



A Roman farmstead at Plot 2b, Broadland Gate, Norwich

Archaeological Excavation Report

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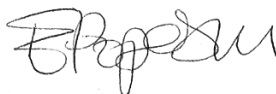


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Archaeological Excavation Report

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Summary

Between 29th March and 16th April 2021, Oxford Archaeology East conducted an archaeological excavation at Plot 2b, Broadland Gate, Norwich, Norfolk (TG 2902 0906). The excavation formed one part of a wider programme of archaeological works associated with the Broadland Gate development and revealed significant remains dating to the Roman period.

The excavation uncovered a series of east to west aligned field system ditches which produced pottery dated to the Early Roman period. A number of pits and postholes, although poorly dated, were probably contemporary with this field boundary system. Evidence for slightly later, Middle to Late Roman, activity was also identified taking place within the boundaries of the earlier field system, including at least three corn dryers and a well. These features produced material which probably derived from a nearby farmstead, including animal bone, fired clay, two copper-alloy bracelets and a substantial assemblage of Mid-Late Roman pottery including some imported central Gaulish Samian and south Spanish amphora. The relatively large assemblage of finds recovered from the site reflects a fairly affluent, well-connected, agrarian community that was established in the Early Roman period but flourished between the mid-2nd and mid-3rd centuries AD, with artefact deposition diminishing during the 4th century AD. Evidence for later activity and land use was restricted to a single post-medieval ditch representing a potential roadside boundary ditch shown on 19th century maps of the site.

The features identified at the site and their associated finds assemblages make a major contribution to the record of Roman activity within the Broadland Gate development area which, in combination with the results of other associated archaeological investigations, have considerable potential to contribute to understandings of Roman rural settlement and economy in the region.

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The project was managed for Oxford Archaeology by Patrick Moan. The fieldwork was directed by Anne-Laure Bollen, who was supported by Jenn Hulse, Rory Coduri and Ioannis Thanos. Survey and digitising was carried out by Valerio Pinna. Thanks are also extended to the teams of OA staff that cleaned and packaged the finds under the supervision of Natasha Dodwell, processed the environmental remains under the supervision of Rachel Fosberry, and prepared the archive under the supervision of Katherine Hamilton.

1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology East (OAE) was commissioned by McDonalds to undertake an excavation at Plot 2b, Broadland Gate, Norwich, Norfolk, in advance of the construction of a McDonalds restaurant and associated parking and infrastructure (NGR TG 29029 09068; Fig. 1). The work at Plot 2b took place as one element of a larger programme of works associated with the development of Broadland Gate (Birks 2017), and the excavation of Plot 2b was carried out following a trial trench evaluation which had indicated the presence of archaeological remains of Romano-British date (Birks 2020a).
- 1.1.2 The work was undertaken as a condition of Planning Permission (planning ref. 20081773 and 20170827). A brief was set by Steve Hickling of the Norfolk County Council Historic Environment service outlining the Local Authority's requirements for work necessary to inform the planning process and a Written Scheme of Investigation was produced by OAE detailing the methods by which OA proposed to meet the requirements of the brief (Moan 2021).
- 1.1.3 The site archive is currently held by OA and will be deposited with the appropriate county stores under the Site Code ENF151042 in due course.

1.2 Location, topography and geology

- 1.2.1 The site is situated on Norwich Crag sands, overlain by superficial deposits of Happisburgh formation diamicton (BGS map viewer <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>).
- 1.2.2 The site is situated on the northern side of the Yare valley and the surrounding landscape is relatively flat, with the site itself lying at an elevation of approximately 26m OD. The land drops significantly heading towards the River Yare to the south-west of site.
- 1.2.3 The site is located in what was the southern limits of Mousehold Heath, as mapped on Faden's 1794 map of Norfolk. This heathland formed following woodland clearance, beginning in prehistory. By the medieval period heathland formed the majority of common land on the edge of Norwich.
- 1.2.4 The site is currently disused farmland which has gradually turned to scrub. Directly to the west of site is an area currently under development for a LIDL supermarket, to the east and south is open farm/scrubland heading towards the A1270, with the route of a link road to the north.

1.3 Archaeological and historical background

Introduction

- 1.3.1 The site lies within a landscape of high archaeological potential. Extensive cropmark complexes have been recorded over large areas in the immediate environs of the site

and numerous archaeological investigations have been undertaken in the area since the 1990s in advance of the infrastructure works and commercial developments.

- 1.3.2 The archaeological and historical background of the site presented here draws on a search of the Norfolk Historic Environment Record (NHER; search dated 17/02/2021) of an area of 1km radius centred on the site and on available historic maps and other documentary evidence as outlined in the evaluation report (Birks 2020a) and the WSI (Moan 2021). Cropmarks recorded by the National Mapping Programme and selected NHER records within 500m of Plot 2b are plotted on Fig. 2; although it should be noted that due to the complexity and large number of HER records for the area, this mapping is highly selective. NHER records plotted on Fig. 2 are rendered in **bold** type in the following text.
- 1.3.3 A brief period-based review of the archaeological and historical background of the immediate environs of the site is presented below, followed by a summary of previous and ongoing work within the Broadland Gate Development. Aside from work directly associated with the Broadland Gate Development, major earlier programmes of archaeological work previously undertaken in the area include investigations carried out along the route of the Norwich Northern Distributor Road (NDR, the A1270), immediately to the east of the site. This included phases of fieldwalking, geophysical survey, and trial trenching and open area excavation (ENF117021, ENF123283, ENF139683, ENF138565, ENF 139692), with some areas of field walking and geophysical survey extending into the Broadland Gate development area itself. To the north, east and south of the development area several areas have also been subject to strip map and sample excavation in advance of alterations to road junctions linking the A1270 and the A47 (the Postwick Hub; ENF134151), and earlier programmes of evaluation and excavation were undertaken to the north-east of the site ahead of the development of the Broadland Business Park (ENF151261, ENF122342). More recently, in 2021, a large area immediately north of the development area and south of Smea Lane has been subject to large scale evaluation through geophysical survey and trial trenching (ENF137845, ENF15018)

Prehistoric

- 1.3.4 Many of the records relating to prehistoric activity in the area are of finds of worked flint, ranging in date from Palaeolithic to Bronze Age, recovered as stray finds or during programmes of fieldwalking. In the immediate vicinity of the site, the cropmark of a penannular/C-shaped ring ditch (**NHER 52036**), located some 420m south of Plot 2b, may represent a round barrow or hengiform monument of Late Neolithic–Early Bronze Age date, although limited excavation of this monument during trial trenching for the NDR recovered medieval finds suggesting it may instead represent the remains of a mill mound.
- 1.3.5 Although most of the extensive crop marks of enclosure/field boundary complexes in the vicinity of the site (e.g. **NHER 51973, 52038, 52213**) are thought to be of Late Iron Age to Romano-British or medieval in date, some may be of earlier, Middle/late Bronze Age, date. This has been suggested for a series of cropmark ditches located to the north-west of Plot 2b (**NHER 51973**) which are on a different alignment to, and appear to predate, a more extensive arrangement of north to south aligned enclosure

ditches of probable Late Iron Age and/or Romano-British date (see below). Equally, the cropmark of a large three-sided rectilinear enclosure (**NHER 52037**) forming part of a broader set of cropmarks within and adjacent to the eastern edge of the Broadland Gate Development Area (**NHER 52038; 49758**) was initially identified as probably being of Late Iron Age or Romano-British date, but subsequent trial trenching and excavation carried out as part of the NNDR and Postwick Hub investigations recovered only a small quantity of prehistoric finds from its ditches, whilst a nearby pit produced a fairly large assemblage of Middle Bronze Age pottery. Excavation in this area also revealed a large number of pits, most of which were undated but which included a small number associated with Bronze Age/Early Iron Age pottery.

Late Iron Age and Roman

- 1.3.6 As noted above, many of the cropmark features recorded within and immediately adjacent to the Broadland Gate development area are suggested to be of Late Iron Age to Roman date and numerous finds of Roman date, including pottery and metalwork, have been recovered during surface collection and metal detecting in the area. The densest and most coherent group of cropmarks belong to what appear to represent a series of rectilinear enclosures and boundaries located to the north-east of the Broadland Gate development (**NHER 51973**), and excavations carried out just to the north of these enclosures in the 1990s revealed a number of 2nd century Romano-British pottery kilns set within further ditched enclosures/fields (**NHER 31108**). To the south, the development area itself sits within a large area where a set of more dispersed, fragmentary cropmark features have been recorded (**NHER 52038**). These include lengths of possible trackway ditches and field boundaries which may be contemporary with the enclosure complex to the north-east (**NHER 49757, 52039**) and, as discussed below (Previous Work), significant Roman remains have been uncovered during earlier phases of work directly associated with the Broadland Gate development.

Anglo-Saxon

- 1.3.7 To the southeast of the site development, the cropmarks of a cluster of three pit-like features (**NHER 52045**) are visible on aerial photographs within the general area of cropmarks recorded under **NHER 52038**. Whilst it is possible that these cropmarks are derived from natural features, it has been suggested that they are remains of Saxon sunken-featured buildings.

Medieval and post-medieval

- 1.3.8 During the medieval period, the site lay on the southern edge of Mousehold Heath, lying roughly equidistant between the historic villages of Great Plumstead and Postwick – located approximately 1.5km to the north and south respectively. Extensive cropmarks of ditched boundaries recorded to the north-east of the site are thought to be largely of medieval to post-medieval date (**NHER 52213**). These include a set of small rectilinear enclosures laid out either side of Smee Lane (**NHER 51971**). An area covering the western end of these cropmarks was excavated as part of works carried out for the NNDR and revealed a series of medieval roadside plots associated

with evidence for settlement and industrial activity. Post-medieval remains in the area are mostly associated with nearby farmsteads, including Heath Farm to the south and Smea Farm to the north-east.

Previous work

- 1.3.9 As set out in Section 1.1, the work described here took place as part of a wider, ongoing, scheme work of archaeological mitigatory work associated with the development of Broadland Gate (Fig. 3). To date, this has included several programmes of trial trenching (ENF143381, ENF143385, ENF146492, ENF147068, ENF148865, ENF148863, ENF148932), watching briefs/monitoring works (ENF14338) and area excavations (ENF147241; ENF150324).
- 1.3.10 Most relevant to the excavations described here are the results of work immediately to the west (ENF148932, ENF150324) and southeast (ENF147068, ENF 147241) of Plot 2b. Details of the trial trenching and excavation to the west, in Plot 2a, were not available at the time of writing, but are noted elsewhere to have revealed Romano-British features relating to the early to mid-2nd century AD (Birks 2020a, 28). The trenching and excavation to the south-east, meanwhile, revealed significant Mid-Late Roman remains (Birks 2020b), with two rows of substantial postholes probably representing the remains of a north-south aligned three bayed aisled building/barn, located immediately adjacent to the south-east corner of the Plot 2b excavations (see Fig. 4). Slightly further to the south, a small rectilinear enclosure ditch and a number of pits were excavated. The probable aisled building was associated with significant charred plant remains, including seeds of flax and – extremely unusually – gold-of-pleasure (*Camelina sativa*), a crop used for oil production which is very rarely attested in Roman Britain.
- 1.3.11 The evaluation of Plot 2b itself was carried out in June 2020 and entailed the excavation of five trenches (ENF148863; Birks 2020a). These revealed Romano-British remains, clearly associated with those previously revealed by the excavation to the south-east, including ditches and the remains of a post-built building. Associated finds were mostly of mid-3rd century date, but with earlier material suggesting activity may have begun in the mid/late-1st to mid-2nd century AD. Some, limited, activity during the medieval and post-medieval periods was indicated through the recovery of unstratified finds.

2 EXCAVATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The project aims and objectives, as set out in the WSI (Moan 2021) were as follows:

- To determine or confirm the general nature of any remains present.
- To determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.
- To investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed.
- To place any archaeological features in their local, regional and national archaeological context.

2.2 Site Specific Research Objectives

2.2.1 Based on the results of the evaluation and the recommendations of the brief, more specific aims and research questions were formulated as follows:

- To aid in a better understanding of the mid-to-late Romano-British farmstead
- To provide further information on the form and function of possible Romano-British post-built structures.
- To find any evidence for an Iron Age antecedent to the Romano-British activity.

2.3 Regional Research Aims

2.3.1 The site-specific objectives were devised in the context of, and aimed to contribute to, the goals of the Regional Research Frameworks relevant to this area:

- Glazebrook J. (1997). *Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment*. East Anglian Archaeology Occasional Papers 3.
- Brown, N. & Glazebrook, J. (2000). *Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy*. East Anglian Archaeology Occasional Papers 8.
- Medlycott, M. (2011). *Research and Archaeology Revisited: A Revised Framework for the East of England*. East Anglian Archaeology Occasional Papers 24.
- East of England Research Framework online resource (available at <https://researchframeworks.org/eoe/>)

2.4 Fieldwork Methodology

2.4.1 The methodology used followed that outlined in the brief (Hickling 2021) and detailed in the Written Scheme of Investigation (Moan 2021).

- 2.4.2 Machine excavation was carried out by a 24 tonne 360 tracked excavator using a 2m wide flat-bladed ditching bucket under constant supervision of a suitably qualified and experienced archaeologist.
- 2.4.3 Spoil, exposed surfaces and features were scanned with a metal detector. All metal-detected and hand-collected finds were retained for inspection, other than those which were obviously modern.
- 2.4.4 All archaeological features and deposits were recorded using OA's pro-forma sheets. Trench locations, plans and sections were recorded at appropriate scales and colour and monochrome photographs were taken of all relevant features and deposits.
- 2.4.5 The site was surveyed with a survey-grade differential GPS (Leica GS07) fitted with "smartnet" technology with an accuracy of 5mm horizontal and 10mm vertical.
- 2.4.6 Samples were taken from a wide variety of features across the site, including ditches, pits, postholes and corn dryers.

3 RESULTS

3.1 Introduction and presentation of results

- 3.1.1 The results of the excavation are presented below and include a stratigraphic description of the archaeological remains. A full list of all the features and deposits recorded during the excavation can be found in Appendix A, which includes details of their phasing and feature groups. Feature/intervention (cut) numbers in the text are rendered in **bold** type through the report. The presence of finds and environmental remains are noted in the stratigraphic descriptions below and are summarised at the end of the results section. Full specialist reports are presented in Appendices B and C.
- 3.1.2 The results of the trial trenching are fully reported elsewhere (Birks 2020a), but descriptions of the features found during the trenching have been included in the results text below, and they are shown on the phased plan (Fig. 4). Likewise, the finds and environmental evidence recovered during the evaluation have not been re-examined or included in the specialist analyses undertaken on the material from the excavation phase, but they are referred to in the relevant finds/environmental summaries (Section 3.7).
- 3.1.3 Features are described by phase and features with multiple interventions have been grouped are referred to by the lowest relevant intervention (cut) numbers assigned to each feature, which are highlighted on the site plan. Context numbers relating to features identified and excavated during the evaluation phase are denoted by the suffix 'E'. A phased plan of the features recorded during the evaluation and excavation phases is provided in Fig. 4, which also shows the location of features uncovered immediately adjacent to the southern edge of Plot 2b during excavations in 2019 (Birks 2020b, ENF 147241). Section drawings are provided in in Figs 5 and 6 and a selection of photographs are reproduced in Plates 1-9.
- 3.1.4 The excavation and evaluation revealed features from two phases of activity covering the Roman and post-medieval periods. The vast majority of features belong to the Roman period, Phase 1, which has been divided into two sub-phases (Phases 1.1-1.2), based largely on pottery dating and spatial relationships (see Section 4 for further discussion of the phasing/chronology of the Roman remains).
- 3.1.5 The phases are listed below:
- Period 1: Roman (1st to 4th century AD)
 - Phase 1.1: Early Roman (1st to 2nd century AD)
 - Phase 1.2: Middle-Late Roman (late 2nd to 4th century AD)
 - Period 2: Post-medieval (AD 1540-1901)
 - Unphased and natural features

3.2 General soils and ground conditions

- 3.2.1 The natural geology of mid brown orange silty sand was overlain by a mid orange-yellow brown sandy silt subsoil, typically measuring between 0.15m and 0.2m thick.

This was in turn overlain by a mid grey brown sandy silt topsoil measuring between 0.20m to 0.35m thick.

- 3.2.2 Ground conditions throughout the excavation were generally good, and the site remained dry throughout. Archaeological features, where present, were easy to identify against the underlying natural geology.

3.3 Phase 1.1: Early Roman (1st to 2nd century AD)

- 3.3.1 Features attributed to the earliest phase of Roman activity consisted of boundary ditches, pits and postholes revealed across the site (Fig. 4). A small assemblage of Early Roman pottery was recovered from these features, the majority from the ditches. A number of poorly dated pits and postholes have also been attributed to this period, based on the nature of their fills and stratigraphic and spatial relationships.

Ditch 4

- 3.3.2 Ditch **4** was located in the northern part of the site on an east to west alignment. It was cut by post-medieval ditch **25** (Period 2). Ditch **4** (=17=19=31=103E) measured between 1.2m to 1.58m wide and 0.3m to 0.42m deep, with steep sides and a slightly concave base (Fig. 6, Sections 1, 6, 7, 12; Plate 1).
- 3.3.3 In the majority of cases this ditch contained two fills, with the exception of interventions **17** and **31** which contained single fills. The basal fill (5=18=20=32=105E), consisted of a mid yellow brown silty sand and measured between 0.18m to 0.24m thick. These deposits produced twelve sherds of Roman pottery (late 1st century to 4th century AD). Overlying this was a secondary fill (6=21=104E), which measured between 0.1m to 0.18m thick and consisted of mid grey brown silty sand with charcoal inclusions that contained eighteen sherds of Roman pottery (late 1st century to 4th century AD) and two pieces of ceramic building material (CBM), one fragment of tegula and one fragment of imbrex.
- 3.3.4 One bulk sample was taken from the fills of the ditch, but it yielded no remains aside from a small volume of charcoal.

Ditch 7

- 3.3.5 Ditch **7** was located approximately 28m to the south of ditch **4** (Plate 2). It was formed by a linear ditch extending from the western edge of excavation for 7m before terminating. Ditch **7** (=314E) measured between 0.9m and 1.58m wide and 0.14m and 0.19m deep with gently sloping sides and a concave base (Fig. 6, Section 2). The single fill of intervention **8** consisted of a grey brown silty sand with charcoal inclusions that contained four sherds of Early-Middle Roman pottery (late 1st century to 3rd/4th century AD). Intervention **314E** was excavated during the evaluation (Birks 2020a) and contained a single fill (315E) which produced an almost complete Roman pottery vessel and fragment of Roman roof tile. One bulk sample was taken from the fills of the ditch but did not yield any remains aside from small volumes of charcoal.

Ditch 62

- 3.3.6 Ditch **62** was located approximately 24m to the south of ditch **7**. This was a linear feature which extended for 10m on west to east alignment from the western edge of

excavation before terminating. Ditch **62** (=74=405E) measured between 0.36m to 0.56m wide and 0.06m to 0.11m deep, with gently sloping sides and a concave base (Fig. 6, Sections 23, 29). Its single fill 63 (=75=406E) consisted of an orange brown silty sand that produced no finds.

Ditch 85

- 3.3.7 Ditch **85** was located at the southeast corner of the excavation area and was formed by a curvilinear ditch which extended for 5.5m on an east to west alignment from the eastern edge of excavation before terminating. Ditch **85** (=87) measured 1.6m wide and between 0.16m to 0.26m deep with gently sloping sides and a slightly concave/flat base (Fig. 6, Section 28; Fig. 7, Section 31). Its single fill (86=88) consisted of a light orange-grey brown silty sand that produced no finds.

Postholes

- 3.3.8 Fourteen postholes identified across the excavation area have been attributed to this phase, including several excavated during the evaluation. The majority of the postholes were located immediately to the east of ditch terminus **7**. They produced few finds and the function of many of them remains unknown but they were probably related to the field boundary system as they are located close or next to ditches **4** and **7**. A small four-post structure revealed by the evaluation work is described separately below.
- 3.3.9 To the south of ditch terminus **7**, postholes **9** and **15** were circular in plan and measured between 0.32m and 0.38m in diameter and were up to 0.05m deep with gently sloping sides and slightly concave bases (Fig. 6, Sections 2, 5). Their single fills (10 and 16) consisted of a mid brown silty sands that produced no finds.
- 3.3.10 Postholes **11** and **13** were located within the cut of ditch terminus **7** and were circular in plan (Plate 2). No relationship was established between them and the ditch as they contained similar fills. They measured between 0.48m and 1m in diameter and 0.1m to 0.14m deep, with gently sloping sides and slightly concave bases (Fig. 6, Sections 3, 4). Their single fills (12 and 14) consisted of a mid grey brown silty sands that produced no finds. An environmental sample of fill 12 (posthole **11**) yielded a small volume of charcoal and a small number of emmer or spelt wheat grains.
- 3.3.11 In the central part of the site, postholes **70** and **72** were sub-circular in plan and measured 0.6m in diameter and between 0.16m to 0.3m deep, with steep sides and concave bases (Fig. 6, Sections 26, 27). Their single fills (71 and 73) consisted of grey brown silty sands that produced no finds.
- 3.3.12 Postholes **50** and **64** were located in the northern part of the site, adjacent to ditch **4**, and were circular in plan. Posthole **50** measured 0.72m in diameter and 0.23m deep with steep sides and a concave base (Fig. 6, Section 18). Its single fill (51) consisted of a mid orange brown silty sand that produced no finds. Posthole **64** measured 0.47m in diameter and 0.23m deep with steep sides and a concave base (Fig. 6 Section 24). Its single fill (65) consisted of a grey brown silty sand that produced no finds.
- 3.3.13 In the south-eastern part of the site, posthole **89** was circular in plan and measured 0.68m in diameter and 0.24m deep with steep sides and a concave base (Fig. 7, Section 32). Its single fill (90) consisted of a mid grey brown silty sand.

Post-built structure

- 3.3.14 During the evaluation phase of work, a group of four postholes were identified in Trench 7, 6m east of ditch terminus **7** (fully described and reported on in Birks 2020a). These postholes formed a structure that was square in plan and measured c. 2.1-2.25m east to west and c. 2.5-2.53m north to south (internally). The postholes themselves (**308E**, **311E**, **316E** and **319E**) were sub-circular in plan and measured between 0.7m to 1m in diameter and 0.15m to 0.2m deep, with steep sides and flat bases. One of these features had cut through a possible earlier posthole (**324E**). Each of the four postholes contained two fills. The basal fills (309E, 312E, 317E and 320E) measured between 0.14m to 0.2m thick and consisted of a mid grey brown sandy silts with frequent flint cobbles. It appeared that flints had formed a packing on the north side of the postholes and presumably the post had been removed as the flints had then slumped into the base of the feature. Overlying these were upper fills (310E, 313E, 318E, 321E) which measured between 0.12m to 0.24m thick and consisted of mid grey brown sandy silts. Fill 313E produced one sherd of Roman pottery (late 1st century to 4th century AD). Two environmental samples of fills 310E and 313E (postholes **309** and **311**) yielded a small volume of charcoal, a moderate volume of charred cereal grains and a small volume of molluscs.
- 3.3.15 Possible posthole **322E** was different in character to postholes (**308E**, **311E**, **316E**, **319E**) and lay to the southeast of these features. It was sub-circular in plan and measured 0.53 in diameter and 0.17m deep with steep sides and a concave base and was filled by a single fill (323E) which produced no finds.

