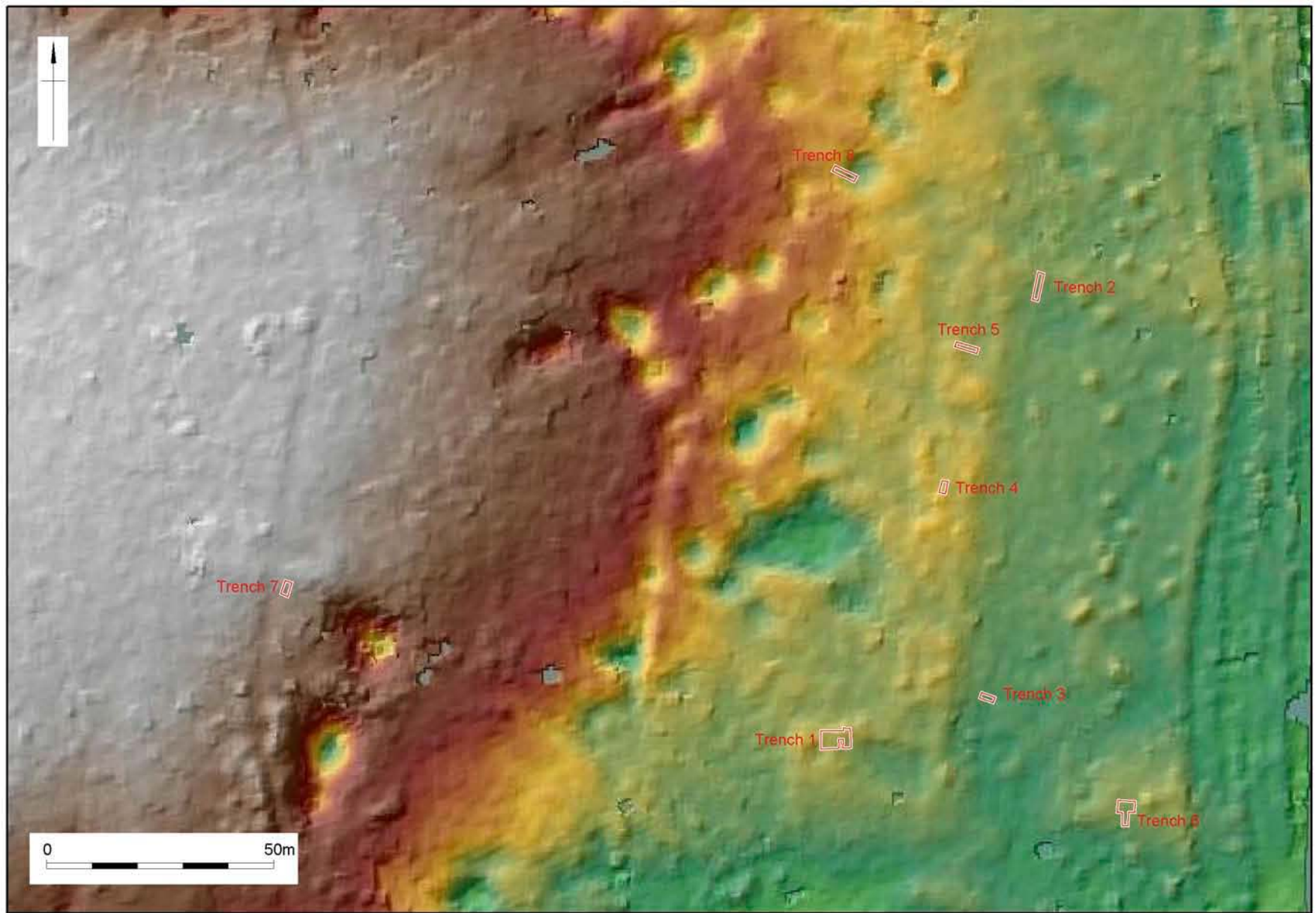
		deliberate depositions and natural infillings over time	
<b>805</b>	<i>Cut</i>	<b>Cut of Romano-British quarry pit. Unclear as what is being extracted. Could be iron ore or clay. Difficult to ascertain as no large amounts of either material identified. Probably iron as these pits are likely to be the origin of the redeposited material observed in Trench 3 forming the courtyard surface.</b>	<b>1.50m +</b>



