



# Land at Castlethorpe Road Hanslope Milton Keynes

Archaeological Excavation



for Triskelion Heritage

> on behalf of Bloor Homes

CA Project: MK0054 CA Report: MK0054\_1 Accession Number: AYBCM:2018.44

November 2019



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#### SUMMARY

Site Name:	Land at Castlethorpe Road
Location:	Hanslope, Milton Keynes
NGR:	479825 246969
Туре:	Excavation
Date:	April-June 2018
Planning Reference:	16/02106/OUT
Location of archive:	Buckinghamshire County Museum
Accession Number:	AYBCM:2018.44
Site Code:	HANS18

A programme of archaeological investigation was undertaken by Cotswold Archaeology between April and June 2018 on land at Castlethorpe Road, Hanslope, Milton Keynes. The work was commissioned by Gerry Wait of Triskelion Heritage, on behalf of Bloor Homes, and involved the excavation of an area of 0.33ha in the north of the development site.

The excavation revealed four distinct phases of occupation dating from the Roman period until the 14th century. The earliest activity encountered within the site was a single ditch of Early Roman date, running roughly parallel to a palaeochannel, which also contained a small assemblage of heavily abraded Roman ceramic fragments. A second phase of occupation comprised a series of ditches of 11th-century or earlier date in the western half of the area, which formed an enclosure probably extending further to the north-west, beyond the limits of excavation and a set of ditches likely forming a droveway along its eastern side. Subsequently, between the 11th and 13th centuries, enclosures and a pit containing midden material likely to belong to the now deserted hamlet of Green End, situated to the immediate west of the site, were established in the western part of the excavation area. During the 13th and 14th centuries the enclosures were reworked and expanded to the east, with seven ditches aligned parallel with and perpendicular to the base of the valley in which the site was located. These features appeared to follow very similar alignments to those of earlier phases of activity. A moderate assemblage of medieval finds was recovered from the site, along with palaeoenvironmental evidence, which suggest habitation in the near vicinity.

The results of the fieldwork appear to support the theory that the village of Hanslope originated during the Anglo-Saxon period, subsequently growing to the sizeable settlement recorded by the Domesday survey. Evidence for the prolonged occupation of the satellite settlement at Green End, to the west of the site, was also encountered.

# 1. INTRODUCTION

- 1.1 Between April and June 2018, Cotswold Archaeology (CA) carried out an archaeological investigation of land at Castlethorpe Road, Hanslope, Milton Keynes (centred on NGR: 479825 246969; Fig. 1) at the request of Triskelion Heritage acting on behalf of Bloor Homes.
- 1.2 Outline planning permission (all matters reserved except access) for residential development of up to 150 dwellings, estate road, open space and associated works was granted by Milton Keynes Council (MKC), conditional on a programme of archaeological work (planning ref. 16/02106/OUT). The archaeological condition was recommended by Nick Crank, the Senior Archaeological Officer at Milton Keynes Council (SAOMKC). Informed by the results of a preceding geophysical survey (Sumo 2017) and trial-trench evaluation (CA 2017a), a strategy of targeted excavation was recommended.
- 1.3 The excavation was undertaken in accordance with a detailed written scheme of investigation (WSI) produced by CA (2018a), and a subsequent addendum (CA 2018b). Both documents were approved by MKC. The fieldwork also followed the Standard and Guidance for Archaeological Excavation (ClfA 2014); the Management of Research Projects in the Historic Environment (MORPHE): Project England 2015a) and accompanying Manager's Guide (Historic PPN3: Archaeological Excavation (Historic England 2015b). Post-excavation analysis also incorporated suitable research themes identified by the Solent-Thames Research Framework for the Historic Environment (Hey and Hind 2014). The fieldwork was monitored by Nick Crank (SAOMKC), including site visits on 24 April 2018 and 7 June 2018.

# The site

1.4 The development site is approximately 10ha in extent and is located to the north-west of Castlethorpe Road, on the western edge of Hanslope (Fig. 1). The site comprises a single arable field, bounded by residential development, part of Hanslope village, to the north-east, by Castlethorpe Road and further residential development to the south-east, and by agricultural land to the south-west and north-west (Figs 1 & 2). The site lies at approximately 114m above Ordnance Datum (aOD) along its south-eastern boundary, remaining relatively high along its north-eastern boundary but falling away to approximately 102m aOD in its western corner.

1.5 The underlying geology is mapped as Blisworth Limestone Formation, a type of sedimentary bedrock formed approximately 165 to 169 million years ago in the Jurassic Period. This is overlain by superficial deposits of Oadby Member Diamicton, formed up to 2 million years ago in the quaternary period (BGS 2019).

# 2. ARCHAEOLOGICAL BACKGROUND

2.1 Archaeological interest in the site arises from previous archaeological works, which have taken place within the development area. These comprised a heritage desk-based assessment (DBA) produced by Cotswold Archaeology (CA 2016), geophysical survey (Sumo 2017), trial-trench evaluation (CA 2017b) and the *Hanslope: Buckinghamshire Historic Towns Assessment Report* document (Green 2011). These reports have included the archaeological and historical background, which is summarised here, supplemented by a search of online Heritage Gateway and Archaeology Data Service (ADS) records in order to identify any recent relevant discoveries in the area. Specific sites are referred to by the Milton Keynes Historic Environment Record (MKHER) reference number. A recent DBA produced for a site immediately to the south (CA 2018c) was also consulted.

# Prehistoric (pre-AD 43) and Roman (AD 43 – AD 410) periods

- 2.2 The earliest prehistoric evidence recovered from the site comprises a single flake of residual worked flint recovered during trial trenching and dating to the Neolithic or Early Bronze Age (CA 2017b).
- 2.3 The MKHER documents an unidentified object of possible Iron Age date that may have been found within the site (MMK964), though the recorded grid reference only gives the general vicinity; the artefact was donated to Buckinghamshire County Museum in 1911 and no further detail is available. A further find of Iron Age date, a fragment of cast copper-alloy flat ring terret, was recorded *c*. 100m to the north of the site (MMK6456).
- 2.4 Three artefacts of Roman date, including a buckle plate, a brooch (MMK6728) and a coin, have been recorded within the site. These might indicate some Roman activity within or near to the site but by themselves are not indicative of extensive Roman occupation.

2.5 A cropmark visible on aerial photography, *c*. 700m to the south-east of the site consists of four or five enclosures, connected by an associated linear ditch which follows an irregular course running south-west to north-east (National Monuments Record (NMR) ref. 1586359). Two enclosures are conjoined at the south-western end of the ditch and another pair is attached at the north-eastern end. The feature group is undated but the enclosures and ditch are overlain by cropmarks indicative of ridge-and-furrow cultivation. This suggests they pre-date the medieval period, and may be of later prehistoric to Roman date based on their morphology.

#### Early medieval (AD 410 - 1066) and medieval (1066 - 1539) periods

- 2.6 There are no recorded heritage assets or find-spots of early medieval date within the development area. The settlement of Hanslope (*Hammescle*) is recorded by the Domesday Book as forming part of the Hundred of Bunsty. The settlement appears at this time to have been very substantial; it is recorded as consisting of 55 households and lists among its assets 26 ploughlands, two lord's plough teams, 18 men's plough teams, 11 ploughs of meadow, woodland for 1000 pigs and a mill.
- 2.7 The MKHER records an extensive scatter of metal-detected medieval finds within the site, among them a number of coins (e.g. MMK6500, MMK6501, MMK6503, MMK6504), a copper-alloy strap clasp (MMK6508), a copper-alloy fragment (MMK6498) and a possible 'plague cross' (MMK6481). The scatter appears to be of greater density within the north-western area of the site and findspots of medieval date have also been recorded immediately to the south and south-west of the site near Cuckoo Hill Farm (e.g. MMK6591, MMK6538). This relative density may suggest medieval settlement activity within the development area, most likely associated with the now abandoned site of Green End.
- 2.8 A medieval settlement known as Green End is recorded approximately 50m to the west of the site. The settlement at Green End is recorded in The Easter Book of Hanslope (dating to 1616) as consisting of 24 households but the settlement appears to have shrunk by 1779, when the Watts Estate Map depicts eight houses. The MKHER records several features at Green End Farm relating to the medieval settlement of Green End, including a now-demolished 16th-century mansion house, fishponds, a moat and pottery findspots (MMK3439, MMK3440, MMK3441). Before the demolition of Green End farmhouse in 1954, house platforms and a street line were documented as having been preserved adjacent to the farmhouse (MMK3439).

The mansion and settlement at Green End were connected to Hanslope by a trackway which ran immediately to the north-west of the site, depicted on the 1779 Watts Estate Map as 'Green Lane' (Fig. 3).

2.9 Given Green End is documented as having shrunk in size and the evident density of medieval artefacts recorded within the site, it is probable that the medieval settlement of Green End extended into the west and north-western areas of the site.

#### Post-medieval (1540 – 1800) and modern (1801 – present) periods

- 2.10 The MKHER records an extensive scatter of post-medieval finds within the site, which were discovered through an episode of metal detecting undertaken between 2003 and 2004. This finds scatter consists of 16 buckles, two shoe buckles, five coins, five rings, three bells, a farthing token, a harness tack, a quatrefoil mount and a copper duit or Dutch coin. The distribution of post-medieval artefactual finds appears to be concentrated within the western area of the site. The types of finds are indicative of former settlement activity and the concentration within the site therefore suggests that post-medieval occupation may have extended within the site, which may be indicative of a continuity of use from the medieval period. The Hanslope Estate Map of 1779 depicts two structures within the western corner of the site, the function of these structures is unknown, but it is possible that they represent part of the then more extensive post-medieval settlement at Green End. The findspots identified within the site may then relate to the occupation of these structures and the structures comprising Green End just to the west of the Site.
- 2.11 Historic cartographic sources show that throughout the post-medieval period and into the modern period the extent of Hanslope remained relatively static and the 'end' settlement foci still thrived. There was some further development, outside of the core settlement of Hanslope during the modern period, for example the 1828 Plan of Hanslope records a small cluster of buildings in the vicinity of Malt Mill Farm, located approximately 200m to the south-west of the site (CA 2016, 25).
- 2.12 The 1st Edition Ordnance Survey (OS) Map of 1881 shows the site comprising three parcels of land (Fig. 4). These are depicted as open fields with trees dispersed across the site. To the north of the site runs a route way running between Stocking-Green Farm to the north-east of the site and the small settlement of Green End directly west of the site. Maltmill Lane is shown to the south of the site. Footpaths from the north-west of Hanslope to Green End pass through the site. These paths

may relate to historic trackways that connected Green End with the village of Hanslope. To the south of the site on Cuckoo's Hill is a small enclosed parcel of land containing some form of building although its extent is not clear.

- 2.13 By 1900, the tree coverage is no longer present allowing further expansion of the property on Cuckoo's Hill. Further settlement expansion is evident in the Ordnance Survey Map of 1950, with three buildings situated on Maltmill Lane (now Castlethorpe Road), which runs directly south-east the site.
- 2.14 By 1977, the site has become merged into two parcels of land and is enclosed to the east by the expansion of Hanslope. This is mirrored to the south of the site with the expansion of the Cuckoo's Hill Farm and the dwellings along Maltmill Lane. The settlement identified as Green End by this time is no longer in existence; however a small group of buildings is still noted to the west of the site.

#### Geophysical survey and trial-trench evaluation

- 2.15 A geophysical survey and trial-trench evaluation of the site were undertaken in 2017 (Sumo 2017; CA 2017b). The geophysical survey revealed several former field boundaries marked on historic mapping and several uncertain linear trends thought to be either natural or agricultural in origin (Sumo 2017). The evaluation trenches, which were targeted on geophysical anomalies, apparently archaeologically blank areas and the location of a building identified on the Watts Estate Map of 1779 (CA 2017a), identified a concentration of archaeological remains: Several ditches containing pottery dating broadly to the Iron Age period were excavated within the northern and central parts of the site (CA 2017b), with Roman pottery, most likely residual in nature, recovered from within possible post-medieval ditches.
- 2.16 A single pit and a midden (located within Trench 4; Fig. 2), both containing pottery of probable medieval date were identified within the northern part of the site. Further presumed evidence of medieval activity comprised the flanking ditches of a possible trackway within the same trench. The archaeological remains observed in the northern part of the site during the evaluation were broadly characteristic of the periphery of a medieval rural settlement.
- 2.17 Features identified in the remaining trenches across the site comprised ditches and agricultural features. The north-east/south-west and north-west/south-east-alignment of many of these ditches (Fig. 2) suggested a common field system,

although the available dating and cartographic evidence including the 1779 map and early OS maps indicated that not all the elements were contemporary. Based on the finds and cartographic evidence as well as morphological characteristics, elements of the putative field system seemed to have their origins within the medieval period, with subsequent post-medieval and modern additions and remodelling.

2.18 The remains of a stone building, which appears on the 1779 Watts Estate map, were identified within Trench 21 at the western corner of the site during the evaluation, (CA 2017b; Fig. 2), wall 2104 being identified within the trench (Fig. 2) and the area being excluded from development (see below).

