JOHN MOORE HERITAGE SERVICES

PROPOSAL FOR ANALYSIS

AND UPDATED PROJECT DESIGN (V 1.2)

FOLLOWING EXCAVATION AT

NEWINGTON HOUSE, NEWINGTON, OXFORDSHIRE

NGR SU 608 963

FEBRUARY 2010

PROJECT DESIGN FOR

English Heritage

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CONTENTS

APPENDICES

FIGURES

A Proposal for Analysis and an Updated Project Design following an Archaeological Intervention at Newington House, Newington, Oxfordshire (Version 2)

SUMMARY

John Moore Heritage Services were engaged to carry out a watching brief on the site of a proposed lake at Newington House, Newington Oxfordshire in 2006. During the initial stages of the excavation it became clear that there were extensive archaeological remains on site. These remains comprised a 13th century smithy with an associated metalled yard, the remains of a further two stone structures and extensive plot boundary ditches and pits from the 12th and 13th centuries. Some 11th century gullies and pits as well as pits from the 14th century were also revealed. The site fell into disuse by the late 15th or early 16th centuries, since it has been parkland.

Following the exposing of the archaeological remains, the client was made aware of the potential cost and the site was closed down. English Heritage was approached for assistance in funding the project. Following site visits and support from the Inspector, English Heritage agreed to underwrite the cost of the excavation. After completion of fieldwork John Moore Heritage Services approached English Heritage for further funding for the assessment of the archaeological material remains. This document comprises the results of that assessment process, a proposal for further analytical work on specific bodies of data and an updated project design.

1 INTRODUCTION

1.1 John Moore Heritage Services (JMHS) were contracted by John Nettleton, the landowner, to carry out a watching brief at Newington House, Newington, Oxfordshire, as a condition of the planning permission for the excavation of a lake at the property. The watching brief commenced in December 2006. Wall footings of a building, several ditches and pits were revealed. The remains were dated to the early medieval period. The site-code was NENH 06 and will be accessioned at Oxfordshire County Museum as 2006.142.

1.2 The client advised in late December 2006 that the site was to be closed down on the grounds of cost for the map and record intervention, which was necessary in light of the strip which had been carried out at the site. JMHS approached the Oxfordshire County Archaeological Services (OCAS) for support in an application for funding from English Heritage (EH) to complete the mapping and sampling of the revealed remains.

1.3 EH supported the application within the scope of Research Programme D4: Rescue! Threat-led last resort analysis. Further work was carried out at the site

Figure 1. Location map of Newington, Holcombe and Chalgrove

to map, sample and record the remaining features. The finds have been washed, marked and bagged and submitted to specialists for analysis reports. A site matrix has been prepared and the site plans have been digitised.

1.4 As a consequence of the work carried out by JMHS, the author contacted South Oxfordshire Archaeological Group (SOAG) regarding work that they were identified as having carried out at the site some twenty years earlier. This resulted in the loan of the site archive by SOAG. This archive has been assessed and will be integrated into the site report.

1.5 The stakeholders within the project have been identified as follows: JMHS, the contracting archaeological organisation; John Nettleton, JMHS's client and the landowner; EH, the funding body; OCAS, the monitoring body; Oxfordshire County Museum Service (OCMS), the receiving museum for the archive; and SOAG, the local amateur group which first identified the site, and which has generated a significant archive related to the site.

1.6 This document summarises the results of the assessment stage of the project and is an updated project design for the completion of the post-excavation analysis, with attached proposed costs (Appendix 1) for the full analysis of selected bodies of the material remains, for the completion of the drawings and for the preparation of supporting documentation for EH and specialists. A Gantt chart detailing the proposed timescales for the work is in Appendix 2.

2 PLANNING BACKGROUND & ENGLISH HERITAGE'S INVOLVEMENT

2.1 South Oxfordshire District Council granted planning permission to construct a lake within the grounds of Newington House. No substantive archaeology could be shown to exist in the immediate environs of the application area, and map regression to the 16th century failed to reveal any evidence of buildings or other activity on the site. The County Archaeologist recommended that a condition be attached to the planning permission requiring the implementation of a watching brief during groundworks to record any potential archaeological remains on site. A *Written Scheme of Investigation* outlining the method by which the archaeological work would be carried out in order to preserve by record any archaeological remains of significance was agreed with OCAS on behalf on the local planning authority, South Oxfordshire District Council.

2.2 During stripping of the lake footprint significant medieval structural remains were exposed. Sample excavation of part of these was undertaken during December 2006. Due to the extensive archaeological remains and bad weather all work on the lake ceased on 15 December 2006. The client informed JMHS that the cost of archaeological work was too great within the overall costings for the proposed lake and that work would not be resumed in 2007.

2.3 A revised strategy for the completion of the work was agreed with OCAS. The support of OCAS was sought and secured for an application for funding from EH which consequently agreed to fund further work. Work was carried

out over the course of 2007 resulting in the excavation and recording of the rest of the exposed remains.

2.4 The additional excavation costs were borne by EH. The developer provided machinery and labour to carry out the strip of the area. Additionally, he has undertaken to underwrite the cost of publication in an appropriate peer-refereed journal.

2.5 The costs for the assessment of the artefactual and environmental remains were borne by EH. The associated reports are appendices to this document. Furthermore EH undertook the costs for the preparation of supporting documentation for specialists, such as site plans, a site matrix and background to the project.

3 LOCATION AND ARCHAEOLOGICAL BACKGROUND

3.1 LOCATION

3.1.1 Newington House is located in the village of Newington (NGR SU 608 963) (Fig. 1). It is in the hundred of Ewelme, situated to the south of the parish church, dedicated to St. Giles, west of the road between Stadhampton and Warborough (A329). The historic manor is located between the church and the present Newington House. The new lake is located in the grounds to the south of Newington House in what was formerly known as Park Field (Fig. 1). The underlying geology is Gault Clay with traces of plateau gravel.

3.1.2 An SMR appraisal showed that while the earthworks of a possible SMV had been recorded in the vicinity of the site, no remains were known with certainty to exist in the immediate environs of the application area. These had been recorded by SOAG, with the support of Oxford Archaeological Unit (OAU), undertaking outreach work. This community archaeology work was carried out for the full extent of SOAG's involvement in Newington. The OAU quarterly and annual reports are the only publication of these sites. The Ordnance Survey co-ordinates given were not specific enough to accurately locate the work. There is no evidence today of the earthworks recorded in the 1980s. No crop mark evidence was available, due to the geology of the site. Map regression was possible to the 16th century (an estate map of 1595; Fig. 2). However, this failed to reveal any evidence of buildings or other activity in the immediate vicinity of the site. Excavations at Harding's Field, Chalgrove (Fig. 1) (Page *et al.* 2005), 2.5km to the east of Newington, comprise the only major medieval investigations in the vicinity.

3.2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND TO THE CURRENT PROPOSAL

3.2.1 Following the conclusion of the excavation in 2007 of the site at Newington, JMHS made contact with SOAG and JMHS are currently in possession of the SOAG archive. Research of the SOAG archive has shown that in 1983 medieval pottery had been found during the digging of a well in Park Field by members of the Sealed Knot for a re-enactment to the south of Newington House in the vicinity of the present lake.

Approximate location of interventions

Figure 2. Estate map 1595, north to bottom of page

At the same time a slit-trench was excavated to the north of the current lake, which was also recorded by members of SOAG (Fig. 1).

3.3 ARCHAEOLOGICAL INTERVENTIONS BY SOAG (Figs. 1, 3 & 4)

3.3.1 The watching brief phase of the investigations was given the site code NSA. SOAG also carried out an earthwork survey in the vicinity of the current lake at this time, which eventually led to the excavation of a trial trench in Park Field (PF85 and PF86) (Figs. 3 & 4). Additional interventions were carried out by the volunteers of SOAG in Newington. Field-walking was undertaken east of the road to Warborough, in Great Bowling Field (GB84) (Fig. 1), as well as a hedge-survey. Moreover, extensive historical research was carried out on Newington in anticipation of publication of the site. The locations of these interventions were only established in 2008 since obtaining the site archives from SOAG.

3.3.2 The long section and finds retrieval from the Sealed Knot slit-trench provide a good picture of the degree of disturbance on site, and as such enable a good assessment of the survival of the settlement activity observed during the work by JMHS. The results of this work can be used to assess the extent of post-depositional movement of finds since the medieval period, as recovery was largely in the topsoil and subsoil, which were largely under-represented during work carried out by JMHS.

3.3.3 The earthwork survey, from 1983, was carried out in the immediate vicinity of the current lake and suggested the presence of building platforms, as well as ridge and furrow; these were not visible during recent works. This data has only been located to within c. 10m, and its relationship with the excavated buildings on the east side of the site has not been precisely ascertained. As these earthworks have been levelled in the meantime since 1984 it may prove that the earthworks and excavated remains are coterminous with one another. If this is not the case, it is clear that further remains extend beyond the properties revealed during the JMHS intervention.

3.3.4 The pottery from the field-walking at Great Bowling Field – site code GB84 – has been assessed although demands no further analysis. The plotting of this data is easily achievable, as the SOAG records for the fieldwalking are all available. The metalwork recovered during the SOAG field-walking is in a poor state of preservation and does not warrant further work, apart from plotting. A quantity of floor and roof tile was also recovered during the field-walking, which will be integrated into the fieldwalking results. These bodies of data reveal clusters of pottery, tile and metalwork, and are a valuable resource for assessing the SMV at Newington.

3.3.5 Preliminary results were believed to indicate high-status activity in the northwest and northern parts of Bowling Green Field such as a manorial site. Initial comparison of the data from NENH 06 and GB84 would seem to contradict this assumption, although clearly the presence of encaustic tile in the ploughsoil as well as in features at a distance from both the historic manor house and church demands explanation. Whereas it might be explained as a

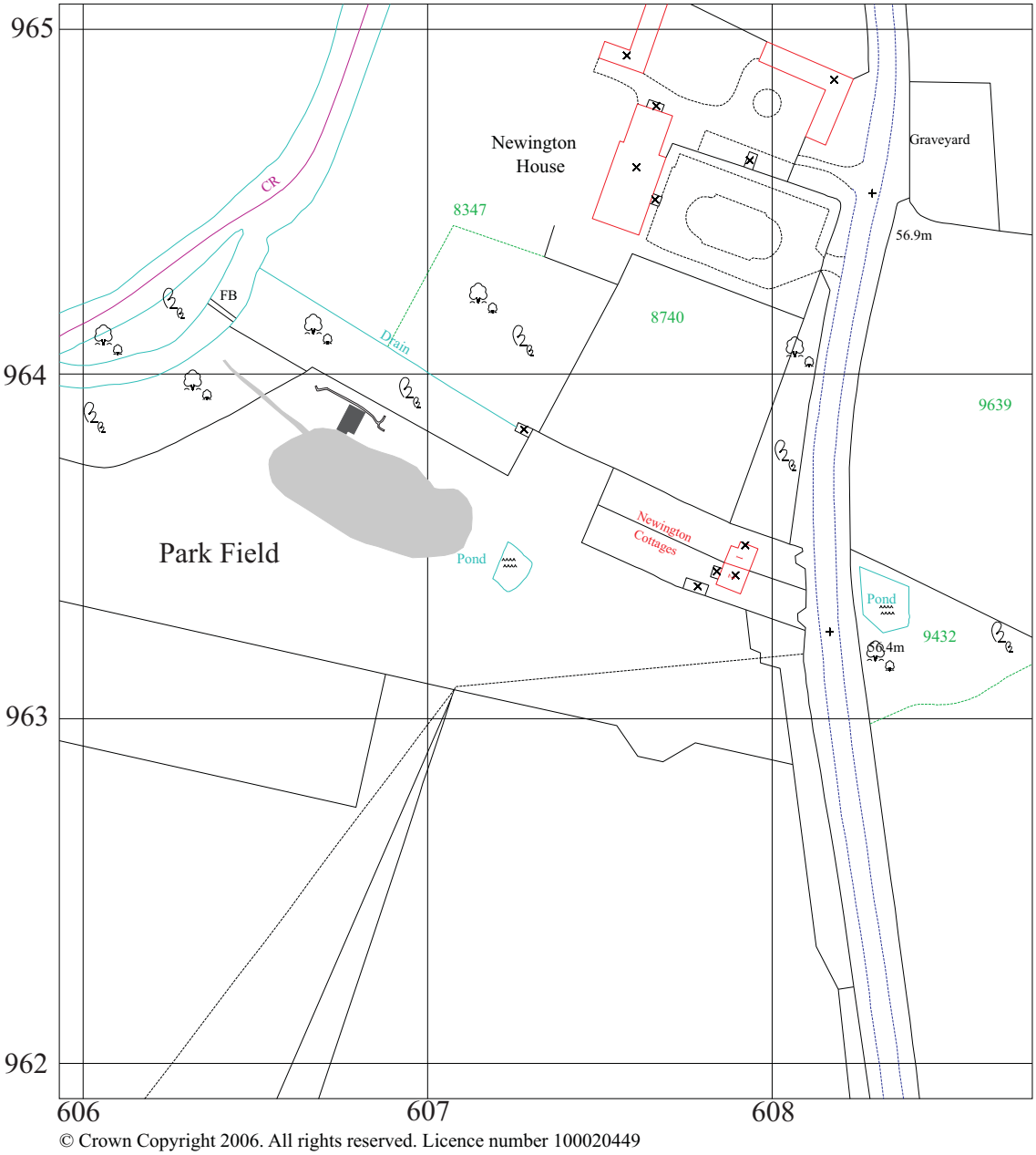

Figure 2. Site location with interventions

result of manuring in Great Bowling Field, on NENH 06 tile was present on yard surfaces as well as within features. Work carried out at Newington 'Orchard site' in 1985 as a watching brief also yielded further finds, although these are largely post-medieval.

3.3.6 The trial trench – site codes PF85 and PF86 (PF85/86) – excavated by members of SOAG revealed a metalled yard-surface associated with much mid and late medieval domestic debris. Possible traces of building foundations were reported beneath the yard surface (Chambers 1984). These appear to be rather insubstantial traces. Although the exact location of the work was not recorded on the SMR, located only to within 100m of a grid reference, work by JMHS has located the trench. The results of the pottery assessment indicate that this data will complement the work carried out by JMHS.

3.3.7 The work carried out by SOAG forms an important background to the site. Although the work was not published it is clear from the notes, which JMHS has in its possession, that the intention was always to bring the results to publication. The interest of the work carried out at Newington extends beyond the immediate site of the smithy and the adjacent properties excavated by JMHS in the recent intervention. It is clear that the work carried out by SOAG has the potential to inform the process of shrinkage of the medieval village and will contribute to the research aims of the project. Additionally, it will locate the specific results from the JMHS intervention in the broader context of the village and its environs.

3.4 ARCHAEOLOGICAL INTERVENTION BY JMHS (Fig. 4)

3.4.1 As part of the work undertaken by JMHS, residual Roman pottery was recovered from some of the features. This is not a significant data-set; the report is in Appendix 3.