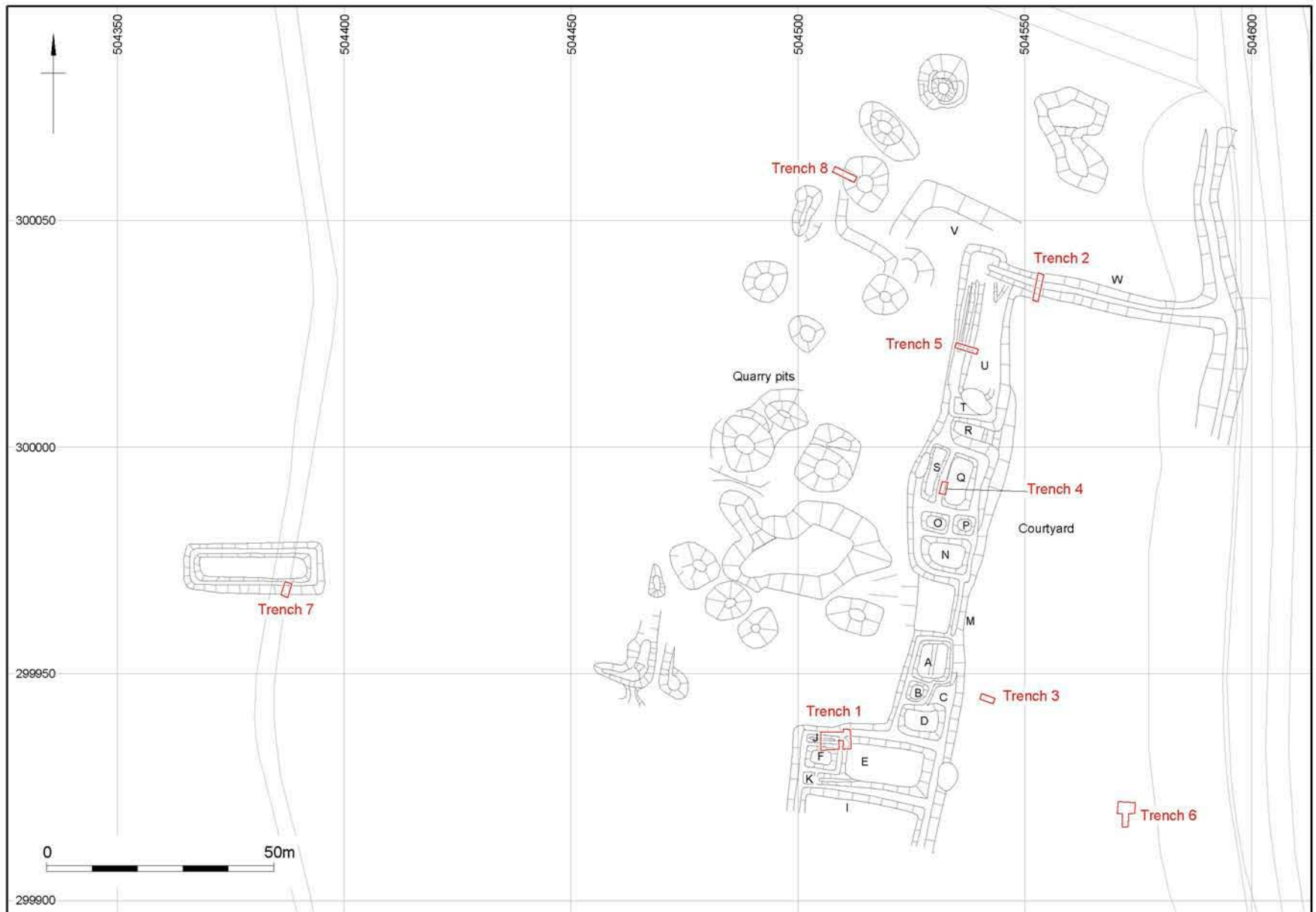


Site location, trench locations and geophysical survey


Figure 1



A. LiDAR survey



B. Earthwork survey

 Evaluation trench

LIDAR results from Forestry Commission survey courtesy of Forest Research.  
 Earthwork survey courtesy of Northamptonshire Archaeology.  
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Plate 1: Trench 1, view from west