# 3. AIMS AND OBJECTIVES

- 3.1 The initial aims of the excavation were to establish the character, quality, date, significance and extent of any archaeological remains or deposits surviving within the site.
- 3.1 The objectives of the excavation were laid out in the WSI produced by CA (CA 2018a) and in a subsequent addendum (CA 2018b), in accordance with the relevant standards and guidelines for archaeological excavation (see section 1.3), as follows:
  - to investigate the vicinity of medieval remains identified during the evaluation;
  - to sample and analyse environmental remains to create a better understanding of any medieval land use and evidence of economy encountered;
  - to record any evidence of past settlement or other land use; and
  - to recover artefactual evidence to date any evidence of past settlement that may be identified.
- 3.2 Following the excavation and assessment of archived materials, a revised set of objectives was formulated during the post-excavation assessment phase, in light of the findings from the fieldwork and post-excavation analysis (CA 2019):
  - **Objective 1**: Further develop our chronological understanding of the origins of the medieval settlement.

- **Objective 2**: Further develop our chronological understanding of the abandonment of the medieval settlement.
- **Objective 3**: Develop our understanding of the environmental and agricultural base of the medieval settlement, the nature of cereal production and consumption, and the use of woodland resources.
- **Objective 4**: Further develop our understanding of the spatial and functional organisation of the medieval settlement.
- **Objective 5**: Investigate the nature of everyday life in the medieval settlement, including craft activities and the social status of the inhabitants.

#### 4. METHODOLOGY

- 4.1 The fieldwork followed the methodology set out within the WSI and addendum (an initial area being opened up around evaluation Trench 4 (CA 2018a), with a subsequent expansion of this area to the south-east around evaluation Trench 29 (CA 2018b)). The location of the excavation area was agreed in discussion between Gerry Wait of Triskelion Heritage and Nick Crank (SAOMKC), informed by the findings of the DBA and results of the geophysical survey (Sumo 2017) and subsequent archaeological evaluation (CA 2017b). It was also agreed that an area at the west of the site should be preserved *in situ* (Fig. 2) following the exposure of building remains in Trench 21 during the evaluation. The total excavation area measuring 0.33ha in extent was set out on OS National Grid (NGR) co-ordinates using Leica GPS and surveyed in accordance with CA Technical Manual 4: *Survey Manual* (CA 2017c). The excavation area was scanned for live services by trained CA staff using CAT and Genny equipment in accordance with the CA *Safe System of Work for avoiding underground services*.
- 4.2 Fieldwork commenced with the removal of topsoil and subsoil from the excavation area by mechanical excavator equipped with a toothless grading bucket, under archaeological supervision. Excavated spoil was systematically swept with a metal detector in order to recover any metal finds. Machine excavation ceased when the first archaeological horizon, or natural substrate was revealed (whichever was encountered first)
- 4.3 The archaeological features thus exposed were hand-excavated to the bottom of archaeological stratigraphy. The sampling strategy comprised 100% hand

excavation of domestic/industrial deposits, 50% hand excavation of all discrete features (postholes, pits) and up to 10% hand excavation of all linear features. Bulk horizontal deposits were a minimum 10% hand excavated and machine excavated thereafter as appropriate.

- 4.4 All features were planned and recorded in accordance with CA Technical Manual 1: *Fieldwork Recording Manual.* Each context was recorded on a pro-forma context sheet by written and measured description; principal deposits being recorded electronically using Leica GPS in accordance with CA Technical Manual 4: *Survey Manual* (CA 2017c). Digital colour photographs were taken as appropriate.
- 4.5 Deposits were assessed for their environmental potential in accordance with CA Technical Manual 2: *The taking and processing of environmental and other samples from archaeological sites* (CA 2012); a total of 20 deposits were deemed suitable for environmental sampling.
- 4.6 All finds and samples were bagged separately and related to the context record. All artefacts recovered from the excavation were retained for processing and analysis in accordance with CA Technical Manual 3: *Treatment of finds immediately after excavation*.
- 4.7 Following the fieldwork, a programme of post-excavation assessment (PXA) was undertaken, which quantified and assessed the stratigraphic evidence from the excavation. All the artefacts and biological material recovered were fully assessed and recorded during the assessment process and full details can be found within the Post-Excavation Assessment and Updated Project Design (CA 2019). The evidence was considered in its local, regional and national context, and a series of updated aims and objectives were compiled. The PXA report (CA 2019) also presents an updated project design and programme for a second phase of post-excavation analysis to include stratigraphic analysis and further work on those artefacts and ecofacts (biological evidence) of intrinsic interest. The results of that analysis are to be contained within an excavation report (the current document), with a summary account to be published in *Records of Buckinghamshire*.

# 5. RESULTS (FIGS 3–9)

- 5.1 The archaeological potential of the site had been highlighted by the earlier DBA (CA 2016), geophysical survey (Sumo 2017) and trial-trench evaluation (CA 2017b). Archaeological features were recorded across much of the stripped area, with the exception of small areas at the eastern and western edges of excavation. The earliest feature recorded was a palaeochannel that traversed the excavation area on a broadly north-east/south-west alignment. Although natural in origin, the channel was infilled with deposits containing artefactual material of Roman date, indicating that the channel remained at least partly open during the historic period.
- 5.2 A single ditch of Roman date, running to the north and broadly parallel with the palaeochannel, represented the first clear phase of human occupation, the form and location of the feature indicating a respect for the extant channel. The Roman ditch was cut by a number of later ditches, including those forming the southern edge of a possible enclosure. However, these features lacked dating evidence and could only be broadly dated between the Roman period and the 11th century.
- 5.3 The most significant activity on the site dated to the medieval period, with two broad phases of occupation being recognised. The first phase, broadly dating to the 11th to 13th centuries, saw the establishment of a second possible ditched enclosure towards the west of the excavation area, with further contemporary features also present in the near vicinity. A small number of features dating to the same period were also recorded further east. The second medieval phase, dating to the 13th to 14th centuries saw the excavation of further ditches to the west but with the establishment of more extensive linear boundary features to the east. Again, a number of discrete, contemporary features were also present.
- 5.4 This section provides an overview of the excavation results; detailed summaries of the contexts, finds and environmental samples (biological evidence) are to be found in Appendices A-N.
- 5.5 The dating evidence indicates that the majority of archaeological activity on site dates broadly to the medieval period. Stratigraphical analysis of the features, supplemented by securely dated finds material, has indicated four distinguishable periods of activity:
  - Geology and natural features

- **Period 1**: Early Roman (AD 43 -225)
- **Period 2**: Anglo-Saxon/Medieval (11th century or earlier)
- **Period 3**: Medieval (11th to 13th century)
- **Period 4**: Medieval (13th to 14th century)
- 5.6 Some features could not be definitively assigned a phase based on stratigraphy or finds dating evidence and consequently remain unphased.

# Geology and natural features

- 5.7 The natural geological substrate comprised light-yellow brown sandy clay and was encountered across the site (Fig. 6) at depths between 0.50m and 0.83m below ground level (bgl). Across the excavation area, the natural substrate was sealed by subsoil of varying thicknesses between 0.17m and 0.53m bgl. The subsoil layer consisted of mid-yellow brown sandy clay deposits, likely to represent colluvial sediments derived from more elevated areas of the site. The subsoil was in turn sealed by a layer of agricultural ploughsoil comprising dark-grey brown clay loam between 0.30m and 0.52m thick.
- 5.8 Palaeochannel R traversed the excavation area following the base of the minor valley within which the excavation area was located (Figs 3-5). It was recorded for 110m and extended to the north-east and west beyond the excavation area. It had a maximum width of 16m and was cut by all archaeological features intersecting it. Slots excavated through channel materials (Figs 8 and 9) indicated that it was at least 0.6m deep, with gently sloping sides and a broadly flat base. A small quantity of residual Roman pottery was recovered from its fills, which comprised a mix of silty clays and clay sands.
- 5.9 The presence of the palaeochannel appears to have actively influenced the alignment of the Period 1 Roman ditch (see below), as well as some of the later Periods 2-4 medieval ditches. This shows the palaeochannel to be a significant natural feature which may have influenced human activity within the site even after the channel itself had completely silted up. Evidence for this was observed during the course of the excavation works, when it was noted that the immediate area of the palaeochannel still remained the wettest part of the site, and rainwater runoff appeared to continue to gather predominantly in the siltier deposits within the extent of the former channel.

#### Period 1, Early Roman (AD 43 – 225)

- 5.10 Ditch E appeared to represent a period of relatively low-level activity within the site during the Early Roman period. The feature measured at least 81m in length, 0.7m to 0.8m in width and was orientated north-east/south-west, extending beyond the north-eastern and south-western edges of excavation (Figs 3-5). The cut was characterised by moderately-sloping sides, with a flat base to the north-east becoming more concave to the south-west, and varied in depth from 0.18m to 0.43m. Three sherds of pottery broadly dating to the Roman period, along with a likely intrusive sherd of Early/Middle Saxon pottery were recovered from its fill, along with a fragment of ironworking slag. In addition, a probable associated bone group comprising cattle ribs and foot bones had been deposited within the fill towards the south-western end of the excavation area. One of the foot bones submitted for radiocarbon dating, produced a date range of 75-225 cal. AD (SUERC-87772; 95.4% probability, providing more refined dating evidence for the feature.
- 5.11 Within the area of excavation, ditch E notably respected the alignment of palaeochannel R, running roughly parallel with the palaeochannel's north-western side. This may imply that the channel had not yet fully silted up by this time, and that the area of the palaeochannel remained significantly wetter and boggier than other parts of the site. The ditch would have provided additional drainage and some form of segregation from the more agriculturally viable, drier ground to the north.

# Period 2, Anglo-Saxon/medieval (11th century or earlier)

- 5.12 Archaeological remains belonging to Period 2 comprised six enclosure or boundary ditches. Despite no dating evidence being recovered from any of these features (though a small amount of animal bone was retrieved), they have all been phased through their stratigraphic relationships with earlier Period 1 ditch E; a feature that four of the ditches truncated (Figs 3 and 5).
- 5.13 The Period 2 ditches could be divided into two spatially distinct groups; those located mostly to the west (ditches L, M and N) and those to the east (ditches B, C and D). The western group appear to have represented the south-eastern and north-eastern boundaries of an enclosure (Enclosure 1). Enclosure 1 measured 45m in length by 18m in width within the excavation area; however, its true size could have been much larger as ditch L extended beyond the northern edge of excavation.

- 5.14 The boundaries of Enclosure 1 appear to have been recut on several occasions: The earliest element, ditch N was 10.7m long, 0.35m to 0.93m wide and aligned east/west. The feature had moderately-sloping sides with a fairly flat base, and measured approximately 0.23m in depth. It was truncated by later ditch M to the west and terminated to the east.
- 5.15 Ditch M was a north-east/south-west-aligned feature approximately 42.5m in length and 1.31m in width turning to the north at its north-eastern extent. It exhibited moderately-sloping, concave sides and was 0.2m deep. The feature became as shallow as 0.06m deep to the north, where it truncated earlier Period 1 ditch E before terminating. Ditch M was recut by ditch L along its central section, with ditch L completely obscuring the earlier cut.
- 5.16 Ditch L was 'L-shaped' in plan, aligned south-west/north-east before turning to the north-west and extending beyond the northern edge of excavation. The ditch measured 35m in length, between 0.85m to 1.49m wide and 0.26m to 0.4m deep. It was partially cut by later Period 4 ditch K towards the northern edge of the excavation area.
- 5.17 To the east of Enclosure 1 were two sinuous north-west/south-east-orientated ditches (C and D; Figs 3 and 5). The earlier of the two (ditch C) was on a similar alignment to the north-west/south-east return of ditch L and it is possible that the two ditches may have defined a trackway. Ditch C measured 30m in length between its truncation to the north by Period 4 ditch F and its truncation to the south by Period 4 ditch H, and 0.70m to 1.5m in width (Fig. 8, Section AA). Adjacent to the southern truncation it measured 0.76m in depth with generally straight sides sloping at *c*. 45 degrees and a concave base, while to the north it only survived to a depth of 0.09m. Due to truncation by ditch H, the line of the feature was partially obscured in the area of palaeochannel R, but appears to have continued for a further 19m to the southern edge of excavation. In this southern area it was between 1.2m and 2.3m wide, its depth varying between 0.23m and 0.42m. Its sides were stepped in places and it exhibited a concave base.
- 5.18 Ditch D was orientated north-west/south-east, extending beyond the limit of excavation to the north-west and curving round to the south-west, extending beyond the southern limit of excavation. The ditch measured approximately 40m in length, 0.35m to 1.25m in width and between 0.10m and 0.44m in depth (Fig. 9, Section BB).