3.4.2 One medieval building, which had survived in a fragmentary state, was extensively recorded by JMHS. The evidence indicates that this was structure was a smithy. In addition to this two further structures were investigated; a building is possibly present to the north of an outflow trench from the lake and to the west of the SOAG trench. This building may well be part of that partially excavated by SOAG. Structural remains of possible buildings also were excavated on the east side of the site, which may be associated with earthworks recorded in the early 80s by SOAG. The observed remains of this building were not extensive.

3.4.3 No disturbance associated with the Sealed Knot trench was observed in the western drainage trench. It would appear that the slit-trench did not extend so far to the south on the west side of the site. There are clear indications of irregularities in the archaeological substrata; these may well be associated with the midden activity observed on NENH 06.

3.4.4 The SOAG trench PF85/86 was located north and immediately adjacent on the western side of the JMHS intervention. A cobbled surface and possible structural remains were identified, indicating further buildings were laid out

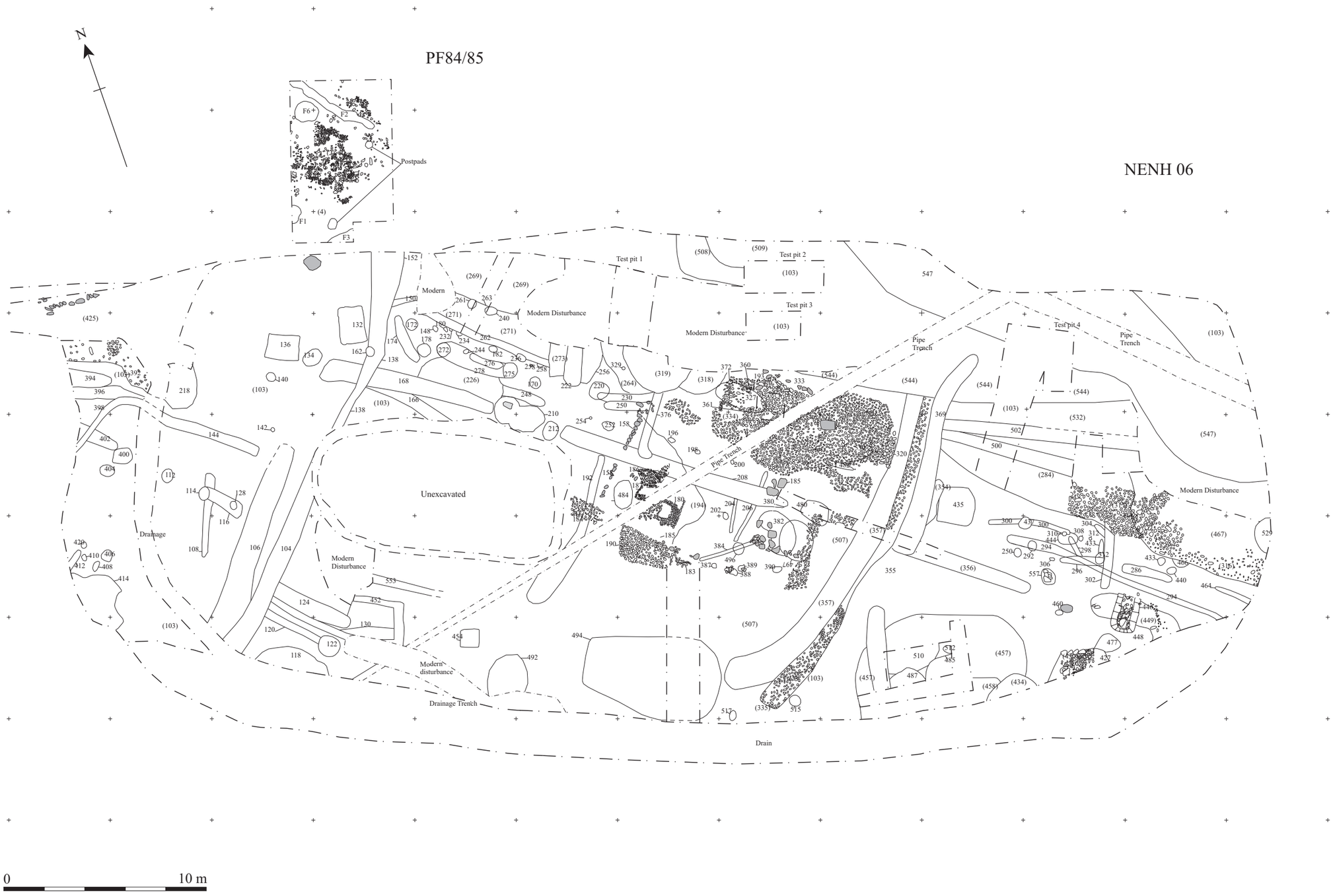

Figure 4. Excavation plan including SOAG trench

on the plateau, beyond the JMHS intervention area NENH 06. Some ridge and furrow is indicated by SOAG work to the southwest of the JMHS intervention area.

3.4.5 As noted above, the remains of a putative third building were located on the east side of the site in the vicinity of the now-razed house platforms and ridge and furrow. To the north of this activity extensive dumping, associated with renovation works to the house, was recorded. This was dated by soft drink cans and snack-packets to the early 1980s.

3.4.6 Between the medieval buildings and the modern dumping, numerous ditches and gullies cross the area, dividing the excavation area into three discrete plots; the smithy is at the centre of this group. Postholes and pits have been identified. The enclosures identified by JMHS may well be part of a planned organisation of land at Newington in the aftermath of the Conquest. There is no evidence for extensive pre-existing settlement on the excavation site. It is however possible that Holcombe, to the north of Newington (Fig. 1), which does not feature in Domesday, but which does feature in later Hearth Tax records may well have been the initial focus of the late Saxon hamlet.

3.4.7 The excavated ditches were aligned northeast-southwest at right-angles to the drain which separates Newington House garden from the rest of the estate. Significantly this drain is shown on the 16th century estate map (Fig. 2), and may well be an older boundary. In the central part of the north side of the site largely to the north of the smithy, there was an extensive area of middening. This backfilled an area with some cut features as well as possibly naturally lower lying land toward the drain. The area of excavation carried out by JMHS may well form part of the manorial complex, overlooking the drain, but separated from the manor, itself, which was possibly located under or near the historic manor just to the south of the church. In such a scenario, industrial activities and tenants occupied the plots observed during the most recent intervention. It remains a valid research question whether some form of a lane ran northwest/southeast to the south of the current lake.

4 ASSESSMENT OF POTENTIAL

All archaeological finds were assessed by material, by quantity (weight and number of fragments) and by stratigraphic location. The results of the assessments were forwarded to the other specialists.

4.1 POTTERY

4.1.1 Spot dating of the Roman pottery from the fieldwork undertaken by JMHS is in Appendix 3. The pottery is residual, but despite this is in good condition, comprising a number of large sherds with little abrasion in some cases, although a number of small, abraded sherds are also present in the assemblage. The date range for the pottery is mid 2nd to late 3rd century AD. A mix of local Oxford and non-local fabrics are represented. The sherd size and good condition of some of the sherds of pottery are good indices of the possibility of the presence of a Roman site in the vicinity of Park Field and the JMHS intervention. A single sherd of Oxford medium sandy reduced ware was

recovered from Great Bowling Field. There is no further work recommended for this assemblage.

4.1.2 Spot dating of the pottery from the fieldwork undertaken by JMHS as well as from the work carried out by SOAG during the 1980s has been carried out by Paul Blinkhorn and is detailed in Appendix 4. This comprised 5½ museum boxes. The results can be broken up by site: NENH 06, PF85/86, Site NSA, GB84 and Miscellaneous Finds. The data-sets comprising GB84 and Miscellaneous Finds are not considered to be of sufficient value to warrant any further work, although plotting the distribution of the material from GB84 indicates concentrations on the eastern edge of the present village. Shrinkage of the medieval settlement can be demonstrated as roof tile and floor tile are also present, which are probably indicative of further buried remains here. The three groups NENH 06, PF85/86 and Site NSA offer data-sets which inform the site of the recent work and complement one another. All three data-sets come from the same field.

4.1.3 The post-Roman pottery assemblage from NENH 06 dates to a fairly short span in the earlier medieval period. It would appear that much of the pottery dates to between the late 11th and 14th centuries, with the bulk of the material dating to the 12th and 13th centuries. Later material was recovered in the latter stages of the JMHS work as was the case when SOAG carried out work in 1983/4. This later material indicates that the site was abandoned by the second half of the 16th century when the earliest map evidence shows an absence of any structures in the immediate vicinity of the site, although buildings are visible to the east fronting onto the road to Warborough, and ultimately Wallingford.

4.1.4 Generally the assemblage is in very good condition, with the mean sherd weight on the large side, and no real evidence of redeposition or attrition, indicating that the deposits are all of a primary nature, and originated very close to where they were buried. The assemblage is largely indicative of a domestic, rather than industrial context, which will provide a valuable data-set for other sites in the region.

4.1.5 Nonetheless, the range of fabrics does indicate contact with regions – London and Northamptonshire – beyond the site's immediate hinterland, which may well be related to the metalworking carried out at the site. Pottery from the East Wiltshire (OXAQ) tradition, as well as Brill/Boarstall ware (OXAM) are present which replace the South-East Oxfordshire wares (OX162) as the defining ware from the late 11th to mid 13th centuries (CPs 2-4). The work by Maureen Mellors (1994, 138) suggested that the two former wares had a very limited distribution in south Oxfordshire, with the exception of the high-status site at Harding's Field (Page *et al.* 2005). The current work at Newington House presents a less clear-cut picture of the pottery distribution in this part of the county.

4.2 FAUNAL & ENVIRONMENTAL REMAINS

4.2.1 The bone was assessed by Claire Ingrem, formerly of University of Southampton (Appendix 5). The bone comprises 3½ museum boxes of mixed

animal bone. The majority of this material comes from within dated contexts with a very small amount of material which comes from undated contexts. The material dating from the 12th, 13th and 14th centuries warrant further analysis.

4.2.2 The bone was assessed by the quantity of recordable bone/teeth of the main species and of the recordable taxa represented. Additionally the quantity of ageable and measurable bone, mandibles and teeth of the main represented taxa was also included in the assessment.

4.2.3 The metrical data from sixty-three specimens combined with the results from the dating of the pottery permits an insight into the changing economic and social activity of the properties investigated at Newington. Despite the relatively small data-sets, which derive from securely dated deposits, the 12th–14th century material is of high potential. It will enable an examination of issues such as animal husbandry and in particular the role of the horse, which is frequently poorly represented on medieval sites. Moreover, comparison with larger sites such as Eynsham Abbey, Oxfordshire (Ayres *et al*, 2003) as well as sites further afield will provide an indication of the wider medieval economy on smaller rural sites, a topic which has been little investigated.

4.2.4 Other environmental data included the flots from sampled features. These flots have been assessed by Professor Mark Robinson of Oxford University (Appendix 6). The assessment report recommends no further analysis. He has however recommended that his assessment report be included in any final report. The carbonised plant remains, which probably derive from crop processing, are entirely typical of rural medieval settlements in the region. This data-set also points to the site being involved in a wider local economy, drawing on the beech woodlands of the Chilterns.

4.3 METALLURGICAL REMAINS

4.3.1 Some of the metal-working debris underwent preliminary analysis prior to the preparation of the Proposal for Assessment document which confirmed that the vitrified clay has no evidence of having been used for copper smelting (Nichols, 2007). The recovered slag was assessed by Marcos Martinón-Torres (MMT) of the Institute of Archaeology, UCL (Appendix 7). Due to teaching his commitments MMT had to withdraw from the project, and Brian Gilmour, formerly of EH and Royal Armouries, has taken over analysis of the metalworking debris (Appendix 8).

4.3.2 The presence of slag and hammerscale contribute to the confirmation of the initial identification of the main excavated building at Newington as a smithy (Astill 1993). Smithing blooms and hammerscale were recovered from features in the immediate vicinity of the structure. These have the potential to further inform the smithing activities on the site. Spatial analysis of the residues (slags and hammerscale) have the potential to inform how the building was used, as well as the length of any activity either predating or postdating the construction of the smithy. The checking for any presence of smelting residues will also form a part of such a programme of analysis. Furthermore, targeted analysis on a few of the domestic iron objects – such as

nails, knife-blades etc. – which may have been made at the smithy would enable a link to be made between artefacts and slag remains. Such iron objects may well be scrap iron to be reused.

4.4 METAL FINDS

4.4.1 The metal finds comprise a number of nails – *c*. 100, from NENH06 as well as a further quantity from the SOAG interventions. Sarah Morton of OCMS carried out the X-ray work and assessed the potential for cleaning and conservation (Appendix 9). A number of iron items from NENH 06 are proposed for further work, including a rowel, a chape, a key, and a slotted spoon or fork, as well as some cleaning of other pieces to clarify what they are. The rowel, chape, key and slotted spoon or fork are recommended for illustration and a finds report. A decision on the other iron objects will be made following cleaning.

4.4.2 Copper alloy finds comprise two buckles and part of a horse cheek piece or similar horse gear. These are recommended for illustration and will be included in an abbreviated finds catalogue.

4.4.3 None of the SOAG metalwork finds is recommended for further work.

4.5 CERAMIC BUILDING MATERIAL

4.5.1 A number of fragments of floor tile, in addition to the roof tile, were recovered. Precise dating of this class of material is always problematic as few kilns have been excavated and finds usually derive from much later contexts than use. Equally, "floor tiles are very prevalent in institutional buildings, and only partly documented" (Munby 2008, 8). Fragments were recovered from the JMHS intervention in 2006/7 as well as from field-walking in Great Bowling Field.

4.5.2 The assessment suggests that there is a quantity of early 14th century Stabbed Wessex style tiles, from the Savernake Forest area where East Wiltshire wares were also made, in addition to some possible Penn tiles, which would indicate a date after the late 14th or 15th century. The presence of this class of material on the NENH 06 site is itself worthy of comment. However, the further presence of floor tiles to the northeast in Great Bowling Field also warrants explanation and interpretation. No further work on the data-set is recommended, although any publication will require an edited report as these are usually associated with high status institutional activities rather than ordinary rural life.

4.5.3 The roof tile from the field-walking in Great Bowling Field has been weighed and counted. This needs to be plotted on the fieldwalking plan and compared with the plot of pottery. The floor tile has also been weighed and will need to be located on these plots. Initial assessment of the potential is high, indicating that discrete clusters of finds are present in the immediate vicinity of the present village, that is, on the northwest side of Great Bowling Field, where buildings are shown on the 1595 estate map (Fig. 2). There is good potential for this data to provide an index of expansion and/or contraction of the medieval village.

4.6 SMALL FINDS

4.6.1 A single sherd of glass was recovered from the site, although some bottle glass was recovered from field-walking. No further work is proposed. A fragment of spindle whorl was also recovered, which merits drawing. Five hones were recovered; these merit drawing although further analysis is limited. Astill (1993) notes that the presence of associated stone artefacts, such as hones, is one of the non-structural traits of smithies.