Pits

- 3.3.16 Sixteen circular/sub-circular pits across the site have been attributed to this phase, including several excavated during the evaluation (Birks 2020a). The majority of these pits were located in the north of the excavation area and adjacent to enclosure ditch **4**. They produced few finds and their function remains unknown.
- 3.3.17 In the north-western corner of the site, pit **48** measured 2.37m long, 1.2m wide and 0.53m deep with steep sides and a concave base (Fig. 6, Section 17). Its single fill (49) consisted of a mid orange brown silty sand that produced no finds.
- 3.3.18 Roughly 10m to the south, pit **58** was sub-circular in plan and measured 3.01m long, 1.6m wide and 0.27m deep with steep sides and a slightly concave base (Fig. 6, Section 20). Its single fill (59) consisted of a mid orange brown silty sand that produced no finds.
- 3.3.19 Close to pit **58**, pit **56** measured 1.31m long, 0.6m wide and 0.09m deep with steep sides and a concave base (Fig. 6, Section 19). Its single fill (57) consisted of a light grey brown silty sand that produced one sherd of Early Roman pottery (late 1st century to 4th century AD).
- 3.3.20 To the northeast of this, and close to the intersection of enclosure ditch **4** and boundary ditch **25**, were two pits (**23** and **27**). Pit **23** measured 1.16m in diameter and 0.29m deep with steep sides and a concave base (Fig. 6, Section 8; Plate 3). Its single fill (24) consisted of a mid grey brown silty sand that produced two sherds of Early Roman pottery (late 1st century to 4th century AD). Pit **27** measured 0.4m in diameter

- and 0.08m deep with gently sloping sides and a slightly concave base (Fig. 6, Section 9). Its single fill (28) consisted of a mid red brown clayey sand. An environmental sample taken from this fill was devoid of plant remains or charcoal.
- 3.3.21 Approximately 15m to the east was a large, shallow, pit (**54**) which measured 2.9m in diameter and 0.18m deep with gently sloping sides and a flat base (Fig. 6, Section 15). Its single fill (55) consisted of a light orange brown silty sand that produced no finds. Cut into the eastern edge of this feature was a smaller pit (**52**) which measured 1m in diameter and 0.22m deep with gently sloping sides and a concave base (Fig. 6, Section 15). Its single fill (53) consisted of a dark grey brown silty sand that contained no finds. An environmental sample taken from the fill yielded a small number of cereal grains and a small volume of charcoal.
- 3.3.22 Pit **66** was located approximately 15m south of pit **23** and measured 0.67 in diameter and 0.19m deep with gently sloping sides and a concave base (Fig. 6, Section 25). Its single fill (67) consisted of a mid grey brown silty sand that produced no finds.
- 3.3.23 To the south-west, some 3m north of ditch terminus **7**, pit **60** measured 0.95m in diameter and 0.14m deep, with steep sides and a concave base (Fig. 6, Section 21). Its single fill (61) consisted of a light grey brown silty sand that produced no finds.
- 3.3.24 To the east of this, close to the eastern edge of excavation, were a further three pits. Pit **108** measured 1.14m in diameter and 0.21m deep with gently sloping sides and a concave base (Fig. 7, Section 37; Plate 4). Its single fill (109) consisted of a mid grey brown silty sand that produced no finds. This feature was cut on its other edge by a second pit, pit **106**, which measured 0.53m in diameter and 0.14m deep with gently sloping sides and a concave base (Fig. 7, Section 37). Its single fill (107) consisted of a mid brown grey silty sand that produced no finds. Approximately 2m to the south of this pair of features was pit **110**, which measured 0.82m wide and 0.15m deep with gently sloping sides and a concave base (Fig. 7, Section 38). Its single fill (111) consisted of a mid grey brown silty sand that produced no finds.
- 3.3.25 During the evaluation, intercutting pits **106E** and **109E** were recorded in the middle of Trench 1, subsequently incorporated into the north-western part of the excavation area (Birks 2020a). Pit **106E** measured 1.28m by 1.18m wide and 0.26m deep with gently sloping sides and a slightly concave base and contained two fills. The basal fill (108E) measured 0.12m thick and consisted of a mottled pale grey white and a mid red brown sandy silt, overlying this was fill 107E which measured 0.13m thick and consisted of a mid grey brown sandy silt that produced one fragment of Roman ceramic building material (mid-1st century to 4th century AD). Pit **109E** measured 1.32m by 0.89m wide and 0.23m deep with gently sloping sides and a concave base and contained two fills. The basal fill (111E) measured 0.12m thick and consisted of a mottled pale grey white and a mid red brown sandy silt, overlying this was fill 110E which measured 0.13m thick and consisted of a mid grey brown sandy silt that produced no finds. The stratigraphic relationship between these two features was unclear as they contained almost identical fills.
- 3.3.26 Two further intercutting pits were uncovered at the eastern end of Trench 3, in the central part of the excavation area (Birks 2020a). Pit **303E** measured 2.6m by 0.5m wide and 0.31m deep with steep sides and a slightly concave base. Its single fill (304E)

consisted of a pale yellow brown sandy silt that produced two small prehistoric flint flakes. It was tentatively dated to the Roman period as it was located within an area of Early Roman features. It was cut by pit **305E**, which measured 0.90m in diameter and 0.6m deep and contained two fills. The basal fill (307E) measured 0.16m thick and consisted of a mid grey brown sandy silt, overlying this was fill 306E which measured 0.45m thick and consisted of a mid yellow brown sandy silt. These two fills produced no finds.

3.4 Phase 1.2: Mid to Late Roman (late 2nd to 4th century AD)

3.4.1 Features attributed to Phase 1.2 were represented by several corn dryers and a well. Although the depth of the well prevented the excavation of its basal fills, its upper backfill deposits produced a large assemblage of finds including mid-to-late Roman pottery, several fragments of ceramic building and fired clay, metalwork and an antler spindle whorl.

Corn dryers

3.4.2 Three corn dryers (**22**, **39** and **84**) were revealed on the site, with another possible example (**105**) being less confidently identified as it had been heavily truncated by ploughing (Fig. 5). The three definite corn dryers were all of very similar morphology – oval in plan with a deeper, bowl-shaped cut at one end with traces of *in situ* burning (the stokehole) from which extended a shallower, elongated, flue.

3.4.3 Two of the corn dryers (**22** and **39**) were located in the western part of the excavation area, some 5m south of ditch terminus **7** (Plate 5). Corn dryer **22** (= **38**) was oval-shaped in plan and measured 2.03m long, 1.04m wide deep with steeply sloping sides and was deeper at its western end (0.34m deep), with a shallower elongated ‘flue’ to the east (Fig. 6, Section 10). No evidence of a remaining super-structure was found. Its basal fill (37) was restricted to the deeper western end of the feature and consisted of a 0.1m thick dark red (heat-affected) sand with no inclusions. This was overlain by a very dark brown silty sand with abundant charcoal and occasional flint inclusions (36) which again was restricted to the deeper part of the cut and measured 0.12m thick. Recovered from this fill was one sherd of mid-to-late Roman pottery (mid-2nd century to 4th century AD) and three fragments of fired clay (114g). An environmental sample taken of this fill contained abundant charred grains including barley and wheat grains and a small volume of weed seeds including corncockle, goosefoots, bromes and docks. In places this deposit was overlain by several very thin patches/lenses of greenish grey pink red clay (34 and 35), and was sealed by a more extensive deposit of mid grey silty sand (33) which also filled the shallower, eastern end of the cut, and which produced one sherd of late Roman pottery (4th century AD) and five fragments of fired clay.

3.4.4 Roughly 2m to the south, corn dryer **39** (= **78**) measured 1.88m long, 0.91m wide and up to 0.38m deep and had a very similar form (and fill sequence) to corn dryer **22**, being oval in plan with a deeper, bowl-shaped, western end (Fig. 6, Section 16). No evidence of a remaining superstructure was found. Its basal fill (83) measured 0.11m thick and consisted of a dark red sand with no inclusions. This was overlain by several thin lenses of light grey green and mid pink/red clays (82 and 81) which measured up

to 0.07m thick. These were in turn overlain by a very dark brown silty sand with abundant charcoal and occasional flint inclusions (80) which measured 0.14m thick. Recovered from this fill were four sherds of mid-to-late Roman pottery (mid-2nd century to 4th century AD) and six fragments of fired clay (241g). An environmental sample taken of this fill contained abundant charred grains including cereals (barley, wheat grain and oat), weed seeds (bromes, goosefoots, black-bindweed, grasses) and a charred fragment of a possible fruit such as a crab apple. The uppermost fill (79) was 0.2m thick and consisted of a mid grey silty sand with occasional charcoal that produced fourteen fragments (141g) of fired clay.

- 3.4.5 A third corn dryer (**84=99**) was located some distance from this pair of corn dryers, in the southeast corner of the excavation area, 3m to the east of well **95** (see below). It was sub-oval in plan and measured 2.22m long, 1m wide and up to 0.27m deep (Fig. 7, Section 36; Plate 6). Although it had a somewhat irregular base, it shared a similar form to the pair of corn dryers described above in terms of having a deeper cut, with a more complex sequence of fills, at one end (here the southern end). No evidence of a remaining superstructure was found. The basal fill (102) measured 0.14m thick and consisted of a dark red silty sand with occasional flint inclusions. This was in turn overlain by a very dark brown silty sand with abundant charcoal (101) which measured 0.15m thick and which contained lenses of mid pink red and mid grey green clay (103 and 104). Fill 101 produced one sherd of late Roman pottery (4th century AD) and two fragments of fired clay (9g). An environmental sample taken from this fill contained a large assemblage of charred barley grains including wheat and oat grains and a single seed of black-bindweed. The uppermost fill of the feature (100) was 0.14m thick and consisted of a light grey brown silty sand with occasional charcoal.
- 3.4.6 Approximately 13m to the southeast of corn dryers **22** and **39** and 20m to the west of corn dryer **84**, a further, possible, corn dryer was revealed (**76=105**). It had an irregular sub-circular shape in plan, as it was heavily truncated on its western side. It measured 2m long, 1m wide and 0.22m deep with gently sloping sides and a concave base (Fig 5, Section 30). Only one fill was recorded infilling this feature, which consisted of a dark grey brown silty sand with abundant charcoal, small fragments of chalk, small flint inclusions and a few patches/lenses of grey and red clay. Ten sherds of mid to late Roman pottery (mid-2nd century to 4th century AD) and nine fragments of fired clay were recovered from this feature. Also present was a worked stone artefact - a pocket whetstone which probably dates to the 2nd or 3rd century AD. An environmental sample taken of this feature's fill contained a small volume of charred grains including barley, emmer and spelt wheat grains.

Well

- 3.4.7 Located in the southeast corner of the site was a large well, **95** (Plates 7 and 8). This feature had been investigated during the trial trenching and it was interpreted as a large pit-like feature (pit **503E**) measured 0.98m deep containing two fills (Birks 2020a). The area excavation established that it was not a pit, but a well. This feature measured up to 4.8m wide, with steep sides which became vertical in the lower part of the excavated profile (Fig. 7, Section 35). The base was not excavated due to the excessive depth of the feature and subsequent augering of the well reached a depth

of 4.5m from the stripped surface of the site without the base of the feature being reached (Plate 9).

- 3.4.8 The lowest investigated fill of the well (96) was recorded through excavation and augering and measured over 4.22m thick. It consisted of a light yellowish brown silty sand with occasional flint inclusions that produced three sherds of mid-to-late Roman pottery (mid-2nd to 4th century AD). An environmental sample taken of this fill yielded a small volume of charred cereal grains. This was overlain by a very dark brown clayey sand with abundant charcoal and occasional flint inclusions (97), which measured 0.5m thick. This fill produced seventy-three sherds of mid-to-late Roman pottery (mid-2nd century to 4th century AD), one fragment of fired clay and two fragments of ceramic building material. Also present was a mid-to-late Roman antler spindle whorl (3rd or 4th century AD). An environmental sample taken from this fill contained a small volume of charred wheat grains. This was in turn overlain by a mid grey brown silty sand with occasional charcoal and occasional flint inclusions (98), which measured 0.8m thick. The fill produced one hundred and eighty-three sherds of mid-to-late Roman pottery (mid 2nd-century to 4th century AD), three fragments of fired clay and five fragments of ceramic building material. A possible fragment of copper-alloy double strand bracelet (SF 2) was also recovered as well as a possible iron chisel and two iron nails. This deposit was sealed by a mid yellowish brown clayey sand with occasional charcoal and occasional flint inclusions (112) that produced no finds. The uppermost fill (113) was 0.7m thick and consisted of a dark grey brown silty sand with moderate charcoal and occasional flint inclusions that produced one hundred and thirty-four sherds of mid-to-late Roman pottery (mid-2nd century to 4th century AD), eight fragments of fired clay and fourteen ceramic building material. Also present was part of a copper-alloy half-bracelet (SF 1). The environmental sample taken of the fill contained charred hulled wheat grains with a single glume base of spelt wheat and occasional seed of flax, cleaver, grasses, clover/medick, rush and dock.

3.5 Period 2: Post-medieval (AD 1540-1901)

Boundary ditch 25

- 3.5.1 Boundary ditch **25** traversed the site on a north to south alignment and extended beyond the northern and the southern limits of the excavation area, cutting Period 1 ditch **4**. Ditch **25** (=29=40=46=68) measured between 1.2m to 1.8m wide and 0.34m to 0.43m deep with steep sides and a concave base (Fig. 6, Sections 11, 12, 13, 14, 22). Its single fill 26 (=30=41=47=69) consisted of a mid to dark grey brown silty sand that produced no finds. One bulk sample was taken from the fill of this ditch, which yielded a small volume of barley grains and spelt wheat grains. No relationship has been recorded with ditch **93** as the ground reading was not obvious due to ground disturbances caused by the removal of a large tree.

3.6 Unphased features

- 3.6.1 A small number of features within the excavation area remain unphased due to a lack of finds and clear stratigraphic or spatial relationships to dated features on the site. They were all located in the southwest corner of the excavation area and recorded as possible ditches/pits but they were all poorly defined and irregular and could equally

be interpreted as localised patches of slightly deeper subsoil rather than cut features. Also, this part of the site had been disturbed by previous work related to the roundabout located to the south of the site and the removal of a large tree.

- 3.6.2 Possible ditch **42** was aligned northwest to southeast and measured over 1.22m wide and 0.27m deep with steep sides and a slightly concave base (Fig. 7, Section 39). Its single fill (43) consisted of a light yellow brown silty sand. It appeared to have been cut on its northern side by possible feature **44**, which had an irregular shape in plan and measured over 2.22m wide and 0.18m deep with gently sloping sides and an irregular base. Its single fill (45) was a light yellow brown silty sand.
- 3.6.3 Roughly 2m to the north, possible ditch **91** was aligned northwest to southeast and measured 1.26m wide and 0.1m deep with gently sloping sides and an irregular base (Fig. 7, Section 33). Its single fill (92) consisted of light yellow brown silty sand, which in one place appeared to have been cut/disturbed by an unexcavated modern pit which containing plastic in its fill. To the north of this, possible ditch **93** was aligned west to east and measured over 0.37m wide and 0.05m deep with gently sloping sides and an irregular base (Fig. 7, Section 34). Its single fill (94) was a light yellow brown silty sand. No relationship with Ditch **25** was established. Indeed, it was impossible to dig a slot at this place due to the ground disturbance caused by the removal of a large tree which made difficult to see clearly if the features were present or not. Also, the fact that ditch **93** was only 0.05m deep could be interpreted as remnant subsoil rather than a ditch cut.

3.7 Finds and environmental summary

Roman pottery (App. B.1; Fig. 8)

- 3.7.1 A relatively large assemblage of 479 sherds (10854g) of Roman pottery was recovered, representing a minimum of 153 individual vessels. A further 199 sherds of Roman pottery (3370g, minimum 56 vessels) were recovered during the trial trenching of Plot 2b and are reported on elsewhere (Lyons in Birks 2020a, 17-20). The majority of the Roman pottery was recovered from a well, ditches, pits and corn dryers. The composition of the assemblage suggests that a small proportion of the pottery relates to an Early Roman phase of activity (from ditches and pits) with a larger amount relating to activity from the late 2nd century through to the 4th century AD. It consists largely of locally made utilitarian coarseware flagons, jars, dishes and storage jars but includes some imports. This assemblage reflects a fairly affluent, well-connected agrarian community that was established in the Early Roman period and prospered between the 2nd and 3rd century AD, before declining during the 4th century AD.

Ceramic building material (App. B.2; Fig. 10)

- 3.7.2 A total of 23 pieces (2.91kg) of tile and brick were recovered from mid-to-late Roman well **95** and ditches. A further two fragments (31g) of Roman tile (*tegula*) was recovered during the trial trenching of Plot 2b and is reported on in the trial trench report (Lyons 2019 in Birks 2020a, 20-21). The material from the excavation consists for the most part of *tegula* roof tile, with smaller amounts of *imbrex* roof tile, a single piece of potential *pila* tile/brick and a possible piece of box-flue tile.

Fired clay (App. B.3)

- 3.7.3 A total of 51 pieces of fired clay weighing 1.25kg were collected during the excavation, largely from mid-to-late Roman corn dryers. Most of this was poorly diagnostic but some pieces, from well **95**, were composed of fragmented loomweights.

Worked stone (App. B.4)

- 3.7.4 Just one item of worked stone was recovered from possible mid-to-late Roman corn dryer **105**. It consists of two pieces of worked stone weighing 52g forming a rod-shaped pocket whetstone. Two further whetstones were recovered during the trial trenching of Plot 2b, these both derived from the fill of well 95 ('pit' 505E) and are reported on in the trial trench report (Lyons in Birks 2020a, 21-22).

Worked antler (App. B.5; Fig. 9)

- 3.7.5 A spindle whorl was recovered from mid-to-late Roman well **95**. It has been cut from the burr area of a red deer antler. It has a stepped conical shape with a central perforation. The weight and form of this spindle whorl suggests that it was probably used to spin wool, rather than linen.

Metalwork (App. B.6)

- 3.7.6 An assemblage of five metal artefacts was recovered from mid-to-late Roman well **95**, comprising two copper-alloy (CuA) and three iron (Fe) items. The two copper-alloy objects are possible incomplete bracelets, two of these iron objects are nails and one could be part of a chisel. A further nine items of metalwork were recovered during the trial trenching of Plot 2b (copper alloy, lead and iron and silver; largely from unstratified contexts). Reported on in the trial trench report (Silwood in Birks 2020a, 22-23), these included a 3rd century Roman coin (a copper alloy radiate), a small iron knife blade and a silver coin - probably a shilling of Elizabeth I (AD 1558-1603).

Environmental remains (App. C.1)

- 3.7.7 A total of thirteen bulk samples were taken from a variety of features. Most of the samples contain a "background scatter" of charred grain, most likely representing material that has accumulated in negative features. Most significant assemblages of charred plant remains are present in samples from three corn dryers (**22**, **39** and **84**) and well **95** including charred cereal grains with very little chaff and occasional weed seeds. The character of the charred remains is consistent with those recovered from five bulk samples taken during the trial trenching of Plot 2b, which are reported on (Summers in Birks 2020a, 23-25).

Animal bone (App. C.2)

- 3.7.8 A total of 5.9kg of animal bone recovered from the mid-to-late Roman well **95** included 52 elements which could be identified to species. It was dominated by cattle, with red deer, and sheep/goat, alongside single elements of roe deer, horse, domestic fowl and pig. A further nine small fragments of burnt bone (9g), perhaps of cattle or another

large mammal, were recovered during the trial trenching of Plot 2b and are reported on in the trial trench report (Curl in Birks 2020a, 21-22).

4 DISCUSSION

4.1 Introduction

- 4.1.1 The excavation of Plot 2b revealed evidence for activity dating to the Roman and post-medieval periods. The Roman remains, including enclosure/field boundaries, a well, corn dryers and a post-built structure (the latter recorded during trial trenching), almost certainly relate to activity taking place within the holdings of a significant Romano-British farmstead, other elements of which have been identified by previous investigations immediately to the south and west of the excavation (Section 1.3, above).
- 4.1.2 A post-medieval boundary ditch was also revealed, indicative of the enclosure of common land on Mousehold Heath during the post-medieval to early modern periods. Finally, a series of undated, possible, features identified at the southern end of site were extremely shallow and poorly defined and their archaeological status is uncertain. If they do represent genuine features, it is difficult to suggest a date for them as they are not aligned with the better dated (Roman or post-medieval) field systems in the excavation area.
- 4.1.3 Given that the excavation represents one part of a larger, ongoing, programme of archaeological works associated with the Broadland Gate development, the discussion presented here is inevitably provisional and, as set out below (Section 5), it is anticipated that a final, fuller, discussion of the site will be incorporated into a publication drawing together the results of fieldwork in the wider development area.

4.2 Roman (Period 1)

- 4.2.1 The earliest phase of Roman activity on the site can be dated to the later 1st or early 2nd century AD, when the series of east to west aligned ditches identified across the site were established. The pottery assemblage recovered from these features is small (34 sherds) but the presence of sherds from two South Gaulish Samian vessels, combined with the range of coarseware forms, strongly suggest they were in use prior to, and had probably largely infilled by, the middle of the 2nd century AD. It seems very likely, however, that the boundaries represented by these ditches remained in use, perhaps in the form of fenced/hedged earthworks, throughout the later phases of the Roman activity in this area, with features attributed to Phases 1.2 sharing a common alignment with these earlier features suggesting they were laid out within these pre-existing plots/fields.
- 4.2.2 Although a relatively large number of other features have been attributed to Phase 1.1, including discrete pits and postholes and the remains of the post-built structure (**308E**, **311E**, **316E** and **319E**) recorded during the trial trenching, their dating is much less secure. Only three of the Phase 1.1 pits (**23**, **56** and **106E**) produced dateable finds, in the form of small quantities of coarseware pottery or CBM only broadly dated to the 1st to 4th centuries AD, and the posthole structure also produced only a single tiny sherd (1g) of pottery of 1st to 4th century date (Birks 2020a 26). It is therefore equally likely that some of these features were actually in use during Phase 1.2, and were broadly contemporary with the corn dryers and the backfilling of well **95**, as well as

with the main phases of activity revealed by the excavation immediately to the south-east of Plot 2b (ENF147421), including the probable aisled building/barn immediately adjacent to the edge of excavation (see Section 1.3; Fig. 4) – which probably dates to the mid-3rd century AD (Birks 2020b, 49).