#### Period 3, medieval (11th to 13th century)

- 5.19 Period 3 activity consisted of a midden-filled pit or hollow T, four ditches (ditches I, P, Q, and V), two of which formed a possible enclosure (Enclosure 2) in the west of excavation area, and a number of pits.
- 5.20 Ditch V (Fig. 4), running on a north-west/south-east-alignment, measured approximately 7m in length, between 2.5m and 3.3m in width and 0.73m in depth, extending beyond the limit of excavation to the south-east, and ending in a rounded terminal at its north-western end, which was partly truncated by pit/hollow T. The cut was characterised by irregular-stepped sides and an irregular base and contained two fills, which were darker and more artefact-rich towards the top of the ditch. Ditch V completely truncated an earlier pit or ditch (5088), which was therefore only visible in section. Feature 5088 had moderately-sloping sides and a concave base and measured 1.45m in width, with a surviving depth of 0.36m. The feature contained two fills, the lower of which produced 14 sherds of 11th to 13th-century pottery.
- 5.21 Pit/hollow T was irregular in plan, measuring approximately 9.4m in length (northeast/south-west) by 5.5m in width with a maximum depth of 0.25m (Fig. 7, Section AA). The feature comprised an irregular shallow pit or natural hollow which partially truncated the terminal end of ditch V, and was filled by a single layer of very dark grey and black deposit of hearth or food-preparation waste with moderate small stone and charcoal inclusions. Four sherds of residual Roman pottery and 40 sherds of 12th to 13th-century pottery were recovered from the fill, along with 27g of amorphous fired clay and a fragment of worked bone. An environmental sample taken from the deposit yielded a substantial assemblage of charred cereal remains including free-threshing wheat, germinated barley and hulled wheat; charcoal, including roundwood and twigs and charred weed seeds including nettle seeds were also recovered.
- 5.22 Ditch Q (Fig. 4) extended eastwards from the western edge of excavation for approximately 14m, before turning to the south-east, continuing for a further 10m and terminating. It measured between 0.75m and 1.40m in width, and appeared to form the eastern and northern sides of a possible enclosure (Enclosure 2), with ditch P to its west forming a western side; the ditches enclosed an area approximately 15m north-east/south-west by at least 12m north-west/south-east. Ditch Q was characterised by moderately-sloping sides and a concave base with a maximum

depth of 0.41m (Fig. 10, Section CC), becoming shallower to the north-west. Where the ditch cut through pit/hollow T it was filled with material very similar to the fill of that feature, although no artefacts were recovered from the ditch fill. However, the fill of the south-eastern terminal of the ditch contained a substantial assemblage of charred plant remains, including germinated free-threshing wheat and hulled wheat, indicative of waste material from processing stored grain.

- 5.23 Ditch P, which formed the western edge of Enclosure 2, measured 12m in length by between 0.58m and 1.59m in width, terminating to the south in the area of palaeochannel R. The feature had moderately-sloping concave sides and a concave base with a depth of 0.2m. Although no artefacts were recovered from ditch P, it has been placed in Period 3 due to its spatial relationship with ditch Q.
- 5.24 Ditch I was situated to the south of Enclosure 2, running on a north-west/south-eastalignment, and measuring 9.5m in length, extending beyond the limit of excavation to the south-east, with its northern end truncated by a modern field drain in the area of palaeochannel R. The ditch was approximately 0.6m wide and 0.21m deep, with moderately-sloping concave sides and a concave base. A single sherd of prehistoric pottery, one sherd of Roman pottery and four sherds of 11th to 13th-century pottery were recovered from its single fill.
- 5.25 Two pits were excavated close to pit/hollow T: pit 5059, a sub-circular feature, roughly 1.7m in diameter and 0.39m deep, which truncated the line of earlier Period 1 ditch E; and pit 5081, a sub-oval feature measuring 2.88m in length by 2.14m in width and 0.49m in depth, which truncated Period 2 ditch M. Both pits contained dark-brown/grey silty fills, yielding 62 and six sherds respectively of 13th-century pottery, along with an iron horseshoe nail and a substantial assemblage of charred plant remains, including free-threshing wheat grains, indicative of waste material from processing stored grain, from the fill of pit 5059. This suggests the pit was located close to an area used for grain processing and was utilised for waste deposition.
- 5.26 Pit 5013 was situated approximately 13m to the north-east of pit 5059 and was circular in plan with a diameter of approximately 0.68m and depth of 0.14m. A single sherd of 11th to 13th-century pottery was recovered from the fill.

5.27 Pit 2055 was located in the eastern half of the excavation area. It was sub-circular, measuring 1.44m in length by 1.10m in width and 0.15m in depth. The feature fill contained a single sherd of 11th to 13th-century pottery.

# Period 4, medieval (13th to 14th century)

5.28 Activity during Period 4 was represented by seven ditches (J, O, S, K, F, H and G), four large pits (2157, 5031, 2015/2153 and 2027) and one smaller pit (2037). The ditches most likely represented enclosure boundaries, although no complete enclosures could be reconstructed from the plan of the excavated features.

# Ditches

- 5.29 Ditch J, situated towards the south-west corner of the excavation area, was aligned east/west and extended beyond the limits of excavation to the east and west. It measured 15m in length, 1.15m in width and 0.21m in depth, and had moderately-sloping, concave sides, and a flat base. A single sherd of 13th to 14th-century pottery and a fragment of worked antler were recovered from its fill.
- 5.30 Some 16m to the north of ditch J, ditch O was orientated north-west/south-east, extending beyond the north-western limit of excavation and ending in a rounded terminal to the south-east, which truncated the south-western edge of Period 3 pit/hollow T. Ditch O measured 12m in length by approximately 1.7m in width and 0.81m in depth, and also cut across ditches E, M, and Q. The fill of the ditch terminal produced a substantial assemblage of charred plant remains, including free-threshing wheat grains indicative of waste material from food preparation and processing stored grain.
- 5.31 Approximately 16m to the north-east, ditch S was orientated north-west/south-east, extending beyond the limit of excavation to the north-west and turning towards the south-west near its south-eastern end, to follow the downward trajectory of the valley slope before ending in a rounded terminal. The feature measured 10m in length, averaged 0.55m in width and 0.1m in depth, with concave sides and a concave base. Four sherds of 13th to 14th-century pottery were recovered from its single fill.
- 5.32 Ditch segment K was situated to the north-east of ditch S, on a similar alignment, and only survived ephemerally, measuring a total of 5m in length by 0.36m in width, with a maximum depth of 0.08m. One sherd of 13th to 14th-century pottery was recovered

from its single fill, and the feature was observed to partly cut across earlier Period 2 ditch L.

- 5.33 In the eastern half of the excavation area, ditch F followed a gently curving north-west/south-east alignment, similar to that of earlier Period 2 ditch D, extending beyond the limit of excavation to the north-west and being truncated by ditch H along its southernmost part in the general area of palaeochannel R. Ditch F measured at least 27m in length by 1.35m in width and 0.47m in depth, with moderately-sloping sides and a concave base. The feature contained two fills, which produced a substantial assemblage of 13th to 14th-century pottery comprising 337 sherds, weighing 5.5kg, along with a corner fragment from a ceramic roof tile of uncertain date and charred plant remains, including indeterminate cereal grain, and free-threshing wheat rachis, most likely to be indicative of waste material from food preparation and processing stored grain. Most of the pottery was derived from the darker upper fill, which may have been representative of deliberate rubbish deposition, probably from a domestic context.
- 5.34 Ditch H was orientated broadly north/south near the northernmost corner of the excavation area, before gently curving towards the south-east and heading towards the centre of the excavation area where the feature truncated ditch F and earlier Period 1 ditch E. From there, the ditch was observed to turn sharply towards the south-west, cutting across Period 2 ditch C and following the line of palaeochannel R. Ditch H measured more than 46m in length with a maximum width of 1.97m and a depth of 0.96m (Fig. 8, Section AA and Fig. 9, Section BB)
- 5.35 Forty-six sherds of 13th to 14th-century pottery were recovered from the fill, along with a single fragment of Roman or medieval stone roofing material with a circular drilled perforation.
- 5.36 The easternmost ditch (ditch G) was orientated north-west/south-east, and cut across the line of Period 1 ditch E before turning towards the south-west to run within the line of palaeochannel R and terminating. The feature measured a total of 26m long, a maximum of 0.92m wide and 0.26m deep. Its fills contained 38 sherds of pottery dating to the 13th and 14th centuries and a substantial assemblage of charred plant remains including free-threshing wheat, indicative of waste material from food preparation and processing stored grain, along with hazelnut shells.

Pits

- 5.37 Pit 5031 was located approximately 3m south-west of ditch S, and appeared subcircular in plan, measuring between 2.65m and 2.31m across and 0.27m deep. The feature contained a single fill from which nine sherds of 13th to 14th-century pottery were recovered.
- 5.38 Pit 2027, located roughly halfway between ditches H and G towards the east of the excavation area, appeared oval in plan, measuring 2.43m in length by 1.15m in width and 0.8m in depth. The feature contained five fills, deriving from both natural silting and deliberate backfilling, from which a large artefact assemblage comprising 24 sherds of 13th to14th-century pottery and three iron nails, including a horseshoe nail, was recovered. A spindle whorl (Fig. 10.8) and part of an iron buckle frame were also recovered from this feature. In addition, the pit fills produced a substantial assemblage of charred plant remains, including free-threshing wheat and hulled wheat, indicative of waste material from food preparation and processing stored grain, along with hazelnut shell. Pit 2027 was cut at its north-eastern end by smaller sub-circular pit 2037, measuring 1.03m in diameter and 0.28m in depth, which produced 21 sherds of 13th to 14th-century pottery.
- 5.39 Pit 2015/2153 was located in the eastern half of the excavation area. It was oval and measured 2.25m in length by 1.05m in width, with a depth of 0.36m; the feature truncated ditches D, E, and F. Two sherds of 11th to 13th-century pottery were recovered from its single fill.
- 5.40 Pit 2157 (Fig. 9, Section BB) was cut into the fills of palaeochannel R in the southeastern part of the excavation area, approximately 16m south of pit 2015/2153. It appeared sub-circular in plan, with near vertical sides that became moderately sloping halfway up the pit profile, and a flat base. The pit measured approximately 2.15m in diameter and 1.14m deep, and contained one fill from which a single sherd of 13th to 15th-century pottery was recovered.

# Undated

5.41 Features which remain unphased because they contained no dating evidence and did not have any clear spatial or stratigraphic relationship with other, dated features

include two ditches (A and U) and twelve pits and postholes (2043, 2045, 2047, 2051, 2065, 2067, 5003, 5005, 5007, 5009, 5011, and 5067).

#### Ditches

- 5.42 Ditch segment A, which was situated in the south-eastern corner of the excavation area, measured 8m in length and was orientated north-west/south-east. The feature measured 0.67m wide with a maximum depth of 0.19m and a concave profile.
- 5.43 Ditch U, crossing the south-western corner of the excavation area and extending beyond the northern and southern limits of excavation, measured at least 4m in length with a width of 1.1m and could not be excavated owing to wet ground conditions. The feature was aligned parallel to nearby ditches I and P, as well as the north-west/south-east arm of ditch Q; it is possible therefore that the features may have been contemporary.

# Pits/postholes

- 5.44 A number of undated pits and postholes were observed across the excavation area. Close to the north-western edge of the area, a roughly north-east/south-west aligned row of postholes (2045, 2047, and 2051) was observed, possibly representing the remains of a fence line or windbreak structure. A further offset feature (2043) may also have been part of the same structure. The postholes measured approximately 0.3m in diameter on average, and between 0.04m and 0.14m deep.
- 5.45 Pits 5003, 5007 and 5011 were located on a similar linear alignment to the postholes near the central section of the north-west limit of excavation. The features measured between 0.65 and 1.13m in diameter and between 0.1m and 0.29m deep. Nearby pit 5005, 0.65m in diameter and just 0.09m deep, may have been an associated feature.
- 5.46 Sub-rectangular pit 5009 was situated just to the south-east of pit 5007 and measured 1.07m in length by 0.33m in width and 0.13m in depth. Due to its close spatial proximity to the pits described above, it is possible that they were contemporary.
- 5.47 Oval pit 2065 was positioned in the northern corner of the excavation area and measured 0.98m long by 0.80m wide, with a depth of 0.33m. It was truncated by posthole or possible postpipe 2067, which was sub-circular in plan, measuring 0.25m in diameter with a depth of 0.48m.

5.48 A further small pit (5067), located to the south-east of pit/hollow T, measured 0.4m in diameter and was just 0.09m deep.

# 6. THE FINDS

6.1 Finds recovered are listed in the table below. Further work on all artefacts can be found in Appendices B-J.

Туре	Category	Count	Weight (g)
Pottery	Prehistoric	3	15
	Roman	11	153
	Anglo-Saxon	3	8
	Medieval	702	9163
	Total	719	9339
Flint	Worked/burnt	27	237
Fired Clay	All	47	334
CBM	Unglazed tile	1	116
Ceramic object	Spindle whorl	1	14
Metals	Iron	12	34
	Copper alloy	2	1
Worked bone	All	2	
Stone	Building stone	1	122
	Burnt	1	374

- 6.2 A small assemblage of pottery of pre-medieval date was recovered, predominantly from the deposits contained within the palaeochannel which traversed the southern end of the site. The sherds were generally small in size and relatively abraded, with three sherds of possible prehistoric date, eleven sherds (forming part of four distinct vessels) dating to the Roman period recovered from several excavated sections within palaeochannel R, Period 1 ditch E, and several other later ditches. Three small sherds recovered from Period 1 ditch E and Period 3 ditch I were of possible Early/Middle Saxon date; the material from the former therefore likely to be intrusive.
- 6.3 A total of fifty-six sherds of Late Saxon and Saxo-Norman date were present within the assemblage. These were exclusively representative of St Neots-type wares, and included fragments of jars and bowls as well as a body fragment probably belonging to a spouted pitcher.
- 6.4 Most of the medieval ceramic assemblage was characterised as dating broadly to the 11th to 14th century, with a mix of shell-tempered and sandy/shelly and sandy wares present. Identifiable forms in the shelly ware group included bowls, jars, and

jugs; with the identified rims mostly conforming to the Milton Keynes type series. Despite the site's proximity to the local pottery production centre at Potterspury, very few sherds of Potterspury ware were identified within the assemblage.