4.6.2 No worked objects in bone were recovered from the site. A small quantity of flint was recovered. These flakes comprise waste and chips, rather than any objects and do not warrant further work.

4.6.3 A preliminary assessment has been carried out on clay tobacco pipe from the site by John Moore. The clay pipe covers the 17th to 19th centuries and evidences plough damage. No further work is proposed.

5 AIMS AND OBJECTIVES

5.1 AIMS

5.1.1 As detailed in the Proposal for Analysis, the aims of the project are informed by archaeological research priorities identified by English Heritage (EH 1997; 2008) and within the Solent-Thames Research Framework, which has also been consulted for the medieval period (Munby 2007; 2008).

5.1.2 The archaeology of medieval villages is skewed to the investigation of deserted or failed settlements, rather than those still in use (EH 1997, 49; H5). Munby (2008) defines several relevant areas of research, which the site at Newington can inform at a regional level. Questions such as:

- How can the work at Newington contribute to our knowledge of the origins and nature of nucleated village settlement, and settlement morphology within the Research Framework area?

- What does the work at Newington contribute to the origins of manorial sites? And what is the chronology of manors and their relation to village morphology?

- What are the function and the nature of subsidiary buildings? And can the study of these buildings contribute to our understanding of class/status as well as historic events such as the Black Death which had a negative effect on growth?

- Can we enable a comparative study of the ceramic, faunal and other finds-categories of the three identified plots within the site? To what extent can this be compared with other sites from this period in the region? Is it a type-site or atypical?

- What can the finds-categories recovered contribute to our understanding of medieval trade and industry?

5.1.3 The project provides a model for Norman settlement expansion and shrinkage within the broader context of a post-Saxon manorial landscape. The changes which the Norman Conquest instituted, which include aspects of daily life and exchange systems, are generally poorly represented in archaeological work (EH 1997, 44-5; PC6). The research questions above are informed by the limited data available for this region.

5.1.4 The medieval settlement patterns of England are key to an understanding of the economic, social and political structures (EH 1997, 52; T3) with artefactual, ecofactual and structural data being crucial to the study of medieval craft specialisation, industry and agriculture (EH 1997, 53; T7) as well as the relationships between and within settlements (EH 1997, 51; T1).

5.2 OBJECTIVES

5.2.1 Polyfocal and non-nucleated settlements are a feature of the Chilterns and nucleated villages are typical of the Vale of Aylesbury in Buckinghamshire (Lewis *et al*. 2001, 110, 103), while as a general rule Oxfordshire is held to conform to the "'midland' area of open fields and nucleated settlement" (Munby 2007). Clearly the work carried out in the East Midland counties (Lewis *et al*. 2001) indicates the complexities of early medieval settlement formation and its subsequent evolution. The Solent-Thames Medieval Research Agenda also emphasises the need to extend village morphology studies as well as to pursue outstanding issues such as village shrinkage and abandonment (Munby 2008).

5.2.2 The pottery is largely dated to the 11th-14th centuries, and although there is some later material demonstrating decline until the 16th century, this is not extensively represented. The rate of discard, sherd size and fabric range will be analysed to yield a product of use to the project and of use to other type sites in the vicinity, such as Chalgrove (Page *et al*. 2005). The site excavated at Harding's Field, Chalgrove will provide a particularly valuable comparison, as it was a manorial site, in contrast with the interventions carried out at Newington, which focussed on the non-manorial activity. Pottery from South East Oxfordshire (OX162) and East Wiltshire (OXAQ) dominated the earlier assessed material, with Brill/Boarstall wares (OXAM) becoming more evident over the life-span of the site from the 13th century onwards. It was noted that the assemblage, while largely typical for the region, was characterised by pottery both from the London region and north of the site, which appear to have become more prevalent after the 13th century. Comparison with other sites in the region will provide important input into those issues of trade and communication raised by the Solent-Thames Medieval Research Agenda.

5.2.3 A high proportion of the sherds are in very good condition indicating that they were disposed of close to their point of use. Rouletted sherds of OX162 are typical for the potters producing this fabric type, and provide a useful means of cross-fit analysis. Equally, sherds of OXAM are characterized by bifid-rim jars, which would warrant comparison with other non-industrial sites in the

vicinity to assess whether this is significant. The Brill/Boarstall assemblage also included two interesting pieces: a horn – either for drinking from or for playing music – and a costrel. The latter is not overly surprising given the industrial context of the site.

5.2.4 The pottery provides a good data-set for comparative work elsewhere in South Oxfordshire. Despite its proximity to built-up areas such as Oxford, Wallingford and Didcot, it is not generally an archaeologically well-represented part of the county. The site has very good potential to provide a pottery sequence for rural sites in this part of Oxfordshire. Additionally the work would also enable a good understanding of external contacts which the site maintained; the presence of the Brill/Boarstall ware horn, as well as the non-local wares indicate a broader range of interaction than is usual on most rural sites. Equally, comparison with the excavation at Harding's Field, Chalgrove (Page *et al.* 2005) will highlight the differences between high-status rural sites and the more typical sort of site.

5.2.5 Claire Ingrem assessed the faunal remains. The bone is largely in very good to good condition. The majority of the bone came from sealed and dated contexts. The taxa represented are, by frequency, cattle, sheep/goat, pig and horse; the last being unusually high. Dog, small mammal and various bird bones were also present. Aging data is obtainable from twenty-nine specimens and sexing from a single pig canine. Evidence for butchery, gnawing and burning was also observed.

5.2.6 The 12th-14th century data from Newington will provide a good sample for comparison with other rural sites in Oxfordshire, but also elsewhere in southern Britain. It will also provide useful comparative data with higher-status sites, such as Harding's Field, Chalgrove (Page *et al.* 2005). Few enough small-scale rural settlements have been investigated in Southern Britain, which will impart a particular importance to a regional chronological comparison with other medieval sites and can be used to inform an understanding of regional as well as supra-regional agricultural behaviour. The quantified, identified species and taxa will contribute to our understanding of the available resource base and how this resource was processed for consumption. The presence of horse was noted for its unusual frequency.

5.2.7 The analysis of the metallurgical debris provides valuable data on iron-working in a rural milieu. The smithy at Newington evidenced at least four of the nine non-structural traits identified by Astill (1993) as pointers to the presence of smithing: slag, hammerscale, scrap iron, associated stone artefacts and possibly bar iron. The type of iron-working carried out at Newington is clearly that of smithing – that is processing of iron billets and reworking scrap – rather than smelting. The scale of production is unclear but the presence of a number of high-status metal objects indicates prestige activity providing a provenance for some of the assemblage of collected scrap metal, which along with the raw materials provides important information regarding the status of the site within the current village and greater *pays* (Munby 2008, 1). Analysis of the smithing residues and a representative proportion of the ironwork have the potential to identify the production centre of iron. Spatial analysis of the

smithing residues has the potential to establish the use-life of the building, and whether smithing at Newington corresponds solely to that use-life or whether ironworking was carried out prior to and/or after the building's use-life. Furthermore scientific analysis of both artefactual and metallurgical data may establish a definite link between production and use within the settlement. The excavations at Harding's Field, Chalgrove (Page *et al.* 2005) will provide an excellent comparative data-set.

5.2.8 The X-raying of the metal-finds revealed that some finds merit further cleaning and conservation work. The rowel, chape and horse gear provide an indication of the social and economic status of the site as well as a context for the relatively high quantity of horse bone recovered from features during the excavation. The rowel, which may preserve traces of tinning (Chris Salter, pers. comm.), is of a type common during the latter part of the 14th century. The other metal finds can be dated roughly, by association with the ceramic data.

5.2.9 The analysis reports will focus on bodies of data identified by the assessment reports as lending themselves to further work. The aim of the analysis stage will be to place that data recovered in chronological and spatial contexts and to further knowledge of specific data-sets, as well as to enable a synthetic overview of the site. This work will determine the significance of the analysed data across the site. It will equally provide a comparative body of data for the analysis of other sites in the region.

6 BUSINESS CASE

6.1 The funding of the analysis of the work carried out at Newington is to the benefit of the majority of stakeholders within the project. English Heritage within the framework of Research Programme D4: Rescue! (Sub-Programme Number 32144.110) had enabled the excavation, which is of regional importance, and which following assessment clearly yields data of supra-regional significance. The pottery, for example, indicates contacts extending into the East Midlands and the South East as well as to the southwest.

6.2 The work will support the national research agenda framework, providing a significant body of data for future comparative work. The project enables the drawing together of research topics identified in the EH Research Agenda (1997), specifically Chronological Priorities (H5), Themes (T1, T3 & T7), and Processes of Change (PC6).

6.3 The site is located within the area of the Solent Thames Research Framework area, currently under assessment by Oxford Archaeology (Munby 2008). Munby (2008, 3) notes that there are a number of issues within the study area needing further work. These comprise manorial development, village morphology and contraction, and the inter-relationship of manor and village. Inter- and intra-settlement agricultural and industrial activities will benefit from the analysis of the data from Newington. Moreover, there is strong potential for the remains to contribute to our understanding of the mechanisms

and motors of medieval industry and trade in the region and beyond. At Harding's

6.4 The work will establish a good typological and chronological ceramic series for rural sites in South Oxfordshire, which currently is a poorly understood part of the region. South-East Oxfordshire Ware (OX162), East Wiltshire Ware (OXAQ), and Brill/Boarstall ware (OXAM) dominate the earlier assemblage. Although the site lies in Oxfordshire the historic boundary of Berkshire is not far from the site, where in Wallingford OX162 was first identified. The penetration of OXAQ this far east is indicative of the extensive trade contacts which the site had.

6.5 The faunal remains provide a well-dated representative sample of bone to test against similar village sites both in Oxfordshire and elsewhere in the country. The economic and agricultural data, which can be recovered from the remains, form an important contribution to regional models for the economy, and ultimately socio-political structures.

6.6 The metallurgical data can similarly be used to inform trade and social relations beyond the immediate hinterland of the site. Analysis of slag and the iron artefacts can contribute to a localising of local/regional production sites, which may well inform potential trade routes. Additionally, such a localising of the origin of the ore may add to our understanding of medieval trade routes, which are still poorly understood (Munby 2007).

7 METHODOLOGY

7.1 STRATIGRAPHIC ANALYSIS & FEATURE DESCRIPTION

7.1.1 The records have been crosschecked and a working site matrix has been produced, which has been sent to the specialists. No detailed phasing has yet been carried out, although a rough chronology has been established for various pits and features, based on spot-dates from Paul Blinkhorn. A detailed phased plan will be generated in conjunction with the analysis to be carried out by Paul Blinkhorn.

7.1.2 This stratigraphic analysis will provide checks against intrusive material and also finalise the site matrix, in particular where discrete features have no relations with other surrounding features. Discussion of apparently anomalous data – such as the presence of c. 16kgs of South-East Oxfordshire Ware (OX162) on NENH 06 and its total absence elsewhere on the Park Field (PF84/85) interventions – will also be need to be both horizontally and vertically stratigraphically contextualised in order to maximise their potential.

7.1.3 The feature description will comprise the characterisation of the ditches, gullies, pits, postholes, maddening activities and structures excavated during the JMHS and SOAG interventions. Such a characterisation will consist of a description of the features and their component fills. Where fills are similar and either date from the same period or can be spatially associated, descriptions will be grouped and indicated as being valid across the features.

Description of the results of the various interventions carried out by SOAG on the watching brief and excavation in Park Field, as well as summarising the field-walking in Great Bowling Field will be carried out within this period.

7.1.4 Equally, integration of the appropriate results from the various specialists with the feature characterisation as well as discussion of the distribution – both horizontal and vertical – of all such integrated characterisations across the proposal areas will be undertaken at this stage.

7.1.5 The report will detail activity across the site by chronological phase. This will tie work together from across Newington and establish the context for the interventions supported by EH, and carried out by JMHS, with the earlier work by SOAG.

7.1.6 The stratigraphic analysis and feature description is anticipated to comprise a report of c. 15 pages including illustrations. These illustrations consist of plans of the intervention areas and phased plans of archaeological remains across the whole site, including the SOAG excavations. Illustrations of selected sections of features will also be included.

7.1.7 Data regarding sites examined in the assessment phase but not included in the proposed final publication – such as Orchard site – will be nonetheless be made known to OCAS in order that it can be added to the Oxfordshire Historic Environment Record.

7.2 ILLUSTRATIONS

7.2.1 The site plans have been digitised and assembled as a single plan of the site. The illustrations comprise internally produced digital drawings and externally produced specialist drawings of finds and objects.

7.2.2 The internally-produced drawings comprise sections of features excavated by JMHS and SOAG, as well as the long section from the SOAG watching brief at Park Field.

7.2.3 The external drawings will be carried out by a professional archaeological illustrator. Depending on availability, this work will be undertaken by one of several individuals who have been approached. This work consists of the drawing of those archaeological finds considered to warrant illustration for the final report. Such illustrations include metalwork, spindlewhorl, whetstones and pottery.

7.2.4 The illustrations comprise approximately 11 pages in the proposed final report.

7.3 POTTERY

7.3.1 The pottery was recorded utilizing the coding system and chronology of the Oxfordshire County type-series (Mellor 1984; 1994). It was assessed by quantity (weight and sherd count) for fabric type, estimated vessel equivalent (EVE) and condition. A spot date was assigned to each context in the assemblage.

7.3.2 Analysis will comprise the checking of the context-specific pottery dates against the stratigraphic matrix, the adjustment of chronology and existing data tables, where necessary, cross-fit analysis and the selection of sherds and vessels for illustration and the catalogue. A report will be prepared discussing the results of the work. This is estimated at *c.* 8 pages in *Oxoniensia*, including tables and illustrations.

7.4 FAUNAL REMAINS

7.4.1 The bone was assessed by the quantity of recordable bone/teeth of the main species and of the recordable taxa represented. Additionally the quantity of ageable and measurable bone, mandibles and teeth of the main represented taxa were also included in the assessment. The analysis will comprise detailed analysis of the age, sex, where appropriate, and condition of the bone.

7.4.2 Anatomical elements will be identified to species where possible with the exception of ribs and vertebrae which will be assigned to animal size categories. Mandibles and limb bones will be recorded using the zonal method developed by Serjeantson (1996) to allow the calculation of the minimum number of elements (MNE) and individuals (MNI); this is based on the most numerous zone of a single element taking into account side. Percentage survival of selected elements will be based on the minimum number of elements (MNE) calculated as a percentage of the maximum number possible according to MNI. In addition, all bone fragments over 10mm will be recorded to species or size category to produce a basic fragment count of the Number of Identified Specimens (NISP).

7.4.3 The presence of gnawing, butchery and burning together with the agent responsible will be recorded. Measurements will be taken according to the conventions of von den Driesch (1976) and Bull & Payne (1982) for mammals, and Cohen and Serjeantson (1996) for birds. The wear stages of the lower cheek teeth of cattle, caprines and pig will be recorded using the method proposed by Grant (1982) and age attributed according to the method devised by Payne (1973), Legge (1982) and O'Connor (1988). The fusion stage of post-cranial bones will be recorded and age ranges estimated according to Getty (1975). Measurements of the crown height of horse teeth will be recorded and age estimated according to the method of Levine (1982).