Plate 2: Trench 1, view from east

 Evaluation trench  
 Earthwork survey

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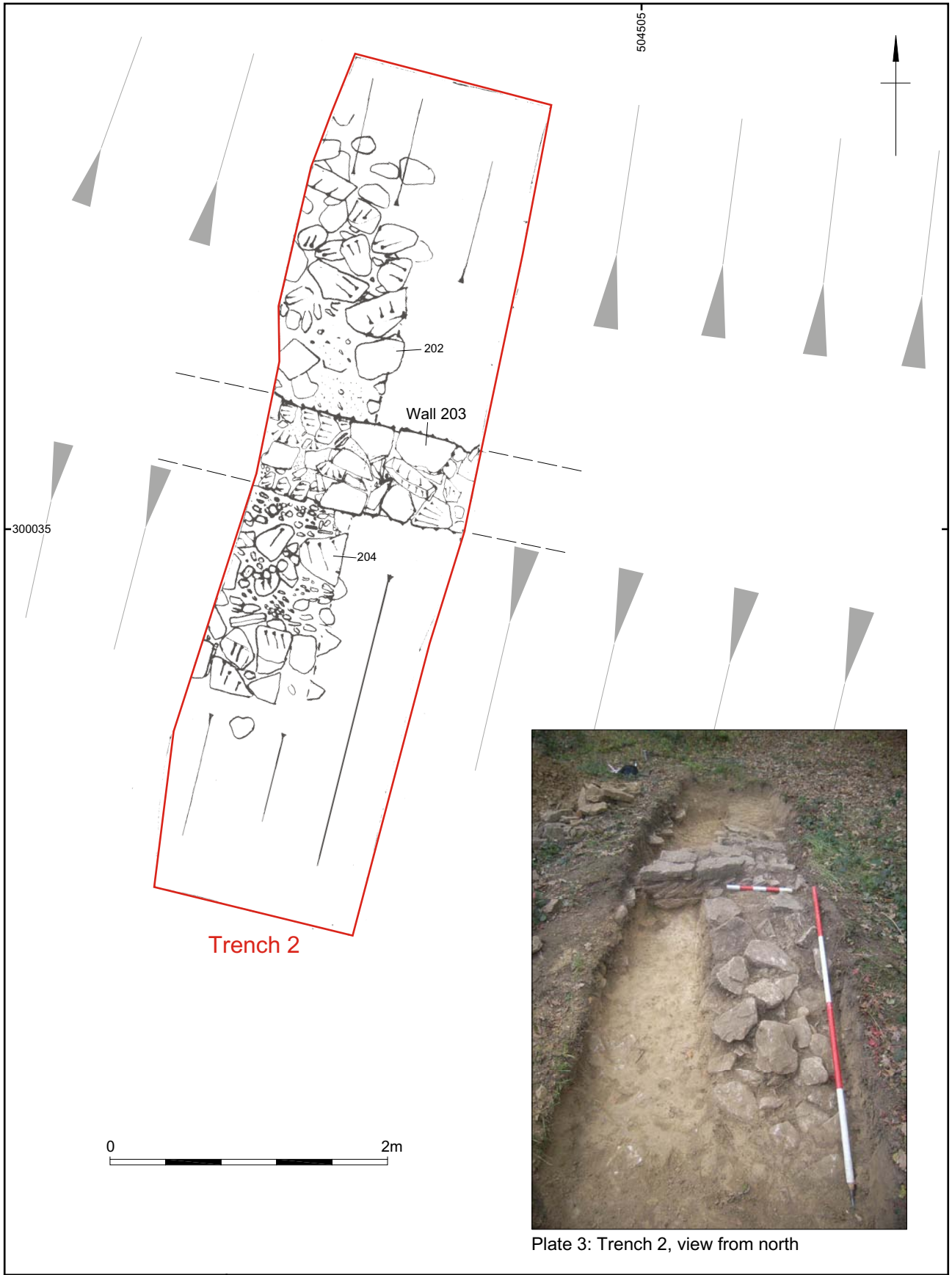


Plate 3: Trench 2, view from north

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Plate 4: Trench 3, view from east



Plate 5: Trench 5, view from east



Plate 6: Trench 7, view from north

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Plate 7: Wall collapse, view from north