- 6.5 A ceramic spindle whorl was recovered from Period 4 pit 2037, manufactured from a base sherd in a shell-tempered fabric likely dating to the 11th to 15th centuries.
- 6.6 A total of 23 worked flints as well as four pieces of unworked, burnt flint were recovered residually from the fills of features of all periods. The majority of the items recovered are comprised of debitage including flakes, chips, a blade and bladelet as well as a core. Three tools, including a retouched flake, notched flake and an end scraper were deemed not chronologically diagnostic.
- 6.7 The majority of fired clay fragments were recovered from the midden deposit within Period 3 pit/hollow T; none of the fragments display any features indicating their original form or function.
- 6.8 A corner of an unglazed roof tile was recovered from Period 4 ditch F, though the artefact was not chronologically diagnostic.
- 6.9 Metal-working residue was recovered from Period 1 ditch E in the form of a fragment of iron slag, possibly derived from a smithing hearth bottom.
- 6.10 A total of 14 items of metalwork were recovered from ditch and pit fills across the site, including 12 iron items and two of copper alloy. Due to high levels of fragmentation and corrosion, the majority could not be identified. Identifiable forms did include hand-forged nails as well as two iron horseshoe nails and an iron buckle fragment. These identifiable artefacts were recovered from Period 3 and 4 features.
- 6.11 One worked bone item displaying cut marks on one side was recovered from Period 3 pit/hollow T, and is likely a waste piece produced by artefactual bone-working. In addition, a worked antler fragment was recovered from Period 4 ditch J; this comprises the tine, with the tip removed either by saw or knife.
- 6.12 Period 4 ditch H produced a single fragment of Roman or medieval stone roofing material with a circular drilled perforation.

# 7. THE BIOLOGICAL EVIDENCE

7.1 Biological evidence recovered is listed in the table below. Further work on the animal bone, charred plant remains and charcoal can be found in Appendices K-M.

Туре	Category	Count	Weight
Animal bone	Fragments	332	3928
Samples	Environmental	20	N/A

- 7.3 A small assemblage of animal bone was recovered from features of all four periods. Cattle bone fragments accounted for the majority of the recovered assemblage, followed by sheep/goat, with some fragments of pig, horse, red deer and goose also identified. Some bones of smaller animals including rabbit/hare and mouse, as well as frog or toad were recovered from the environmental samples. Except for a possible articulated bone group from Period 1 ditch E, no evidence for feasting, butchery or processing waste was observed.
- 7.3 Charred plant remains from two Period 3 features and five Period 4 features were selected for analysis. The Period 3 features contained moderate to large assemblages of a variety of cereal remains including wheat, barley and rye, as well as other crops including celtic beans and garden peas. Various weed seeds, typical of grassland, field margin and arable environments, were also identified. No major changes in cultivation appear to have occurred between Periods 3 and 4, and the varieties of crops recorded broadly match those of other contemporary sites. On the whole, the results reflect a relatively low-status medieval rural settlement site, matching the conclusions of the fieldwork and analysis of the other finds.
- 7.4 Charcoal evidence recovered from a number of Period 3 and 4 deposits was also broadly consistent between the two phases of occupation, suggesting continuity in resource availability as well as supply. The majority of wood remains are likely to be derived from a deliberate supply of firewood, with oak trunk wood logs supplemented by smaller branch and stem wood from other species including hazel, hawthorn, blackthorn and apple. Notably, all of the taxa identified are hardwoods, presumably chosen deliberately for their high calorific burning properties and ability to provide a sustained, consistent burn.

#### 8. DISCUSSION

- 8.1 The evidence from the archaeological investigations has indicated that in common with much of the surrounding area, prehistoric activity was limited, and although the nearest Roman settlement of any significance lay some 11km away, the site lay in an area populated by a series of isolated farmsteads during this period, the single Roman ditch identified during the investigations adding a further element to the known dispersed rural settlement pattern.
- 8.2 Hanslope is recorded in Domesday Book as a settlement of significant size and during the Anglo-Saxon period probably comprised a series of dispersed habitation areas around a common focus; there was no directly dateable evidence for Anglo-Saxon activity on the site, but features dated stratigraphically to this period probably indicated activity in the landscape between areas of habitation. Significant activity was identified within the site between the 11th and 14th centuries, probably associated with post-Conquest expansion of the various habitation areas, the later development possibly being associated with the establishment of the church of St James The Great at Hanslope in the 12th century. The archaeological evidence from the site relates to the settlement at Hanslope and the associated satellite of Green End, indicating that the latter at least was more extensive during the medieval period and may have linked with the former within the site at this time. The apparent decline in activity on the site from the later 14th century is indicative of a more widespread rural depopulation phenomenon at this time, the continued contraction of Green End continuing into the post-medieval period and this element of the settlement disappearing almost completely by the end of the 19th century.

# Period 1

- 8.3 Early activity within the near vicinity appears to have been limited, based on the scarcity of finds, with only a small number of isolated findspots of Iron Age and Roman artefacts recorded by the county HER. Some evidence for a small sub-rectangular Iron Age enclosure to the south-west of the site, as well as a possible system of smaller enclosures and an associated linear ditch to the south-east, has been previously identified through aerial photography (CA 2016, fig. 2).
- 8.4 The Historic Town Assessment, which summarises all known archaeological, historical, topographical and architectural evidence available for Hanslope as part of a county-wide historic and natural environment characterisation programme, also

reports a general absence of prehistoric and Roman sites in Hanslope, citing the relatively unfavourable topography of the area to account for this (Green 2011, 20). The closest remains of small-scale, Roman domestic settlement activity in the form of rural farmsteads are recorded approximately 1.5km to the east of the site, near Woad Farm, and approximately 2km to the north-west at Gordon's Lodge Farm. The urban focal point of the area, meanwhile, appears to have been the small Roman town of *Magiovinium* located approximately 11km to the south-west of Hanslope (Green 2011, 20).

- 8.5 It is worth noting that the majority of the small assemblage of prehistoric and Roman pottery recovered during the fieldwork was derived from the sediments of the palaeochannel, possibly indicating habitation upstream of the site during these periods, with only a small number of sherds recovered from other cut features. This suggests that the palaeochannel was still at least a partially open channel during this period, and may go some way towards explaining the alignment of the Early Roman ditch E encountered during the investigations. The feature ran roughly parallel to the alignment of the palaeochannel, and may have served as a demarcation or boundary to the wetter, boggier ground in this area. Secure dating of the feature was provided by the radiocarbon date derived from a cattle foot bone recovered from the fill, which indicated deposition between the late 1st and early 3rd centuries AD.
- 8.6 With just one ditch of Roman date crossing the site, indicating limited landscape exploitation, and no further contemporary features, it appears that the site had little direct or sustained interaction with other Roman sites in the vicinity. It is possible that the wet ground either side of the palaeochannel discouraged settlement, and/or that the soils were less fertile than others in the wider area and that the site was therefore regarded as unattractive for settlement as well as other forms of exploitation.

#### Period 2

- 8.7 Evidence for pre-Norman Conquest activity within the site, in the form of agricultural activity and/or settlement in the vicinity, survived as a series of enclosure and boundary ditches that, in contrast with the later features, contained relatively sterile fills, with few artefactual and ecofactual remains. Phasing of the features assigned to Period 2 was therefore identified primarily through stratigraphic relationships.
- 8.8 The presumed pre-Conquest ditched enclosures encountered as part of the excavation suggest Anglo-Saxon origins for the village of Hanslope, and possibly the

hamlet of Green End (Figs 1, 3 and 4), to which the Period 3 and 4 enclosure ditches probably belonged (see below). No clear evidence is currently available for the extent or nature of any Anglo-Saxon occupation at Hanslope, although it is recorded in Domesday Book and a settlement of reasonable size must have existed by the time the church of St James the Great was founded in the 12th century, though it has been suggested that the foundation of the church itself, possibly on a green field site, was a catalyst to settlement and population expansion (Green 2011, 25). It is possible that the formation of Green End was directly related to the pre-Conquest development of Hanslope, which is recorded in the Domesday Book as a 'very large' settlement comprising 55 households. Anglo-Saxon and medieval settlements in this area were characteristically dispersed in nature, each settlement comprised of a series of "ends" located around a central focus, such as a village green (Green 2011, 22). Therefore, rather than solely referring to the village of Hanslope, the Domesday entry probably includes a number of these surrounding "ends", including Green End.

8.9 It is likely that the Period 2 features represented field boundary and enclosure divisions surrounding the focal point (or points) of the Anglo-Saxon settlement. However, it is notable that the ditches forming Enclosure 1 lay significantly north of the palaeochannel and associated damp ground, whereas ditches C and D to the east, cut across this area, potentially indicating very different functions for the two groups of ditches; it is possible that Enclosure 1 on the drier ground to the west was directly related to settlement activity associated with the early development of Green End, whereas ditches C and D were more likely associated with land management in the area between the Green End and Hanslope habitation areas.

#### Periods 3 and 4

8.10 Evidence for settlement activity dating to the 11th to 14th centuries (Periods 3 and 4) survived as a large pit/hollow containing a fill of midden-like material and a series of discrete features (pits and postholes), as well as boundary and enclosure ditches. These features contained occupation debris, including pottery, fired clay and metal artefacts, and charred plant remains and charcoal deriving from nearby areas of occupation. The evidence indicated that domestic settlement lay in the very near vicinity; the finds assemblages indicating the products utilised, with limited evidence of craft production as demonstrated by bone and antler working and production of the ceramic spindle whorl. Palaeoenvironmental evidence indicated that food preparation and crop processing were taking place nearby, refuse from domestic hearths was

being deposited in nearby features, and there was possibly also exploitation of local, fruit-producing tree species.

8.11 The pottery assemblage recovered is of local importance as it is among the first medieval assemblages from the parish of Hanslope, which to date have mostly been unstratified material. Enough material was recovered from Period 3 and 4 features to discern a shift in vessel types and shapes between the two periods of occupation; a shift in focal points for domestic refuse dumping was also identified (see Appendix C), though in practice there was probably continued occupation throughout much of the medieval period. During Period 3 deliberate rubbish dumping appears to have concentrated on the area of midden pit/hollow T in the western part of the site. Conversely, in Period 4 waste appears to have been deposited primarily in the northern part of Ditch F, possibly in order to facilitate the infilling of an unwanted boundary line.

#### Period 3

- 8.12 Activity during Period 3 appears to have been focussed towards the western end of the excavation area and represented by the possible small enclosure formed by ditches P and Q, as well as ditch V and midden pit/hollow T. These were largely located north of palaeochannel R, indicating that land-use in this area may still have been influenced by damp conditions. In addition, a small number of apparently isolated pits of various shapes and sizes were scattered across the excavation area.
- 8.13 It is likely that the occupation deposits related closely to the medieval settlement at Green End, located just to the north-west of the site. The particularly finds-rich midden pit/hollow T produced a large assemblage of pottery, animal bone and environmental remains suggesting deliberate deposition of domestic refuse material. No evidence for any kind of industrial activity, or primary processing of crops or animal carcasses was encountered, but the evidence of waste from food preparation and the processing of stored grain indicates settlement in the near vicinity. The charcoal evidence is strongly indicative of material dumped from domestic hearths, adding further support to there having been habitation in the very near vicinity. The charcoal also suggested the possible pruning of fruit-bearing species, indicating that these were also growing nearby.
- 8.14 The density of medieval artefacts recovered within the site, both during the course of the excavation and through a previous metal-detector survey (CA 2016), indicates

that structures relating to Green End may have extended into the north-western area of the site. This was confirmed during the trial-trench evaluation of the site (CA 2017a), which encountered structural remains in the form of a remnant stone-built wall line in one of the trenches in the north-west corner of the site. The location of the wall corresponded with a building shown on the 1779 Watts Estate map, in the field referred to as 'Barn Close' (Fig. 3). It is also possible that undated ditch U at the western end of the excavation area, may have corresponded with a ditch at the north-east of Mag's Close, shown on the 1779 map.