7.4.4 A selected suite of elements will be used to differentiate between sheep and goat (Boessneck, 1969, Payne 1985): the distal humerus, proximal radius, distal tibia, distal metapodials, astragalus, calcaneus and deciduous fourth premolar.

7.4.5 Where data is available, withers height will be calculated using the factors of Kiesewalter for horse, Matolsci for cattle and Teichert for sheep (Boessneck and Von den Driesch, 1974).

7.4.6 A report will be prepared focusing on the data from the 12th–14th century remains which will detail the above. This is estimated at *c.* 5 pages in *Oxoniensia*, including tables.

7.5 METALLURGICAL REMAINS

7.5.1 The samples of slag were examined with the naked eye by MMT. Brian Gilmour proposes optical and compositional analysis on a representative proportion of each type of waste debris as identified in Appendix 8, with a comparative data-set drawn from some of the iron artefacts. This will permit a series of types of smithing residues and the process(es) which caused them, including their identifying characteristics such as non-metallic inclusions. Metallographic and compositional analysis of the selected iron artefacts will permit identification of non-metallic inclusions which will both enable categorisation of the iron and comparison with the slags. The report is anticipated to be c. 6 pages in length including illustrations.

7.5.2 Hammerscale was present in both samples floated for environmental remains as well as in samples taken from around the smithy floor. This data set will also be comprised within Brian Gilmour's metallurgical report in addition to being plotted on Figure 6, and be integrated into the excavation report on the use-life of the smithy.

7.4 METAL FINDS

7.4.1 The iron finds were X-rayed by OCMS. The metal finds were assessed for their condition as well, as some had undergone an initial conservation by SOAG. No further work is proposed for the SOAG metal finds, and at the time of deposition Esther Cameron of OCMS, who is currently discussing the deposition of other SOAG sites, will be consulted fully to assess the physical archive.

7.4.2 Further cleaning for illustration purposes as well as to understand some of the anomalies visible on the X-rays will be carried out. This will also assist in the identification and dating of some of the iron finds. As stated in 7.3 a small number of representative iron artefacts will undergo metallographic and compositional analysis. An abbreviated catalogue as well as some of the finer objects should be illustrated. The timescale for this latter work is comprised within the rubric Small Finds on the Gantt chart in Appendix 2. See also 7.6 for further details.

7.5 CERAMIC BUILDING MATERIAL

7.5.1 The tile was scanned for evidence of encaustic tile, glazed roof tile and other particular forms. The tile was weighed and counted. Where appropriate CBM was given a small find number. No further analytical work is recommended on the bulk of the ceramic building material, although the abbreviated catalogue should be included as a table in any final report. A report on and illustration of the encaustic tiles from NENH 06 is recommended. The timescale for this latter work is comprised within the rubric Small Finds on the Gantt chart in Appendix 2. Illustration of the tile will be carried out in-house. See also 7.6 for further details.

7.6 SMALL FINDS

7.6.1 The other finds were scanned and assessed for recording as small finds, where appropriate. The whetstones and spindlewhorl are considered to be worth

illustrating, with an associated catalogue description. A catalogue of the other finds will be summarized as a table in any final report. The timescale for this latter work is comprised within the rubric Small Finds on the Gantt chart in Appendix 2. The reports on metal finds, encaustic tile and other small finds are anticipated to be three and a half pages including illustrations.

8 RESEARCH & SYNTHESIS

8.1 It has been agreed provisionally with the editor of Oxoniensia that the final report will be published in Volume 75 (2010), subject to the report being ready by April 1st 2010. The historical background work carried out by SOAG will need to be integrated with the results of archaeological data from the immediate area in order to fully explicate the significance of the site, in respect of both the site itself as well as the wider region.

8.2 Research on the relevant sites in the area will be undertaken at the Historic Environment Record, Westgate House, Oxford, in addition to that on relevant, published and comparative sites outside the county which will be carried out at the Sackler Library, Oxford.

8.3 Synthesis necessitates the integration of the results of the various interventions which have been carried out since 1984 within the broader context of the regional and national research agendas to which the project can contribute. Unlike the majority of excavation reports, the proposed report draws together work over 25 years old, within the context of a more recent intervention. The synthesis also aims to provide a research context for the trade and production of iron on a medieval smithing site, for other future sites to expand upon and develop, and at the same time to provide a model for medieval village contraction in South Oxfordshire.

9 INTERFACES

9.1 The full analysis of the various proposed data-sets from the project will contribute to a broader and deeper contextualisation of those data-sets beyond the immediate confines of the project. The results of the analysis of the pottery, bone and metallurgical data will inform future aspects of the regional research agenda.

9.2 Medieval pottery from Oxfordshire was last fully assessed in the late 1980s (Mellor 1994). This work predates the implementation of PPG16. Assumptions regarding distribution networks, which were valid up until 1988, before watching briefs and evaluations became embedded within the planning process, are clearly due for re-evaluation. Previously, distributions of wares were plotted from data that was drawn from work targeted on higher status sites, such as Dean Court Farm (Allen 1994), or on sites which due to their size or location (i.e. Oxford City excavations during the 1960s and 70s) were subject to investigation. A greater range of lesser sites have been brought into the ambit of planning-driven archaeological work. As a consequence our

understanding of pottery production and, in particular, the distribution networks has changed. Extended distribution networks can be used to infer a greater breadth and depth to medieval trade. An outcome of this will be to raise questions on a number of issues. These include, but are not limited to transportation: by road and by water; the role of markets, whether centred on Oxford, Wallingford etc. or more localised; as well as exchange and use mechanisms, such as who carried out the trade in ceramics, the role of credit in that trade; as well as the purchase, use and discard of pottery. Although many of these topics lie outside the immediate remit of the project, work such as that carried out at Newington will provide a significant contribution to such aspects of medieval trade. Moreover, the results from the site will provide good comparative data for the consideration of an updating of Mellor's key work on the pottery assemblages in Oxfordshire (Mellor 1994).

9.3 Assemblages of bone have frequently focused on urban or high status sites, particularly in Oxfordshire. The impact and effects of regional economies frequently overlook the rural dimensions, as the data is not always available. The assessment has indicated a wide range of animals, in particular the unusually high presence of horse, on site. It will be particularly important to explore the potential relationship between the animals represented on site and the shrinkage of Newington evidenced by the excavations and field-walking. Such data will provide an important resource for comparison with other rural sites in the region, which since the introduction of PPG16 have become increasingly subject to archaeological conditions in the planning process, but which often lack a comparative body of data for the analysis of bone assemblages.

9.4 This project presents the potential opportunity to establish the groundwork for further analysis of metallurgical residues with a view to investigating trade networks of raw materials and the economic and social relations which held these together in the medieval period. Slag and other metallurgical residues have more often than not been merely counted and weighed with little further assessment, never mind analysis of the data-set, prior to the enforcement of a rigorous discard policy at the time of archive deposition. The generation of a data-set which problematises the issue of archaeological slags, will be enable the opportunity to carry out further work at a regional and potentially at a national level.

10 PUBLICATION

10.1 Publication has, in principle, been agreed with the editor of *Oxoniensia*, the journal of The Oxfordshire Architectural & Historical Society. A memorandum of understanding will be signed, following funding agreement for analysis with EH, with a view to publication in *Oxoniensia* **75** (2011). Costs for the publication of this have agreed to be borne by Mr. John Nettleton, for whom JMHS carried out the work at Newington House.

11 DEPOSITION

11.1 The site archive and that of SOAG will be deposited with the Oxfordshire County Museum Service at Standlake. The accession code for the archive, which is currently held by JMHS, is 2006: 142. All original written and drawn records, as well as copies of specialist reports will also be deposited, in addition to microfiche copies of the above

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11.2 Discussion has been initiated with Esther Cameron of OCMS regarding deposition of the archives. Responsibility for the costs of deposition will be between John Nettleton and SOAG. The elaboration of an informed proactive deposition policy has been discussed with OCMS. Such a policy is subject to further discussion with specialists and OCMS to refine any discard policy so that the integrity of the archive is maintained all the while not committing resources to unusable data.

12 COSTS

12.1 Costs are detailed below in Appendix 1. These are based on the full analysis of specific parts of the site archive and the generation of relevant reports. The costs for draughtsman are based on generating further drawings, including details of the plans, section drawings and illustrations of objects which merit further work and publication.

13 CONCLUSIONS

13.1 The work carried out by JMHS on the early medieval site at Newington provides a significant quantity of data that span a limited period of time in the post-Norman Conquest period, and which will help to characterise the settlement activity at the excavated site within its local context, which was investigated by SOAG in the early 80s, as well as its more wide regional context. The site presents an apparently tight chronological efflorescence, development and decay over c. 350 years.

13.2 The assemblage of pottery provides a tightly dated sequence for similar rural sites in the lee of the Chilterns and in the Thame valley, which is currently lacking. Excavations at Benson, for example, to the south of the site have yielded little post-Conquest pottery. By way of contrast Harding's Field, Chalgrove 2.5km east of Newington revealed a similarly short-lived site. This will tie the site into its greater social and economic ambit within the region, while also providing a valuable comparative site for future work for chronological, typological and characterisation purposes.

13.3 The site at Newington is a polyfocal settlement comprising Newington on the south side and Great Holcombe on the north side of the drain, which separates the two hamlets. A watching brief carried out by OAU (Chambers 1982, 133) identified a $12^{th}/13^{th}$ century layer with carbonised bread wheat overlain by a spread cut by a lime-mortared wall. An outlying settlement is Little

Holcombe, now a single farm. The place name, Holcombe is also Old English, though the settlement is not recorded in Domesday. It is not clear whether other current farms in the village's hinterland are part of such an earlier Saxon or post-Saxon estate. The fieldwalking carried out by SOAG at Great Bowling Field is a significant resource for understanding the post-Conquest development of Newington.

13.4 In the case of Newington, which means simply enough 'new farm/settlement', it is not clear to what the phrase 'new settlement' refers. Records exist for such a new settlement already from before Domesday. Ekwall (1960) locates the hamlet or small village of Newington in the *Codex diplomaticus ævi saxonici* – a late 10th century document. While it is possible that there is (deliberate?) confusion or conflation between Holcombe and Newington, the emplacement of a solidly Norman church dedicated to Giles – a convincingly Norman patron saint – certainly lends a post-Conquest feel to the settlement.

13.5 Locally, the evidence strongly indicates an early outlying settlement of the *Bensington* estate, which in the immediate post-Conquest period was suppressed. Holcombe was attached to Benson as part of the Saxon 'multiple estate'. However, the Domesday evidence indicates that the parish was already property of Canterbury Cathedral – up until the Reformation the incumbent was appointed by the Archbishop of Canterbury; its tithes were later commuted to Christ Church when Canterbury College was acquired by the former institution. The pre-Norman dedication to any pre-existing parish church is not known.

13.6 One of the most significant processes which the site can illuminate is the identified but poorly understood process of the shrinkage – and indeed desertion – of medieval villages on the edge of the Chilterns (Bond 1986, 141). This must be contrasted with the probably planned post-Norman settlement within the former *Bensington* (Benson) estate. The historical work undertaken by SOAG specifically at Canterbury and Christ Church, Oxford and more generally at the SMR and CRO repay a full integration with the archaeological results. A leading question may be whether Great Holcombe was the earlier late Saxon focus, to which was added a new settlement – with subsequent Norman foundation of a possibly planned village. Certainly the dedication and 12th century construction (Sherwood & Pevsner, 1974) date for the church indicate that any trace of a possible Saxon parish church was erased.

13.7 The processes and drivers of change in this part of rural Oxfordshire are poorly understood: the breadth and depth of the data compliment the Research Priorities T1, T3, T7, H5 and PC6 of the National Research Agenda. From the potential Romano-British origins of medieval towns, villages and indeed hamlets to the efflorescence and shrinking of such medieval rural settlements, the apparently economically specialised remains recovered during the most recent phase at Newington compare well with the more general data recovered previously and illustrate and inform the profound societal and economic changes which the Norman Conquest engendered.

13.8 The examination of an archaeological and historical record which is spread across the village would set the most recent work in its fuller context, all the while providing a suitable opportunity to bring a long-overdue site to publication.

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Appendix 3

Roman pottery from Newington House, Newington, Oxfordshire

By Paul Booth

The assemblage consists of 16 sherds (321g) of Roman pottery, plus a single sherd (3g) from adjacent fieldwalking carried out in 1984 (GB84). The pottery was scanned rapidly and recorded in summary form using codes from the Oxford Archaeology Roman pottery recording system. The pottery was in slightly variable condition. The mean sherd weight was high, and many sherds were well preserved. A few, however, were small and relatively abraded.

The following fabrics were present:

S30. Central Gaulish samian ware. 3 sherds, 23 g.
F51. ?Oxford colour-coated ware. 2 sherds 51 g.
F52. ?Nene Valley colour-coated ware. 1 sherd, 3 g.
O10. Oxford fine oxidised coarse wares. 4 sherds, 107 g.
O30. Oxford medium sandy oxidised ware. 1 sherd, 7 g.
O81. Pink grogged ware. 1 sherd, 19 g.
R10. Oxford fine reduced wares. 2 sherds, 21 g.
R30. ?Oxford medium sandy reduced ware. 2 sherds, 21 g (including the fragment from GB84).
R50. Black-surfaced sandy reduced coarse ware. 1 sherds, 49 g.

The only certainly non-local sherds were the samian ware, the possible Nene Valley colour-coated ware fragment (F52), which was in an atypical fabric, and the single sherd of pink grogged ware (O81) which, with a source at Stowe (Buckinghamshire) is a common component of assemblages in this area. All the remaining sherds are likely to have derived from the Oxford industry kilns, but this is not absolutely certain as the coarse ware fabrics of this industry are not particularly diagnostic. Neither of the Oxford colour-coated ware sherds (F51) was certainly identified as such, the characteristic surfaces having been eroded off, and it is possible that these sherds were of the equivalent (and otherwise identical) coarse ware fabric O10.

Fabric F51, if present, would be indicative of a date after AD 240. In any case the assemblage as a whole has a 2nd-3rd century date range. The only rim sherds all came from a single context group (203), the only one (with 9 sherds, 153 g) to contain more than a single sherd. The rims were from a samian ware form 36 dish and three jars, two in fabric O10 and one in fabric R10. None of these is closely dateable, although the R10 rim sherd is of a type which is particularly common after *c* AD 250. A mid 2nd to mid/late 3rd century date range would cover all the likely permutations of this group.

Appendix 4

Post-Roman pottery from Newington House, Newington, Oxfordshire

By Paul Blinkhorn

In the following report, the pottery form each distinct phase of work at the site has been analysed separately. In each case, it was recorded utilizing the coding system and chronology of the Oxfordshire County type-series (Mellor 1984; 1994). The pottery occurrence by fabric type is shown in each sub-report.