- 4.2.3 The ditched boundaries assigned to Phase 1.1 extended beyond the limits of the excavation, and the full extent and morphology of the boundary system to which they belong remains uncertain, although integration of the results of the excavation of Plot 2a, to the west, should allow a more detailed assessment in due course. The function of the majority of the pits and postholes is also uncertain, and none of the features recorded during the excavation phase appear to relate to recognisable structures analogous to the post-built structure revealed by the trial trenching (features **308E**, **311E**, **316E** and **319E**). This structure, fully reported in the trial trenching report (Birks 2020a), was marked by four substantial postholes defining an area measuring approximately 3m by 3m across, although it is possible that three much smaller features, one to the south recorded during the trial trenching (**322E**), and two subsequently revealed to the east during the excavation (**70** and **72**) represent additional elements of what was a single, larger, structure. Leaving this possibility aside, four-post structures of similar dimensions are a well-known element of Iron Age settlement architecture, in which context they are invariably interpreted as raised granaries (Gent 1983). The use of similar structures at Roman sites has been little discussed, but research carried out in the course of the *Roman Rural Settlement Project* has identified the presence, albeit fairly rarely, of well-dated examples of Roman date from sites across southern Britain (Smith *et al* 2016, 60; Lodwick 2017, 67-8). Elsewhere in Norfolk, excavations at Sedgeford revealed a somewhat larger four post structure, measuring some 4.5 by 6m, interpreted as a granary and associated with a substantial rectangular corn dryer dated to the 4th century AD (SHARP 2014, 61-63).
- 4.2.4 Activity on the site appears to have intensified at some point during the later 2nd and 3rd centuries AD, with evidence for agricultural processing in the form of three, possibly four, corn dryers, all located in the southern half of the site. The latest pottery recovered from the site (from corn dryer **38 (=22)**) was of 4th century date, and it seems that the site, and perhaps the wider farmstead, was abandoned at this time. Well **95** was probably in use during the same broad period, with its backfill deposits dated to the mid-3rd century AD, and as noted above, the substantial post-built structure uncovered just beyond the south-eastern edge of Plot 2b in 2019, within 10m of both well **95** and corn dryer **84**, also dates to the 3rd century AD (Birks 2020b).
- 4.2.5 At an early stage of excavation it was thought possible that some of the corn dryers may have represented pottery kilns, but the form of these features and the absence of kiln furniture or pottery wasters, coupled with the rich deposits of charred plant remains recovered from their backfills leaves little doubt that they instead represent simple 'long hearth' corn dryers, of a type well-known from Roman rural settlements and farmsteads (Lodwick 2017, 55-61) characterised by a bowl shaped stoke hole with signs of *in situ* burning at one end, leading to a shallower, elongated flue. Charred plant remains from the corn dryers were dominated by barley with smaller quantities of wheat and oat grains, alongside various weed seeds. Chaff was rare suggesting the

remains derived from processed (i.e. threshed) crops. As discussed by Fosberry (App. C.3), Romano-British corn dryers were evidently used for various stages/types of crop processing including parching and drying grains ahead of storage or milling and for heating malted grain. The predominance of barley in the samples from the corn dryers differs from the wheat dominated charred plant assemblages from the backfill of well **95** (see below), which could indicate an association with malting barley as part of beer production, but none of the barley grains showed traces of the germination characteristic of malted grain.

- 4.2.6 Notwithstanding the significance of the corn dryers and structural remains belonging to this phase, it was the upper fills of the well (**95**) uncovered in the south-east part of the site that produced the vast majority of Roman pottery recovered from the site, together with a range of other finds. Almost 10kg (425 sherds; 9743g) of pottery came from the well (not including material recovered during the trial trenching), and consisted mainly of good quality local utilitarian coarse ware vessels supplemented by smaller numbers of non-local fine table wares (App. B.1.). This character of the pottery assemblage, along with the other finds, such as the two copper alloy bracelets (App. B.6) suggest that the farmstead's core lay relatively close to the excavation area, and that this material represents refuse from a nearby, fairly affluent, domestic settlement.
- 4.2.7 The well fills also provide useful evidence for the economy of the site. The animal bone assemblage was small, but as is typical of the period, was dominated by cattle whilst charred plant remains were dominated by spelt wheat. Cultivation and processing of flax is also indicated by charred seeds of this species, and this complements the charred plant remains recovered from the postholes of the building excavated immediately to the south-east of well **95** in 2019, which produced relatively abundant flax seeds – although there was no evidence from the well for the extremely unusual presence of the oil yielding crop, gold-of-pleasure, recovered from this building (see Section 1.3, Summers in Birks 2020b). Craft activities taking place within the wider farmstead are also indicated by the antler spindle whorl (probably for spinning wool, see App. B.5) and by offcuts of red deer antler among the animal bone assemblage, whilst the use and maintenance of tools is evidence both by fragments of iron tools and by a pair of whetstones recovered from this feature during the trial trenching (Lyons in Birks 2020a, 21-22); and a third whetstone was recovered from the fill of possible corn dryer **76** (=105; App. B.4)

4.3 Post-medieval (Period 2)

- 4.3.1 Ditch **25** is the only feature from this excavation attributed to the post-medieval period. This ditch was possibly dug during the period of enclosure, when common land on Mousehold Heath was enclosed. The most probable function for it was as a field and roadside boundary ditch, as identified on the 1888 to 1913 OS map. This ditch ran along the “Field Farm” (the current site of Heath Farm) and probably formed a part of the previous farm access.

4.4 Significance

- 4.4.1 The excavations at Plot 2b revealed significant remains of Roman date within a broader area of Roman activity, probably representing a major farmstead, other parts of which

have been investigated by adjacent excavations. Activity within Plot 2b itself appears to largely relate to agricultural activities including the processing and storage of arable crops, but the rich assemblage of finds from the site suggest that it lay relatively close to an area of domestic settlement occupied by a fairly affluent household/community. When combined with the results of other investigations in the Broadland Gate development area, the results of the excavation have considerable potential to contribute to understandings of Roman rural settlement and economy in the region.

5 PUBLICATION AND ARCHIVING

5.1 Publication

- 5.1.1 It is proposed that the site is combined in an overall publication detailing the results of all archaeological excavation work undertaken across the Broadland Gate scheme. This publication work will be undertaken by an archaeological contractor following completion of fieldwork on the Broadland Gate plots. It is expected that the publication will take the form of an article in the *Norfolk Archaeology* journal.
- 5.1.2 This report will be supplemental to a published article and be superseded by any new data and interpretations presented within it.

5.2 Archiving, Retention and Dispersal

- 5.2.1 The site archive (under Site Code ENF151042, Accession No. NWHCM 2021.16) will be deposited with NHER and comprises a maximum of four bulk finds / document boxes and three small find boxes.

APPENDIX A CONTEXT INVENTORY

Context	Cut	Same as	Category	Feature Type	Function	Phase	Group	Width (m)	Depth (m)
1	-	-	layer	topsoil		-	-	-	0.37
2	-	-	layer	subsoil		-	-	-	0.20
3	-	-	layer	natural		-	-	-	-
4	4	17, 19, 31	cut	ditch	boundary	1.1	4	1.58	0.42
5	4	-	fill	ditch	primary	1.1	4	1.16	0.24
6	4	-	fill	ditch	secondary	1.1	4	1.58	0.18
7	7	-	cut	ditch	boundary	1.1	7	1.58	0.14
8	7	-	fill	ditch	primary	1.1	7	1.58	0.14
9	9	-	cut	posthole	unknown	1.1	-	0.32	0.04
10	9	-	fill	posthole	disuse	1.1	-	0.32	0.04
11	11	-	cut	posthole	unknown	1.1	-	1	0.14
12	11	-	fill	posthole	disuse	1.1	-	1	0.14
13	13	-	cut	posthole	unknown	1.1	-	0.48	0.1
14	13	-	fill	posthole	disuse	1.1	-	0.48	0.1
15	15	-	cut	posthole	unknown	1.1	-	0.38	0.05
16	15	-	fill	posthole	disuse	1.1	-	0.38	0.05
17	17	4, 19, 31	cut	ditch	boundary	1.1	4	1.24	0.18
18	17	-	fill	ditch	primary	1.1	4	1.24	0.18
19	19	4, 17, 31	cut	ditch	boundary	1.1	4	1.32	0.32
20	19	-	fill	ditch	primary	1.1	4	1.2	0.18
21	19	-	fill	ditch	secondary	1.1	4	1.32	0.18
22	-	-	structure	corn dryer	corn dryer	1.2	22	-	-
23	23	-	cut	pit	unknown	1.1	-	1.16	0.29
24	23	-	fill	pit		1.1	-	1.16	0.29
25	25	29, 40, 46, 68	cut	ditch	boundary	2	25	1.2	0.43
26	25	-	fill	ditch	secondary	2	25	1.2	0.43
27	27	-	cut	pit	unknown	1.1	-	0.4	0.08
28	27	-	fill	pit	disuse	1.1	-	0.4	0.08
29	29	25, 40, 46, 68	cut	ditch	boundary	2	25	0.68	0.34
30	29	-	fill	ditch	secondary	2	25	0.68	0.34
31	31	4, 17, 19	cut	ditch	boundary	1.1	4	1.08	0.33
32	31	-	fill	ditch	primary	1.1	4	1.08	0.33
33	38	-	fill	corn dryer	tertiary	1.2	22	1.04	0.19
34	38	-	fill	corn dryer	secondary	1.2	22	-	0.02
35	38	-	fill	corn dryer	secondary	1.2	22	-	0.01
36	38	-	fill	corn dryer	secondary	1.2	22	1.04	0.12
37	38	-	fill	corn dryer	primary	1.2	22	1.04	0.1
38	38	-	cut	corn dryer	corn dryer	1.2	22	1.04	0.34

Context	Cut	Same as	Category	Feature Type	Function	Phase	Group	Width (m)	Depth (m)
39	-	-	structure	corn dryer	corn dryer	1.2	39	-	-
40	40	25, 29, 46, 68	cut	ditch	boundary	2	25	1.8	0.35
41	40	-	fill	ditch	secondary	2	25	1.8	0.35
42	42	-	cut	ditch	boundary?	-	-	1.22	0.27
43	42	-	fill	ditch	disuse	-	-	1.22	0.27
44	44	-	cut	pit	unknown	-	-	2.22	0.18
45	44	-	fill	pit	disuse	-	-	2.22	0.18
46	46	25, 29, 40, 68	cut	ditch	boundary	2	25	1.2	0.34
47	46	-	fill	ditch	secondary	2	25	1.2	0.34
48	48	-	cut	pit	unknown	1.1	-	2.37	0.53
49	48	-	fill	pit	disuse	1.1	-	2.37	0.53
50	50	-	cut	posthole	unknown	1.1	-	0.72	0.23
51	50	-	fill	posthole	disuse	1.1	-	0.72	0.23
52	52	-	cut	pit	unknown	1.1	-	1	0.22
53	52	-	fill	pit	disuse	1.1	-	1	0.22
54	54	-	cut	pit	unknown	1.1	-	2.9	0.18
55	54	-	fill	pit	disuse	1.1	-	2.9	0.18
56	56	-	cut	pit	unknown	1.1	-	1.31	0.09
57	56	-	fill	pit	disuse	1.1	-	1.31	0.09
58	58	-	cut	natural feature	natural feature	-	-	3.01	0.27
59	58	-	fill	natural feature	disuse	-	-	3.01	0.27
60	60	-	cut	pit	unknown	1.1	-	0.9	0.14
61	60	-	fill	pit	disuse	1.1	-	0.9	0.14
62	62	74	cut	ditch	unknown	1.1	62	0.36	0.06
63	62	-	fill	ditch	disuse	1.1	62	0.36	0.06
64	64	-	cut	posthole	unknown	1.1	-	0.47	0.23
65	64	-	fill	posthole	disuse	1.1	-	0.47	0.23
66	66	-	cut	pit	unknown	1.1	-	0.67	0.19
67	66	-	fill	pit	disuse	1.1	-	0.67	0.19
68	68	25, 29, 40, 46	cut	ditch	boundary	2	25	1.6	0.4
69	68	-	fill	ditch	secondary	2	25	1.6	0.4
70	70	-	cut	posthole	unknown	1.1	-	0.64	0.3
71	70	-	fill	posthole	disuse	1.1	-	0.64	0.3
72	72	-	cut	posthole	unknown	1.1	-	0.66	0.16
73	72	-	fill	posthole	disuse	1.1	-	0.66	0.16
74	74	62	cut	ditch	boundary	1.1	62	0.38	0.06
75	74	-	fill	ditch	secondary	1.1	62	0.38	0.06
76	76	-	cut	corn dryer?	corn dryer?	1.2	105	1	0.22

Context	Cut	Same as	Category	Feature Type	Function	Phase	Group	Width (m)	Depth (m)
77	76	-	fill	corn dryer?	backfill	1.2	105	1	0.22
78	78	-	cut	corn dryer	corn dryer	1.2	39	0.91	0.38
79	78	-	fill	corn dryer	tertiary	1.2	39	0.91	0.2
80	78	-	fill	corn dryer	secondary	1.2	39	0.91	0.14
81	78	-	fill	corn dryer	secondary	1.2	39	-	0.07
82	78	-	fill	corn dryer	secondary	1.2	39	-	0.05
83	78	-	fill	corn dryer	primary	1.2	39	0.91	0.11
84	-	-	structure	corn dryer	corn dryer	1.2	84	-	-
85	85	87	cut	ditch	boundary	1.1	85	1.6	0.16
86	85	-	fill	ditch	secondary	1.1	85	1.6	0.16
87	87	85	cut	ditch	boundary	1.1	85	1.6	0.26
88	87	-	fill	ditch	secondary	1.1	85	1.6	0.26
89	89	-	cut	posthole	unknown	1.1	-	0.68	0.24
90	89	-	fill	posthole	disuse	1.1	-	0.68	0.24
91	91	-	cut	ditch	boundary?	-	-	1.26	0.1
92	91	-	fill	ditch	disuse	-	-	1.26	0.1
93	93	-	cut	ditch	boundary?	-	-	<0.37	0.05
94	93	-	fill	ditch	disuse	-	-	<0.37	0.05
95	95	-	cut	well	well	1.2	-	4.8	<4.5
96	95	-	fill	well	primary?	1.2	-	<1.72	<1.8
97	95	-	fill	well	backfill	1.2	-	1.4	0.5
98	95	-	fill	well	backfill	1.2	-	<3.12	0.8
99	99	-	cut	corn dryer	corn dryer	1.2	84	1	0.27
100	99	-	fill	corn dryer	tertiary	1.2	84	1	0.14
101	99	-	fill	corn dryer	secondary	1.2	84	1	0.15
102	99	-	fill	corn dryer	secondary	1.2	84	1	0.14
103	99	-	fill	corn dryer	primary	1.2	84	-	0.05
104	99	-	fill	corn dryer	primary	1.2	84	-	0.05
105	-	-	structure	corn dryer	corn dryer	1.2	105	-	-
106	106	-	cut	pit	unknown	1.1	-	0.53	0.14
107	106	-	fill	pit	disuse	1.1	-	0.53	0.14
108	108	-	cut	pit	unknown	1.1	-	1.07	0.21
109	108	-	fill	pit	disuse	1.1	-	1.07	0.21
110	110	-	cut	pit	unknown	1.1	-	0.82	0.15
111	110	-	fill	pit	disuse	1.1	-	0.82	0.15
112	95	-	fill	well	disuse	1.2	-	<2.14	0.4
113	95	-	fill	well	backfill	1.2	-	<2.54	0.7

APPENDIX B FINDS INVENTORY

All finds by context (number/weight in grammes)

Context	Animal bone	CBM	Fired Clay	Metal	Pottery	Stone	Worked bone
6		1/452			2/9		
8					4/246		
20					12/41		
21		1/89			16/550		
24					2/47		
33			5/78		1/33		
36			3/114		1/16		
57					1/24		
77			9/315		10/89	1/52	
79			14/141				
80			6/241		4/50		
96	3/485				3/47		
97	12/1662	2/185	1/104		73/1833		1/25
98	29/2902	5/334	3/116	2 Fe, 1 Cua	180/4699		
101			2/9		1/6		
113	8/858	14/1848	8/133	1 Cua	172/3173		

APPENDIX C FINDS REPORTS

C.1 Pottery

By Alice Lyons

Introduction

C.1.1 A total of 479 sherds, weighing 10,854g (14.99 Estimated Vessel Equivalent (EVE)), of Roman pottery was found, representing a minimum of 153 individual vessels. The pottery is in a fragmentary but good condition with a relatively large mean sherd weight of 19.5g. The material has been protected from most post-depositional destructive processes, such as ploughing, within the cut features, particularly a well (95), but also ditches, pits and corn dryers (Table 1). The low levels of abrasion have preserved some surface residues associated with use, particularly soot deposits, which have consistently survived on external surfaces.

C.1.2 A further 199 sherds of Roman pottery (3370g, minimum 56 vessels) were recovered during the trial trenching of Plot 2b. These are reported on elsewhere (Lyons in Birks 2020a, 17-20 and see Table 6, below).

Table 1: The pottery by feature-type, listed in descending order of weight (%).

Feature	Count	Weight (g)	EVE	Weight (%)
Well	425	9743	14.50	89.76
Ditch	35	852	0.37	7.85
Pits and corn dryers	19	259	0.12	1.39
Total	479	10854	14.99	100.00

Methodology

C.1.3 The pottery was analysed following the national guidelines (Barclay *et al* 2016). The total assemblage was studied, and a catalogue was prepared (summarised in Table 7; Excel spreadsheet in archive). The sherds were examined using a hand lens (x10 magnification) and were divided into fabric groups defined based on inclusion types present. Vessel forms (jar, bowl) and numerical type were also recorded. The sherds were counted and weighed to the nearest whole gram and recorded by context. Decoration, residues, and abrasion were also noted.

The pottery fabrics and forms

A total of thirteen Roman pottery fabrics were recorded (Table 2).

Table 2: The Roman pottery quantified by fabric and form, listed in descending order of weight (%).

Fabric: abbreviation Published reference	Vessel form (most common in BOLD) and type	Sherd Count	Weight (g)	EVE	Weight (%)
Sandy reduced (grey) ware: SGW <i>Green 1977; Lyons 2003, 99</i>	Beaker (type 3.7), dish (type 6, 6.17, 6.18, 6.19), jar (type 4, 4.4, 4.5, 4.5.2, 4.5.3, 4.8, 4.13, 5, 5.2, 5.3, 5.4), lid (type 8.1), mortaria (type 7), storage jar	378	8727	11.26	80.40
Nar Valley reduced ware: NAR RE	Jar (type 4, 4.5, 4.5.3), storage jar	30	580	0.48	5.34

Fabric: abbreviation Published reference	Vessel form (most common in BOLD) and type	Sherd Count	Weight (g)	EVE	Weight (%)
<i>Gurney 1990, 89; Peachey 2018, 40</i>					
Spanish amphora: BAT AM 2 <i>Tomber and Dore 1998, 85</i>	Amphora (DR20, DR23)	5	387	0.00	3.56
Sandy oxidised (white) ware: SOW; SREDW <i>Lyons 2003, 99</i>	Beaker (type 3), flagon (type 1, 1.9), flask (type 2.1), jar (type 4)	25	350	1.06	3.22
Samian (all factories) <i>Tomber and Dore 1998, 25-41</i>	Bowl (Dr37, Dr44), cup (Dr27, Dr33, Dr35) dish (Dr18, Dr31R), mortaria (Dr45)	18	290	0.93	2.68
Lower Nene Valley grey ware: LNV GW <i>Perrin 1999, 78-87</i>	Dish (type 6.18, 6.19), jar (type 4, 4.5.3, 5.3)	9	220	0.86	2.03
Postwick oxidised ware: POM <i>Lyons 2003, 48-49</i>	Mortaria (type 7.2)	1	111	0.09	1.02
Lower Nene Valley colour coat: LNV CC <i>Tomber and Dore 1998, 118</i>	Beaker (type 3, 3.6), dish (type 6.19)	4	65	0.10	0.60
Fine grey ware: GW(FINE) <i>Tomber and Dore 1998, 137</i>	Beaker (type 3.6)	4	58	0.11	0.54
Oxfordshire red slipped ware: OXF RS <i>Tomber and Dore 1998, 176</i>	Bowl (type 6)	1	33	0.00	0.30
Wattisfield reduced ware: WAT RE <i>Tomber and Dore 1998, 184</i>	Dish (type 6.18)	1	23	0.10	0.21
Shelly ware: STW <i>Tomber and Dore 1998, 212</i>	Jar (type 4)	1	6	0.00	0.06
Moselkeramik or Trier black- slipped ware: MOS BS. <i>Tomber and Dore 1998, 60</i>	Beaker (type 3)	2	4	0.00	0.04
Total		479	10854	14.99	100.00

Type series

C.1.4 This is a numerical sequence based on one developed by Jude Plouviez (formerly SCC) and subsequently adapted by the author. Published parallels taken from Brampton where possible (Green 1977).

1: miscellaneous flagon

1.9: cupped rim flagon (Green 1977, 66-67, fig 28, nos 46 & 47)

2.1: narrow mouthed jar (Green 1977, 62, fig. 26, no 7, 8 & 9)

3: miscellaneous beaker

3.6: bag-shaped beaker (Green 1977, 74, fig 32, no 118)

3.7: funnel necked beaker (Tyers 1996, 174, fig 216, no 50)

4: miscellaneous medium mouthed jar

4.4: lid-seated jar (Lyons 2003, 46, fig 27, no 4.4)

4.5: globular medium mouthed jar with a rolled rim (Green 1977, 82, fig. 36, no 227)

4.5.2: globular medium mouthed jar with a squared rim (Green 1977, 82, fig. 36, no 229)

- 4.5.3: globular medium mouthed jar with an underscored rim (Green 1977 82, fig 36, no 228 & 234)
- 4.8: globular medium mouthed jar with a bi-fid rim (Green 1977, 62, fig. 26, no 5)
- 4.13: globular medium mouthed jar with an everted rim (Green 1977, 72, fig. 31, no 103)
- 5: miscellaneous wide mouthed jar
- 5.2: wide mouthed jar carinated jar (Green 1977, 68, fig. 29, no 58)
- 5.3: wide mouthed cordoned jar (Green 1977, 70, fig 30, no 84)
- 5.4: wide mouthed jar with a girth groove(s) (Green 1977, 70, fig 30, nos 85, 86 & 87)
- 6: miscellaneous open form
- 6.17: straight-sided flanged dish (Green 1977, 80, fig 35, no 205)
- 6.18: straight-sided beaded dish (Green 1977 82, fig 36, no 231)
- 6.18a: carinated beaded dish (Green 1977, 80, fig 35, no 191)
- 6.19: straight-sided dish (Green 1977, 80, fig 35, no 202)
- 7: miscellaneous mortarium
- 7.2: bead and flanged mortaria with a grooved rim (Lyons 2003, p. 47, fig 28, no 7.12.3)
- 8.1: lid (Green 1977, 66, fig 28, no 53)

Samian

C.1.5 Published description taken from Webster 1996.