#### Period 4

- 8.15 Activity within the site continued during the 13th and 14th centuries, though the archaeological evidence for this later medieval occupation was limited to a small number of boundary ditches, possibly demarcating livestock or other enclosures for agricultural use. However the quantity of finds and carbonised plant remains indicating the deposition of food preparation and crop processing waste, indicates that there was still domestic habitation nearby.
- 8.16 Stratigraphic analysis and detailed assessment of the ceramic and other evidence suggests that the enclosure and/or boundary ditches had been backfilled or silted up by the end of the 14th century. This would suggest a scaling back of activity during this period, coinciding with a time of widespread settlement shrinkage and abandonment across a large part of the country, a phenomenon traditionally attributed to the onset of the black death in the mid-14th century, though also sustained by subsequent changes in land ownership. Numerous other examples of rural settlement/population decline are recorded in the surrounding region; immediately north of Hanslope, for example, the settlement at Stocking Green clearly had medieval origins, but had contracted by the post-medieval period, declining further after the late 18th century (Green 2011, 31). Other notable examples of shrunken or deserted villages in the local area and more widely across Buckinghamshire include Tattenhoe and Westbury (Ivens et al. 1995), Quarrendon (Everson 2001), Doddershall (BAS 2013), Stantonbury (Mynard 1971) and Stowe (Page 2005). Numerous further examples are listed by Beresford (1953-4).
- 8.17 However, the apparent lack of continued maintenance of existing enclosure and field system boundaries within the site from the later 14th century onwards does not appear to herald the abandonment of Green End as a satellite settlement, rather there was a shrinkage in the area occupied by the settlement. The now-demolished

mansion house and associated structures including ponds and a moat, which have been recorded at Green End Farm, appear to date to the late 16th or early 17th century (see MKHER entry for the mansion/farmhouse MMK3440), indicating a continued occupation at Green End to the west of the site. In the Hanslope Easter book of 1616, the hamlet still comprised a total of 24 households; although by 1779 only eight houses including the 16th/17th-century mansion house are shown on the estate map (Fig. 3). By the 19th century, the former settlement at Green End had been reduced to a single entity; Green End Farm.

8.18 Whilst Green End experienced significant shrinkage after the 14th century and there was also probable contraction of Hanslope back to the area of the current village, the area of the study site reverted largely to agricultural usage. The 1779 estate map shows much of the excavation area occupied by the large field known as The Home Close, whilst a small area at the west was occupied by the small field or paddock known as Mags Close. The 1881 Ordnance Survey Map shows the excavation area occupying parts of two fields, the boundary between them being the same as that between The Home Close and Mags Close. The site remained in agricultural use up until the start of the archaeological investigations.

#### Conclusions

- 8.19 The exact dating and extent of early activity within the site remains unclear and could not be refined beyond the basic conclusion that later prehistoric and Roman activity was taking place within the wider area, but likely to a small extent. This is supported by the lack of other substantial finds recorded within the area. The nearest known Roman settlement at *Magiovinium* lay approximately 11km to the south-west of the site, but the area around Hanslope was occupied by a series of isolated rural farmsteads, and whilst these may have had trading links with larger centres, such interaction is not really discernible in the archaeological record.
- 8.20 Given the very low level of Roman activity encountered during the fieldwork and in the wider area to date, it is unlikely that any sizeable Roman-era settlement was located in the close vicinity. However, activity dating to Period 2, along with the Domesday entry for Hanslope, clearly shows that a settlement was established here in the Anglo-Saxon period. The somewhat ephemeral nature of the archaeological evidence and the lack of directly dateable artefactual material has meant that it has not been possible to accurately date the foundation of the settlement, but it is likely to

have been of dispersed nature with the study site lying between elements that would become Hanslope and Green End.

- 8.21 The main period of activity on the site extended from the 11th to 14th centuries, when Hanslope to the east and Green End to the west, may almost have become a single entity. Occupation deposits including a large midden area, and the structural remains encountered as part of the trial-trenching works, also attest to the continuity of occupation and activity within and around the site throughout the medieval and post-medieval periods. The medieval pottery assemblage was noted to mirror some of the locally produced forms observed during investigations of the contemporary settlement at Great Linford, approximately 9km to the south-east (Mynard and Zeepvat 1992).
- 8.22 The artefactual evidence not only provided valuable dating material and permitted an understanding of what objects were being used, it also provided limited evidence of craft manufacture, including bone and antler working, and the manufacture of the spindle whorl. The palaeoenvironmental evidence gave an indication of the species growing in the local environment, the nature of exploitation of different species, and along with the artefactual material, gave an indication of the proximity of the site to areas of domestic habitation.
- 8.23 The various phases of enclosures and field systems encountered within the site on the whole seemed to conform to broadly similar alignments, respecting and/or reinforcing significant boundary lines. This suggests that while some change and reorganisation did take place over time, mostly this was low-level maintenance of existing field boundaries. The apparent abandonment of these field systems in the 14th century coincided with a broader phenomenon associated with plague and changes in land ownership, which continued into the early post-medieval period. From the 14th century the study site reverted to agricultural usage and remained so into the 21st century, whilst Hanslope contracted to the east and Green End contracted to the west, eventually becoming a single farm.
- 8.24 Overall the archaeological investigations have permitted an increased understanding of chronology in the Hanslope area, in particular the development of the medieval settlement and its subsequent decline, supported by artefactual evidence, including a significant medieval pottery assemblage, and palaeoenvironmental evidence that has allowed a better understanding of the wider environment.

#### 9. CA PROJECT TEAM

9.1 Fieldwork was undertaken by Ralph Brown and Jay Wood, assisted variously by Anna Moosbauer, Mat Ferron, Isabela Jurkiewicz, Callum Ruse, Robert Falvey, Rachel Jordan, Mark Davies, Eduardo Cabrera, Keighley Wasenczuk, Georgina Johnston, Tim Street, Luke Bateson, Susanna Ferron, Daniel Riley, Eilidh Barr, and Bethany Hardcastle. The post-excavation assessment was produced by Ralph Brown, and this report was written by Anna Moosbauer. The pottery report was produced by Sue Anderson; and the metalwork and worked bone/antler reports were written by Katie Marsden. The ceramic object, ceramic building material, fired clay, metal-working residue, and lithics were reported on by Jacky Sommerville. The plant macrofossils report was written by Sarah F. Wyles, and the charcoal report produced by Dana Challinor. Radiocarbon dating was carried out by the Scottish Universities Environmental Research Centre (SUERC) and reported on by Emma Aitken. The illustrations were prepared by Amy Wright and Dan Bashford, and the finds illustrations were produced by Esther Escudero. The archive has been compiled and prepared for deposition by Emily Evans. The fieldwork was managed for CA by Stuart Joyce and the post-excavation programmes were managed by Dan Stansbie and Peter Boyer.

# 10. STORAGE AND CURATION

10.1 The archive is currently held at CA's offices in Milton Keynes whilst post-excavation work proceeds. Upon completion of the project, and with the agreement of the legal landowners, the site archive and artefactual collection will be deposited with Buckinghamshire County Museum (accession number AYBCM:2018.44) which has agreed in principle to accept the full archive upon completion of the project. A summary of information from this project, set out within Appendix O will be entered onto the OASIS online database of archaeological projects in Britain.

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# APPENDIX A: CONTEXT DESCRIPTIONS

Context Type		Fill of	Description	Feature type	Period	Feature label	
2000	layer		dark grey brown, friable clay loam- plough soil, covers whole area	Natural soil	0		
2001	layer		mid yellow brown, soft sandy clay - sub soil, covers whole area	Natural soil	0		
2002	layer		light yellow brown, soft sandy clay - natural	Natural strata	0		
2005	fill	2010	mid grey brown, moderately compact silty clay		4	F	
2006	cut		linear ditch, possible boundary ditch	Ditch/other linear	2	С	
2007	fill	2006	reddish brown, compact silty clay		2	С	
2008	cut		linear ditch, possible boundary ditch	Ditch/other linear	2	D	
2009	fill	2008	reddish brown, compact silty clay		2	D	
2010	cut		linear boundary ditch	Ditch/other linear	4	F	
2011	fill	2010	mid-reddish brown, moderately compact silty clay		4	F	
2012	cut		linear ditch, possible boundary ditch	Ditch/other linear	4	F	
2013	fill	2012	mid greyish brown, compact silty clay		4	F	
2014	fill	2012	dark brown grey, firm silty clay		4	F	
2015	cut		oval pit, unknown function	Pit	4		
2016	fill	2015	mid reddish brown, compact silty clay		4		
2017	cut		linear ditch, possible boundary ditch	Ditch/other linear	2	D	
2018	fill	2017	mid greyish brown, compact silty clay		2	D	
2019	cut		linear ditch, possibly used a subdivision of agricultural field system	Ditch/other linear	2	D	
2020	fill	2019	mid yellowish grey, friable silty clay		2	D	
2021	cut		linear ditch, possibly boundary or subdivision of large agricultural field system	Ditch/other linear	1	E	
2022	fill	2021	mid brownish grey, friable clayey silt		1	E	
2023	cut		linear ditch, possible boundary or field system	Ditch/other linear	1	E	
2024	fill	2023	mid red brown, soft silty clay,		1	E	
2025	cut		linear ditch, possible boundary or irrigation ditch	Ditch/other linear	1	С	
2026	fill	2025	Mid greyish brown, soft silty clay		1	С	
2027	cut		sub-ovoid pit, likely midden/waste pit	Pit	4		
2028	fill	2037	mottled, mid blue grey/grey brown		4		
2029	fill	2027	dark brown grey, friable silty clay		4		
2030	cut		linear ditch, possibly field boundary	Ditch/other linear	1	E	
2031	fill	2030	mid greyish brown with orange mottling, soft silty clay		1	E	
2032	cut		curvilinear ditch, possible field boundary	Ditch/other linear	4	Н	
2033	fill	2032	mid greyish brown with orange mottling		4	Н	
2034	fill	2027	mid blue-grey brown, firm sandy clay		4		
2035	fill	2027	mottled blue-grey and grey-brown, compact clay		4		
2036	fill	2027	mid grey brown, friable gravelly sandy clay		4		
2037	cut		circular pit, likely recut of [2027], possibly waste pit	Pit	4		
2038	cut		linear ditch, possible part of agricultural field boundary/drainage system	Ditch/other linear	1	E	

Context Type		Fill of	Description	Feature type	Period	Feature label	
2039	fill	2038	mid brownish grey with red flecks, friable silty clay		1	E	
2040	cut		linear ditch, possibly for agricultural purposes, drains into palaeochannel	Ditch/other linear	4	G	
2041	fill	2040	mid grey yellowish, soft silty clay		4	G	
2042	fill	2040	dark grey, soft silty clay		4	G	
2043	cut		circular cut of possible posthole	Posthole	0		
2044	fill	2043	mid brownish grey, firm silty clay		0		
2045	cut		circular cut of possible post hole	Posthole	0		
2046	fill	2045	mid brownish grey, soft/firm silty clay		0		
2047	cut		circular cut of possible posthole	Posthole	0		
2048	fill	2047	dark greyish brown, soft/firm silty clay		0		
2049	cut		irregular oval, cut of probable bioturbation	Tree hole/bowl	0		
2050	fill	2049	mid grey brown, soft/firm silty clay		0		
2051	cut		sub-ovoid, cut of possible posthole	Posthole	0		
2052	fill	2051	mid brownish grey, soft/firm silty clay		0		
2053	cut		linear ditch, drains into palaeochannel	Ditch/other linear	2	С	
2054	fill	2053	mid grey/yellowish brown, friable silty clay		2	С	
2055	cut		oval pit	Pit	3		
2056	fill	2055	mid yellowish brown, friable clayey silt		3		
2057	cut		linear ditch, possible enclosure ditch, cut by [2059]	Ditch/other linear	4	F	
2058	fill	2057	dark brown grey, friable silty clay		4	F	
2059	cut		linear ditch	Ditch/other linear	4	Н	
2060	fill	2059	mid greyish brown with orange flecks, firm silty clay		4	Н	
2061	cut		linear ditch/gully, possible made for agricultural purposes, drains into palaeochannel	Ditch/other linear	2	С	
2062	fill	2061	mid yellow grey, soft silty clay		2	С	
2063	cut		linear ditch, agricultural purposes	Ditch/other linear	2	D	
2064	fill	2064	dark yellow grey, soft silty clay		2	D	
2065	cut		ovoid pit,	Pit	0		
2066	fill	2065	mid yellow brown, soft/firm silty clay		0		
2067	cut		circular stake hole	Posthole	0		
2068	fill	2067	dark greyish brown, soft/firm silty clay		0		
2069	cut		linear boundary ditch	Ditch/other linear	2	D	
2071	fill	2069	mid brownish grey, moderately compact silty clay		2	D	
2072	cut		linear boundary ditch	Ditch/other linear	2	С	
2073	fill	2072	mid greyish brown, moderately compact silty clay		2	С	
2075	fill	2072	mid reddish brown, moderately compact silt clay		2	С	
2076	cut		irregular, truncated bioturbation	Tree hole/bowl	2		
2077			dark blackish grey, moderately compact silty clay (68%) and charcoal (30%)		2		
2078		2076	mid blackish grey, moderately compact silty clay (90%), and charcoal (8%)		2		
2079	cut		sub-circular pit, truncated by ditches [2069] and [2072], unknown function	Pit	2		