In all cases, it was possible to give each stratified context-specific assemblage a Ceramic Phase date, based on the range of wares present, with the dating scheme shown in Table 1.

Table 1: Pottery Occurrence per ceramic phase

Ceramic Phase	Ceramic Phase	Defining ware
CP1	11th C	OXAC
CP2	Late 11th – early 12th C	OX162
CP3	Early 12th – early 13th C	OXAQ
CP4	Early – mid 13th C	OXAM, OXBK
CP5	Mid – late 13th C	OABG
CP6	14th C	OXAM
CP7	15th – late 15th C	OXAM, OXBN
CP8	Late 15th – mid 16th C	OXCL, OXAM
CP9	Mid 16th – 17th C	OXDR
CP10	17thC	OXREWSL
CP11	Late 17th – early 18th C	OXBEW
CP12	Early – late 18th C	OXFM
CP13	Late 18th C+	WHEW

Site NENH06

The pottery assemblage comprised 2,421 sherds with a total weight of 30,731g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 13.79. The assemblage comprised a range of wares which indicate that the site was occupied from the late 11th century to the 14th century, after which there was a gradual decline in activity, with the site finally abandoned in the second half of the 16th century.

The following fabrics were noted:

F100: OXR: St. Neots Ware type T1(1), AD850-1100. 2 sherds, 6g, EVE = 0.
F200: OXAC: Cotswold-type ware, AD975-1350. 74 sherds, 628g, EVE = 0.76.
F202: OXAQ: East Wiltshire Ware, 12th – 14th century. 495 sherds, 5849g, EVE = 2.37.
F300: OX162: South-East Oxfordshire ware, AD1075 – early 13th century. 1331 sherds, 16083g, EVE = 7.61.
F301: OXY Medieval Oxford ware, AD1075 – 1350. 2 sherds, 57g, EVE = 0.16.
F329: OX68: Potterspury ware, Late 13th - 17th century. 4 sherds, 11g, EVE = 0.
F330: OXBK: Medieval Shelly Coarseware, AD1100-1350. 8 sherds, 85g, EVE = 0.22.
F352: OXAM: Brill/Boarstall ware, AD1200 – 1600. 435 sherds, 6828g, EVE = 2.50.
F356: OXBG: Surrey Whiteware. Mid 13th – mid 15th C. 13 sherds, 397g, EVE = 0.28.
F361: OXAG: Abingdon ware, mid/late 11th – mid 14th century. 32 sherds, 392g, EVE = 0.13.
F403: OXBN: Tudor Green Ware, late 14th century - c. 1500. 1 sherd, 1g, EVE = 0.

F405: OXST: Rhenish Stoneware, AD1480 – 1700. 1 sherd, 9g, EVE = 0.
F425: OXDR: Red Earthenwares, 1550+. 1 sherd, 3g.

The pottery occurrence per ceramic phase is shown in Table 2. The data has not been checked against the stratigraphic matrix. This will be carried out at the report stage, and the data tables adjusted accordingly. The range of fabric types is fairly typical of sites in the region, but the presence of wares from areas to the north of the site (OXAM, OXBK, OX68) and from the London region (OXBG) appears unusual for a rural settlement in this area. Given the nature of the site, and the extensive ironstone deposits in Northamptonshire, it is possible that the pottery assemblage is a reflection of both the ore-sources and the markets for output of the iron-working taking place at the site.

Table 2: Pottery Occurrence per ceramic phase

Ceramic Phase	No	Wt	EVE
CP1	7	49	0
CP2	177	2668	1.49
CP3	1050	12966	5.94
CP4	855	10436	4.50
CP5	106	899	0.37
CP6	96	2272	1.24
CP7	34	287	0.17
CP8	0	0	0
CP9	13	223	0.08
Total*	2338	29800	13.79

*80 sherds (883g) were unstratified, 3 sherds (48g) of Romano-British pottery occurred in contexts with no later material

Table 3 shows the pottery occurrence per phase by weight per major fabric type. Generally the pattern is what would be expected for phases CP1 – 6, with the OX162 ad OXAQ dominating the assemblage, then OXAM gradually becoming the major ware through time. The data for CP7 and CP9 are a little unusual, but this is almost certainly due to the small assemblage sizes for those ceramic phase groups. The pattern of pottery deposition suggests very strongly that the site was in severe decline by the 15th century.

Table 3: Pottery occurrence per ceramic phase by major fabric type, expressed as a percentage of the phase assemblage

Phase	OXAC	OX162	OXAG	OXAQ	OXAM	OXBG	OXDR	Total
CP1	100%	-	-	-	-	-	-	49
CP2	3.5%	88.2%	0.4%	-	-	-	-	2668
CP3	1.9%	70.3%	1.0%	25.8%	-	-	-	12966
CP4	1.5%	33.9%	2.2%	21.2%	41.1%	-	-	10436
CP5	5.9%	25.6%	5.8%	8.0%	42.8%	10.9%	-	899
CP6	1.0%	7.1%	0	3.3%	80.8%	6.9%	-	2272
CP7	0	5.9%	0	2.4%	47.0%	36.2%	-	287
CP9	0	7.2%	0	4.9%	69.5%	17.0%	1.3%	223

Generally the assemblage is in very good condition, with the mean sherd weight on the large side, and no real evidence of redeposition or attrition, indicating that the deposits are all of a primary nature, and originated very close to where they were buried.

A number of factors are worthy of further consideration. A large proportion of the OX162 sherds were decorated, mainly with square-notched rouletting, but also in a few cases with vertical combing, and, on one sherd, a very carefully executed incised pendant triangle with a wheel stamp impression placed in the centre. Rouletting is, usually for coarsewares in the region, a speciality of the OX162 potters (Mellor 1994, 84 and Fig. 31), and is a useful 'point of entry' for cross-fit analysis.

From a functional aspect, the later medieval assemblage appears to have an unusually large number of OXAM bifid-rim jars. Given the industrial nature of the site, this may be significant, although such vessels are a well-known part of the Brill potters' repertoire (ibid. 118). Comparison of the OXAM rim-form occurrence with other, non-industrial sites in the region may provide clarification.

The assemblage also produced a large fragment of one of the rarest Brill/Boarstall vessel types, a horn. Whether this was a drinking vessel or musical instrument is impossible to tell as the tip is missing, but they are extremely rare, and may again relate to the status/function of the site. The neck and rim from an OXAM medieval costrel was also present. These are again very rare.

These aside, the assemblage does not appear to have any unusual traits, and appears largely domestic, which is a little surprising given the nature of the site. Industrial sites of the later medieval tend to produce relatively large quantities of pottery associated with the storage, transportation and consumption of liquids, presumably as a result of the hard physical work involved. The general lack of such pottery from this site, give that ironworking was taking place, suggests that the industrial phase was largely finished by the time such pottery came into general use in the 15th century. This will be investigated at the report stage.

Site PF85

The pottery assemblage comprised 601 sherds with a total weight of 2,847g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 0.81. Activity at the site is generally confined to the 12th – 14th centuries.

The following fabrics were noted:

F200: OXAC: Cotswold-type ware, AD975-1350. 6 sherds, 33g, EVE = 0.
F202: OXAQ: East Wiltshire Ware, 12th – 14th century. 220 sherds, 1517g, EVE = 1.08.
F300: OX162: South-East Oxfordshire ware, AD1075 – early 13th century. 515 sherds, 2074g, EVE = 0.49.
F330: OXBK: Medieval Shelly Coarseware, AD1100-1350. 17 sherds, 69g, EVE = 0.20.
F352: OXAM: Brill/Boarstall ware, AD1200 – 1600. 621 sherds, 3680g, EVE = 6.28.
F356: OXBG: Surrey Whiteware. Mid 13th – mid 15th C. 5 sherds, 41g, EVE = 0.
F361: OXAG: Abingdon ware, mid/late 11th – mid 14th century. 15 sherds, 59g, EVE = 0.
F414: OXBEW: Manganese glazed wares. C. 1690-1800. 5 sherds, 40g.
F425: OXDR: Red Earthenwares, 1550+. 409 sherds, 4777g.
F1000: WHEW: Mass-produced White Earthenwares, 1795+. 34 sherds, 193g

The range of fabric types is fairly typical of sites in the region. The pottery occurrence per ceramic phase is shown in Table 4. The data has not been checked against the stratigraphic

matrix. This will be carried out at the report stage, and the data tables adjusted accordingly. The table shows that activity at the site was largely confined to the medieval period, mainly from the 12th century (CP3) to the 14th century (CP6), after which the site was abandoned, apart from a short period of pottery deposition in 19th century (CP13).

Table 4: Pottery Occurrence per ceramic phase

Ceramic Phase	No	Wt	EVE
CP1	1	15	0
CP2	10	42	0.03
CP3	36	151	0.10
CP4	71	402	0.05
CP5	343	1482	0.22
CP6	101	589	0.33
CP7	0	0	0
CP8	0	0	0
CP9	0	0	0
CP10	0	0	0
CP11	0	0	0
CP12	0	0	0
CP13	39	166	0.08
Total	601	2847	0.81

Table 5 shows the pottery occurrence per phase by weight per major fabric type. The fabric occurrence is generally as would be expected for medieval sites in the region. Almost all the pottery from CP13 is residual, with just a single small (1g) sherd of contemporary pottery present, and suggests that the assemblage of that date is the result of a single event rather than sustained activity, and intrusion cannot be confidently ruled out at this stage.

Table 5: Pottery occurrence per ceramic phase by major fabric type, expressed as a percentage of the phase assemblage

Phase	OXAC	OX162	OXAG	OXAQ	OXBK	OXAM	OXBG	WHEW	Total
CP1	100%	-	-	-	-	-	-	-	15
CP2	0	100%	0	-	-	-	-	-	42
CP3	0	84.8%	0	15.2%		-	-	-	151
CP4	5.5%	17.4%	0	4.7%	0	72.4%	-	-	402
CP5	2.2%	29.6%	1.1%	5.9%	1.1%	47.0%	11.9%	-	1482
CP6	3.9%	24.8%	0	4.1%	1.0%	62.6%	3.6%	-	589
CP13	3.6%	38.0%	0	15.7%	0	34.9%	0	0.6%	166

It is also worthy of note that OXAM rims with bifid forms appear somewhat over represented, with four of the ten jar rims from the entire site assemblage (all periods) being of that type.

Decorated sherds in OX162 were entirely absent. There is no obvious explanation for this, other than chronotypological reasons. This will be investigated at the report stage, once the pottery dating has been checked against the stratigraphic matrix.

Site NSA

The pottery assemblage comprised 132 sherds with a total weight of 1325g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 0.13. The

bulk of the assemblage (84 sherds, 1024g) was unstratified. The stratified pottery suggests that there was activity at the site from the late 11th – 13th centuries, but the range of fabrics amongst the unstratified material suggests that it was longer-lived, probably until the 14th century.

The following fabrics were noted:

F200: OXAC: Cotswold-type ware, AD975-1350. 1 sherd, 4g, EVE = 0.
F202: OXAQ: East Wiltshire Ware, 12th – 14th century. 26 sherds, 149g, EVE = 0.
F300: OX162: South-East Oxfordshire ware, AD1075 – early 13th century. 83 sherds, 814g, EVE = 0.13.
F330: OXBK: Medieval Shelly Coarseware, AD1100-1350. 1 sherd, 4g, EVE = 0..
F352: OXAM: Brill/Boarstall ware, AD1200 – 1600. 6 sherds, 147g, EVE = 0.
F356: OXBG: Surrey Whiteware. Mid 13th – mid 15th C. 8 sherds, 135g, EVE = 0.
F361: OXAG: Abingdon ware, mid/late 11th – mid 14th century. 4 sherds, 32g, EVE = 0.
F405: OXST: Rhenish Stoneware, AD1480 – 1700. 1 sherd, 27g, EVE = 0.

The range of fabric types is fairly typical of sites in the region. The pottery occurrence per ceramic phase is shown in Table 6. The data has not been checked against the stratigraphic matrix. This will be carried out at the report stage, and the data tables adjusted accordingly.

Table 6: Pottery Occurrence per ceramic phase

Ceramic Phase	No	Wt	EVE
CP1	0	0	0
CP2	21	133	0
CP3	24	163	0.13
CP4	1	3	0
U/S	84	1024	0
Total			

Site GB84, Field Survey Pottery
The pottery assemblage comprised 1951 sherds with a total weight of 13,383g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 2.33.

The following fabrics were noted:

F200: OXAC: Cotswold-type ware, AD975-1350. 6 sherds, 33g, EVE = 0.
F202: OXAQ: East Wiltshire Ware, 12th – 14th century. 220 sherds, 1517g, EVE = 1.08.
F300: OX162: South-East Oxfordshire ware, AD1075 – early 13th century. 514 sherds, 2070g, EVE = 0.49.
F301: OXY: Medieval Oxford ware, AD1075 – 1350. 3 sherds, 20g, EVE = 0.04.
F330: OXBK: Medieval Shelly Coarseware, AD1100-1350. 17 sherds, 69g, EVE = 0.20.
F352: OXAM: Brill/Boarstall ware, AD1200 – 1600. 621 sherds, 3680g, EVE = 6.28.
F356: OXBG: Surrey Whiteware. Mid 13th – mid 15th C. 5 sherds, 41g, EVE = 0.
F361: OXAG: Abingdon ware, mid/late 11th – mid 14th century. 15 sherds, 59g, EVE = 0.
F403: OXBN: Tudor Green Ware, late 14th century – c. 1500. 1 sherd, 3g, EVE = 0.
F404: OXCL: Cistercian ware, 1475-1700. 7 sherds, 40g, EVE = 0.
F405: OXST: Rhenish Stoneware, AD1480 – 1700. 14 sherds, 291g, EVE = 0.
F410: OXAM: Brill/Boarstall 'Tudor Green' wares, 1475-1600. 3 sherds, 8g, EVE = 0.02.
F412: OXRESWL: Polychrome Slipware, 17thC. 18 sherds, 178g.

F414: OXBEW: Manganese glazed wares. C. 1690-1800. 5 sherds, 40g.
F425: OXDR: Red Earthenwares, 1550+. 409 sherds, 4777g.
F430: OXFI: Chinese Porcelain, c1650+. 1 sherd, 3g.
F433: OXFM: Staffordshire White-glazed English Stoneware, 1730 – 1800. 2 sherds, 7g.
F438: OXEST: English Stoneware, late 17th century+. 1 sherd, 2g.
F451: OXFH: Border wares, 1550 – 1700. 11 sherds, 148g.
F1000: WHEW: Mass-produced White Earthenwares, 1795+. 34 sherds, 193g

In addition, 37 sherds (172g) of Romano-British pottery (fabric F1001) were also noted (See Appendix 3), along with seven sherds of flint-tempered ware of Bronze Age or Early Iron Age date (Fabric F1002).

Miscellaneous Pottery Finds
A number of chance pottery finds or material from trial holes etc were also noted. These are shown in Table 7.