Plate 8: Collapsed roofing tiles, view from north



Plate 9: Grain-rich occupation layer (405), view from north



Plate 10: Rammed earth floor (406) and underlying natural, view from north

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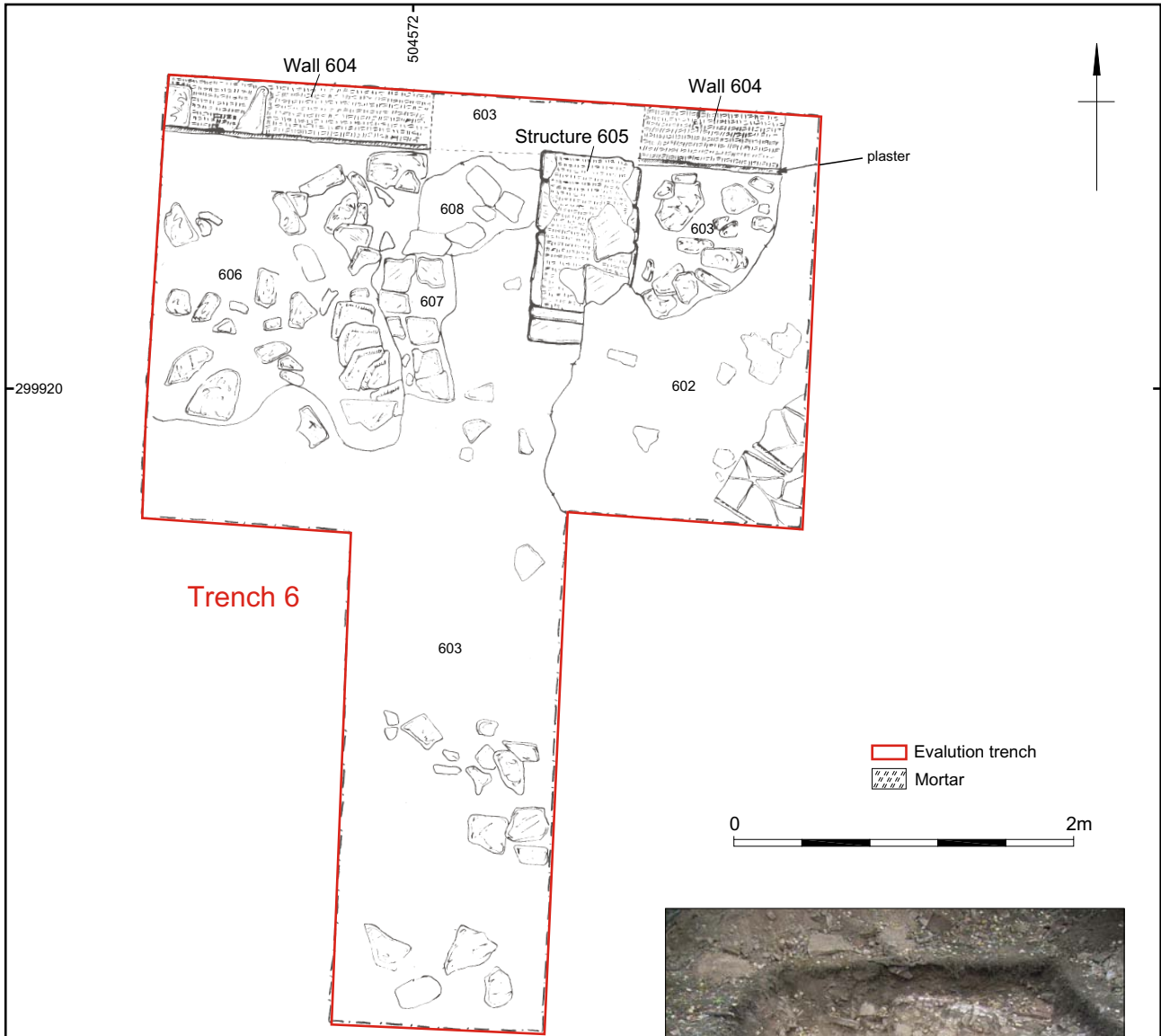
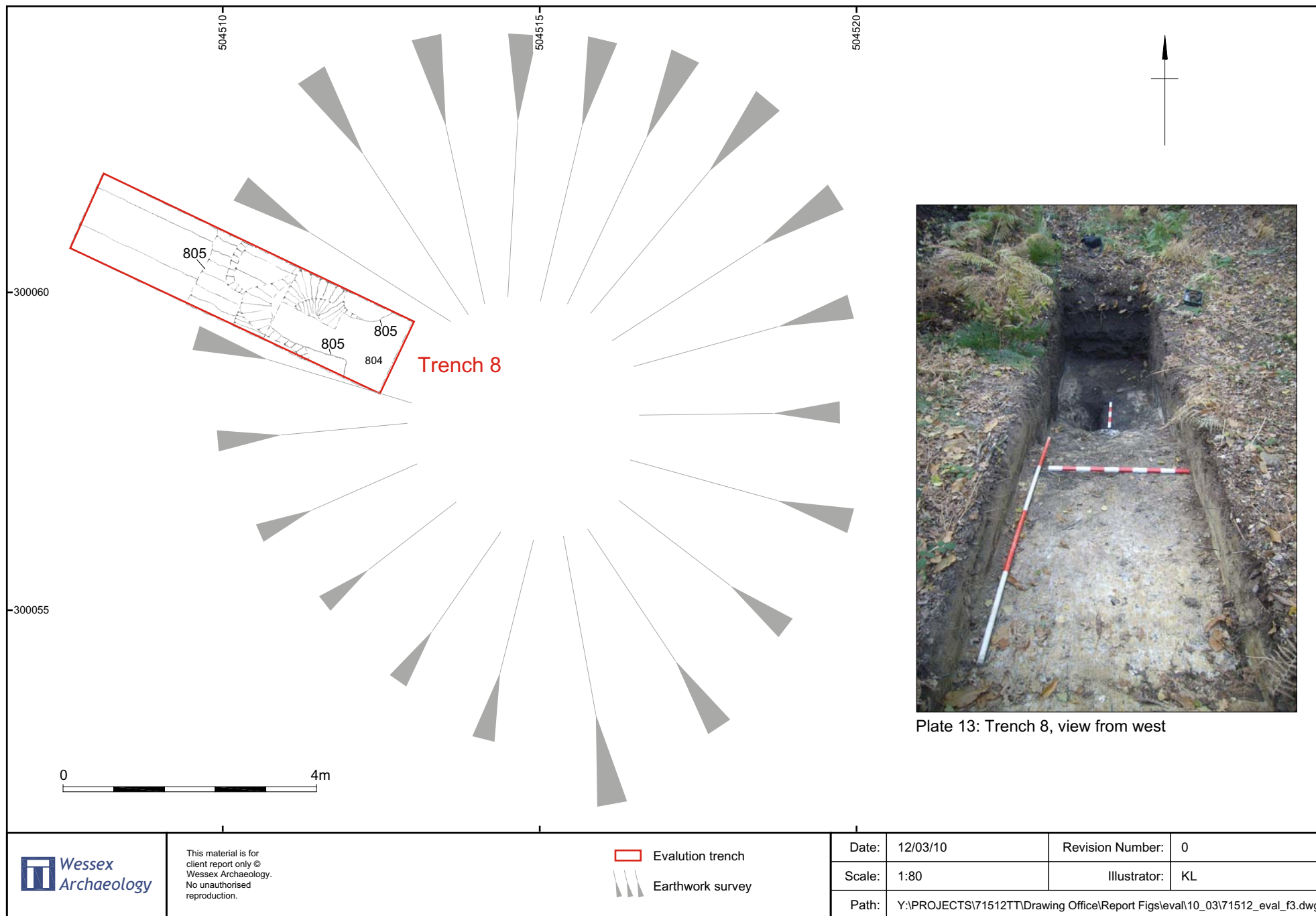


Plate 11: Trench 6, view from north



Plate 12: Detail of wall (604) and structure (605), view from west

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Trench 8: plan and photograph

Figure 8





**WESSEX ARCHAEOLOGY LIMITED.**

Registered Head Office: Portway House, Old Sarum Park, Salisbury, Wiltshire SP4 6EB.

Tel: 01722 326867 Fax: 01722 337562 info@wessexarch.co.uk

With regional offices in Maidstone and Sheffield

For more information visit [www.wessexarch.co.uk](http://www.wessexarch.co.uk)