Context	Context Type		Description	Feature type	Period	Feature label
2081	cut		irregular sub oval bioturbation	Tree hole/bowl	4	
2082	fill	2081	light yellowish brown, firm silty clay		4	
2083	cut		curvilinear ditch, likely a boundary ditch	Ditch/other linear	4	Н
2086	fill	2083	mid reddish grey, friable clayey silt		4	Н
2087	fill	2059	mid blue brown with orange flecks, friable silty clay		4	Н
2088	fill	2083	dark brownish grey, firm silty clay		4	Н
2089			linear ditch, probable field boundary, truncated by [2091]	Ditch/other linear	1	E
2090	fill	2089	dark greyish brown, soft silty clay		1	E
2091	cut		linear ditch, possible field boundary or drainage systems	Ditch/other linear	4	G
2092	fill	2091	lark yellowish brown, soft silty clay 4		4	G
2093		2091	dark greyish brown, moderate silty clay		4	G
2095			linear ditch,	near ditch, Ditch/other 2 linear		В
2096		2095	mid yellowish brownish grey, firm silty clay		2	В
2097	cut		linear gully, probably drainage system, drains into palaeochannel			A
2098	fill	2097	mid yellowish grey, firm silty clay		0	A
2099	cut		near gully, probably drainage system, drains into Ditch/other linear		0	A
2100	fill	2099	mid yellowish grey, firm silty clay	n silty clay 0		A
2101	cut		linear gully, probably drainage system, drains into Ditch/other 0 palaeochannel linear		0	A
2102	fill	2101	mid yellowish brown, firm silty clay		0	A
2103	cut		linear ditch, unclear function	Ditch/other linear	4	Н
2104	fill	2103	mid blue brown, firm silty clay		4	Н
2105			linear ditch terminus, possible boundary ditch	Ditch/other linear	2	N
2106		2105	mid greyish brown, moderate silty clay		1	Ν
2109	cut		linear gully	Ditch/other linear	2	D
2110	fill	2109	light yellow brown, compact silt clay		2	D
2112	cut		linear boundary ditch, likely for agricultural purposes	Ditch/other linear		В
2113			mid yellowish brown, moderately compact silty clay			В
2114	fill	2112	mid greyish brown, moderately compact silty clay		2	В
2115			linear ditch, possible field boundary	Ditch/other linear	1	E
2116		2115	mid yellow brown with brown mottling			E
2117			linear irregular cut of palaeochannel	Natural strata		R
2118		2117	grey brown, friable sandy silt			R
2119			linear ditch, possible field boundary, truncated by [2121]	Ditch/other linear		В
2120		2119	mid brownish grey, firm silty clay			В
2121			cut of possible ditch corner	Ditch/other linear		Н
2122			mid yellowish grey, friable sandy clay	_		Н
2123		2121	light yellow brown, soft sandy silt			Н
2126	cut		linear ditch, possible boundary or enclosure	Ditch/other	4	G

Context	Туре	Fill of	Description	Feature type	Period	Feature label
				linear		
2127	fill	2126	dark grey brown, compact silty clay		4	G
2128	cut		possible bioturbation cut with steep irregular sides	Tree hole/bowl	4	
2129	fill	2128	mid brownish grey, moderately compact clayey silt		4	
2130	cut		irregular linear palaeochannel	Natural strata	0	R
2131	fill	2130	mid blue brown, compact silt clay		0	R
2132	cut		linear in plan with right angle turn, probable boundary ditch, thought to be same ditch as [2160]	Ditch/other linear	4	Н
2133	fill	2132	mid greyish brown, soft sandy silt		4	Н
2134	fill	2132	light yellow brown, soft sandy silt		4	Н
2135	cut	2135	irregular linear palaeochannel	Natural strata	0	R
2136	fill	2135	mid brownish grey, moderately compact clayey silt	d brownish grey, moderately compact clayey silt		R
2137	fill	2168	mid grey orange, soft silty clay		0	R
2138	fill	2168	mid brown grey, soft sandy silt		0	R
2139	cut		ear boundary ditch, truncated by [2142] and [2145] Ditch/other 2 linear		2	С
2140	fill	2139	mid brownish grey, firm clayey silt		2	С
2141	fill	2139	mid yellowish grey, firm silty clay		2	С
2142	cut		linear ditch, part of subdivision of large field system	Ditch/other linear	2	D
2143	fill	2168	mid brown grey, firm sandy clay		0	R
2144	fill	2168	mid reddish grey, firm silty clay		0	R
2145	cut		linear boundary ditch	Ditch/other linear	4	Н
2146	fill	2145	dark reddish grey, frim clayey silt		4	Н
2147	fill	2145	mid brownish grey, firm silty clay		4	н
2148	cut		linear ditch running across site, possible drainage/field boundary ditch	Ditch/other linear	1	E
2149	fill	2148	mid yellow grey, firm sandy clay		1	E
2150	cut		linear ditch	Ditch/other linear	4	F
2151	fill	2150	mid red brown, firm sandy clay		4	F
2152	fill	2150	dark brown grey, soft dandy silt		4	F
2153	cut		sub-ovoid pit, unknown use	Pit	4	
2154	fill	2153	mid grey brown, firm sandy clay		4	
2155	cut		linear ditch with rounded end	Ditch/other linear	4	G
2156	fill	2155	dark grey brown, firm sandy clay		4	G
2157	cut		sub-circular pit	Pit	4	
2158	fill	2157	dark greyish brown with dark reddish brown mottling, firm clayey silt		4	
2159	fill	2130	mid reddish brown, moderately compacted silty clay (60%) and cobbles/pebbles (40%)		0	R
2160	cut		linear boundary ditch, thought to be same ditch as [2132]	Ditch/other linear	4	Н
2161	fill	2160	mid brownish grey, loose clayey sand		4	Н
2162	fill	2160	mid reddish brown, moderately compact sandy clay		4	Н
2163	cut		irregular linear cut of palaeochannel	Natural strata	0	R
2164	fill	2163	mid brown grey, soft sandy clay		0	R
2165	fill	2103	mid blue grey, soft silty clay		4	Н
2166	cut		irregular linear cut of palaeochannel	Natural strata	0	R

Context	Context Type Fill of		Description	Feature type	Period	Feature label	
2167	fill	2166	mid brown grey, soft sandy silt		0	R	
2168	cut		linear cut of palaeochannel	Natural strata	0	R	
2169	fill	2142	mid brown grey, soft sandy silt		2	D	
	Layer		Topsoil/Ploughsoil layer. Mid greyish brown, silty clay		0		
	Layer		Subsoil layer		0		
	Layer		Natural. Light yellowish grey sandy clay		0		
5003	1		Sub circular pit	Pit	0		
5004	fill	5003	Mid greyish brown, silty clay, formed by silting after disuse		0		
5005			Circular pit/possible tree bole	Pit	0		
5006	fill	5005	Mid greyish brown, silty clay, formed by natural silting after disuse		0		
5007	cut		Circular pit	Pit	0		
5008	fill	5007	Mid greyish brown, friable silty clay, formed by natural silting after disuse		0		
5009	cut		Ditch terminus enclosure entryway	Ditch/other linear	4		
5010	fill	5009	Mid greyish brown, friable silty clay, formed by natural silting after disuse		4		
5011	cut		Circular pit	Pit	0		
5012	fill	5011	Mid greyish brown, clayey silt. Formed by natural silting after disuse		0		
5013	cut		Circular pit/possible tree bole	Pit	3		
5014	fill	5013	Mid greyish brown clayey silt, formed by natural silting after disuse		0		
5015	cut		Ditch terminus enclosure entryway	Ditch/other linear	4	К	
5016	fill	5015	Mid brownish grey, friable silty clay formed by natural silting after disuse		4	К	
5017	cut		Ditch, possible boundary function	Ditch/other linear	1	E	
5018	fill	5017	Dark greyish brown friable silty clay formed by natural siling after disuse		1	E	
5019	cut		Curvilinear ditch	Ditch/other linear	2	М	
5020	fill	5019	Mid brownish grey friable silty clay, possibly formed by waterborne redeposit of natural		2	М	
5021	cut		Curvilinear gully, likely drainage function	Ditch/other linear	4	S	
5022	fill	5021	Mid greyish brown, firm silty clay		4	S	
5023	cut		Possible enclosure ditch	Ditch/other linear	4	К	
5024	fill	5023	Mid greyish yellow, silty clay formed by natural waterborne silting/alluvial		4	К	
5025	cut		Ditch - replacement sealing of earlier enclosure ditch [5023]	Ditch/other linear	2	L	
5026	fill	5025	Mid greyish brown silty clay		2	L	
5027	cut		Possible boundary ditch	Ditch/other linear	2	М	
5028	fill	5027	Mid greyish brown, silty clay formed by natural silting after disuse		2	М	
5029	cut		Possible enclosure ditch	Ditch/other linear	2	L	
5030	fill	5029	Mid greyish blue, silty clay formed by waterborne silting/alluvial		2	L	

Context Type		Fill of	Description	Feature type	Period	Feature label
5031	cut		Pit	Pit	4	
5032	fill	5031	Light brownish grey, friable silty clay		4	
5033	cut		Curvilinear gully terminus	Ditch/other linear	4	S
5034		5033	Mid yellowish grey clayey silt formed by natural silting after disuse		4	S
5035	cut		irregular linear ditch,	Ditch/other linear	2	N
5036	fill	5036	mid greyish brown, friable silty clay		2	Ν
5037			Irregular, cut of tree throw	Tree hole/bowl	0	
5038		5038	Dark greyish brown, friable silty clay		0	
5039			Cut of linear ditch, possibly a enclosure/boundary	Ditch/other linear	1	E
5040		5039	mid grey-brown, soft (waterlogged) clay-silt		1	E
5041	cut		linear, possibly small boundary ditch	Ditch/other linear	2	N
5042		5041	mid-greyish brown, loose silty-clay		2	N
5043			linear, possible boundary ditch	Ditch/other linear	2	M
5044		5043	mid-greyish brown, friable silty clay		2	М
5045			linear, possible boundary ditch	Ditch/other linear	2	М
5046			mid brownish grey, friable silty clay		2	М
5047			linear, irregular	Ditch/other linear	2	L
5048		5047	dark brownish grey, friable silty clay		2	L
5049			linear, possible enclosure ditch	Ditch/other linear	2	L
5050			mid brownish yellow, friable silty clay		2	L
5051			irregular, cut of tree throw	Tree hole/bowl	0	
5052			mid greyish brown, friable silty clay		0	
5053			linear ditch	Ditch/other linear	2	L
5054			mid greyish yellow, moderately firm silty clay		2	L
5055			linear ditch, shallow and concave	Ditch/other linear	1	E
5056		5055	mid greyish blue brown, firk silty clay		1	E
5057			linear ditch	Ditch/other linear	2	L
5058		5057	medium greyish orange, compact clay	D:+	2	L
5059		5050	sub-circular pit, possible midden	Pit	3	
5060 5061		5059	dark brownish grey, friable clayey-silt linear ditch, possible field boundary or drainage system	Ditch/other	3 1	E
		5004		linear		
5062		5061	5061 greyish brown, firm silty clay     1			E
5063		5000	terminus of linear ditch	Ditch/other linear	2	L 1
	5064 fill5063 medium greyish orange, compact sandy clay5065 cutlinear ditch, possible field boundary		medium greyish orange, compact sandy clay	Ditch/other	2 2	L N
5065		<b>5005</b>		Ditch/other linear		
	ITIII	5065	medium greyish orange, compact silty clay		2	N

Context Type		Fill of	Description	Feature type	Period	Feature label	
5068	fill	5067	dark yellowish-grey, soft clayey silt		0		
5069	cut		linear ditch	Ditch/other linear	1	E	
5070	fill	5069	dark brownish grey, loose silty clay		1	E	
5071	cut		linear ditch, possible field boundary or drainage system	Ditch/other linear	1	E	
5072	fill	5071	greyish brown, firm silty clay		1	E	
5073	cut		linear ditch, possibly field boundary	Ditch/other linear	2	N	
5074	fill	5073	medium greyish orange, compact sandy clay		2	Ν	
5075	cut		linear ditch, possible field boundary	Ditch/other linear	2	L	
5076	fill	5075	edium greyish orange, compact clay		2	L	
5077	cut		linear ditch, possible field boundary	Ditch/other linear	2	N	
5078	fill	5077	medium greyish orange, compact sandy clay		2	N	
5079	cut		linear ditch, possible field boundary	Ditch/other linear	3	Q	
5080	deposit	5079	mid-grey-brown, soft clayey silt		3	Q	
5081	cut		sub-oval pit,	Pit	3		
5082	fill	5081	dark brownish grey, friable sandy silt		3		
5083	cut		linear ditch, possible field boundary	Ditch/other linear	2	N	
5084	fill	5083	medium greyish orange, compact sandy clay		2	N	
5085	cut		curvilinear ditch	External dump	3	V	
5086	fill	5085	dark brownish grey, friable silty clay		3	V	
5087	fill	5085	mid greyish brown, friable silty clay		3	V	
5088	cut		sub oval ditch/ditch terminus	External dump	3	V	
5089	fill	5088	mid yellowish brown, loose silty clay		3	V	
5090	cut		linear ditch	Ditch/other linear	3	Q	
5091	fill	5090	dark brownish grey, friable silty sand		3	Q	
5092	fill	5088	dark brownish grey, loose silty clay		3		
5093	cut		linear, slightly curvilinear ditch, possible boundary/enclosure	Ditch/other linear	1	E	
5094	fill	5093	mid greyish brown, friable silty clay		1	E	
5095	cut		linear ditch	Ditch/other linear	1	E	
5096	fill	5095	mid greyish yellowish brown, friable silty clay		1	E	
5097	cut		linear ditch, possible boundary ditch	Ditch/other linear	4	0	
5098	fill	5097	mid greyish blueish brown, firm silty clay		4	0	
5099	cut		linear ditch, possible enclosure ditch	Ditch/other linear	2	N	
5100		5099	mid yellowish brown, friable silty clay			Ν	
5101			linear ditch, possible boundary ditch	Ditch/other linear	4	0	
5102		5101	mid greyish blueish brown, moderately friable silty clay		4	0	
5103	cut		linear ditch, possible enclosure	Ditch/other linear	1	E	