Table 7: Pottery from Miscellaneous Find-Spots

	RB		F202		F300		F330		F352		F405		F425		F412		F414		F1000	
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt
Gate Piers	3	30			1	44					1	6								
Orchard Site (Centre)																			1	4
Orchard Site (Centre) (E)									2	22			6	123	2	32			1	3
Orchard Site C									1	3			17	94			1	2		
Orchard Site Spoil D													5	50					7	77
Orchard Site UNK					1	19							2	17					3	55
Trial Hole 1/10/85					1	7	1	4	2	12										
60m E of Pond			2	13	3	23			4	31										
80m w of drain clay surf													7	94						

Appendix 5

Assessment of the animal bone from Newington House, Newington, Oxfordshire

By Claire Ingrem

An assemblage of animal bone was recovered from medieval and Post-medieval deposits during a watching brief in advance of the construction of a lake in the grounds of Newington House, Newington Oxfordshire by John Moore Heritage Services in 2006 and 2007. The work revealed the extensive remains of a building, several ditches, pits and postholes that range in date from the 11th through to the 16th century (Williams *pers. com*). Animal bone was recovered from a variety of features including ditches, occupation layers and pits.

Methods

The assemblage was assessed in April 2009. All hand collected bone fragments over 10mm and all fragments of sieved material over 2mm were examined, with the number of potentially identifiable and unidentifiable bones being counted for each context, to provide a basic NISP (Number of Identified Specimens Present). The number of bones or teeth that could provide metrical, ageing or sexing information was recorded, and the presence of butchery was noted.

Condition of the bone

In order to estimate the potential of an assemblage to provide taphonomic information, the condition of the bone is graded on a scale of 1 to 5. That assigned to '1' is deemed to be in excellent condition, demonstrating little post-depositional damage whilst bone material classed as '5' has suffered severe surface erosion and can be identified only as 'bone'. The condition of the bone recovered from Newington is given in Table 1 and shows that most of the assemblage is in good condition.

Table 1. Condition of the bone (Number of bags)

Condition	11th	12th	13th	14th	15th	16th	Undated	Total
1								
2	18	58	55	16	3	2	41	193
3	1	5	20				12	38
4		1	1				1	3
5								
Total	19	64	76	16	3	2	54	234

Data

A total of 1,538 fragments of animal bone were recovered of which a third are identifiable to taxa (Table 2). The majority of the animal bone came from deposits dated to the 12th, 13th and 14th centuries with smaller amounts derived from features dated to earlier (11thcentury) and later periods (15th and 16th centuries). The majority of the material was recovered by hand collection although a sieved sample comprising a sheep/goat bone and three unidentifiable specimens came from a 15th gully.

Overall cattle are the most frequent taxa followed by sheep/goat with pig and horse also well represented (Table 2). There is some chronological variation such as the increased frequency of caprines and horse in the 12th century assemblage although this could be a refection of the relatively small size of the samples assigned to each period and/or be related to feature type. Dog, and galliform (probably domestic fowl) are present in small numbers and two of the small mammal bones belong to cat.

Table 2. Taxa representation (NISP)

	11th	12th	13th	14th	15th	16th	Undated	Total
Cattle	21	47	80	30		1	40	219
Sheep/goat	8	48	64	10	1	3	25	159
Pig	3	17	26	9	2		7	64
Horse	3	21	13	9			3	49
Dog		1						1
Small mammal	1		1	1		1		4
Galliform		1	1				1	3
Bird		3	1					4
Unidentifiable	63	337	262	181	15	4	173	1035
Total	99	475	448	240	18	9	249	1538
Total identifiable	36	138	186	59	3	5	76	503
% identifiable	36	29	42	25	17	56	31	33

General information

Metrical data is available from sixty-three specimens including forty-five bones that derive from 12th, 13th and 14th century deposits (Table 3). Ageing data could be obtained from twenty-nine loose teeth or mandibles most of which belong to cattle, sheep/goat and pig that also derive from 12th, 13th and 14th century deposits. A single pig canine can provide an indication of sex.

Evidence for butchery, gnawing and burning was observed during recording.

Table 3. General information (NISP)

	11th	12th	13th	14th	15th	16th	Undated	Total
Measureable								
Cattle	2	5	13	3		1	7	31
Sheep/goat	2	3	1	2			2	10
Pig		3	2	1				6
Horse	3	5	4	3			1	16
Total	7	16	20	9		1	10	63
Ageable								
Cattle	1	4	3	2			3	13
Sheep/goat		2	4	1			2	9
Pig		1	3				1	5
Horse			2					2
Total	1	7	12	3			6	29

Sexable								
Pig		1						1

Discussion

During the period that following the Norman Conquest the growth in towns was accompanied by changes in the rural economy in response to the increasing demands for food being placed on it by a growing urban population and the development of the wool trade. As a result, complex relationships developed between towns and the surrounding countryside and a considerable amount of pasture was converted into arable land in order to increase cereal production (Davies, 1987). A substantial increase in caprines relative to cattle and pig is generally evident in the 13th century (Maltby, 1979; O'Conner 1982) as wool becomes increasingly important in the economy. In the middle of the 14th century the population of Britain was severely reduced by the Black Death which resulted in widespread abandonment of the countryside and a reversal of previous trends, more land returned to pasture and renewed stimulus for livestock husbandry is indicated by the increase in animal size.

Large assemblages of animal bone have been recovered from a variety of Medieval and Post-medieval sites in southern England including Eynsham Abbey, Oxfordshire (Ayres *et al*, 2003), Portchester Castle, Hampshire (Grant, 1985) , the manor at Faccombe Netherton (Sadler, 1990) and Exeter (Maltby, 1979) and provide evidence for changes in the rural-urban economy throughout the Medieval period. Evidence from smaller rural sites is less common but has the potential to provide information concerning the impact and effect that the wider economic conditions had on small scale rural settlements. The majority of the animal bone derives from securely dated 12th, 13th and 14th century deposits. Samples sizes are relatively small however there is evidence for the existence of chronological variation in respect of taxa representation and a considerable amount of metrical and ageing data is available. Consequently, detailed analysis of the 12th – 14th century samples (in particular regional chronological comparisons) has the potential to provide an insight into animal husbandry practices at the local scale and to provide information concerning the effects that the wider economy had on rural settlements during the medieval period. Horse is generally poorly represented at contemporary sites and consequently their frequency in the Newington assemblage would benefit from further investigation.

Recommendations

Full analysis of the animal bone recovered from securely dated 12th, 13th and 14th century deposits is recommended using the methodology outlined in the appendix. Data analysis and interpretation should focus on determining the existence of chronological and spatial variations in taxa representation and where sufficient data is available, mortality profiles. In order to investigate rural-urban relations and the effects of the wider economy on rural settlements, comparative studies should be included using data gathered from other rural and urban sites.

The samples of animal bone recovered from 11th, 15th and 16th century deposits are too small to warrant further analysis and should be excluded from future work along with material from undated contexts.

Appendix: recommended methodology for analysis

Anatomical elements will be identified to species where possible with the exception of ribs and vertebrae which will be assigned to animal size categories. Mandibles and limb bones

will be recorded using the zonal method developed by Serjeantson (1996) to allow the calculation of the minimum number of elements (MNE) and individuals (MNI); this is based on the most numerous zone of a single element taking into account side. Percentage survival of selected elements will be based on the minimum number of elements (MNE) calculated as a percentage of the maximum number possible according to MNI. In addition, all bone fragments over 10mm will be recorded to species or size category to produce a basic fragment count of the Number of Identified Specimens (NISP).

The presence of gnawing, butchery and burning together with the agent responsible will be recorded. Measurements will be taken according to the conventions of von den Driesch (1976) and Bull & Payne (1982) for mammals, and Cohen and Serjeantson (1996) for birds. The wear stages of the lower cheek teeth of cattle, caprines and pig will be recorded using the method proposed by Grant (1982) and age attributed according to the method devised by Payne (1973), Legge (1982) and O'Connor (1988). The fusion stage of post-cranial bones will be recorded and age ranges estimated according to Getty (1975). Measurements of the crown height of horse teeth will be recorded and age estimated according to the method of Levine (1982).

A selected suite of elements will be used to differentiate between sheep and goat (Boessneck, 1969, Payne 1985): the distal humerus, proximal radius, distal tibia, distal metapodials, astragalus, calcaneus and deciduous fourth premolar.

Where data is available, withers height will be calculated using the factors of Kiesewalter for horse, Matolsci for cattle and Teichert for sheep (Boessneck and Von den Driesch, 1974).

Appendix 6

Assessment of Carbonised Plant Remains from Newington House, Newington, Oxfordshire

By Mark Robinson, Oxford University Museum

INTRODUCTION

Excavations in advance of the proposed construction of a lake in the grounds of Newington House, Newington, Oxfordshire revealed remains of medieval buildings, mostly of the 12th-13th centuries. These included a smithy or metal-working building. Bulk samples were taken for the analysis of carbonised plant remains.

DATA

Quantification of Material

Sixteen samples totalling 550 litres were taken for carbonised plant remains. Following processing, these are now in the form of dried flots.

Methods

The samples were floated onto a 0.5mm mesh and the flots dried. The flots were then scanned under a binocular microscope for charcoal and other carbonised remains. The charred seeds (and any chaff) observed were identified and an estimate made of their abundance. Charcoal from the flots was broken transversely and examined at up to x50 magnification. This enabled the majority of the charcoal, *Fagus* and *Quercus*, to be identified. High-power incident light microscopy was used to establish the identity of the remaining taxa. The quantity of each taxon in each sample was estimated. The results for charred remains other than charcoal are given in Table 1 and for charcoal are given in Table 2.

Results for Carbonised Plant Remains (excluding charcoal)

Carbonised seeds were present in all of the samples except for Context 352 from Feature 351. Chaff, however, was absent. The concentration of remains was relatively low, with no sample containing more than 1.1 seeds per litre and only five samples with more than 0.5 seeds per litre. The assemblages showed a similar character with cereal grain, particularly short free-threshing grains of *Triticum* (rivet or bread-type wheat) predominating, often a few seeds of cultivated legumes and usually a few seeds from plants that readily grow as arable weeds. The other cereals represented were *Secale cereale* (rye), hulled *Hordeum* sp. (hulled barley) and *Avena* sp. (oats). The only cultivated legume which could be identified with certainty was *Pisum sativum* (pea) but *Vicia sativa* (fodder etch) and *V. faba* (field bean) could also have been present. The weed seeds included *Vicia* or *Lathyrus* sp. (vetch or tare), *Rumex* sp. (dock) and *Anthemis cotula* (stinking mayweed).

In addition to the carbonised remains, the flot from Context 409, Feature 408, contained some silicious ash. Within this were awn fragments of *Triticum* or *Secale* sp. (wheat or rye).

Results for Charcoal

Charcoal was present in thirteen of the samples. *Fagus sylvatica* (beech) was best represented, being present in nine of them. The *Fagus* charcoal included both small-diameter and large-diameter wood. Charcoal of *Quercus* sp. (oak) was found in several of the contexts and there

was much in Context 349 from Feature 361. There was also a slight presence of charcoal of Pomoideae (hawthorn, apple etc) and *Corylus avellana* (hazel).

POTENTIAL

Discussion of the Results

The carbonised seeds were probably derived from the accidental burning of crops during processing possibly including the heating of wheat grain to dry it prior to grinding. This material had probably become mixed and scattered over the site. The crop assemblages from Newington were typical of rural medieval settlements in the region. Wheat, hulled barley and oats were all probably major cereal crops with rye of less importance. It is possible that some of the wheat grain was from *T. turgidum* (rivet wheat) as well as *T. aestivum* (bread wheat) but it is not possible to determine this in the absence of rachis fragments. The occurrence of cultivated legumes was also usual for the medieval period.

The predominance of beech and oak amongst the charcoal suggests that the site was exploiting a woodland fuel source rather than cutting thorn shrubs from scrub and hedgerow. In particular the occurrence of so much beech charcoal raised the possibility that wood was being obtained from the beechwoods of the Chilterns.

Potential for Further Work

While it would be possible to sort the samples fully for seeds and give counts for the number of each taxon it is not thought that this would give results of any greater significance than those already available from the assessment. Likewise the charcoal has no potential for further study.

RECOMMENDATIONS

No further work is recommended on the carbonised plant remains from Newington House. However, the assessment results provide a useful local crop record and it is also of interest that fuel was apparently being obtained from the Chilterns. It is therefore recommended that an edited version of this assessment report be included with any publication of the archaeological fieldwork on the site.

Table 1: **Carbonised Remains (excluding charcoal) from Newington House, Newington**

	Sample	16	17	2	20	5	10	11	12		13	9	14	18	19	17
	Feature	312			361	369	376	380	382	408		192	427	485	487	
	Context	313	322	340	349	368	375	379	381	409	415	418	428	486	488	511
	Sample Volume (litres)	30	40	40	10	40	40	40	40	30	40	40	20	40	40	40
CEREAL GRAIN																
Triticum sp. - short free-threshing grain	rivet or bread wheat	+	++	+	+	++	++	++	-	-	+	++	-	++	++	++
Secale cereale L.	rye	-	-	-	-	-	-	-	-	+	-	-	-	-	-	+
Hordeum sp. – hulled	hulled barley	-	+	-	-	-	-	-	-	-	-	-	-	+	-	-
Avena sp.	oats	+	-	-	-	-	+	-	-	+	-	-	-	-	-	+
cereal indet.		++	++	-	-	+	+	++	+	+	-	++	-	+++	+++	++
Total Cereal Grain		++	+++	+	+	++	++	++	+	+	+	+++	-	+++	+++	+++
OTHER CROP SEEDS																
Pisum sativum L.	pea	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
Vicia or *Pisum* sp.	fodder vetch, bean or pea	+	+	-	-	-	-	+	+	-	-	-	+	+	+	+
Total Cultivated Pulses		+	+	-	-	-	-	+	+	-	-	-	+	+	+	+
WEED SEEDS																
Vicia or *Lathyrus* sp.	vetch or tare	-	-	+	-	-	+	-	-	-	-	-	+	+	+	-
cf. *Medicago lupulina* L.	black medick	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
cf. *Trifolium* sp.	clover	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
Rumex sp.	dock	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
Galium aparine L.	goosegrass	-	-	-	-	-	+	-	-	-	-	-	-	+	-	-
Anthemis cotula L.	stinking mayweed	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
Gramineae indet.	Grass	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
weed seeds indet.		-	+	-	-	-	-	-	-	-	-	-	-	+	+	-
Total Weed Seeds		+	+	+	-	+	+	-	+	+	-	-	+	++	+	-
Total seeds		++	+++	+	+	++	++	++	+	+	+	+++	+	+++	+++	+++

+ 1-5, ++ 6-20, +++ 21-45

Table 2: **Charcoal from Newington House, Newington**

	Sample	16	17	2	20	10	11	12	13	9	14	18	19	17
	Feature	312			361	376	380	382		192	427	485	487	
	Context	313	322	340	349	375	379	381	415	418	428	486	488	511
	Sample Volume (litres)	30	40	40	10	40	40	40	40	40	20	40	40	40
Pomoideae indet.	hawthorn, apple etc	-	-	-	-	-	-	-	-	-	++	-	-	-
Corylus avellana L.	hazel	-	-	-	-	-	+	-	-	-	-	-	-	+
Fagus sylvatica L.	beech	+	++	-	-	-	+	+	+	+	-	++	++	+
Quercus sp.	oak	-	+	+	+++	+	-	-	-	+	-	-	+	-

+ present, ++ some, +++ much

Appendix 7

Assessment of the metallurgical waste from Newington House, Newington, Oxfordshire

By Marcos Martinón-Torres, Institute of Archaeology, UCL

1. Introduction

The excavation of a smithy at the medieval manorial settlement at Newington, Oxfordshire, was carried out by John Moore Heritage Services in 2006/07. An assessment of the abundant pottery recovered across the site indicated a main chronological range dating from the late 11th to the 14th century. Approximately 50kg of metallurgical waste were recovered, together with structural remains that suggested the possible presence of an iron smithy.