- Dr18: a plate with a curved wall and beaded lip (Webster 1996, 32)
- Dr27: a cup with a double curved wall and a beaded rim (Webster 1996, 38)
- Dr31: a shallow concave bowl (webster 1996, 34)
- Dr33: a conical cup with a footstand (Webster 1996, 45)
- Dr35: a cup with curved walls and overhanging rim with trailed leaf decoration (Webster 1996, 46)
- Dr37: a hemispherical decorated bowl (Webster 1996, 47)
- Dr44: a cordoned bowl (webster 1996, 54)
- Dr45: a mortarium with a near upright wall (Webster 1996, 55)

Amphora

C.1.6 Published description taken from Tyers 1996.

- DR20: large globular vessel with two handles, thick concave rim and pointed base (Tyers 1996, 87-89)
- DR23: small globular vessel with two handles, concave rim and more pointed base (Tyers 1996, 87-89)

Coarse wares

C.1.7 The majority of pottery recovered consists of locally produced utilitarian wheelmade reduced (grey) and oxidised (white-to-red) coarse wares characteristic of a mid-to-late Roman date.

Reduced (grey) wares

C.1.8 A large part of the assemblage (80% by weight) are SGW wares that have been skilfully made on a fast potter's wheel and kiln fired in an reducing atmosphere to a blue/grey colour. Although this material is not assigned to a specific source it is diagnostic of central Norfolk pottery production such as that undertaken at the large manufacturing industry centred around Brampton and located only c.20km to the north (Knowles 1977; Green 1977). The Brampton industry flourished between the mid-2nd and 3rd

centuries AD and its vessel repertoire was heavily influenced by the Black Burnished (2) ware industry of the upper Thames Valley (Tyers 1996, 186-188). It should also be noted that some of the SGW fabrics are similar to those made in the nearby Postwick kilns (Lyons 2003), however, this material is generally earlier Roman in date. Local (on site) production is, moreover, suggested by the recovery of SGW jar rim waster from a ditch (Fig. 8, no. 9).

- C.1.9 Although the majority of SGW are undiagnostic jar/bowl body sherds where a vessel can be assigned to a specific form globular jars with rolled under-scored rims are the most abundant (Fig. 8, no. 6; type 4.5.3), with wide mouthed jars also found (Fig. 8, nos 2 & 13). Dishes are also well represented most commonly as beaded rim dishes (Fig. 8, nos 3 & 6; type 6.18), although straight-sided examples are also common (Fig. 8, nos 11 & 12). Decorative motifs are also frequent with area burnish and cross-hatched decoration well-represented; other designs include multiple combed horizontal lines, combed wavy lines and lines of stabbing. That these were primarily utilitarian vessels is demonstrated by the common presence of sooty residues about the rim of the vessel where they have been exposed to an open flame when used as cooking pots.

Illustration catalogue

Figure 7, Photo 9. SGW. Jar, type 4.5. Waster. (8), ditch [7]

Figure 7, Draw 6. SGW. Jar. Globular jar with a rolled underscored rim, type 4.5.3. (113), well [95]

Figure 7, Draw 2. SGW. Jar, type 5.4, decorative girth groove. (97), well [95]

Figure 7, Draw 13. SGW. Jar, type 5.4, large version. (98), well [95]

Figure 7, Draw 3. SGW. Carinated beaded rim dish, burnished bands, type 6.18 (variant). (97), well [95]

Figure 7, Draw 10. SGW. Dish, type 6.18. (98), well [95]

Figure 7, Draw 11. SGW. Dish, type 6.19, double groove under rim. (98), well [95]

Figure 7, Draw 12. SGW. Dish, type 6.19, burnished cross-hatch inside base. (98), well [95]

- C.1.10 Reduced wares from other factories were identified and include a small but significant number of coarse reduced ware jar and storage jar fragments (NAR RE), commonly decorated with a rusticated motif (Fig. 8, no. 5). These fragments are consistent with manufacture in the Nar Valley, located c.60km to the west of the site in West Norfolk, during the mid-to-late Roman period.

Illustration catalogue

Figure 7, no. 5. NAR RE. Globular jar with a rolled rim (rusticated), type 4.5. (113) [95]

- C.1.11 Late Roman pale grey ware dish and jar fragments typical of production in the Lower Nene Valley industry (LNV GW), centred at Water newton near modern Peterborough, were found. Also recorded in small quantities were a single micaceous grey ware dish piece made within the Wattisfield Valley, north Suffolk (WAT RE) and a sherd from an undiagnostic South Midland-type Shelly ware (STW) jar possibly traded from the Harold kilns in Bedfordshire during the 4th-century AD.

Oxidised (white and red) wares

- C.1.12 Oxidised wares are found in small numbers (3.2% by weight). White wares are recorded in the form of a large cupped-rim flagon (Fig. 8, no. 1; type 1.9), also narrow mouthed jars or flasks (type 2.1): a Brampton source is also likely for these wares.

Illustration catalogue

Figure 7, no. 1: SOW. Flagon, type 1.9. (97), well [95]

Specialist wares

Amphora

C.1.13 Five pieces of Spanish globular olive oil amphora, from different vessels, were found; both thick DR20 pieces, and finer (smaller) later Roman DR23 fragments also. These are the only type of amphora commonly found in Norfolk, away from the coastal Shore forts, although it is thought importation ceased by the mid-3rd century AD (Tyers 1996, 87).

Mortaria

C.1.14 Mortaria are a type of Roman mixing bowl typically lined with sharp grits (Tyers 1996, 117-135); five fragmentary examples were found during this project. It is worthy of note that the coarseware examples may all be products of a nearby mortaria kiln located at Postwick and known to have been active in the later part of the 2nd century (AD 150-170; Lyons 2003, 49). A white ware mortarium of a bead and flanged design with a single groove in the rim is very similar to the known Postwick output (Fig. 8, no. 4; type 7.2), while the undiagnostic Sandy (blue) grey body sherds lined with flint grits is also consistent with the products of that kiln (although manufacture at Brampton is also possible). In addition, a single samian table ware wall-sided mortarium fragment was also found (Dr45), dated to AD170 or later.

Illustration catalogue

Fig. 8, no. 4. POM. Bead and flanged mortarium (with a grooved rim), type 7.2. (113), well [95]

Fine wares

C.1.15 Gaulish imported samian are the most common fine wares recovered (2.7% by weight) (Table 3). This distinctive red glossy table ware was imported into Britain between the mid-1st and mid-3rd centuries AD (Tyers 1996, 105-116).

Table 3: Samian, listed by factory.

Fabric	Vessel	Count	Weight (g)	EVE	Weight (%)
South Gaulish samian: SAM SG	Dish (Dr18, Dr31)	3	41	0.06	14.14
Central Gaulish samian: SAM CG	Bowl (Dr37), cup (Dr27, Dr33, Dr35) dish (Dr31R), mortaria (Dr45)	13	229	0.80	78.96
East Gaulish samian: SAM EG	Bowl (Dr44)	2	20	0.07	6.90
Total		18	290	0.93	100.00

C.1.16 A small quantity of (probably residual) South Gaulish dish fragments were found in small quantities - one of which has a large hole deliberately punched through its base (Fig. 8, no. 7). This dramatic adaptation to the original function of the vessel may suggest it is a disturbed 'ritually 'killed' cremation vessel. Damaging cremation accessory vessels, especially samian, was a relatively common semi-destructive practice seen in cremation burial during the early-to-mid Roman era making 'a dead pot for a dead person' (Going 1988, 23); a practise sometimes associated with libation

but also deterring the re-excitation of valuable buried pots (Lyons 2019, 361). Alternatively it is possible that the pot was adapted as a special samian deposit within the well as the practice of placing samian in watery deposits, particularly wells, has long been documented (Willis 2005, 12.3). Central Gaulish material, commonly imported in the 2nd century AD is the most frequent and includes the widest range of vessels comprising a bowl, cups, dishes and a mortarium. It is noteworthy that one of the Dr33 conical cups also appears to have been deliberately cut down to form a disc. Two East Gaulish vessel fragments were found including a bowl. None of the samian was stamped by their maker.

Illustration catalogue

Figure 7, Photo 7. SAM SG. Dish base (adapted: hole punched through base). (113), well [95]

C.1.17 Trier black slipped ware beaker fragments were the only other imported pottery type found which were traded into Britain between the late 2nd to mid-3rd centuries AD (Tyers 1996, 138-139).

C.1.18 Domestic (British) fine wares are less common than their imported counterparts. The chronologically earliest material (Early Flavian to mid-2nd century AD) are the small number of fine grey wares beaker fragments – colloquially know as London ware but known to have been manufactured more locally in both the Wattisfield and Lower Nene Valley kiln centres (Tyers 1996, 170-171). Other finewares comprise beaker and dish pieces manufactured in the Lower Nene Valley (near modern Peterborough) between the mid-2nd to 4th centuries AD (Tyers 1996, 173-175) (0.6% by weight). A single piece of a late Roman red ware bowl in the Oxfordshire region in the 4th century was also found.

Illustration catalogue

Figure 7, no. 8. GW(FINE). Bag-shaped beaker with a funnel neck, type 3.6. (113), well [95]

Pottery from features

C.1.19 The pottery assemblage was recovered from a well, ditches and pits and corn dryers (Table 1).

Ditches

C.1.20 A small number of Roman pottery sherds, totalling 34 sherds, weighing 846g (0.37 EVE), was recovered from three ditch cuts (Table 4). No complete vessels were found, and it does not appear to have been deliberately placed. Although the assemblage is small and diagnostic sherds are rare, the presence of two South Gaulish samian vessels, combined with the range of coarseware forms, suggest this ditch system was in use during the late 1st to early/mid-2nd centuries. It is interesting to note that this is earlier in the Roman sequence than the corn dryers and well (see below).

Table 4: The Roman pottery from ditches.

Ditch Cut	Fabric	Vessel	Count	Weight (g)	EVE
4	SGW	Jar (type 4)	2	9	0.00
7	SG SW	Dish (Dr31)	1	11	0.00
	SGW	Jar (type 4.5), storage jar (type 5.3)	3	235	0.22

19	SG SW	Dish Dr18	1	4	0.06
	SGW	Jar (type 4), storage jar (type 4 & 5)	27	587	0.09
Total			34	846	37

Pits/corn dryers

C.1.21 Only ten sherds, weighing 176g (0.12EVE) were recovered from two pit features and three corn dryers (Table 5). No complete vessels were found, and the material does not appear to have been deliberately placed. Although the assemblage is small and diagnostic sherds are rare, the presence of a late Roman OXF RS bowl base suggests at least one of these, corn dryer **38/22**, was backfilled in the 4th century AD.

Table 5: The Roman pottery from pits and corn dryers

Cut	Type	Fabric	Vessel	Count	Weight	EVE
23	Pit	SGW	Jar (type 4)	2	47	0.00
38=22	Corn dryer	OXF RS	Bowl (type 6)	1	33	0.00
		SGW	Jar (type 4)	1	16	0.00
56	Pit	SGW	Jar (type 5)	1	24	0.12
39=78	Corn dryer	SOW	Jar (type 4)	4	50	0.00
84=99	Corn dryer	STW	Jar (type 4)	1	6	0.00
Total				10	176	0.12

Possible corn dryer 76/105

C.1.22 A further ten sherds weighing 89g, were recovered from a possible corn dryer feature which was initially thought to perhaps represent a pottery kiln (**76/105**). The pottery comprises a calcareous Sandy grey ware and Sandy white ware jar fragments. There is nothing to suggest they are products of a kiln, indeed their small ASW (9g) suggests they are residual. It is interesting to note, however, that a SGW waster sherd was recovered from a nearby ditch feature (fill 8, ditch **7**; Fig. 8, Photo 9).

Well 95: spot date mid-3rd century AD

C.1.23 The majority of the whole-site assemblage (90% by weight) was recovered from three deposits, associated with the dis-use and deliberate back-filling, of well **95**; a total of 425 sherds, weighing 9743g (14.50 EVE). The composition of the well assemblage is therefore very similar to the whole site group described above comprising mainly good quality local utilitarian coarse ware jar, dishes and storage jars supplemented by smaller numbers of non-local fine table wares (Table 2). Two of the samian vessels have been adapted, one with a hole punched through its base and another cut-down to form a disc (see above). The punched vessels may possibly relate to a disturbed cremation in the area or possibly be a form a special well related deposition (see above). As a whole, however, this group is representative of a waste from a near-by, fairly affluent, domestic settlement.

C.1.24 It is also worthy of comment that this group has a high EVE measurement of 14.50 – which reflects the remarkably good preservation of the assemblage (within the well-

cut) which has resulted in a high number of intact surviving rims. The only discernible, possibly significant, difference between the whole site assemblage and the well group is that two of the sparsely represented 4th-century wares (OXF RS and STW) are not present within the group which has contributed to its assigned closing date of the mid-3rd century AD.

Discussion

C.1.25 This is a significant group of stratified early (within ditches) and mid-to-late (within pits and a well) Roman pottery which predominantly consists of locally made utilitarian coarseware flagons, jars, dishes and storage jars; some still retaining sooty use residues. Much of the coarseware pottery is typical of Norfolk manufacture with the majority of material characteristic of the Brampton ceramic repertoire, with coarse wares also traded from more distant centres at Wattisfield (north Suffolk), also the Nar (west Norfolk) and Nene (north Cambridgeshire) valleys. It is important to observe that at least one late 2nd century mortarium can be securely sourced to local Postwick production (Lyons 2003). The community that deposited this material also had good access to imported material, particularly central Gaulish samian and south Spanish amphora. As such this assemblage reflects a fairly affluent, well-connected agrarian community that was established in the Early Roman period but thrived between the mid-2nd and mid-3rd centuries AD, with ceramic deposition diminishing during the 4th century AD. This assemblage is the latest recovered from a series of adjacent plots at Broadland Gate which combined make a significant contribution to our understanding of agrarian settlement and land use in the region (Table 6).

Table 6: Broadland Gate, the Roman pottery (all sites).

Feature	Archaeological Contractor	Count	Weight (g)	Weight (%)	Pottery Reports
ENF147068	Birks Archaeology	44	1253	5.71	Lyons 2020a
ENF147241	Birks Archaeology	187	2687	12.24	
ENF148863	Birks Archaeology	199	3370	15.35	Lyons 2020b
ENF148932	Birks Archaeology	34	454	2.07	Lyons 2020c
ENF150324	Birks Archaeology	178	3331	15.18	Lyons 2021
ENF151042	OA East	479	10854	49.45	This report
Total		1121	21949	100.00	

Recommendations for further work

C.1.26 No additional analytical work is necessary at this stage. If, however, the site proceeds to wider publication it is recommended that the pottery from all interventions (if possible) is combined and an overview of all the pottery be undertaken (Table 6).

Catalogue

KEY: B = base, BEAK = beaker, C=century, Dsc = description, E=early, EVAL = evaluation, EX = excavation, FBOWL = flanged bowl, FLAG = flagon, IA = Iron Age. L=late, M = mid, MORTR = rim, NCD = not closely datable, SJAR = storage jar, U=undecorated body sherd.

*For full fabric names see Table 2

Table 7: The pottery catalogue

Context	Cut	Function	Fabric	Form	DSC	Quantity	Weight (g)	Spot date
6	4	DITCH	SGW	JAR	UB	2	9	LC1-C4
8	7	DITCH	SGW	JAR	R	1	21	LC1-C4
8	7	DITCH	SGW	SJAR	R	1	211	LC1-C3
8	7	DITCH	SGW	JAR/BEAK	U	1	3	LC1-C4
8	7	DITCH	SAM SG	DISH	R	1	11	MC1-EC2
20	19	DITCH	SGW	JAR	RU	12	41	LC1-C4
21	19	DITCH	SGW	SJAR	U	1	108	MC1-C4
21	19	DITCH	SGW	SJAR	RU	7	359	LC1-C4
21	19	DITCH	SGW	JAR	U	7	79	LC1-C4
21	19	DITCH	SAM SG	DISH	R	1	4	MC1-EC2
24	23	PIT	SGW	JAR	UB	2	47	LC1-C4
33	38	CORN DRYER	OXF RS	BOWL	UB	1	33	C4
36	38	CORN DRYER	SGW	JAR	D	1	16	C2-C4
57	56	PIT	SGW	JAR	R	1	24	LC1-C4
77	76	CORN DRYER	SOW	JAR	U	2	14	C3-C4
77	76	CORN DRYER	SGW	JAR	UD	8	75	MC2-C4
80	78	CORN DRYER	SOW	JAR	U	4	50	C2-C4
96	95	WELL	SGW	DISH	UB	1	21	C3-C4
96	95	WELL	SOW	JAR	D	1	23	C2-C4
96	95	WELL	GW(FINE)	BEAK	D	1	3	C2-C4
97	95	WELL	SOW	FLAGON	R	1	59	MC2-MC3
97	95	WELL	SGW	WJAR	R	2	120	MC2-C3
97	95	WELL	SGW	CDISH	R	1	52	MC2-C3
97	95	WELL	SGW	SJAR	UD	3	125	MC2-C3
97	95	WELL	SGW	JAR	UD	13	243	MC2-C3
97	95	WELL	SGW	DISH	B	3	86	MC2-C3
97	95	WELL	SGW	DISH	UB	5	302	MC2-C3
97	95	WELL	NAR RE	JAR	RUD	10	155	MC2-C4
97	95	WELL	NAR RE	SJAR	U	2	37	MC2-C4
97	95	WELL	LNV GW	DISH	R	1	51	MC2-C3
97	95	WELL	LNV GW	DISH	R	1	20	MC2-C3
97	95	WELL	WAT RE	DISH	R	1	23	MC2-C3
97	95	WELL	SGW	DISH	R	1	15	MC2-C3
97	95	WELL	SGW	DISH	R	1	20	MC2-C3
97	95	WELL	SGW	FDISH/LID	R	1	13	C3-C4
97	95	WELL	LNV CC	BEAK	D	1	39	MC2-C4
97	95	WELL	LNV CC	BEAK	D	1	10	MC2-MC3
97	95	WELL	SAM CG	DISH	RB	2	34	MC2-MC3
97	95	WELL	SAM EG	BOWL	R	1	17	LC2-MC3
97	95	WELL	SAM EG	FRAG	U	1	3	LC2-MC3
97	95	WELL	SGW	JAR	R	1	27	LC2-C3
97	95	WELL	SGW	JAR	R	1	27	E/MC2-C3
97	95	WELL	LNV GW	JAR	R	1	23	LC2-EC4
97	95	WELL	SGW	JAR	R	1	34	C2-C3

Context	Cut	Function	Fabric	Form	DSC	Quantity	Weight (g)	Spot date
97	95	WELL	SGW	JAR	R	1	26	MC2-C3
97	95	WELL	SGW	JAR	R	1	19	MC2-C3
97	95	WELL	SGW	SJAR	R	1	32	LC1-C4
97	95	WELL	SGW	JAR	R	1	22	LC2-C4
97	95	WELL	SGW	JAR	R	1	23	LC1-C4
97	95	WELL	SGW	JAR	R	1	16	LC1-C4
97	95	WELL	SGW	JAR	R	2	36	LC1-C4
97	95	WELL	SGW	JAR	R	1	24	LC1-C4
97	95	WELL	SGW	JAR	R	1	10	LC1-C4
97	95	WELL	SGW	JAR	R	2	48	LC1-C4
97	95	WELL	SGW	JAR	RUD	5	42	MC2-C3
98	95	WELL	SGW	JAR	UDB	90	2131	E/MC2-C3
98	95	WELL	LNV GW	JAR	D	2	18	E/MC2-C3
98	95	WELL	SGW	JAR	D	1	16	C2-C4
98	95	WELL	SGW	SJAR	U	1	27	LC1-C4
98	95	WELL	BAT AM	AMPH	U	4	364	C1-C3
98	95	WELL	SGW	DISH	B	8	129	C2-C4
98	95	WELL	SGW	DISH	R	1	104	MC2+
98	95	WELL	SGW	DISH	P	4	162	MC2+
98	95	WELL	SGW	DISH	P	1	64	C3-C4
98	95	WELL	SGW	DISH	P	4	122	C3-C4
98	95	WELL	SGW	DISH	R	1	105	MC3+
98	95	WELL	SGW	DISH	R	1	26	MC2+
98	95	WELL	SGW	DISH	R	1	25	MC2+
98	95	WELL	SGW	DISH	R	1	23	MC2+
98	95	WELL	SGW	DISH	R	1	23	MC2+
98	95	WELL	SGW	DISH	R	1	26	MC2+
98	95	WELL	SGW	DISH	R	2	42	MC2+
98	95	WELL	LNV GW	DISH	R	1	14	C3-C4
98	95	WELL	SGW	DISH	R	1	7	MC2+
98	95	WELL	SGW	DISH	R	1	20	MC3+
98	95	WELL	SGW	MORT	RU	3	45	MC2-C4
98	95	WELL	SGW	JAR	RD	1	116	MC1-C4
98	95	WELL	LNV GW	JAR	R	1	37	LC2-MC4
98	95	WELL	SGW	JAR	R	1	27	LC1-C4
98	95	WELL	SGW	JAR	R	1	25	LC1-C4
98	95	WELL	SGW	JAR	R	1	19	LC1-C4
98	95	WELL	SGW	JAR	R	1	46	LC2-C4
98	95	WELL	SGW	JAR	R	1	17	LC1-C4
98	95	WELL	SGW	JAR	R	1	13	C2-C4
98	95	WELL	SGW	JAR	R	1	12	LC1-C4
98	95	WELL	SGW	JAR	R	1	21	LC2-C4
98	95	WELL	SGW	JAR	R	1	16	LC2-C4
98	95	WELL	SGW	JAR	R	1	44	LC2-C4