Context Type		Fill of	Description	Feature type	Period	Feature label	
5105	cut		linear ditch, possible boundary ditch	Ditch/other linear	4	0	
5106	fill	5105	mid greyish blue brown, firm silty clay		4	0	
5107	cut		irregular sub-ovoid, cut of midden	External dump	3	Т	
5108	fill	5107	dark-grey black (40%), mid to dark grey (60%), friable silty clay		3	Т	
5109	cut		irregular in plan midden	External dump	3	Т	
5110	fill	5109	dark greyish brown, loose silty clay		3	Т	
5111	cut		sub-circular midden or pit	External dump	3	Т	
5112	fill	5111	greyish brownish black, friable clayey silt		3	Т	
5113	cut		irregular in plan midden, test pit square within midden	dump		Т	
5114		5113	dark greyish brown, loose soft silty clay		3	Т	
5115	cut		irregular in plan midden, test pit square	External dump	3	Т	
5116	fill	5115	dark greyish brown, loose soft silty clay		3	Т	
5117			linear terminus	Ditch/other linear	4	0	
5118		5117	mid grey brown, firm silty clay			0	
5119			linear feature possible field boundary/enclosure	Ditch/other linear	4	J	
5120	fill	5119	lark yellow grey, firm silty clay		4	J	
5121	cut		linear ditch, possible drainage ditch or field system/boundary	Ditch/other linear	3		
5122	fill	5121	light brownish grey, firm silty clay		3	1	
5123			linear feature, possible enclosure/boundary system	Ditch/other linear	3	Q	
5124		5123	mid yellow grey, soft (waterlogged) clayey silt		3	Q	
5125			linear ditch terminus, possibly boundary ditch	Ditch/other linear	3	P	
5126		5125	mid greyish brown, firm silty clay		3	Р	
5127			linear ditch, possible boundary or enclosure ditch	Ditch/other linear	4	J	
5128		5127	mid grey brown, friable silty clay		4	J	
5129			linear feature, gully or heavily truncated ditch	Ditch/other linear	3		
5130		5129	mid grey brown, friable silty clay		3		
5131			linear ditch, possible boundary ditch	Ditch/other linear	3	P	
5132		5131	dark grey brown, friable silty clay	_	3	Р	
5133			northern edge of palaeochannel	Ditch/other linear	0	R	
5134		5133	mottled, mid-grey brown, some yellow flecks, moderately compact clayey silt		0	R	
5135			northern edge of palaeochannel	Ditch/other linear	0	R	
5136	-		mid grey brown, friable silty clay	_	0	R	
	deposit		mid brown, soft sandy clay - irregular width, depth unknown		0	R	
5138	cut		terminus of curvilinear feature, heavily truncated	Ditch/other linear	2	М	

Context	Туре	Fill of	Description	Feature type	Period	Feature label
5139	fill	5138	mid yellow grey, firm silty clay		2	М
5140	deposit		dark black grey, friable silty clay - deposit of natural hollow		0	
5141	deposit		dark brown, grey, friable silty clay - deposit of natural hollow		0	
5144	cut		, ,	Ditch/other linear	3	Q
5145	fill	5144	dark yellow grey, friable silty clay		3	Q

# **APPENDIX B: WORKED FLINT**

By Jacky Sommerville

### Introduction and provenance

A total of 23 worked flints (222g) and four pieces of burnt, unworked flint (15g) were retrieved. Twelve worked lithics were redeposited in features belonging to Periods 1 (Early Roman) to 4 (13th to 14th), or ploughsoil. The remainder are from Period 2 (11th century or earlier) features or unphased pits.

# Range and variety

Debitage consists of 13 flakes, one blade, one bladelet, four chips and a core. The core is a dual-opposed platform type which was used to produce flakes and displays evidence of preparation of the striking platform. The latter is a feature of earlier prehistoric (Mesolithic/Early Neolithic) reduction strategies (Butler 2005, 84, 121). Other possible indicators of such dating are the presence of the blade and bladelet, and a linear butt on one of the flakes. Linear butts may indicate removal using a 'soft' hammer (Inizan *et al.* 1992, 80).

The three tools are a retouched flake, a notched flake and an end scraper (made on a flake), none of which are chronologically diagnostic.

# Discussion

Earlier prehistoric lithics are not common in this part of Buckinghamshire. However, redeposited Mesolithic flints, including a microlith, are known from the Late Neolithic site at Stacey Bushes, Milton Keynes *c*. 8km south of Hanslope (Green and Sofranoff 1985, 21–3).

# References

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## **APPENDIX C: POTTERY**

By Sue Anderson

### Introduction

The pottery assemblage comprised 719 sherds of pottery weighing 9.339kg, and was collected from 45 contexts. Table 1 shows the quantification by fabric. The pottery is generally in good condition with little abrasion and sherd sizes are large.

Fabric	Code	Date range	No	Wt/g	MNV	eve
General prehistoric	PREH	Prehistoric	1	3	1	
Unidentified handmade	UNHM	Preh/ESax?	2	12	2	0.12
Roman shelly wares	RBSH	Rom	11	153	6	0.22
Early/Middle Saxon ironstone tempered	A2	E/MSax	3	8	2	
St Neots-type ware	SNC1	10th-12th c.	56	424	44	0.51
Early medieval shelly ware	MC1	11th-13th c.	152	1482	106	2.38
Medieval shelly wares	MC1/3	11th-14th c.	92	868	78	0.19
Olney Hyde A / Later medieval shelly ware	MC3	13th-15th c.	323	5483	91	2.70
Sandy and shelly ware	MSC1	L.11th-M.13th c.	1	3	1	
Finer sandy and shelly ware	MSC2	L.13th-14th c.	8	95	8	
Potterspury-type sandy calcareous ware	MSC3	12th-13th c.	3	55	3	
Sandy, sparse fine calc	MSC	Med	9	70	2	
Medieval coarse sandy ware	MS2	L.13th-E.15th c.	10	95	5	
Medieval grey sandy ware	MS3	M-L.11th-E.15th c.	45	577	18	0.21
Potterspury ware	MS6	L.13th-16th c.	2	18	2	
?Beds medieval coarseware	MS8	L.13th-14th c.	2	7	2	
Totals			720	9353	371	6.33

## Table 1: Pottery quantification by fabric

## Methodology

Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). The minimum number of vessels (MNV) within each context was also recorded, but cross-fitting was not attempted unless particularly distinctive vessels were observed in more than one context. A full quantification by fabric, context and feature is available in archive. Medieval fabric codes were assigned from the Milton Keynes post-Roman fabric series (Mynard 1992, 1994). Identification of fabrics and forms followed the Milton Keynes type series (*ibid*), together with published assemblages from Northampton, West Cotton and Olney Hyde (McCarthy 1979; Blinkhorn 2010; Mynard 1984), although separation of MC1 and MC3 fabrics was difficult due to their similarity. Form terminology for medieval pottery is based on MPRG (1998). The results were input directly onto an Access database, which forms the archive catalogue.

# Pottery by period

#### Pre-medieval

Seventeen sherds are certainly or possibly of pre-medieval date. One possible prehistoric sherd from ditch fill 5130 (Period 3 ditch I) was in a fine silty fabric with a red surface and black core appeared to have combed

decoration on the surface. Two small abraded sherds appeared to be handmade but were of uncertain date: a small body sherd from ditch fill 2123 (Period 4 ditch H) in a soft black fabric with voids (leached calcareous?), and an upright beaded rim from palaeochannel fill 2144 in a soft very fine silty fabric. Both are likely to be of prehistoric date, the latter possibly later Iron Age.

Eleven sherds of four vessels are likely to be Roman. These were recovered from palaeochannel fill 2144, ditch fill 5062 (Roman ditch E), primary ditch fill 5092 (Period 3 ditch V) and ditch fill 5130 (Period 3 ditch I). Most were small and abraded body fragments of soft shelly wares which had lost their calcareous inclusions through leaching. Three sherds from 5062 were part of a large shell-tempered storage jar with a thick upright everted rim.

Three small body sherds in fine sandy fabrics with abundant ironstone inclusions may be of Early/Middle Saxon date. These were from ditch fill 2039 (Period 1 ditch E) and ditch fill 5122 (Period 3 ditch I).

#### Saxo-Norman

Fifty-six sherds were of Late Saxon or Saxo-Norman date, all St Neots-type wares. Six rims were present, of which four were from jars and two from bowls; in addition there was one carinated body fragment of a bowl. The jar rims were all everted types, two lid-seated with a rounded edge, one thickened everted wedge, and one flaring. The bowl rims were beaded and plain upright forms. A body fragment which appeared to have a spout (or possibly a handle) attached was probably from a spouted pitcher.

#### Medieval

Most of this assemblage comprised pottery of broadly 11th to 14th-century date. Shell-tempered fabrics made up the bulk of the group, but sandy/shelly and sandy wares were also found.

Identifiable forms in the shelly ware group included eight bowls, 36 jars, two jugs and a possible spouted pitcher. The latter was identified based on the rim form, which is paralleled at Great Linford (Mynard 1992, fig. 124.32). Bowl rim types were commonly upright plain forms, sometimes with a carination, but there were also single examples of thickened everted, flat-topped everted and ?inturned forms. The rims were most frequently Milton Keynes types A1 (curving), A2 (angled) and occasionally A3 (upright neck). One jug rim had an upright plain tapered form with a slight carination below, and the other jug comprised a wide strap handle with random stabbing. Several jars had complete profiles and these were generally slightly globular forms, but 'top hat' jars with flaring rims and straight-sided bodies were also present.

Only one sandy/shelly ware form was identifiable, this being a jug handle in 'MSC3', which was a sub-rectangular section rod with a single line of vertical stabbing centrally.

Two MS3 vessels comprised a ?bowl with a flat-topped tapering everted rim, and a jar with an upright rim with everted tip.

The distinction between the shelly wares (MC1, MC1/3 and MC3) is largely subjective as there is no clear description of distinguishing features in the Milton Keynes volumes, and elsewhere these wares are grouped together as a single entity. The main dating evidence is in the form of the rims and vessel types, where these can be discerned. Some rim forms occur in both fabric groups at Great Linford and it is clear that there is a degree of overlap which is not reflected in the date ranges of the two fabrics. Blinkhorn (2010, 276) has suggested that

some of the forms present at this site, such as the 'top hat jar' may have been largely out of use by the middle of the 13th century at Raunds. Several forms which occur in both MC1 and MC3 (e.g. the curving, almost cavetto, rim forms with small beads occur commonly in the early phases of St Peter's Street House 1, McCarthy 1979, figs 81.53–54 and 82.86) may also be of 12th/13th-century date at Hanslope. This would fit with the almost total lack of Potterspury ware in this assemblage, despite the site's proximity to the source.

### Pottery by site period

Table 2 shows the distribution of pottery by site phase and pottery period. The majority of this assemblage came from contexts assigned to Periods 3 and 4.

- (		F F		
Group	P. 1	P. 3	P. 4	Unph
Preh		1	1	1
Roman	3	5	2	1
E/MSax	1	2		
Late Saxon		23	31	2
Earlier medieval	7	141	471	4
Later medieval		2	20	1
Totals	11	174	525	9

Table 2: Pottery quantities (sherd count) by site period and pot period

Most sherds were recovered from ditch fills – details are provided below by site period (unphased material will not be considered further). Unphased material is that which had become incorporated into non-archaeological, natural deposits.

## Period 1 – Early Roman

Three fills of ditch E produced eleven sherds, including Roman shelly ware, a body fragment of an Early/Middle Saxon ware and seven body sherds of MC1/MC3. The latter were all recovered from fill 2023 and indicate that this was a much later fill of the feature.

### Period 3 – medieval 11th–13th-century

Three large pits, three ditches and one large pit/hollow contained 174 sherds in this period. Table 3 shows the distribution by feature group.

Pit 2055 produced one small body sherd of MC1. Pit 5081 contained six sherds of MS3, MC1 and MC3 including a jar rim (type A2a, *cf.* Mynard 1992, fig. 125.42). Pit 5059 produced 66 sherds including a jar, a bowl and a possible spouted pitcher in SNC1, four jars and a bowl in MC1 and body and base sherds of MC3 and MS1.

Ditch I contained six sherds scattered across two fills. One was prehistoric, one was Roman and two were Early/Middle Saxon, all residual, as a flaring jar rm in MC1 and a body sherd of MSC1 were also found. Ditch P contained two sherds of MC1.

Adjoining features T and V contained the largest quantity of sherds from this phase. Some residual pottery was present, including Roman shelly ware and a few sherds of St Neots-type, but the majority of sherds in these two features were in fabric MC1, with only a few MC1/3, MC3, MSC3 and MSC2 sherds present. Sixteen jar and five

bowl rims were found, all in MC1, including rim types A1a, A1b, A1c, A1f, A2a, A2d, A3a, B1, B4 and B6. One vessel was a 'top hat' jar.