This report presents the observations based on a macroscopic assessment of the assemblage of metallurgical waste, carried out by the author in March 2009. The main aims of this study were:

a) to confirm the nature of the suspected metallurgical waste as related to ferrous metallurgy,
b) to establish whether smelting, smithing or both metallurgical processes took place,
c) to consider the possible presence of non-ferrous metallurgy on site, and
d) to evaluate the pertinence of further analytical study of the assemblage.

The methodology for slag identification and reporting is based on the Archaeometallurgy guidelines published by English Heritage (Bayley et al. 2001). Before presenting the results of the assessment, a brief introduction to the technology of pre-industrial iron metallurgy is provided, hoping that it may facilitate an understanding of the technological origins of the various remains discussed below. However, non-specialists are encouraged to consult the above guidelines for further technological or terminological clarification.

2. Medieval iron metallurgy

The main method of smelting iron ores in pre-modern Europe was the so-called 'direct' or 'bloomery' method, in which the ore is processed in a furnace with charcoal at temperatures around 1200 °C. In this process, the iron never reaches the molten state, but iron oxides are progressively reduced to metal in the solid state, and they coalesce as a mass of metal or 'bloom'. Only the main by-product, smelting slag, is liquid during the process. This slag is formed primarily by the reaction between some of the iron oxides in the ore (which are therefore never reduced to the metallic state) and silica and alumina, which may be present in the ore as well as in the furnace clay lining or any fluxes added to the charge. Other impurities possibly present in the ore (as gangue) and fluxes are also incorporated into the slag, together with molten material from the technical ceramics (including the 'tuyeres' or bellow pipes), and charcoal ashes. A range of smelting slag morphologies can be produced during the smelting of iron, depending on the raw materials, furnace structure and operating parameters. These may include 'furnace bottom slag' (collected at the bottom of the furnace and therefore preserving the shape of the furnace base),

'furnace slag' (solidified within the furnace shaft, therefore more irregular in shape and often containing charcoal inclusions or impressions), 'tap slag' (which displays a flow texture similar to that of lava, and forms if the liquid slag is tapped out of the furnace through a hole and solidifies in contact with air) and 'ceramic rich slag' (typically glassier and lighter, as it is dominated by molten ceramics rather than by iron oxides). Often several of these slag-types form in the same smelt, and their typologies are not always clearly distinctive.

Given that the metallic iron is never liquid, the separation between metal and slag by density is never perfect during bloomery smelting. As the bloom forms inside the furnace, particles of charcoal and slag become incorporated in the metal matrix. Therefore 'primary smithing' is carried out by hammering the bloom on an anvil while still hot (or in cyclical reheating and hammering episodes), to remove adhering slag, consolidate the metal and expel inclusions of slag and charcoal. 'Secondary smithing' is the operation where the resulting metal billet or bar is shaped into a finished object, by repeatedly heating the iron in a hearth and hammering on an anvil. Secondary smithing may involve the welding together of several pieces of iron or steel (which may originate from different sources and/or have different compositions), and it would often involve the recycling of broken or otherwise discarded scrap. Secondary smithing would also be carried out to repair or re-sharpen iron objects.

As the iron was heated in the hearth for smithing, the reaction between the oxidised iron, the fuel and the hearth lining would also lead to the formation of slag. This often accumulated in the hearth during successive reheating episodes, near the blowing hole, progressively taking the form of a plano-convex cake. These slag types are often referred to as 'smithing hearth bottoms (SHB)' or 'plano-convex bottoms (PCB)'. In addition, during the hammering of the iron on the anvil, "hammerscale" would be produced. Hammerscale is composed of small, flat flakes of oxidised iron that would break off the metal surface when struck, and spheroidal, often hollow, droplets that would be expelled from the iron, particularly during welding, and solidify almost immediately.

3. The Newington assemblage

3.1. Smithing hearth bottoms

The majority of the slag cakes and fragments with diagnostic shapes present in the assemblage can be confidently ascribed to smithing hearth bottoms produced during smithing processes. Many of them are fragmented, but they can be easily recognised as belonging to SHBs by comparison to more complete ones. They display a characteristic concavo- or plano-convex profile, are rather dense and sometimes contain small pebbles adhering to the surfaces, as well as sand and charcoal impressions. Although none of them were sectioned to examine their internal structure, layering is evident in some of them. Larger fragments allow an estimate of their diameter, ranging approximately 15-25 cm, with a depth reaching up to 5 cm (Figs. 1-6). Some of the SHBs preserve remains of a curved ceramic rim adhering to them, clearly the lining of the hearth that vitrified during the high temperature operation and became attached to the forming slag (Fig.7).

Fig. 1 (212)

Fig. 2 (326)

Fig. 3 (347)

Fig.. 4 (347)

Fig. 5 (347)

Fig.. 6 (352)

Figures 1-6. Top and side views of smithing hearth bottoms, with an indication of the context where they were found. The spacing between the lines in the background of all the images is 8 mm.

Figure 7. Two fragments of smithing hearth bottoms recovered in context (326) with parts of the ceramic hearth lining attached to them.

3.2. Undiagnostic slag

Any metallurgical site will yield a number of slag lumps that cannot be easily identified macroscopically, and Newington House is no exception. These are small or fractured pieces that have the dark colour and high density of iron-rich slag, but which lack any diagnostic surface morphology. Here they appear as relatively small lumps, with eroded or irregular surfaces, with densities normally comparable to the more diagnostic SHBs (Figure 8). The most plausible explanation is that they are simithing slags too, which either never formed a typical cake, or were fragmented during postdepositional processes. Such slag fragments are frequent in smithies. If considered macroscopically and in isolation from the rest of the assemblage, some of them might appear to constitute lumps of furnace slag deriving from smelting operations. However, such an ascription seems extremely unlikely, in view of their small incidence and other indications that this workshop represents a smithy only.

Fig. 8. Examples of 'undiagnostic slag' from context (347)

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3.3. Iron

Among the less diagnostic lumps, one further fragment should be singled out, as it probably constitutes a corroded iron fragment rather than a slag piece. It appears as a small block of approximately 5 cm in length, with a yellow, powdery, cracked surface often found in corroded iron (Figure 9). Its potential importance is noted here, as it

might constitute a piece of bloom or billet and therefore be informative of the type of iron supplied to the smithy.

Figure 9. Possible fragment of corroded iron from context (347).

3.4. Fuel ash slag

A small but significant number of slag lumps are characterised by a comparatively low density and high abundance of round pores, also appearing glassier and more brittle than average. They are typically small (longest axis ≤5 cm) and often lighter in colour than the rest of the waste, displaying yellow or beige hues as opposed to the dark brown of the rest of the slag (Fig. 10). These lumps are interpreted as fuel ash slag. This type of slag would have formed primarily through the vitrification of charcoal and its reaction with the hearth clay lining and possibly fluxes such as sand added during smithing.

Although they probably contain some iron, these residues are dominated by lighter compounds such as those found in wood ashes and ceramic material. It should be noted, however, that there is a continuum from the iron-rich SHBs to the alkali-rich fuel ash slag. They formed during the same metallurgical process and the two types should be seen as the extremes of a spectrum, rather than as two mutually exclusive types – hence the range of 'undiagnostic slag' types in between.

Figure 10. Examples of fuel ash slag from context (347).

3.5. Vitrified technical ceramic

A small number of residues were identified as vitrified technical ceramics. These appear as relatively light, flat or slightly curved ceramic fragments, up to 8 cm in the longest axis and up to 2 cm thick (but often much thinner). One surface appears smooth, glassy and brittle, resulting from high-temperature vitrification, whereas the other side appears completely unvitrified or only partially baked, with a rough surface and soil impressions (Figures 10-11). These features are typical of the thermal gradient experienced by the clay used for lining internally the smithing hearth, with the inner side exposed to the high temperatures. With progressive vitrification, this lining becomes more brittle until it may flake off the rest of the structure, resulting in these relatively flat, ceramic-rich fragments. At this point, the hearth would have to be re-lined.

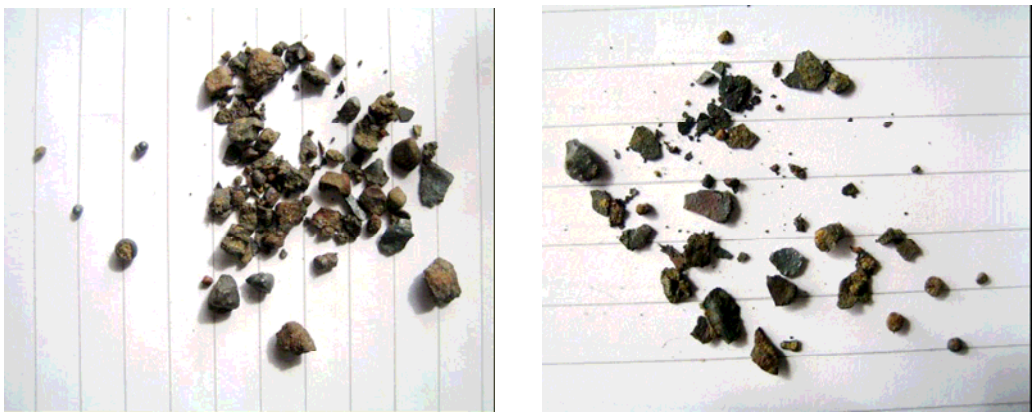
The peculiar appearance of some of these fragments was recognised by the excavator, who inquired whether these might constitute crucible sherds and thus relate to nonferrous metallurgy. A report was prepared by Matt Nichols of UCL (Nichols, 2007). However, many aspects differentiate these vitrified ceramic lining from the typically coarser-grained, red-or green-stained crucibles used in medieval England for non-ferrous metallurgy. The most obvious one is the fact that these ceramics show the evidence for vitrification on the inner surface, whereas medieval crucibles, typically heated from the outside, should show the exact opposite vitrification gradient.

Figs. 11 &12. Inner (left) and outer surfaces of a fragment of vitrified hearth lining from context (352).

3.6. Hammerscale

One of the most informative types of metallurgical waste with regards to the organisation of the site is the hammerscale, and the excavators should be commended for having collected it on site. Unlike larger slag fragments, which could be moved or dumped far away from the activity area, the microscopic nature of hammerscale means that it would normally not be collected or cleaned up. The relative abundance of hammerscale on a site may therefore serve as an indication of the proximity to the location of the anvil or anvils (e.g. Mills and McDonnell 1992).

Both spheroidal globules and flat flakes of hammerscale were recovered at Newington House. Although sediments were sieved, no magnets were employed during the excavation, and it is therefore likely that the hammerscale collected is not the total amount of residue existing on site. However, even if only on a presence/absence basis, special attention should be paid in particular to contexts (322), (352), (415), (418), (488) and (511), where the amounts of hammerscale collected were particularly high. It is probable that the anvil or anvils of the smithy where placed near these contexts, and the rest of the smithy layout may be more easily interpreted from this evidence.



Figs. 13 & 14. Examples of hammerscale from contexts (322) and (352).

4. Discussion

The macroscopic assessment of the metallurgical waste from Newington House leaves little doubt that the site constitutes a medieval smithy, where iron (and/or steel) was forged into usable objects, and/or where the repair and recycling of iron took place. The presence of smithing hearth bottoms and hammerscale are diagnostic of such activities. Furthermore, the location of the workshop, near the likely consumers – as opposed to near the raw material sources –, and even the structural remains suggestive of a sheltering superstructure, altogether support this interpretation.

None of the evidence collected suggests the possibility that iron smelting took place at the site. This is not surprising, given that central smelters, located nearer the woods for fuel and/or the sources of ore, would normally supply smiths with the iron they required. In addition, the metallurgical assemblage is not indicative of non-ferrous metallurgy. Even if non-ferrous metallurgy may have been practiced in the vicinity of Newington House, the archaeological evidence remains to be unveiled in a different area.

Given the relatively large temporal span covered by the site, and the fact that the site was not fully excavated, it is not possible to estimate the scale of the operations based on the metallurgical assemblage recovered. The majority of the contexts where ironworking waste was recovered were dated to the 12th and 13th centuries, but the dates of some other contexts associated to such remains range from the 11th to the 15th centuries. Even though some of this material may be intrusive, it is any case possible that the smithy was long-lived, supplying local needs during a relatively long period.

The technology of medieval iron smithing in England is relatively well understood, and thus the importance of this metallurgical activity is more archaeological than archaeometallurgical. The contextualisation of the ironworking activity in the broader functioning of the settlement, or the workshop layout, are all aspects that deserve further attention.

From a scientific perspective, it could be interesting to compare the chemical composition of the smithing waste to that of the slag inclusions in iron artefacts recovered on site, including the iron fragment described above (the iron artefactual assemblage was not studied for the present report). Correlating iron slag and artefacts is notably difficult, and it is even more difficult when the slag of reference derives from smithing rather than smelting (Blakelock et al. 2009). However, there might be a strong chemical signature (with oxides of titanium or manganese, for example), that could allow one to ascertain a link between the smithy and the artefacts. Furthermore, even if the provenance of the iron was not be determined, such study would allow an insight into the homogeneity of the iron supplied to the Newington smithy: compositional homogeneity would be indicative of a single supplier, whereas a variety of compositional signatures would indicate a range of suppliers. A recent study has shown that there are clear regional variations in the composition of Iron Age and Romano-British iron smelting slag (Paynter 2006), and a similar pattern could be expected for the medieval period. Therefore, in due course, the composition of the Newington assemblage (both smithing slag and slag inclusions in objects) could also be compared to that of contemporary smelting slag recovered in the region.

Appendix 8

Supplementary assessment of slag remains and associated ironworking residues

By Brian Gilmour

Assemblage composition

This assessment is intended to be taken as a supplement to the initial assessment carried out by Marcos Martinez-Torres in March 2009.

The assemblage consisted of approximately 57.3 kg of waste debris from probable ironworking on or near the site. This assessment was carried out in order to assess the potential of this material for further analysis aimed at identifying the activity/process(es) responsible for the slag. Much if not all of it may relate to the operation of a suspected late medieval smithy in the form of an open fronted building and associated cobbled surface(s) recovered during the excavations here and dated by associated pottery approximately to the 13th century.