Context	Cut	Function	Fabric	Form	DSC	Quantity	Weight (g)	Spot date
98	95	WELL	SGW	JAR	R	1	4	LC2-C4
98	95	WELL	SGW	JAR	R	1	28	LC2-C4
98	95	WELL	SGW	JAR	R	1	26	LC1-C4
98	95	WELL	SGW	JAR	R	1	45	LC1-C4
98	95	WELL	NAR RE	JAR	RU	7	181	LC2-C4
98	95	WELL	NAR RE	JAR	RUDB	4	48	LC2-C4
98	95	WELL	SGW	JAR	R	1	36	LC1-C4
98	95	WELL	SGW	JAR	R	2	29	MC1-C4
98	95	WELL	SGW	JAR	D	2	32	C3-C4
98	95	WELL	SGW	DISH	RB	3	71	C3-C4
98	95	WELL	SGW	JAR	D	1	24	MC2-C4
98	95	WELL	SOW	FLASK	RU	1	36	MC2-C3
98	95	WELL	SREDW	JAR/BOWL	D	2	29	LC3-C4
98	95	WELL	LNV CC	BEAK	D	1	7	C3-C4
98	95	WELL	SOW	JAR	R	1	29	C3-C4
98	95	WELL	SOW	FLAGON	U	1	7	MC1-C3
98	95	WELL	SOW	BEAK	R	1	6	C2
98	95	WELL	SAM CG	CUP	R	1	6	LC1-C2
98	95	WELL	SAM CG	CUP	B	1	22	C2
98	95	WELL	SAM CG	CUP	R	2	59	C2
98	95	WELL	SAM CG	MORT	R	1	14	LC2-MC3
98	95	WELL	SAM CG	DISH	R	1	11	MC1-MC2
98	95	WELL	SAM CG	DISH	DB	1	48	MC1-MC3
98	95	WELL	SAM CG	BOWL	U	1	12	MC1-MC3
98	95	WELL	SAM CG	FRAG	U	1	3	MC1-MC3
101	99	DITCH	STW	JAR	U	1	6	C4
113	95	WELL	SGW	JAR	UDB	94	1542	E/MC2-C4
113	95	WELL	POM	MORT	RF	1	111	MC2-C3
113	95	WELL	NAR RE	JAR	RUD	4	131	LC2-C4
113	95	WELL	NAR RE	JAR	U	3	28	LC2-C4
113	95	WELL	SOW	JAR	U	6	53	MC1-C3
113	95	WELL	SGW	SJAR	RUDB	10	279	C2-C3
113	95	WELL	SGW	SJAR	B	1	116	MC1-C3
113	95	WELL	SOW	FLAGON	U	1	5	MC1-C3
113	95	WELL	BAT AM	AMPH	U	1	23	C1-C3
113	95	WELL	SOW	FLASK	RU	4	39	MC2-C3
113	95	WELL	SGW	JAR	R	1	26	LC2-C3
113	95	WELL	SGW	JAR	RD	1	69	LC2-C3
113	95	WELL	SGW	JAR	RD	1	16	LC1-C3
113	95	WELL	SGW	JAR	R	1	11	C2-C4
113	95	WELL	SGW	JAR	R	1	4	LC1-C4
113	95	WELL	SGW	JAR	R	1	6	C2-C4
113	95	WELL	SGW	JAR	R	1	3	C2-C4
113	95	WELL	SGW	JAR	R	1	13	LC2-C3

Context	Cut	Function	Fabric	Form	DSC	Quantity	Weight (g)	Spot date
113	95	WELL	SGW	JAR	R	1	39	LC2-C3
113	95	WELL	SGW	JAR	R	1	36	C2-C4
113	95	WELL	SGW	JAR	R	1	9	LC1-C4
113	95	WELL	SGW	JAR	R	1	15	LC1-C4
113	95	WELL	SGW	JAR	R	1	24	LC2-C4
113	95	WELL	LNV GW	JAR	R	1	15	LC2-EC4
113	95	WELL	LNV GW	JAR	R	1	42	C3-C4
113	95	WELL	SGW	LID	R	3	53	MC1-C3
113	95	WELL	SGW	DISH	R	1	54	MC2-C3
113	95	WELL	SGW	DISH	R	1	20	MC2-C3
113	95	WELL	SGW	DISH	R	2	37	MC2-C3
113	95	WELL	SGW	DISH	RUB	5	145	MC2-C3
113	95	WELL	SGW	DISH	RB	2	35	MC2-C3
113	95	WELL	SGW	DISH	RD	2	29	C3-C4
113	95	WELL	SGW	DISH	UD	2	22	C3-C4
113	95	WELL	LNV CC	DISH	R	1	9	C3-C4
113	95	WELL	MOS BL	BEAK	D	2	4	LC2-C3
113	95	WELL	SAM CG	CUP	R	1	16	C2
113	95	WELL	SAM SG	DISH	B	1	26	MC1-EC2
113	95	WELL	SAM CG	CUP	U	1	4	MC2
113	95	WELL	GW(FINE)	BEAK	RUDB	3	55	M/LC2

C.2 Ceramic building material

By Simon Timberlake

Introduction

C.2.1 A total of 2.91 kg (23 pieces) of tile and brick were recovered from this investigation. A further two fragments (31g) of Roman tile (*tegula*), not detailed here, were recovered during the trial trenching of Plot 2b and is reported on in the trial trench report (Lyons 2019 in Birks 2020a, 20-21). All of the material collected during the excavation phase is probably of Roman in date, consisting for the most part of *tegula* roof tile (2408g), minor amounts of *imbrex* roof tile (164g), a single piece of potential pila tile/brick (279g) and possible small piece of box-flue tile (23g). In addition, a small fragment (34g) of unknown/ undated brick was recovered from the fill of the Roman well.

Methodology

C.2.2 The CBM was identified visually using an illuminated x10 magnifying lens and compared where necessary with an archaeological reference collection. A dropper bottle containing dilute hydrochloric acid was used to confirm the presence or absence of carbonate.

Description of Roman tile and brick

- C.2.3 The 2572g of Roman roof tile consisted of 2408g of *tegula* (MNI=11) and 164g of *imbrex* (MNI=3). In general the *tegula* was better preserved and in larger pieces, a factor which in part be due to its increased thickness (c.20-25mm) Most of the *tegula* examined was made of Fabric A (a fine sandy gritted pinky-tile with spots of red grog in it (1229g = 10 pieces)), with smaller but still significant amounts of Fabrics B (590g = 5 pieces) and C (589g = 2 pieces). The much thinner *imbrex* was composed of single pieces each of Fabrics B (89g), C (18g) and D (57g). The single piece of possible *pila* brick/tile was made of Fabric C (279g) and the tiny box-flue fragment of Fabric D (23g).
- C.2.4 Some of the *tegula* (such as the group from context 113a) consisted of refitting (therefore associated) pieces, and most also included parts of the well-preserved flanges (Fig. 10). These all conformed to the common types referred to in Brodribb (1987) – in particular the rounded square profiles illustrated in his fig. 5 (Types 1 and 4). These are some of the commonest types encountered in Eastern England. One of the tiles with a flange preserved possessed a shallow internal finger-made groove (98b, Fig. 10; see Brodribb *ibid.* 16), whilst several slightly more unusual features were noted upon the well-preserved side of a thin *tegula* from context (6; Fig. 10). This possessed a Brodribb Type 1 small flange with a cut-away on the corner (a moderately common practice designed to ease the fitting of tiles – see Brodribb fig. 8, 16-17) plus a 7mm round nail hole (perforated whilst wet) close to the preserved left hand side edge. Brodribb discusses the occurrence and purpose of this found in some *tegulae* tiles, concluding that the most likely explanation/use of these would have been to secure the tiles on the lowest course of the roof, overlooking the eaves (*ibid.*, 11).
- C.2.5 The four fabric types encountered are described in the inventory below (and see Chart 2). Fabric A accounts for some 40% of the tile CBM recovered.

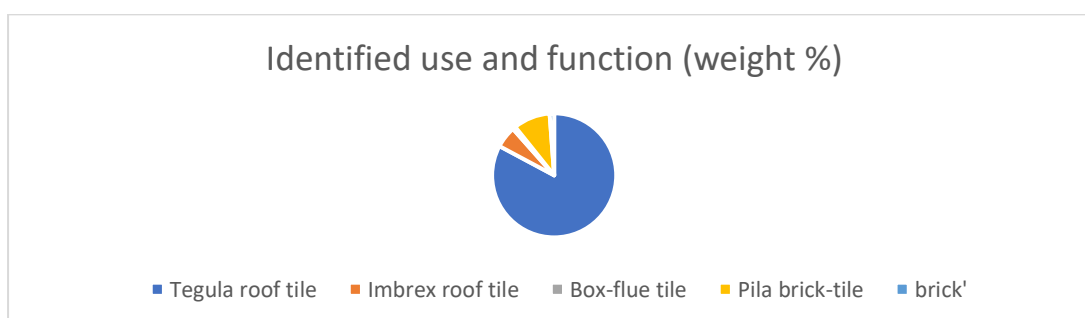


Chart 1: Types of Roman tile and brick recognised within the CBM assemblage

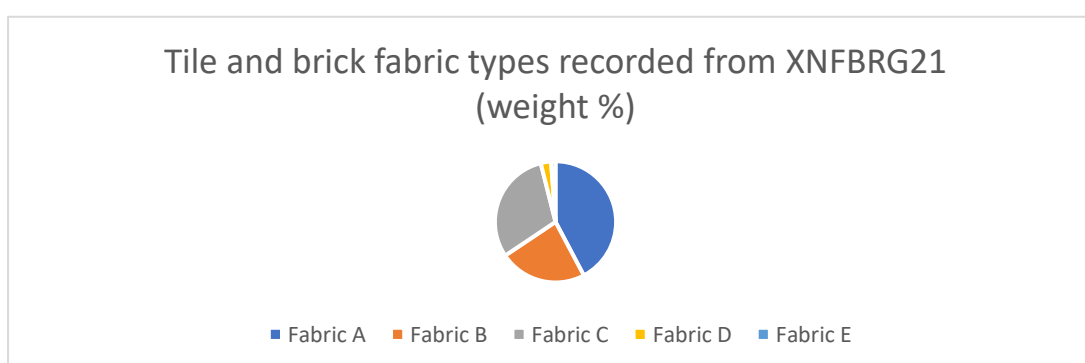


Chart 2: Tile and brick fabric types recorded within the CBM assemblage.

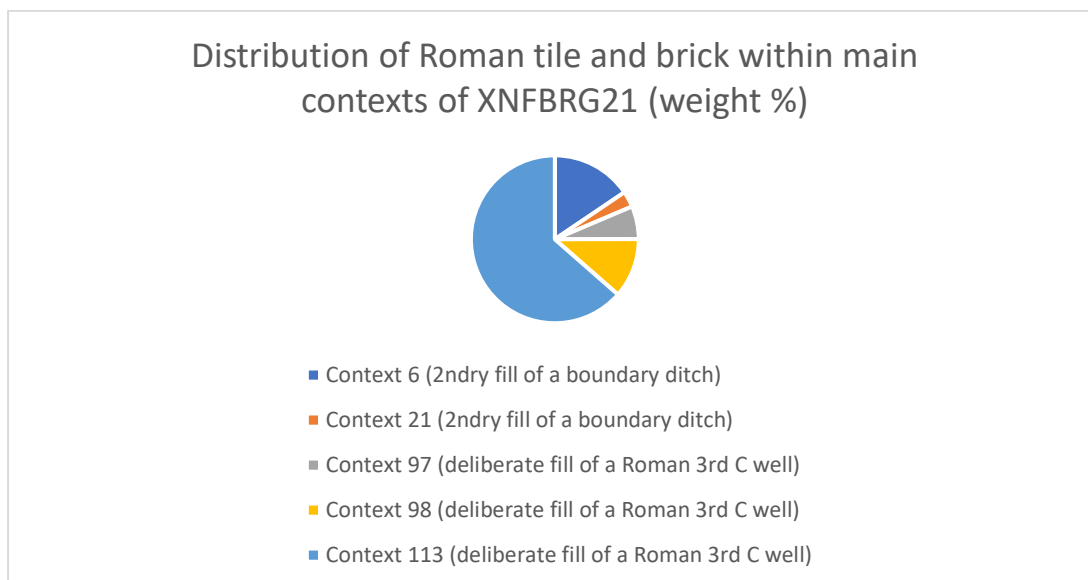


Chart 3: Distribution of tile/ brick from all contexts.

Discussion and conclusion

C.2.6 The CBM represents only a small assemblage. However, almost all of the tile is reliably Roman in date, with more than 60% of it coming from the deliberate backfill of a 3rd century AD well (95). Nevertheless, it is still difficult to date this tile and brick just on the basis of type, as these forms of tegulae and imbrex have a long currency, and their use here was established relatively early on. In all probability though we are looking at CBM associated with (wood and plaster-built) structures associated with a late 1st - 3rd century AD open-plan Romano-British settlement. The presence of *tegula* and *imbrex* suggests the use here of ceramic tiles rather than Collyweston Slate as the standard roofing material, in all probability as roofs of wooden daub-panelled Romano-British structures rather than of stone-built ones.

C.2.7 The almost (and possibly perhaps the complete) absence of hypocaust CBM suggests that we are probably not looking at a bath house or high-status villa anywhere in the near-vicinity, suggesting instead that this could have been the grounds of a Romano-British farmstead – something which might square with the evidence for the presence of enclosures and a well away from any obvious signs of a dwelling. Nevertheless, very little of the tile is abraded, even though it is quite broken; a fact which suggests that most of it was dumped and buried soon after it fell into dis-use and was discarded.

CBM catalogue

Context	Nos.	Dimensions (mm)	Weight (g)	Fabric type	Identity	Date	Notes
6	1	100x140x21(45 flang)	452	C	<i>tegula</i>	Roman	slightly weathered large broken piece of tegula with narrow flange (Brodrribb 1987 Fig.5 Type 1?) and cut-away (35mm long) at tile edge: Brodrribb Type 1 (complete) <i>ibid.</i> Fig.7 NB has 7mm wide perforated nail hole just 15mm away from (side) edge
21	1	85x70x13	89	B?	<i>imbrex</i>	Roman	weathered broken piece – slight upturned flange edge at end
97	2	75x40x20 + 60x65x14	185	A	<i>tegula?</i>	Roman	uncertain if these are flat fragments of tegula – from different tiles perhaps – sooted. Perhaps hypocaust related?

Context	Nos.	Dimensions (mm)	Weight (g)	Fabric type	Identity	Date	Notes
98 (a)	2	40x40x20 + 70x45x20	117	B	<i>tegula</i>	Roman	non-refitting pieces of same tegula base
98 (b)	1	70x55x17 (40 flange)	137	C	<i>tegula</i>	Roman	flange+ part base fragment (Brodribb Fig 5. Type 4 flange) with shallow flange groove
98 (c)	1	50x25x15	23	D	box flue tile?	Roman	small abraded piece – has traces of one linear corrugated surface
98 (d)	1	60x45x15	57	D?	<i>imbrex?</i>	Roman	appears to be from edge with slight upturned lip
113 (a)	6	160x160x23(refit)	774	A	<i>tegula</i>	Roman	refitting pieces of c. 50% of the flat base of tile (minus flange)
113 (b)	1	60x60x25(50 flange)	163	B	<i>tegula</i>	Roman	flange only frag – well-fired and preserved – SEE Brodribb 1987 Fig.5 Type 4
113 (c)	1	100x85x25	279	C	<i>pila?</i>	Roman	thin pila corner piece – poorly diagnostic
113 (d)	1	80x70x20 (45 flange)	193	B	<i>tegula</i>	Roman	slightly smaller example of flange rim than 113(b) - well fired + preserved
113 (e)	1	90x50x15	117	B?	<i>tegula</i>	Roman	thinner example than the above (as base)
113 (f)	1	90x80x20	183	A?	<i>tegula</i>	Roman	reduce-fired base of above – cracked from re-heating
113 (g)	1	60x20x15	18	C	<i>imbrex</i>	Roman	small abraded fragment
113 (h)	1	55x70x14	87	A	<i>tegula</i>	Roman	well-preserved small fragment - undiagnostic
113 (i)	1	35x30x28	34	E	brick	uncertain	abraded fragment with trace of mortar on one side

Fabric descriptions:

Fabric A = pink clay fabric spotted with moderately abundant v small inclusions (1-3mm) of red clay grog + sandy grit with slight swirl structure internally

Fabric B = pink-red hard-fired sandy fabric with occ round quartz pebble incl.

Fabric C = orange silty terracotta hard fabric poor in sand and grit inclusion

Fabric D = a coarse and poorly-mixed variegated pink colour sandy-grog fabric with mica

Fabric E = very sandy brick-red fabric with fine grit inclusions

C.3 Fired clay

By Simon Timberlake

Introduction

C.3.1 Some 1.25 kg (51 pieces) of fired clay were recovered from this excavation. Most of this was poorly diagnostic based on form as to its function, but it did include some fragmented loomweight. Only a small amount of the probable loomweight was recognisable as pieces of 'LIA-type' equilateral form loomweights based on the presence of well-preserved fragments.

Methodology

C.3.2 The fired clay was identified visually using an illuminated x10 magnifying lens and compared where necessary with an archaeological reference collection. A dropper bottle containing dilute hydrochloric acid was used to confirm the presence or absence of carbonate.

Description and interpretation of worked clay objects

C.3.3 The 1251 g of fragmented fired clay was analysed for identifiable features, fabric type and possible function. As a result, five different fabric-types were recognized (Fabrics 1-5; see Table 8 and Chart 4).

C.3.4 Almost 80% of the fired clay consisted of Fabric 1. The largest amount came from contexts (36), (77), (79) and (80) – all the fills of corn dryers.

- C.3.5 Just 10-15% of the fired clay was composed of Fabric 2. However, these were consistently better-fired and more carefully moulded. As such these fragments were readily identifiable as coming from LIA-type equilateral/ rectangular loomweights that were probably 50-60mm thick (at least) with the classic diagonal warp thread perforations through the centres of each corner or apex and the very rounded edges. Both pieces were recovered from contexts (97) and (98) – from part of the deliberate backfill of the 3rd century Romano-British well **95**.
- C.3.6 The remaining fabrics had only minor representation here (in total no more than 6-8%). All came from context (113) – yet another deliberate backfill context from the same Romano-British well.

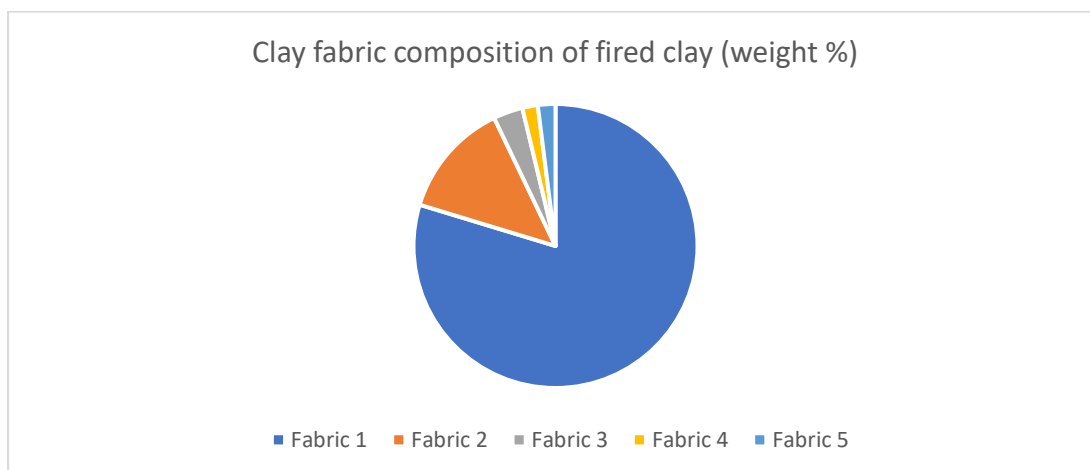


Chart 4: Fabric composition of fired clay recovered from site.

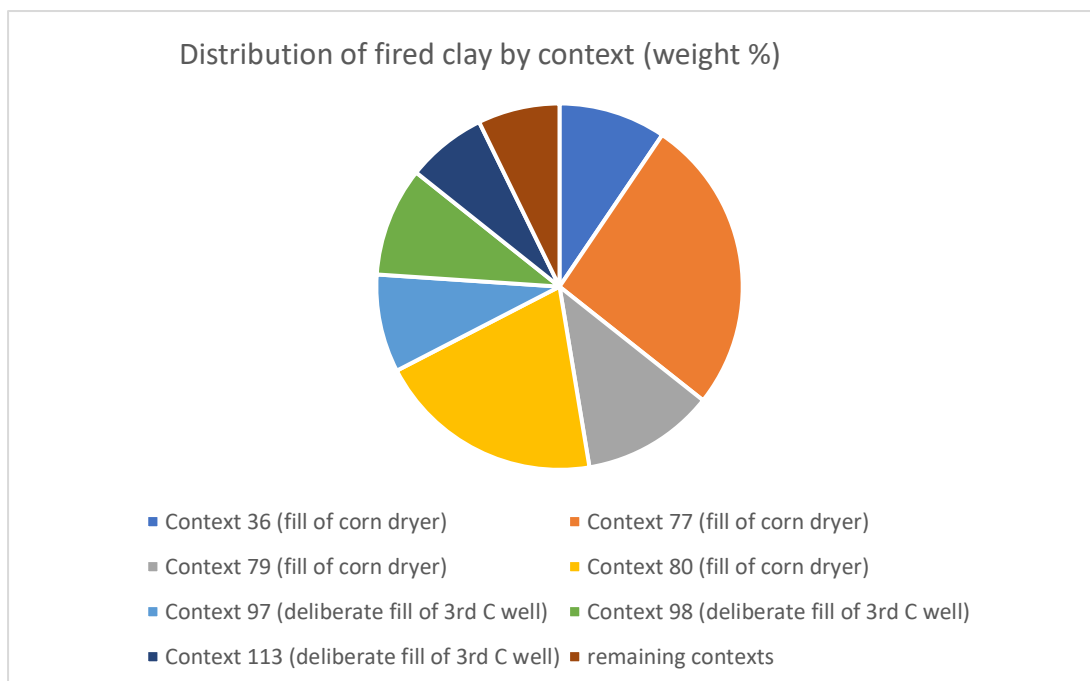


Chart 5: Distribution of fired clay across the site.

Discussion and conclusion

C.3.7 It is difficult to say much about this small, fragmentary and poorly preserved fired clay assemblage. Some of it seems to consist of broken-up loomweight, no complete or even semi-complete examples survived, and much of the material was un-diagnostic. The few pieces that are recognisable as loomweights suggest that these are Iron Age forms -either ones that continued in use post-Conquest within Romano-British settlements, or else traces of broken-up loomweight re-deposited into later Roman features.

Catalogue

Table 8: Catalogue of fired and worked clay from Broadland Gate, Norwich.

Context	Nos.	Dimensions (mm)	Weight (g)	Fabric type	Identity	Notes
33	5	45x40x30 + 35x30x30 + 35x25x22	78	1?		more strongly-fired and part-fused pieces of same? With finger print in one
36	3	50x40x30 + 65x35x26 + 25	114	1		
77	9	70x50x30 +60x50x30 + 50x40x35 + 30- 45	315	1		
79	14	20-45	141	1?		v broken-up and abraded – sev pieces have poss trace of flat moulded surface
80	6	80x45x35(refit) +60x45x35 + 45x35x35 + 45- 30	241	1		poorly diagnostic– v weathered and abraded
97	1	65x55x55	104	2	loomweight	An apex fragment of an equilateral LIA-type loomweight with x-corner warp thread perforation c 8-10mm diameter. Well-fired
98	3	55x45x30 + 55x40x25 + 30x20x15	116	1(53) + 2(61)	loomweight	minimum of 2 diff loomweights but fairly undiagnostic fragment
101	2	17 + 22	9	1		tiny crumbs only
113 (k)	4	50x30x25 +30- 28	55	1(25) + 3(8) + 4(22)		
113 (l)	1	50x30x16	25	5		
113 (m)	3	55x40x25 + 20- 45	53	3(34) + 1(21)		

Fabric descriptions:

Fabric 1 = sandy-silty pink fabric with unsorted inclusions of chalk and larger burnt flint gravel pebs in a variegated mix

Fabric 2 = hard fine mottled grey-brown well-fired silty clay fabric with few inclusions

Fabric 3 = variegated pinkish silty fabric with voids - porous

Fabric 4 = brick-red fine sandy fabric with flakes of red grog – porous

Fabric 5 = fine silty-sandy micaceous fabric without inclusions

C.4 Worked stone

By Simon Timberlake

Introduction

C.4.1 Fragments deriving from one item of worked stone—a single whetstone was recovered from the excavation, from the fill of possible corn dryer **76=105**. Two further whetstones were recovered during the trial trenching of Plot 2b, these both derived from the fill of well 95 ('pit' 505E) and are not detailed here, having been reported on in the trial trench report (Lyons in Birks 2020a, 21-22).

Methodology

C.4.2 The stone was identified visually using an illuminated x10 magnifying lens, and compared where necessary with an archaeological worked stone reference collection. A dropper bottle containing dilute hydrochloric acid was used to confirm the presence or absence of calcite in the rock.

Description and discussion of the worked stone

C.4.3 Just one (or possibly two very similar) items of worked stone weighing in total 52g were recovered from the southern site of this excavation.

C.4.4 Context 77, fill of possible corn dryer **76=105**: *pocket whetstone* (Roman) 100mx20mmx10mm 48g.

C.4.5 Two re-fitting parts of a subsequently-split and broken rod-shaped whetstone (Allen 2014,11) were recovered from the secondary fill of this Romano-British corn dryer pit **76**. The whetstone is made of finely laminated fissile Weald Clay Sandstone with its origin somewhere in the north-west of the High Weald near the Surrey/ Sussex border (Allen *ibid.* 39). The stone is a fine-grained fissile calcareous sandstone with finely visible muscovite defining the laminae, alongside microscopic quartz, chert and calcite and scattered dark flakes of carbonaceous granules and plant fossil material along the same micaceous laminae. Though now weathered, the whetstone was clearly once split to size and shaped as part of a manufacturing process for batches of these. It has one damaged end, with the other intentionally notched on either short side (and very faintly in between) in the form of a c.10mm wide band – most probably as a means of hafting this whetstone in order for it to be hung by a string— such as from a belt. The whetstone has been used on three sides (but not upon the subsequently split face), though in neither case was this use excessive, there being no evidence for any resulting depression or concavity. One narrow edge of this is smoother than the other, reflecting the preference for using it upon the RH side.

C.4.6 Yet another fragment of what appears to be exactly the same stone (used as a whetstone) accompanies this. This cannot be matched directly to the larger example, yet it is possible this comes from the split side, with a further bit missing in the middle. This fragment weighs 6g and is 30mm x 20mm x 2mm thick. The significant difference is that this is a rod-shaped rebated piece, with at least one well-polished longitudinal rebate cut into the top of the narrow edge, just 1.5mm wide as a groove, and evidently

intended for finishing-off the cutting edge of any sharpened knife blade. This is a common Roman practice with whetstones (Allen *ibid.* fig. 2.1: H and J).

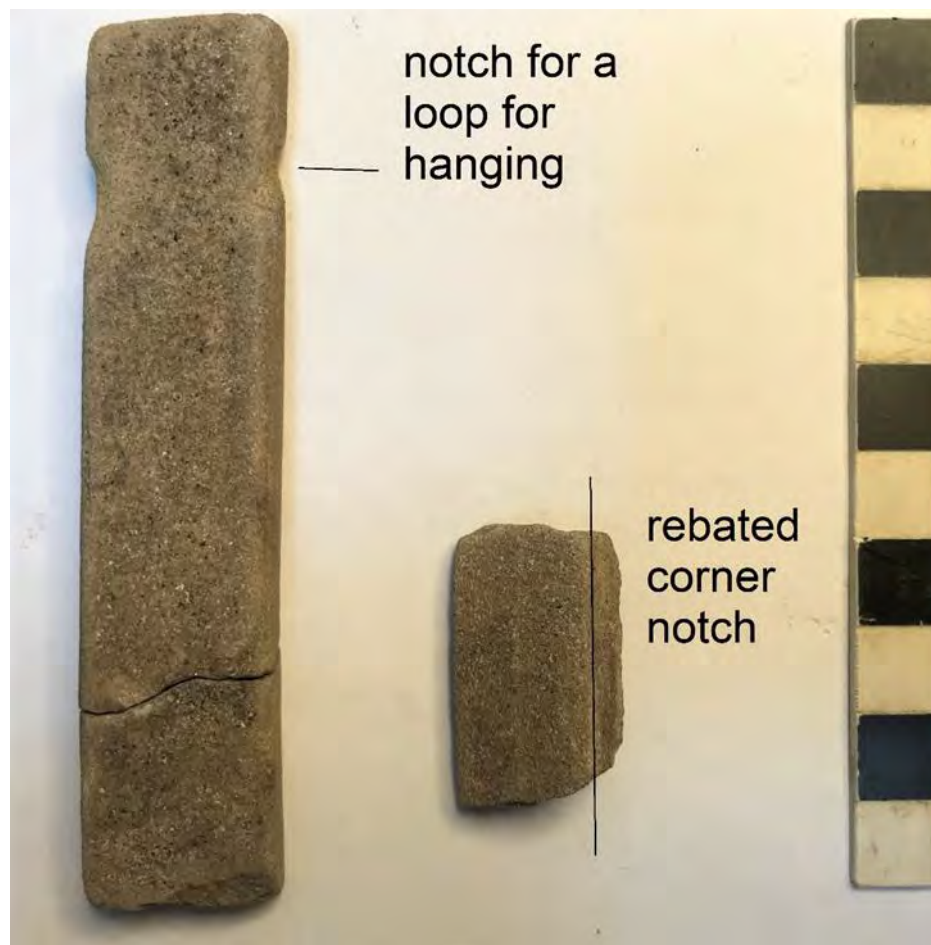


Plate B.4.1: Broken rod-shaped whetstone and a same or another piece with a rebate for knife edge work cut along one corner.

Discussion and conclusion

- C.4.7 This single example of a Romano-British rod-shaped pocket whetstone is interesting, yet it is quite limited as to what it can tell us of the material culture and exact period of the settlement occupation. These are fairly common artefacts as imported whetstones across Roman Britain, yet the use of this traded item is interesting this far north in East Anglia, given the availability of sandstone erratic material within Norfolk, and the closer proximity to Pennine sources of gritstone, whether these were of primary gritstone or secondary use off discarded Millstone Grit quern. The important quality of this particular stone over grit for the purpose of sharpening and polishing good quality metal knives, blades and razors is its fineness of grain and sufficient softness not to wear down the blades, but instead to finely hone and polish them.
- C.4.8 Of all the whetstones examined and recorded by J.R.L. Allen from Roman Silchester (*Calleva Atrebatum*), those made of Wealden Clay Sandstone were the most common ones to be bar-shaped, rebated, portable and also primary (i.e. none of these whetstones had been made from re-used fragments of slate, quern etc) and all appear to have been imported as such from this SE England-based industry. These whetstones

have been recorded in significant numbers from Roman urban sites such as Silchester, Dorchester and Wroxeter (where 100 sandstone blanks were found ready to be shaped and used (*ibid.*40)) – but also as far north as Fiskerton and Nettleton (near Roman Lincoln). Within East Anglia, just small numbers have been found at Roman Cambridge (Eddington; see Timberlake in Evans *et al* forthcoming) and from the Romano-British settlement at Northstowe, Cambridge (Timberlake in Aldred & Collins forthcoming).

- C.4.9 Whilst the Wealden whetstone-manufacturing ‘industry’ appears to have begun as early as the later 1st century AD, its probable zenith was during the later Roman period (Allen & Scott 2013; Allen 2014b). The probability is then that at Broadland Gate we could be looking at an import dating from the 2nd-3rd centuries AD.

C.5 Worked antler

By Ian Riddler

Antler Spindle Whorl

- C.5.1 The spindle whorl (Fig. 9) has been cut from the burr area of a red deer antler and a small amount of cortile tissue is visible on the upper, flat surface. It has been proficiently lathe-turned to provide a stepped, conical profile, and it is pierced by a central perforation. Two notches have been cut on the edge of the flat, upper surface and it is likely that these served to retain the yarn when it was first applied to the whorl. The spindle whorl came from the fill of a well **95** in the southern part of the excavation area.
- C.5.2 It is a comparatively rare and unusual form of spindle whorl, with its distinctive stepped conical section, and it can be assigned to the late Roman period. From the third century onwards the use of antler for spindle whorls became increasingly common in northern Europe. The earlier antler forms have a discoidal or shallow plano-convex section, whilst deeper conical sections appear to be a later development, probably not seen before the fourth century AD. The method of manufacture of these spindle whorls is well-illustrated amidst the assemblage from Drevant (Cher, France) in particular, where naturally-shed and skull-attached red deer antler burrs were sawn laterally, roughly shaped and set on to a lathe, where they could be turned and decorated (Cribellier and Bertrand 2011, 168-73). The same process occurred here, with the elaborate stepped profile providing most of the decoration. The shallow spindle whorls echo the natural form of the antler around the burr and would have been easier to produce than a deeper, stepped profile. Thus, although this is a later form of spindle whorl, it is also a more proficient form, and it would probably have been restricted to more affluent households.
- C.5.3 Greep placed these antler spindle whorls into his type 3.2 and noted that they were particularly common at Silchester (Greep 1983, 155 and 585). A related form from Lyon includes the characteristic stepped profile, but the middle section is plano-convex. One example was found still attached to its bone spindle (Béal 1983, 153, pl XXVII.355). Closer parallels for this form are provided by spindle whorls from Fréjus and

particularly from Dover, where the spindle whorl is unstratified, unfortunately (Rodet-Belarbi and Lemoine 2010, fig 32d; Philp 1981, fig 42.229).

C.5.4 The weight of the spindle whorl is as important as its form. In discussing the Roman spindle whorl in general, Wild noted: ‘Its weight is not often published; but it is this parameter, coupled with the whorl’s shape and the weight of the spindle that governs a yarn’s character’ (Wild 2002, 8). The choice of material will determine the weight of a spindle whorl. This example weighs just over 25g, placing it just beyond the weights of antler spindle whorls from Drevant, which range from 8.1g to 22.6g (Cribellier and Bernard 2011, 175-6). It is likely to have been heavier than whorls produced from pot sherds, as well as most of those made from the articular condyles of cattle femurs, which are a feature of the Iron Age and the earlier part of the Roman period. Two whorls of that material were found in a grave of early to mid-Roman date at Witchford in Cambridgeshire; they both weighed 18g (Crummy 2011). The relatively heavy weight of the antler spindle whorl suggests that it was probably used to spin wool, rather than linen.

SF 5

Complete spindle whorl of conical form, cut from the burr area of a red deer antler and lathe-turned to provide a stepped profile. The larger ridges, closer to the flat apex, are decorated with incised lateral lines. Pierced by a lightly conical central perforation. Two notches have been cut around the circumference and there is slight damage to the outer edge.

Feature: 95

Context: 97

Diameter: 46.2mm Height: 16.5mm Perforation Diameter: 7 – 8mm Weight: 25.

C.6 Metalwork

By Denis Sami

Introduction

C.6.1 The assemblage consists of five artefacts, all recovered from well **95**. The assemblage comprises copper-alloy (CuA) and iron (Fe) artefacts and it is used here to develop further understanding of the character of the different activities that occurred on the site through its chronological phases (Table 9). A further nine items of metalwork were recovered during the trial trenching of Plot 2b (copper alloy, lead and iron and silver; largely from unstratified contexts). Not detailed here, and reported on in the trial trench report (Silwood in Birks 2020a, 22-23), these included a 3rd century Roman coin (a copper alloy radiate), a small iron knife blade and a silver coin - probably a shilling of Elizabeth I (AD 1558-1603).

C.6.2 The assemblage from the excavation dates exclusively to the Roman period.

C.6.3 The metalwork includes dress accessories, fittings and a possible tool.

Table 9: quantity of artefacts by metal.

Material	No. Artefact
CuA	2
Fe	3
Total	5

- C.6.4 Overall, the assemblage is in poor condition and artefacts are incomplete. The finds have heavy encrustation and are oxidised due to the adverse conditions of the soil.

Methodology

- C.6.5 The metalwork was examined in accordance with the Oxford Archaeology East (OAE) metalwork finds standard based on the guidance of the Historical Metallurgy Society (HMS, Datasheets 104 and 108), the *Archaeometallurgy Guidelines for Best Practice* (Historic England 2015) and the *Guidelines for the Storage and Display of Archaeological Metalwork* (English Heritage/Historic England 2013).
- C.6.6 The catalogue of Roman ironwork at the British Museum published by Manning (1989) is used here as the main reference in the discussion and description of iron artefacts, while the Portable Antiquities Scheme (PAS) database was consulted for finds not reported in Manning's work
- C.6.7 Copper-alloy artefacts were compared with similar artefacts published in the catalogue of the metalwork from the excavation in Colchester (Crummy 1983) and the PAS.
- C.6.8 The material was classified according to Crummy's 1983 categories. The items were catalogued and the details are presented in a table at the end of this section (Table 2).
- C.6.9 A single Excel spreadsheet was used to enter details and measurements of each artefact. All metal finds were counted, weighed when relevant and classified on a context by context basis. The catalogue is organised by context number.

The assemblage

Copper-alloy

- C.6.10 A total of two copper-alloy artefacts were recovered during the project. Although given their preservation these objects are relatively undiagnostic, they are possible incomplete bracelets falling into Crummy's dress accessories category. SF 1 is a plain half-bracelet with missing terminals formed by a tapering (from 4.5 mm to 4 mm) and curved rod of copper-alloy with a circular cross-section. The internal diameter is 37 mm.
- C.6.11 SF 2 is tentatively identified as a double strand bracelet made of a thin strip of metal now twisted and deformed. With a thickness of only 0.5 mm, if this artefact was a bracelet, it should have been a delicate item easily prone to deformation.
- C.6.12 Bracelets were popular items, well represented at Middle to Late Roman sites and have a broad chronology spanning from c. AD 200 to c. 410 with possible later use (Crummy 1983, 38-39). The pottery recovered from pit 95 and associated with these items dates to the mid-3rd century (Lyons, App. B.1), this chronology is compatible with the two artefacts. Interestingly, from approximately the 3rd century, bracelets appear to have been distinctive indicators of gender identity and are associated with females (Swift 2011), possibly indicating activities connected with a female presence on site.

Iron

- C.6.13 Fitting/long nail SF 3 belong to Manning Type 2b, with a sub-circular head and tapering square cross-section. With a total length of 138 mm, this fitting denotes an item used in substantial architectural timber structures.
- C.6.14 Given its poor preservation, the identification of SF 4 is ambiguous, this artefact could have been some sort of crafting tool perhaps a chisel, but another interpretation remains open at this stage
- C.6.15 Similarly, SF 6 is covered by a thick deposit of rust that prevent a clear identification of this item. The presence of a tapering stem with sub-rectangular cross-section suggests this artefact is a nail of a structural fitting.

Discussion

- C.6.16 This assemblage is small, and its provenance limited to well **95**, therefore it can only provide restricted information. Nonetheless, it includes dress accessories and utilitarian objects (tools) consistent with the kind of material typically associated with Roman rural settlement in the region.

APPENDIX D ENVIRONMENTAL REPORTS

D.1 Environmental Samples

By Rachel Fosberry

Introduction

- D.1.1 Thirteen bulk samples were taken from features within the excavated area at Plot 2b, Broadland Gate, Norwich with the aim to identify any plant remains that are present and their interpretation with regard to domestic, agricultural and industrial activities, diet, economy and rubbish disposal. Samples were taken from deposits that are thought to be Romano-British in date.
- D.1.2 The results of environmental sampling from earlier evaluation of the site, not detailed here, indicated that there was widespread distribution of charred plant remains, primarily spelt wheat and hulled barley grains with occasional chaff elements as well as preservation of flax/linseed seed. The charred remains were interpreted as representing processed products (Summers in Birks 2020, 23-5).

Methodology

- D.1.3 The samples were processed by tank flotation using modified Sīraf-type equipment for the recovery of preserved plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve.
- D.1.4 A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds.
- D.1.5 The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table 1. Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (2010) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

Quantification

- D.1.6 For the purpose of this assessment, items such as seeds and cereal grains have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

Results

- D.1.7 Preservation of plant remains is through carbonisation with no evidence of preservation by any other means such as mineralization or waterlogging.
- D.1.8 Most of the samples contain a ‘background scatter’ of charred grain, most likely representing material that has accumulated in negative features. More significant assemblages of charred plant remains are present in samples from four features; two possible oven dryers **22/38**, **39/78** and **84/99** and well **95**.
- D.1.9 Sample 3, fill 36 of feature **22/38** produced abundant charred grain, predominantly hulled barley (*Hordeum vulgare*) with a minor component of wheat (*Triticum* sp.) grains that have the morphology of hulled wheat, spelt (*T. spelta*) and emmer (*T. dicoccum*). No chaff items were noted in the assemblage. Weed seed include corncockle (*Agrostemma githago*), bromes (*Bromus* sp.), goosefoots (*Chenopodium* sp.), black-bindweed (*Fallopia convolvulus*), grasses including meadow grass/cat’s tails (*Poa/Phleum* sp.) and docks (*Rumex* sp.). Sample 9, fill 80 of feature **39/78** produced an assemblage that is similarly comprised of cereals and weed seeds with no chaff. The cereals are predominantly barley with occasional wheat grain and oats (*Avena* sp.). It is not possible to determine if the oats are a cultivated or wild variety without the diagnostic chaff elements which have not been preserved. Other weed seeds include bromes, goosefoots, black-bindweed, grasses, vetch/tare (*Vicia/Lathyrus* sp.) and a charred fragment of a possible fruit such as a crab apple (*Malus* sp.). Sample 9 also contains a seed that morphologically resembles spinach (*Spinacia oleracea*) although it is more likely to be a seed of the genus *Atriplex* which has similar shaped seeds with a pronounced radicle. Spinach can only be confidently identified through the more distinguishable morphology of the fruit (Hallavant & Ruas, 2014). Sample 8, fill 101 of feature **84/99** also produced frequent charred barley grains with wheat and oat grains and a single seed of black-bindweed.
- D.1.10 Sample 12, fill 113 of well **95** produced charred hulled wheat grains with a single glume base of spelt wheat and occasional seeds of flax (*Linum usitatissimum*), cleaver (*Galium aparine*), grasses (Poaceae), clover/medick (*Trifolium/Medicago* sp.), rush (*Juncus* sp.) and dock (*Rumex* sp.).

Table 10: Environmental bulk samples.

Sample no.		1	2	3	4	5	6	7	8	9	10	11	12	13
Context no.		12	21	36	26	28	47	53	101	80	77	97	113	96
Feature no		11	19	22/38	25	27	46	52	84/99	39/78	76	95	95	95
Feature type		Posthole	Ditch	Pit	Ditch	Pit	Ditch	Pit	Pit	Pit	Pit	Well	Well	Well
Volume processed (L)		17	16	16	16	2	8	16	18	16	16	16	8	2
Flot Volume (ml)		50	5	100	20	5	20	10	150	25	60	40	20	1
CHARRED CEREALS														
<i>Avena</i> sp. Caryopsis	oat (wild or cultivated)								##	##				
hulled <i>Hordeum vulgare</i> L. caryopsis	domesticated Barley grain			####			#		####	####	#		#	
<i>Triticum</i> sp.	Wheat grain											#		

Sample no.		1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Triticum dicoccum</i> Schübl/ <i>spelta</i> L caryopsis	Emmer or spelt wheat grain	#		##	#		#		#	##	#		##	#
<i>Triticum spelta</i> L. coleoptile	Spelt Wheat sprout											#		
cereal indet. caryopsis		##		##				#	##	##	#	#	##	#
CHARRED CEREAL CHAFF														
<i>Triticum spelta</i> L. glume base	Spelt Wheat chaff												#	
CHARRED WILD SEEDS AND FRUITS														
<i>Agrostemma githago</i> L. seed	Corncockle			#										
<i>Atriplex/Spinacia</i> sp. seed	Orache/Spinach									#				
<i>Bromus</i> spp. caryopsis	Bromes			##						#			##	
Large <i>Chenopodium</i> sp. Seed (>1mm)	Goosefoots									#				
<i>Chenopodium album</i> L seed	Fat hen			#						#				
<i>Fallopia convolvulus</i> (L.) Á. Löve achene	Black-bindweed			#					#	#				
<i>Galium aparine</i> L. nutlet	Cleavers												#	
<i>Galeopsis tetrahit</i> L. seed	Common hemp-nettle			#cf										
<i>Linum usitatissimum</i> L. seed	flax/linseed												##	
<i>Poa/Phleum</i> sp. caryopsis	Meadow-grass/Cat's tail			#										
small Poaceae indet. (< 2mm) caryopsis	small-seeded Grass Family												#	
medium Poaceae indet. (2-3mm) caryopsis	medium-seeded Grass Family												#	
<i>Polygonum</i> sp. achene	Knotgrasses			#										
<i>Rumex</i> sp. achene	small-seeded Dock			#										
<i>Silene</i> sp. seed	Campions									#				
cf <i>Spinacea</i>	Prickly sow-thistle													
Large <i>Trifolium/Medicago</i> sp. seed	large-seeded Clovers/Medicks												#	
<i>Vicia/Lathyrus</i> sp.s eed	small-seeded Vetches/tares									#				
<i>Juncus</i> sp. seed	Rushes												#	
Estimated charcoal vol (ml)		10	3	80	<1	<1	<1	5	40	25	5	40	25	<1

Discussion

D.1.11 The environmental samples from this site have produced assemblages that are dominated by charred cereal grains with very little chaff and occasional weed seeds that are consistent to the results from earlier excavations. The features that produced the most abundant grain were noted as having *in-situ* burning and are most likely to be crop dryers. These features are commonly found on Roman farmsteads and were multi-functional with possible uses including drying and parching grain and for heating malted grain to halt germination (van der Veen 1989, 303). Hulled wheat requires several stages of processing to release the grain from the tight outer husk that results in fine chaff waste products that were commonly used as kindling in corn dryers and as packing in pottery kilns. The scarcity of chaff on this site suggests that the cereals had been processed elsewhere and maybe brought onto the site for storage, milling and/or distribution. Grain would need to be dried/hardened prior to milling to produce flour and it would also need to be fully-dried prior to storage to prevent mould formation which could eventually lead to 'hot-spots' and, potentially, spontaneous combustion.