This assemblage mostly consisted of a mixture of slag fragments (of one kind or another), related hearth debris and hammer-scale, some of which has been subsequently separated out. In amongst this material were a few fragments of metallic iron, possibly associated with the ironworking here. This material has been scattered across the site and was recovered from some 115 different contexts, mostly from this campaign of excavation, although a small amount was saved during the South Oxfordshire Archaeological Group (SOAG) excavation (PFI) campaign here in the 1980s. However the bulk of this slaggy waste debris came from just a very few pit groups/contexts (notably contexts (326), (347) and (370) which appear to relate to the operation of the suspected smithy.

Much of the material consists of lumps – approximately pea size up to bun size (~1-10 cm) – of irregular and still dirty slaggy waste, although some of the larger pieces have the appearance of (nearly) complete, roughly plano-convex smithing hearth bottoms (SHBs) as would be expected if this site did have an operating smithy. Much of the slaggy waste may relate to the use of this, but some of the denser slag from further away might relate to smelting would need to be checked with this in mind.

Method Statement

It is proposed that this material will be cleaned and the fragments sorted by hand, separated, weighed, listed, described and categorised, and the finer gritty material put through a magnetic separator to recover the hammer-scale fraction. Optical and compositional analysis will be carried out on a representative proportion of each type of waste debris present to determine what type of waste material is present, what process gave rise to the slag, and also to identify the main identifiable characteristics in terms of the minor elements present in the slag.

Apart from one or two pieces of iron amongst the slaggy waste, other pieces of iron were recovered from the site, some of which may relate to the possible operation of a smithy here. It is recommended that a representative proportion of this ironwork be examined metallographically and compositionally, partly with a view of categorising

the iron, but also to analyse the non-metallic inclusions and comparing the results between the artefacts, and also with those from the slags to see if a regional/local centre of production can be identified.

A proportion of the finds/structures will be photographed; the results of the physical examination recorded on an Excel spread-sheet format, and the compositional results recorded in a similar way, and these will be incorporated into the final report on this assemblage.

Statement of Potential

The main objective of this investigation is to link the waste ironworking debris to the identifiable archaeological horizons across the site, and in particular to confirm the tentative interpretation of the open fronted, north facing building as a 13th century smithy belonging a period when Newington was a larger settlement than it is today. A detailed examination of the spatial distribution of the material should help in the reconstruction of how this building was used, and whether or not there was ironworking here for longer than the apparent use of the smithy, as well as to check for the presence of any smelting residues, and to try and find any links between the iron artefacts and the slag remains. Thus it should be possible to improve the interpretation of the site as a whole

Appendix 9

Assessment of Conservation Needs of Archaeological Metalwork

By Sarah Morton, Oxfordshire County Museum Services

Quantities

This assemblage contains metalwork from two sites, 49 objects from NENH 06, and 15 from GB84. All the objects are iron.

Method of Assessment

All the objects were examined then x-rayed. Separate plates have been used for the three sites. Five plates were produced for NENH 06, and three for GB84.

Condition

The ironwork from NENH 06 is corroded but is not obscured by corrosion products; it is still possible to see the outlines of most of the objects. Some objects still have dirt adhered to the surface. Most of the ironwork shows signs of post excavation corrosion, flaking, cracking and laminating, and some of the objects have loose flakes in the packing. Storage in a low relative humidity microclimate appears to be preventing further corrosion but the corrosion layers are fragile and handling can cause loss of loose flakes.

The ironwork from GB84 is in poorer condition; some objects have lost extensive amount of surface material. All the objects are friable and easily damaged by handling with most having loose flakes in the packing. Storage in a low relative humidity microclimate appears to be preventing further corrosion.

Preservation and Archival Requirements

The metalwork needs to be kept dry to prevent further corrosion. Recommended levels of relative humidity (RH) for iron is less than 15%. The evidence for post excavation corrosion, particularly on objects from GB 84 indicated further corrosion will occur if a dry environment is not maintained. The use of humidity indicator strips to monitor the microclimate within the box is recommended.

The current packing is fair but some of the more fragile objects would benefit from more support within the packing. The amount of objects packaged in a box may also cause physical damage by crushing; repacking in larger boxes or less objects to a box is suggested.

Technology: Comments on X-rays

Plate X2009/11 shows 14 objects from NENH 06 2006.142

- The x-rays shows a hole in <59> with a rectangular nail still in pace.
- X-ray indicated a possible nail or rivet in <34>

Plate X2009/12 shows 18 objects from NENH 06 2006.142

●Object <19> has a hole at one end, there is a loss of material at the other end but a three pronged shape in suggested.
●The detail of <18> can be seen including the 'teeth' of the key and decoration around the shaft.
●The two sections of <45> have been x-rayed as <45>a and <45>b. The x-ray indicates a round rivet or nail is present in the centre of <45>b

Plate X2009/13 shows 8 objects from NENH 06 2006.142

●Square nail holes can be seen in <20>, <26> and <60> with a square nail remaining in the centre hole of <20>
●A line can be seen running diagonally across <15> this may be a crack, fault in the material or be evidence of a repair.
●The middle of <16> appears to either be thicker, less corroded iron or maybe a different material.

Plate X2009/14 shows 5 objects from GB 84

●Square nail holes can be seen in <5>, <12>, <14> and <16> nails remain in some of the holes of <5> and <14>.
●One nail remains in a hole in <16> but it appears to have a larger head than the others seen.

Plate X2009/15 shows 9 objects from GB 84

●Square nail holes can be seen in <6> and <9> with a number of nails remaining in <9> and one in <6>.
●<18> has a raised 'blister' in the centre of the outer edge. The cracking and corrosion around it indicates this may have been caused by corrosion rather than being an original feature of the object.

Plate X2009/16 shows 6 objects from GB 84

●Object <19> was very fragmentary, only the four largest sections have been x-rayed.
●Square nail holes can be seen in <13>
●The blade of <15> is in poor condition with very little metallic iron remaining.

Plate X2009/17 shows 1 object from NENH 06 2006.142

●<91> was x-rayed vertically and horizontally. The horizontal image shows th the de-lamination of the outer layer. No decoration is visible.

Plate X2009/18 shows 8 objects from NENH 06 2006.142

●The x-ray shows <96> has a hole at one end with a bar/pin running across it.
●One end of <101> curves back to make a loop, the other end shows signs of possible distortion.

Potential for Further Work

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●Cleaning of <18> and <19> to reveal shape

●Cleaning of <15> to investigate line seen running across object

●Removal of soil from <16> to investigate the construction and materials present

●Cleaning of <96> to investigate bar/pin and around ends of <101> to investigate shape.

●Cleaning of selected items to reveal more information about the technology or as necessary for drawing/publication.

Appendix 10

Small finds

The Other Finds category includes any other finds which have been given a Small Find number and which have not already been sent to specialists for assessment. This group of finds largely consists of finds from NENH 06. Metal objects, whetstones, floor tile and roof tile were assessed. The latter three categories have been weighed and counted. A catalogue of the encaustic tile is included.

For the purposes of assessing further work, this category also includes drawing and research work on those metal objects, some of which are subject to conservation work, and all of which will require a fuller record.

Metal Objects
All the metal objects below come from the JMHS excavation.

Cu Objects
A cheek-piece from horse-gear [(331)SF12] was found during the excavations. Additionally two buckles [(324) SF31] and [(511) SF89] were recovered during the excavation. A finds report and illustration is recommended for publication.

Fe Objects
A chape [(331) SF16], a rowel [(331) SF15], a key [(317) SF18] and and a slotted spoon or fork [(317) SF19]were found during the excavations. A finds report and illustration is recommended for publication. Two further objects [(331) SF96] and [(461) SF101] may also require a finds report and illustration, should cleaning reveal significant information.

Whetstones
Five whetstones were recovered during the excavation. These appear to be fine-grained limestones, from a range of sources. No further work is recommended, apart from illustration.

Context number	Small Find number	Weight (g)	Dimensions
493	81	136g	97x29x29mm
190	30	94g	77x40x21mm
524	82	354g	110x42x40mm
185	28	573g	156x72x39mm
506	64	498g	84x83x35mm

Roof tile
The roof tile from Great Bowling Field has been weighed and counted. The roof tile should be plotted on the fieldwalking plan and the distribution would be compared with that of the pottery. A visual assessment of the SOAG records, where the pottery

has already been plotted, indicates that there are distinct spreads of pottery in Great Bowling Field, primarily at the north end of the field, nearest the village of Newington. The identification carried out by Paul Blinkhorn provides date ranges for the pottery. Comparison with the plotted tile data would provide an indication of the extent of this part of the village as well as the span of occupation. Certainly, the 16th century map evidence suggests that the village morphology was less linear than it is today.

Other ceramic objects

Two fragments of reworked roof-tile were recovered. These appear to be either lids for a small container or perhaps counters, although they seem to small for the former and too large for the latter. These are included in Paul Blinkhorn's pottery report, but illustration may be indicated if they can be shown to correspond with specific vessel forms.

A fragment – about half – of a small spindle whorl was also recovered. A short report and illustration is recommended for publication.

Context number	Small Find number	Weight (g)	Dimensions	Identification
521	177	68g	63x62x14mm	pot-lid/counter
325	178	88g	77x74x14mm	pot-lid/counter
266	48	7g	37x20x15mm	spindle whorl

Encaustic floor tile

The glazed floor tile from Newington House, Newington comprises eight fragments. Three of the pieces do not conjoin with any other tile fragment; two fragments from (190) conjoin but the motif is not easily identifiable; a further two fragments from (190) conjoin with a piece from the midden layer (493). A finds report and illustration is recommended for the identifiable fragments.

The fragments from Great Bowling Field do not conjoin, although it is apparent that at least three fragments are from a similar source. All fragments are abraded, which given that they were retrieved during fieldwalking is not surprising.

An abbreviated catalogue is recommended for the unidentified fragments of encaustic tile from NENH 06 as well as all the Great Bowling Field tile. Comparison with the floor tiles at St Giles, Newington is recommended.

Table 1. Glazed Floor Tile from Newington House, Newington, Oxfordshire

Context Number	Small Find	Frags.	Weight	Thick-ness	Dimensions	Fabric	Glaze	Decoration	Comments	Date
190	183	2	120g	17mm	82mm x69mm	reduced grey core, red on underside, fine sandy fabric with flint, grog and calcined inclusions, rough base	glazed; greenish brown with yellow slip v. thin	Vegetable motif	Two edges present one piece; not very worn conjoins with (493 SF180)	14th onwards
190	184	2	119g	20mm	83mm x75mm	reduced grey core, buff to red on underside, fine sandy fabric with occasional calcined inclusions, stabbed base	Glazed; pale green glaze with yellow inlaid motif	Vegetable motif; not very clear	Two edges present; 'Stabbed Wessex' style base; broken in antiquity; very worn	14th onwards
190	185	1	44g	17mm	53mm x36mm	reduced grey core, buff to red on underside, coarse sandy fabric with no inclusions, sand-roughened base	Glazed; only inlaid white slip present	Not clear, but apparently vegetable fleur-de-lis motif	Possible 'Stabbed Wessex' style – evidence for point on fracture; very worn; slip still present; Early?	14th onwards
284	181	1	42g	16mm	64mm x40mm	reduced grey core, fine fabric no inclusions, two edges present – one trimmed	glazed; dark greenish brown with yellow inlaid decoration	Not readily identifiable	Possibly 'Stabbed Wessex' style, trimmed prior to firing as a triangular piece, glaze on edges	14th onwards
318	182	1	158g	20mm	89mm x65mm	reduced pale grey core, reddening under glaze and on underside, coarse fabric some grog inclusions, two edges present, base sand-roughened	v. worn; glazed; background red with yellow cruciform motif	One croix gironée (also Gyronny Cross) in the corner of the tile, a second is clearly adjacent but incomplete		14th onwards
347	179	1	72g	20mm	63mm x49mm	buff fabric, some flint and grog inclusions; base not present	Worn; yellowish glaze; red background	Geometric design with dots and lines		14th onwards
493	180	1	70g	17mm	51mm x45mm	reduced grey core, red on underside, fine sandy fabric with flint, grog and calcined inclusions, rough base	glazed; greenish brown with yellow slip v. thin	Vegetable motif	One edge present Conjoins with (190) SF183	14th onwards
Total		8	553g							

Table 2. Glazed Floor Tile from Great Bowling Field, Newington, Oxfordshire

Context Number	Type	Frags.	Weight	Thick-ness	Dimensions	Fabric	Glaze	Decoration	Comments	Date
U/S 1	floor	1	126g	25mm	79mm x79mm	Red, fine sandy fabric with grog inclusions, rough base	Pale creamy slip and traces of red glaze; v. worn	Not identifiable	Two edges present one piece	14th onwards
U/S 2	floor	1	127g	25mm	87mm x52mm	Red, fine sandy fabric with grog inclusions, rough base	Pale creamy slip and traces of red glaze; v. worn	Not identifiable	Traces of one edge present	14th onwards
U/S 3	floor	1	309g	28mm	109mm x87mm	Red, coarse sandy fabric with grog inclusions, rough base	Only traces of inlaid white slip present; v. worn	Not identifiable	Two edges present	14th onwards
110	floor	1	81g	30mm	51mm x43mm	Pale red, coarse sandy fabric with grog inclusions, rough base	White glaze present	Not identifiable	One edge present; is it floor tile?	
129	floor	1	91g	18mm	65mm x65mm	Red, fine sandy fabric with no inclusions, rough base	Yellow glaze present over white slip, v. worn	Not identified	Two edges present; poss. Penn style floor tile	
197	floor	1	110g	18mm	65mm x60mm	Dark red, fine fabric with no inclusions, Stabbed Wessex style base	Olive green glaze over traces of white slip, though inlaid slip apparently removed – groove visible running across tile; two edges and poss scored tile as one fracture line v. clean	Not identified		
211	floor	1	158g	31mm	91mm x50mm	Pale red, coarse sandy fabric with grog inclusions, rough base	Yellow/green glaze over white slip; green spotting visible; v. worn and abraded; cf 110 & U/S 3	Not identified		
Total		7	1002g							

Appendix 11

Excavations at Newington House, Newington

Product Descriptions

DOCUMENT CONTROL	
Author(s):	Gwilym Williams
Derivation:	Proposal for Analysis & UPD
Origination Date:	19/09/09
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5276
Product Title
Publication in Oxoniensia of English Heritage-funded Excavations at Newington House, Newington Oxfordshire (Draft Synopsis)
Purpose of the Product
To enable publication of the results of excavations and other interventions at Newington House, Newington Oxfordshire
Composition
Publication standard report
Derived From
Authors' reports (see synopsis)
Format and presentation
Document comprising text, illustrations, photographs and tables
Allocated to
GW & specialists for specialist reports
Quality criteria and method
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Person / group responsible for quality assurance
JM
Person / group responsible for approval
EH
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