D.1.12 Regional syntheses of rural sites in Roman Britain (Lodwick in Allen et al. 2017, van der Veen 2016, Parks 2013, Livarda et al. 2007) have shown that arable farming was primarily based on the cultivation of spelt wheat and barley, with intensification of production of spelt, in particular, focused on the Anglian plain. Barley is the dominant cereal in northern England and is considered to have been primarily produced for fodder. The dominance of barley in the corn dryers at this site maybe significant in this regard. The introduction of corn dryers and storage barns is generally seen as an indication of the production of surplus for market and for feeding the military.

D.1.13 The assemblage from the upper deposits of well **95** differs from the corn dryer assemblages in the predominance of spelt wheat over barley and also in the inclusion of flax/linseed. This oil-rich seed was a minor crop in the Roman period but would have been used for consumption but also for linen production.

Retention, dispersal and display

D.1.14 The flots should be retained within the project archive. The preserved cereal grains may be considered suitable for isotopic analysis should funding for this work ever become available.

D.2 Animal Bone

By Hayley Foster

Introduction and Methodology

- D.2.1 The animal bone from Broadland Gate, Norwich, represents a small assemblage of faunal remains weighing 5.9kg in total. There are 52 identifiable fragments assigned to a phase. Material was recovered via hand collection. The species represented include cattle (*Bos taurus*), sheep/goat (*Ovis/Capra*), horse (*Equus caballus*), pig (*Sus scrofa*), red deer (*Cervus elaphus*), roe deer (*Capreolus capreolus*) and domestic fowl (*Gallus gallus*). The remains came solely from well **95**, which dates to the mid to late Roman period. Remains comprise food waste and craft working residue. A further nine small fragments of burnt bone (9g), perhaps of cattle or another large mammal, were recovered during the trial trenching of Plot 2b; they are not included in the analyses presented here and are fully reported on in the trial trench report (Curl in Birks 2020a, 21-22).
- D.2.2 The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which is modified from Albarella and Davis (1996). Identification of the faunal remains was carried out at Oxford Archaeology East. References to Hillson (1992), Schmid (1972), von den Driesch (1976) were used where necessary.
- D.2.3 One methods of ageing were implemented when analysing the mammalian bone remains. These methods include observing dental eruption and wear and epiphyseal fusion. When analysing tooth wear of sheep/goat, tooth wear stages by Payne (1973 and 1987) were implemented. Tooth wear stages by Grant (1982) were implemented when assessing wear for cattle and pig. Higham (1967) mandibular wear stages (MWS) were assigned to loose mandibular third molars (M3s) and mandibles with the innermost tooth still present. The Higham wear stages are used to estimate a minimum age of an individual animal. The state of epiphyseal fusion is determined by examining the metaphysis and diaphysis of a bone. Fusion was recorded according Silver (1970) and Schmid (1972) for cattle, sheep, and pig.
- D.2.4 Measurements were taken according to the specifications of von den Driesch (1976), Payne and Bull (1988) and Davis (1992).

Results of Analysis

- D.2.5 The faunal remains from Broadland Gate are largely in good condition with high levels of fragmentation. There is evidence of butchery, burning and gnawing.
- D.2.6 Cattle are the best represented species in the feature. Most remains are primary butchery waste in the form of cranial fragments and extremities, including phalanges and metapodials, several of which are chopped. There are additionally three horn cores, one of which has chop marks, for the removal of the horn. Six other cattle fragments have chop and saw marks, including two scapulae, one of which is sawn and one that has a chop mark through the spine and notches made into the proximal blade.

Table 11: Number of identifiable specimens (NISP) and minimum number of individuals.

Species	NISP	NISP%	MNI	MNI%
Cattle	39	75.0	3	33.3
Red Deer	6	11.5	1	11.1
Sheep/Goat	3	5.8	1	11.1
Roe Deer	1	1.9	1	11.1
Horse	1	1.9	1	11.1
Domestic Fowl	1	1.9	1	11.1
Pig	1	1.9	1	11.1
Total	52	100.0	9	100.0

- D.2.7 Red deer remains in the form of sawn and broken pieces of antler are associated with craft working waste. Other deer remains include a humerus, phalanx and metapodia.
- D.2.8 Other mammal remains are only minimally represented, along with a single domestic fowl fragment.
- D.2.9 Metrical data was minimal due to the high levels of fragmentation (Tables 13 and 14), and estimated shoulder height could not be calculated.
- D.2.10 There was minimal ageing date, however there was a presence of an adult sheep/goat based on dental wear and cattle under the age of 30 months, based on epiphyseal fusion.

Discussion

D.2.11 While the assemblage from Broadland Gate is small in volume, all the remains came from single well **95**, containing evidence of exploitation of animals for both food and craft purposes. The majority of remains are domestic food waste, typical of cattle dominated Roman assemblages, however the craft working waste is of particular interest. During the Roman period the use of the cleaver increased greatly from the Iron Age period which saw more fine cut marks (Maltby 2007). The use of a saw is inefficient for carcass processing however can be used for the removal of horn cores and antler (Rixon 1989). Evidence shows that a saw was used on both antler fragments and on a cattle scapula, in both cases for craft working activity.

Retention, dispersal and display

D.2.12 The assemblage should be retained as it is an excellent example of a single feature with evidence of domestic activity in the form of craft working and butchered food waste.

Table 12: List of Specimens.

Context	Species	Element
97	Cattle	Metapodial 1
97	Cattle	Tibia
97	Cattle	Phalanx 1
97	Cattle	Calcaneus
97	Cattle	Calcaneus

Context	Species	Element
97	Cattle	Metatarsal 1
97	Pig	Mandible
113	Red Deer	Humerus
113	Cattle	Humerus
113	Cattle	Metacarpal 1
113	Cattle	Metatarsal 1
113	Cattle	Metatarsal 1
98	Roe Deer	Metacarpal 1
98	Cattle	Metacarpal 1
98	Cattle	Phalanx 1
98	Cattle	Metacarpal 1
98	Sheep/Goat	Mandible
96	Cattle	Horn Core
96	Cattle	Horn Core
96	Cattle	Horn Core
113	Cattle	Metacarpal 1
113	Horse	Loose Maxillary Tooth
113	Cattle	Femur
97	Red Deer	Metatarsal 1
97	Cattle	Scapula
97	Cattle	Loose Maxillary Tooth
97	Cattle	Scapula
97	Cattle	Humerus
98	Cattle	Radius
98	Cattle	Scapula
98	Sheep/Goat	Loose Maxillary Tooth
98	Red Deer	Phalanx 1
98	Cattle	Tibia
98	Domestic Fowl	Radius
98	Red Deer	Antler
98	Red Deer	Metacarpal 1
98	Cattle	Phalanx 1
98	Cattle	Metatarsal 1
98	Cattle	Metacarpal 1
98	Cattle	Metatarsal 1
98	Cattle	Loose Maxillary Tooth
98	Cattle	Loose Maxillary Tooth
98	Cattle	Radius
98	Cattle	Pelvis
98	Sheep/Goat	Loose Maxillary Tooth
98	Red Deer	Antler
98	Cattle	Cranium
98	Cattle	Metatarsal 1

Context	Species	Element
98	Cattle	Scapula
98	Cattle	Loose Maxillary Tooth
98	Cattle	Loose Maxillary Tooth
98	Cattle	Loose Maxillary Tooth

Table 13: Measurements in (mm) for elements.

Context	Species	Element	GL	Bp	SD	Bd	GLP
96	Cattle	Horn Core	143				
96	Cattle	Horn Core	163				
96	Cattle	Horn Core	150				
97	Cattle	Metapodial 1					
97	Cattle	Tibia				48.9	
97	Cattle	Phalanx 1	60.8				
97	Cattle	Calcaneus	229.8				
97	Cattle	Calcaneus					
97	Cattle	Metatarsal 1		51.8			
97	Pig	Mandible					
97	Red Deer	Metatarsal 1				39.7	
97	Cattle	Scapula					
97	Cattle	Loose Mandibular Tooth					
97	Cattle	Scapula					
97	Cattle	Humerus					
98	Roe Deer	Metacarpal 1		21.6	13.2		
98	Cattle	Metacarpal 1		61.2		63.6	
98	Cattle	Phalanx 1	63.4				
98	Cattle	Metacarpal 1		53.4			
98	Sheep/Goat	Mandible					
98	Cattle	Radius				89.5	
98	Cattle	Scapula					
98	Sheep/Goat	Loose Mandibular Tooth					
98	Red Deer	Phalanx 1	46.1				
98	Cattle	Tibia					
98	Domestic Fowl	Radius					
98	Red Deer	Antler					
98	Red Deer	Metacarpal 1					
98	Cattle	Phalanx 1	61.7				
98	Cattle	Metatarsal 1		47.8			
98	Cattle	Metacarpal 1					
98	Cattle	Metatarsal 1					
98	Cattle	Loose Mandibular Tooth					
98	Cattle	Loose Mandibular Tooth					
98	Cattle	Radius					
98	Cattle	Pelvis					
98	Sheep/Goat	Loose Mandibular Tooth					
98	Red Deer	Antler					
98	Cattle	Cranium					
98	Cattle	Metatarsal 1				51.7	
98	Cattle	Scapula					
98	Cattle	Loose Mandibular Tooth					
98	Cattle	Loose Mandibular Tooth					
98	Cattle	Loose Mandibular Tooth					

Context	Species	Element	GL	Bp	SD	Bd	GLP
113	Red Deer	Humerus					
113	Cattle	Humerus					
113	Cattle	Metacarpal 1		67.6			
113	Cattle	Metatarsal 1					
113	Cattle	Metatarsal 1				52.2	
113	Cattle	Metacarpal 1					
113	Horse	Loose Maxillary Tooth					
113	Cattle	Femur					

Table 14: Abbreviations for table of measurements.

Abbreviation	Description
GL	Greatest length
Bd	Greatest breadth of distal end
BT	Greatest breadth of trochlea
Bp	Greatest breadth of proximal end
SD	Smallest breadth of diaphysis
GLP	Greatest length of glenoid process

Table 15: Evidence of butchery.

Species	Element	Butchery	Notes
Cattle	Pelvis	Chop	2 chops to acetabulum.
Cattle	Metatarsal 1	Chop	Chop to distal condyle, likely separating joint.
Cattle	Tibia	Chop	Diagonal chop upper mid-shaft.
Cattle	Calcaneus	Chop	2 chop marks, lateral side.
Cattle	Horn Core	Chop	5 chops to remove horn.
Cattle	Scapula	Sawn and Chop	scapula is sawn horizontally through spine, midway through body followed by longitudinal saw. Chop through articulation.
Red Deer	Antler	Sawn	5 pieces of antler. 2 larger chunks with sawing marks.
Cattle	Scapula	Chop	Spine is chopped, proximal end contains a series of notches (again likely sign of craft work)

Table 16: Evidence of burning.

Species	Element	Burning
Cattle	Metapodial 1	Blackened
Red Deer	Antler	Singed
Red Deer	Metacarpal 1	Singed

Table 17: Evidence of gnawing.

Species	Element	Gnawing
Cattle	Phalanx 1	Carnivore
Roe deer	Metacarpal 1	Carnivore

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APPENDIX F OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-415513		
Project Name	A Roman farmstead at Plot 2b, Broadland Gate, Norwich		
Start of Fieldwork	19/03/2021	End of Fieldwork	16/04/2021
Previous Work	Yes	Future Work	No

Project Reference Codes

Site Code	ENF151042	Planning App. No.	20081773 & 20170827
HER Number	ENF151042	Related Numbers	ENF148863, ENF147241

Prompt

Techniques used (tick all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> Aerial Photography – interpretation | <input checked="" type="checkbox"/> Open-area excavation | <input type="checkbox"/> Salvage Record |
| <input type="checkbox"/> Aerial Photography - new | <input type="checkbox"/> Part Excavation | <input type="checkbox"/> Systematic Field Walking |
| <input type="checkbox"/> Field Observation | <input type="checkbox"/> Part Survey | <input type="checkbox"/> Systematic Metal Detector Survey |
| <input type="checkbox"/> Full Excavation | <input type="checkbox"/> Recorded Observation | <input type="checkbox"/> Test-pit Survey |
| <input type="checkbox"/> Full Survey | <input type="checkbox"/> Remote Operated Vehicle Survey | <input type="checkbox"/> Watching Brief |
| <input type="checkbox"/> Geophysical Survey | <input type="checkbox"/> Salvage Excavation | |

Monument	Period	Object	Period
ditch	Roman (43 to 410)	pottery	Roman (43 to 410)
pit	Roman (43 to 410)	bone	Roman (43 to 410)
posthole	Roman (43 to 410)	CBM	Roman (43 to 410)
corn dryer	Roman (43 to 410)	metal work	Roman (43 to 410)
well	Roman (43 to 410)	Worked stone	Roman (43 to 410)

Insert more lines as appropriate.

Project Location

County	Norfolk	Address (including Postcode) Plot 2b Broadland Gate, Norwich Norfolk NR13 5AY
District	Broadland	
Parish	Postwick	
HER office	Norfolk	
Size of Study Area	3.640m2	
National Grid Ref	TG 29029 09068	

Project Originators

Organisation	Oxford Archaeology East
Project Brief Originator	Steve Hickling
Project Design Originator	Patrick Moan
Project Manager	Patrick Moan
Project Supervisor	Anne-Laure Bollen

Project Archives

	Location	ID
Physical Archive (Finds)	Norwich Castle Museum	NWHCM 2021.16
Digital Archive	Norwich Castle Museum	NWHCM 2021.16
Paper Archive	Norwich Castle Museum	NWHCM 2021.16

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Remains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Stratigraphic		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Survey		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Worked Stone/Lithic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

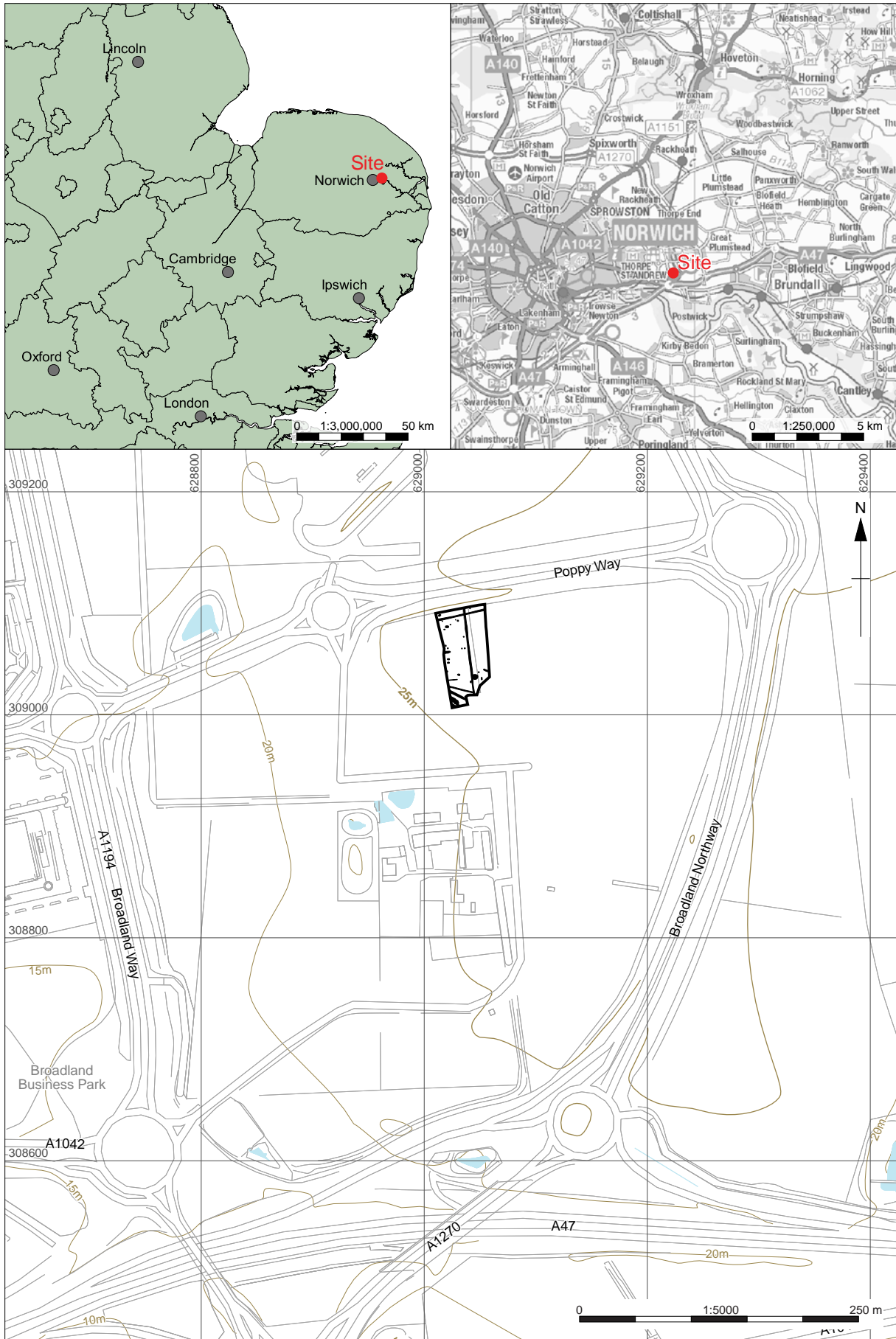
Digital Media

Database	<input checked="" type="checkbox"/>
GIS	<input checked="" type="checkbox"/>
Geophysics	<input type="checkbox"/>
Images (Digital photos)	<input checked="" type="checkbox"/>
Illustrations (Figures/Plates)	<input checked="" type="checkbox"/>
Moving Image	<input type="checkbox"/>
Spreadsheets	<input checked="" type="checkbox"/>
Survey	<input checked="" type="checkbox"/>
Text	<input checked="" type="checkbox"/>
Virtual Reality	<input type="checkbox"/>

Paper Media

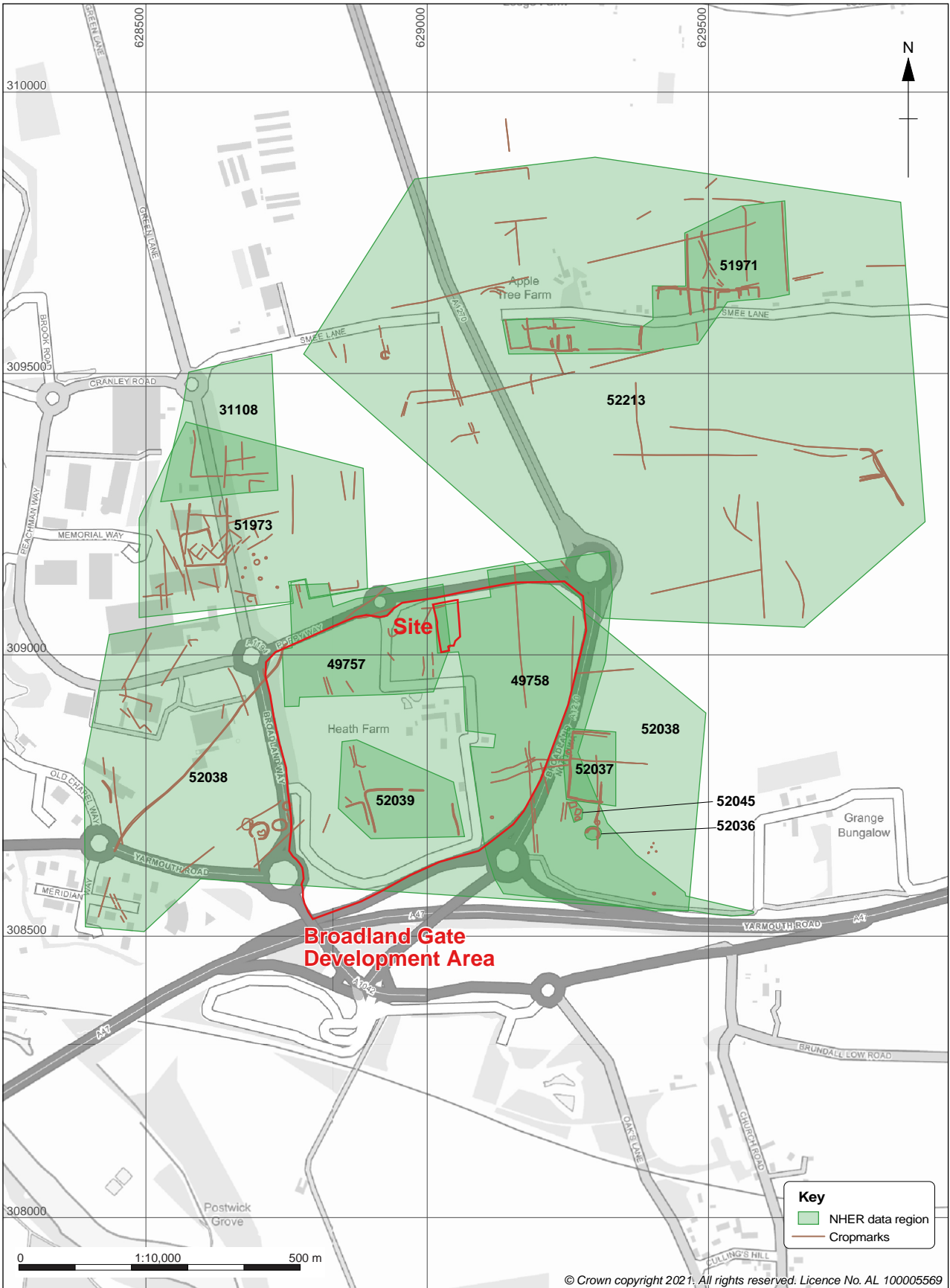
Aerial Photos	<input type="checkbox"/>
Context Sheets	<input checked="" type="checkbox"/>
Correspondence	<input type="checkbox"/>
Diary	<input type="checkbox"/>
Drawing	<input checked="" type="checkbox"/>
Manuscript	<input type="checkbox"/>
Map	<input type="checkbox"/>
Matrices	<input type="checkbox"/>
Microfiche	<input type="checkbox"/>
Miscellaneous	<input type="checkbox"/>
Research/Notes	<input type="checkbox"/>
Photos (negatives/prints/slides)	<input type="checkbox"/>
Plans	<input checked="" type="checkbox"/>
Report	<input checked="" type="checkbox"/>
Sections	<input checked="" type="checkbox"/>
Survey	<input checked="" type="checkbox"/>

Further Comments



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Figure 1: Site location



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Figure 2: NHER data

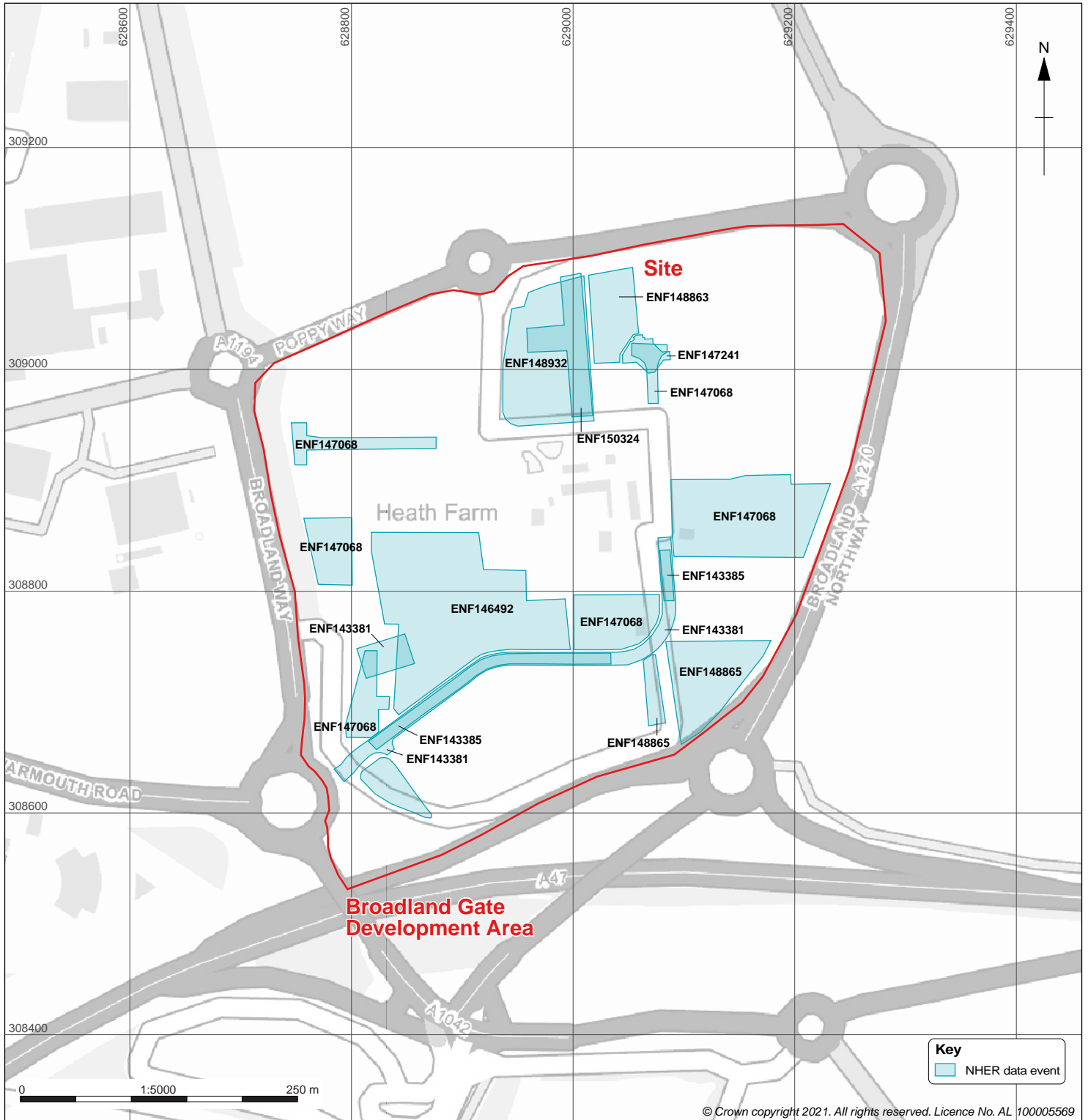


Figure 3: Previous work in Broadland Gate Development Area

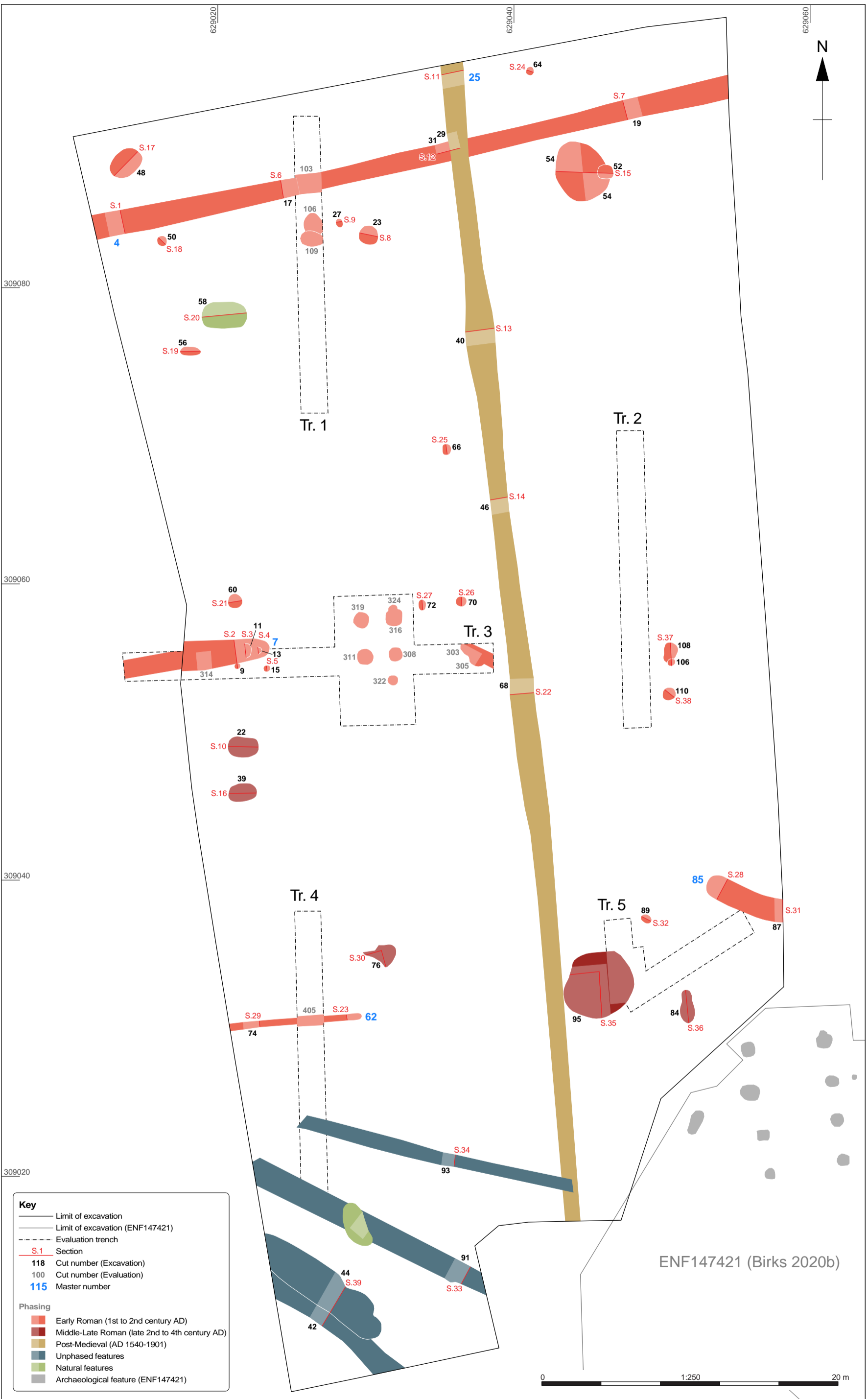


Figure 4: Site Phase plan, showing features from adjacent 2019 excavation (ENF147421), after Birks 2020b, fig. 10

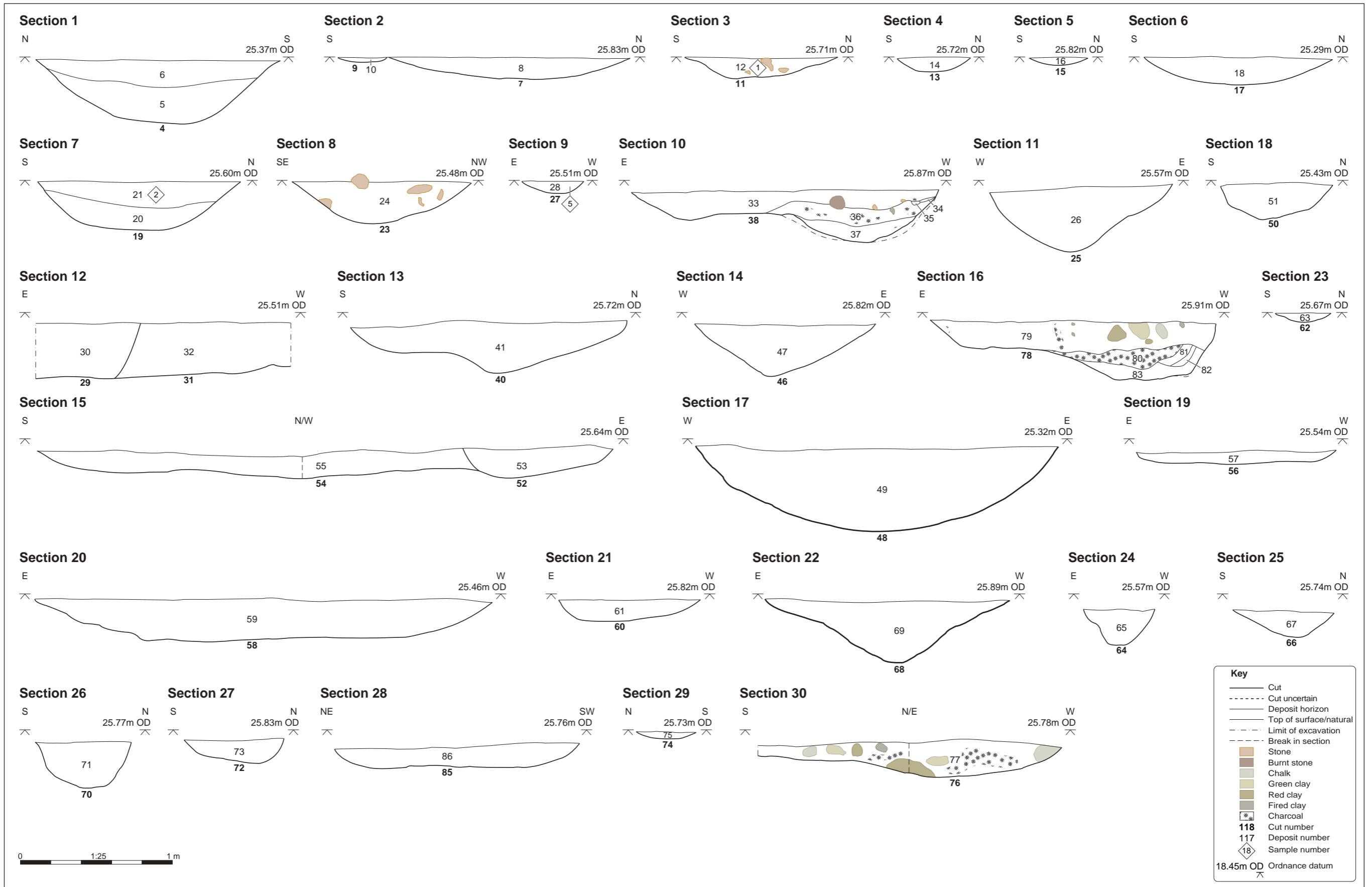


Figure 5: Sections

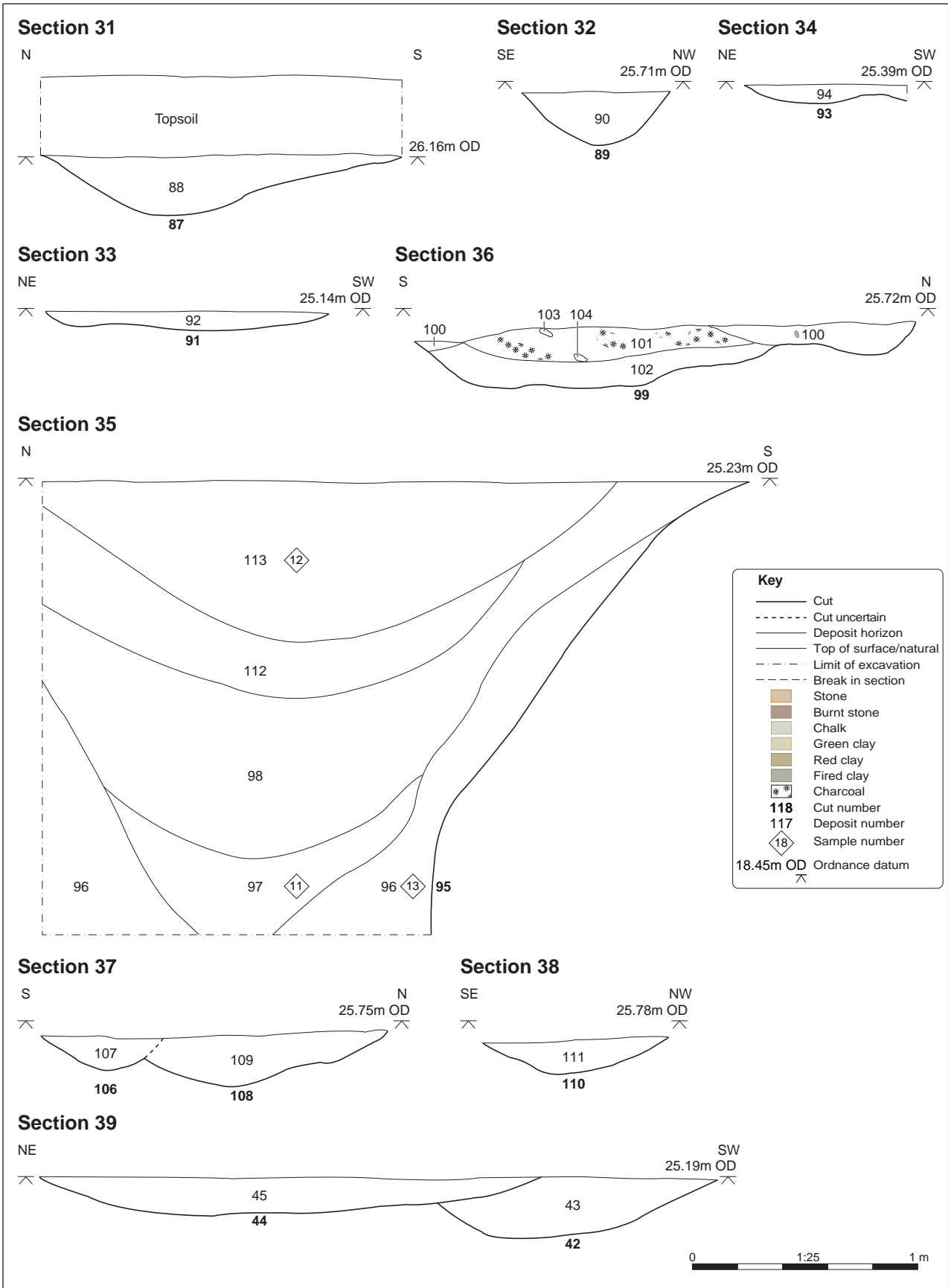


Figure 6: Sections

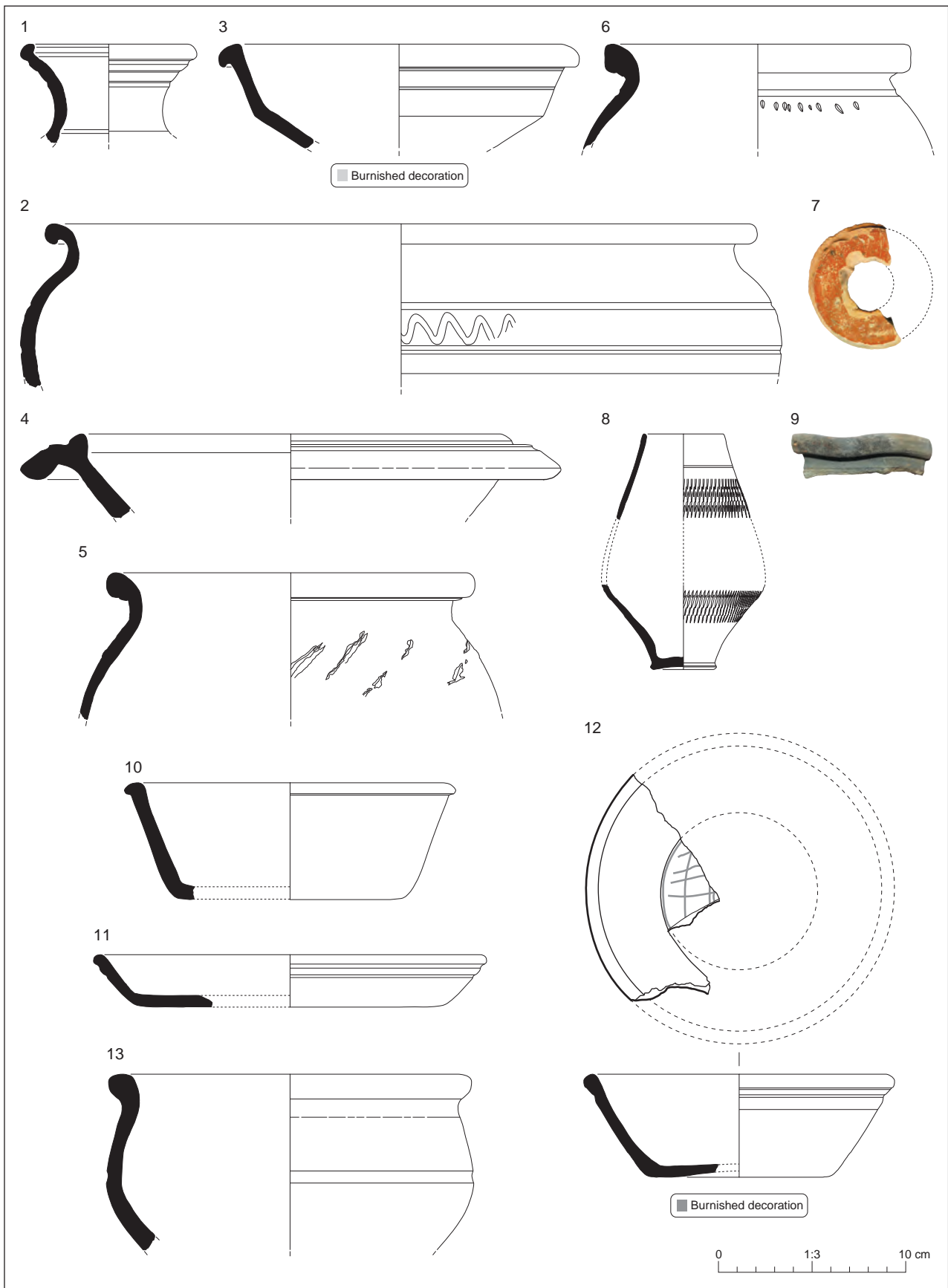


Figure 7: Roman pottery



Figure 8: Antler spindle whorl

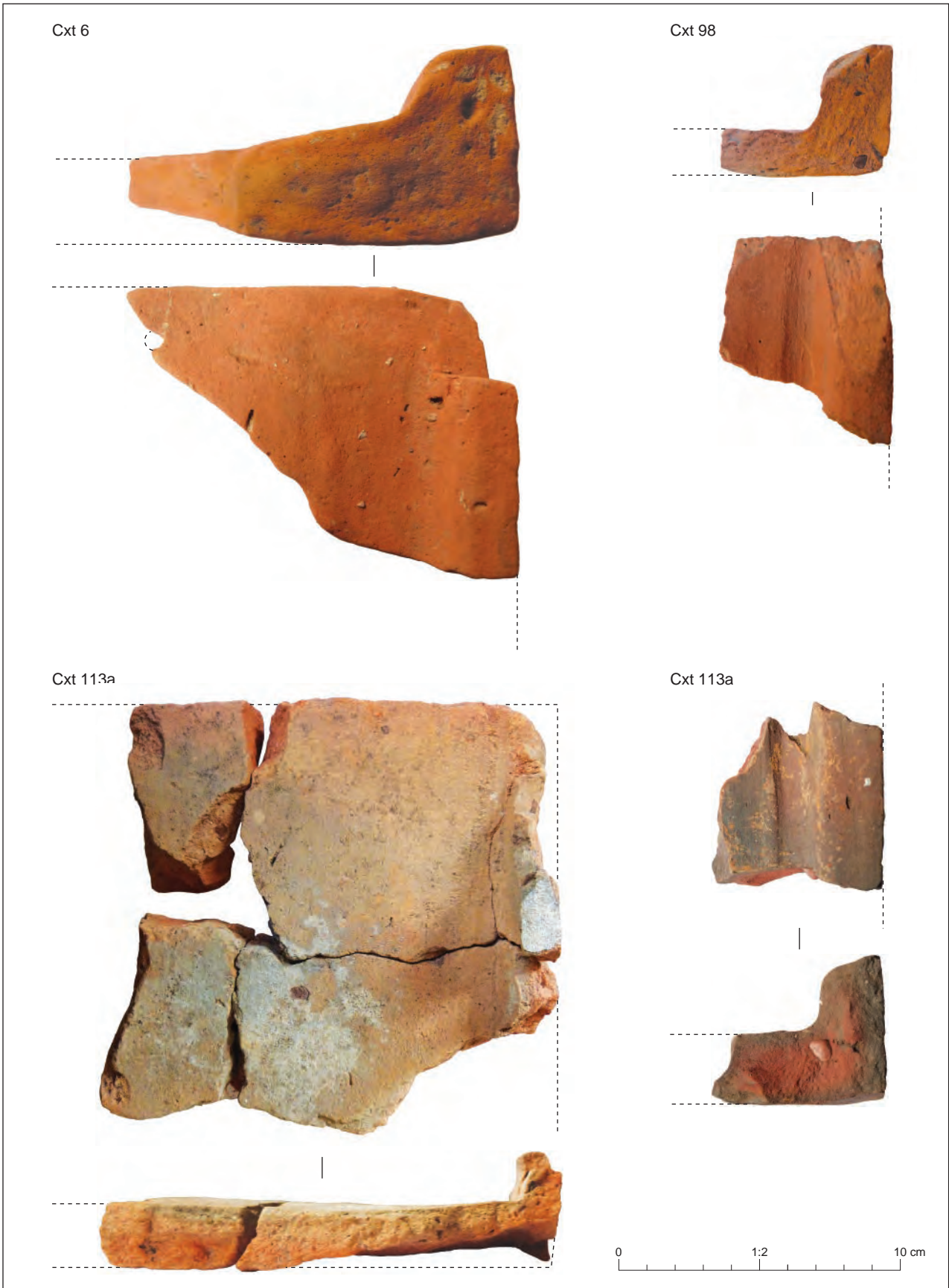


Figure 9: CBM



Plate 1: Ditch 19, from the east



Plate 2: Ditch 7 and Postholes 9, 11, 13 and 15, from the east



Plate 3: Pit 23, from the north-east



Plate 4: Pits 106 and 108, from the east



Plate 5: Corn dryers **22** and **39**, from the north



Plate 6: Corn dryer **84**, from the east



Plate 7: Well 95, before stepping, from the west



Plate 8: Well 95, after stepping, from the west



Plate 9: Working shot of testing the depth of Well 95 with an auger



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