			0			
Fabric	Ditch I	Ditch P	Hollow T	Ditch V	Ungrouped	Totals
PREH	1					1
RBSH	1			4		5
A2	2					2
SNC1			4	3	16	23
MC1	1	2	40	28	11	82
MC1/3			5	2	33	40
MC3			1	3	11	15
MS3					2	2
MSC1	1					1
MSC3			1			1
MS2			1			1
MSC2			1			1
Totals	6	2	53	40	73	174

Table 3: Distribution of sherds by fabric and feature group in Period 3

# Period 4 - medieval 13th-14th-century

Five pits, one small gully and seven ditches produced 526 sherds in this period. Table 4 shows the distribution of fabrics across the groups.

The pits produced a relatively small quantity of pottery, the largest group being from intercutting pits 2027 and 2037 (45 sherds). In pit 2027, fabric MC3 was most frequent, will small quantities of SNC1, MC1, MSC3, MS2, MS3 and MS8. Three jar rims (A1a and A3a types) and a jug handle (Fig. 11.1) were found. Most of the sherds in 2037 were body and base fragments but one SNC1 bowl rim was found, and there were body and base sherds of MC3, MS2 and MS3. Pit 2157 contained one sherd, a jar rim (type A1a) in MC3. Five sherds were found in pit 5031, all body sherds of MC1 and MC3, the latter being most frequent. Pit 2153 produced two body fragments of MSC and small gully or beam-slot 5009 contained one body sherd of MC1/3.

Most of the assemblage was recovered from ditch F, with the largest single group (308 sherds) from the fills of cut 2012, most of which was of later 13th to 14th-century date. As shown in the table, MC3 was by far the most frequent fabric. Despite the large quantities, only a few rims were present, comprising two SNC1 jars, an MC1/3 spouted pitcher, an MC1/3 jar (type A1a), six MC3 jars (types A1a (Figs 11.4 and 11.6), A1f and A3a (Figs 11.5 and 11.7)), and a bowl (type B1).

Ditch H also contained pottery of later 13th to 14th-century date, all of it from sections north of the palaeochannel (cuts 2057/5059, 2083, 2103). There was one Roman shelly ware jar rim, an SNC1 jar rim (A2a), a jar rim and a jug rim in MC3 (types A3b (Fig. 11.3) and C1 respectively), a jug handle in MSC3 and a jar rim in MS3 (type A2d?).

All pottery in ditch G was recovered from the fills of cut 2040. Two MC1 jar rims (A2a/b, A3b (Fig. 11.2)) and an SNC1 bowl were found. Other ditches produced only small quantities of sherds, none of which were diagnostic

for form.

			D	itches					
Fabric	F	G	Н	J	K	0	S	Ungrouped	Totals
UNHM			1						1
RBSH			2						2
SNC1	13	3	1			2	3	9	31
MC1	27	21	9			2	1	5	65
MC1/3	49		1					1	51
MC3	248	14	21		1			18	302
MS3	25	4	4					10	43
MSC	7							2	9
MSC3			1					1	2
MS2			1					7	8
MS6	1		1						2
MS8	1			1				1	3
MSC2	2	2	2				1		7
Totals	373	44	44	1	1	4	4	52	526

Table 4: Distribution of sherds by fabric and feature group in Period 4

# Summary and discussion

This is a relatively large rural medieval pottery assemblage which is comparable with the much larger groups recovered from previous excavations around Milton Keynes. However, it is of local importance, being one of the first medieval assemblages from the parish of Hanslope. It may represent rubbish disposal from the hamlet of Green End to the west of the site, and much of it appears to be of a limited date range with little Potterspury ware present.

It is apparent that shelly fabric MC1 was more frequent in Period 3 contexts, with a large increase in MC3 wares in Period 4. Due to the difficulties in distinguishing these two wares, spot-dating was based largely on other fabrics whenever possible, but the phasing (based on stratigraphic relationships and spot-dating) seems to confirm the decline of MC1 at the expense of MC3 in the 13th century here, as was found at Great Linford (Mynard 1992, 253).

Rim forms showed some minor differences between Periods 3 and 4. Apart from bowl type B1 (carinated type) which occurred four times in Period 3 and only once in Period 4, quantities were too small to determine patterns. The jar rim quantities are shown in Table 5.

Based on this, there appears to be a slight decrease in curved necks from Period 3 to Period 4 (the exception being type A1a), and possibly also in angular necked types, but a much greater number of vessels with upright necks in Period 4.

There was a slight decrease in the proportion of bowls to jars with 21% bowls in Period 3 and 14% bowls in Period 4, although this may not be significant given the small quantities involved.

MK rim type	Code	Description	Period 3	Period 4
Curved neck	A1a	Slightly thickened flaring	5	5
	A1b	Cavetto	1	
	A1c	Thickened everted	3	
	A1f	Short rounded thickened	2	1
Angular neck	A2?		1	
	A2a	Thickened everted	4	1
	A2a/b	Short everted		1
	A2d	Beaded	2	1
Upright neck	A3a	Beaded	2	5
	A3b	Square beaded		2
Totals			20	16

## Table 5: Milton Keynes rim forms by phase (MNV)

The distribution of pottery across the site also appears to change slightly from Period 3 to Period 4, with large assemblages from three features in particular suggesting concentrations of activity which probably relate to nearby settlement. In the earlier period, much of the pottery was recovered from features T and V to the west of the excavation area, but nearby Period 4 ditch Q produced only four sherds (all of which could be residual). In Period 4, most of the pottery was recovered from ditch F towards the east of the excavation area, close to the point where it diverged from ditch H. Period 4, pit 2153 located at the same point contained only two sherds. This suggests a shift in focus for rubbish distribution during the 13th century and may also represent a shift in occupation.

## Illustrated vessels (see Fig. 11)

- 1. MC3 jug handle, random stabbing. Pit fill 2029, Period 4.
- 2. MC1 jar, rim A3b, Olney Hyde type 4. Ditch G, fill 2041, Period 4.
- 3. MC3 jar, rim A3b, Olney Hyde type 3. Ditch H, fill 2088, Period 4.
- 4. MC3 jar, rim A1a?, Olney Hyde type 2? Flat base. Ditch F, fill 2014, Period 4.

5. MC3 jar, rim A3a, Olney Hyde type 1B. Ditch F, fill 2014, Period 4.

- 6. MC3 jar, rim A1a?, Olney Hyde type 2? Ditch F, fill 2014, Period 4.
- 7. MC3 jar, rim A3a. Ditch F, fill 2014, Period 4.

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### APPENDIX D: CERAMIC BUILDING MATERIAL

By Jacky Sommerville

A corner fragment from an unglazed roof tile, in a fine fabric with sparse quartz, fine flint and mica inclusions, though not chronologically diagnostic, was recorded from Period 4 (13th to 14th century) ditch F. It is thin (10mm) with thickened, slightly chamfered edges (17mm).

# APPENDIX E: FIRED CLAY

### By Jacky Sommerville

A total of 47 fragments (334g) of fired/burnt clay was recovered – mostly from Period 3 (11th to 13th century) pit/hollow T. The majority are orange and feature inclusions of limestone or quartz. None of the fragments display features which might indicate original form or function.

## **APPENDIX F: CERAMIC OBJECT**

#### By Jacky Sommerville

A ceramic spindle whorl (Ra. 2, 14g; Fig. 11.8) was retrieved from Period 4 pit 2037. It was made from a base sherd in an oxidised, shell-tempered fabric. This accords with pottery fabric MC1/3 and is dateable to the 11th to 15th centuries (see Pottery report).

## Illustration catalogue (Fig, 11)

8. Ceramic spindle whorl. Ra. 2, pit 2037, fill 2028, Period 4.

## **APPENDIX G: METALWORK**

#### By Katie Marsden

A small group of metalwork, totalling 14 items (weighing 35g) was recovered from pits (85%) and ditches (15%). The group comprises 12 iron items and two of copper alloy, characterised by high fragmentation and corrosion. Consequently, a large proportion cannot be attributed to form, function or date. Identifiable items include nails, of a hand-forged type introduced in the Roman period and that continues largely unchanged until industrialisation in the post-medieval period.

Dateable items are limited to two iron horseshoe nails and one iron buckle fragment. The nails are of 'fiddle key' form, recovered from Period 3 pit 5059 (fill 5060; Ra. 5000) and Period 4 pit 2027 (fill 2029), and date to the medieval period (Clark 1995, fig. 64a). The buckle fragment comprises a double-loop frame fragment from Period 4 pit 2027 (fill 2029), dateable from the mid-14th to mid-17th centuries (Whitehead 1996). The items recovered from pit 2027 (fill 2029) support the medieval dating indicated for this feature by associated pottery.

# References

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# APPENDIX H: METAL-WORKING RESIDUE

## By Jacky Sommerville

Period 1 (Roman) ditch E produced a fragment of iron-working slag (84g). It is plano-convex in cross-section and may be a fragment from a smithing hearth bottom. The fragment is of minimal significance and not clearly dateable, but may represent metalworking in the near vicinity.

# **APPENDIX I: WORKED STONE**

## By Ruth Shaffrey

Three pieces of stone were retained and submitted for analysis. These comprise a shiny cuboid stone (64g) from Period 2 Ditch D, which has broken naturally along the bedding planes. The polish on this stone appears natural and is unlikely to be the result of use. A single piece of stone roofing with a circular drilled perforation (122g) was recovered from Period 4 Ditch H. This is made from a very shelly fine-grained limestone; it could be Roman or medieval in date. A third piece of stone is a burnt (reddened) micaceous siltstone (374g), from Period 2 Ditch C. It is not worked or utilised (other than its exposure to heat).

# APPENDIX J: WORKED BONE/ANTLER

## By Katie Marsden

A small assemblage comprising one bone and one antler item was recovered from two deposits. The antler fragment was recovered from Period 4 ditch J (fill 5120) and consists of the tine, with the tip removed, probably sawn or by knife. This is an indicator of craft production, where antler tines are removed in order to access the beams for artefact production (c.f. Ashby 2005). The worked bone item recovered from Period 3 pit/hollow T (fill 5110) is a long bone (probable tibia) of uncertain, sheep-sized, species with lateral cut marks on one side. The item is likely to be a waste piece from artefactual bone-working.

#### Reference

Ashby, S. 2005 'Working Waste' in Spall, C.A. and Toop, N. J. (eds.) *Blue Bridge Lane and Fishergate House, York. Report on Excavations; July 2000 to July 2002* http://www.mgassocs.com/mono/001/index.html Accessed 02 October 2018

#### APPENDIX K: ANIMAL BONE

By Matilda Holmes

# Background

A small assemblage of animal bone (332 fragments weighing 3928g) was recovered from various features of Roman to medieval date. An assessment of the character of the animal economy at the site is provided, but further analysis was not considered necessary given the poor sample sizes.

#### Methods

All bones and teeth were recorded, although for some elements a restricted count was employed to reduce fragmentation bias: vertebrae were recorded when the vertebral body was present, and maxilla, zygomatic arch and occipital areas of the skull were identified from skull fragments. A basic recording method was employed to assess the potential of the animal bone assemblage. The number of bones and teeth that could be identified to taxa were noted, as well as those used to age the major domesticates (tooth wear and bone fusion). The quantity of bones likely to be useful for metrical data were also recorded. Other information included condition and the incidence of burning, gnawing and butchery marks. All fragments were recorded by context including those that could not be identified to taxa. Recording methods and analysis are based on guidelines from Baker and Worley (2014).

## Summary of findings

Bones were generally in fair condition (Table 6), though fragmentary. Evidence for gnawing and butchery was common, though the only burnt fragments came from samples, suggesting that bones were not routinely exposed to fire as a means of processing, cooking or disposal.

Cattle were the most numerous taxa, followed by sheep/ goat, with a few bones of pig, equid, canid, red deer and goose (Table 7). A few bones of small mammal (including rabbit/ hare), micro-mammal (including mouse) and frog or toad were recovered from samples (Table 8). There was one potential associated bone group from Period 1 Ditch E (cut 5071; fill 5072), but other than that no specific deposits of feasting, butchery, craft or processing waste were observed. As may be expected in such a small sample, the number of bones that could provide age and metrical data were minimal (Table 9).

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- Hambleton E 1999 Animal Husbandry Regimes in Iron Age Britain. Oxford: British Archaeological Reports British Series 282

			Pre	servati	on		Bone Modification				
Period	Description	Good	Good-fair	Fair	Poor	Fair-poor	Gnawed	Butchered	Burnt		
1	Ditch			2		1	1	1			
2	Ditches (field system?)			2	1						
3	Midden, ditches, pits	4		1		1	3	2			
4	Ditches, pits	2	1	7	1	1	4	1			
Undated		1		1	1		1	1			
То	tal N contexts	7	1	13	3	3	9	5	0		
Proportio	on (%) of all contexts	26	4	48	11	11	33	19	0		

# Table 6: Preservation and bone modifications observed on the bones for each context

Table 7: Number of fragments recorded for the major domesticates, birds and other taxa (hand collection only)

		Cattle	)	Sheep	2	Pig	!	Bird	Fish	Other	Total	Other taxa
Period	Unidentified	Bones	Teeth	Bones	Teeth	Bones	Teeth				Identified	
1	117	11									11	
2		1	1					1			3	
3	74	7	3	7	2	1		2		9	31	Equid, red, ?roe, human
4	87	7	3	4	2		1	3		3	23	Equid, canid, goose
Undated	1	1		1							2	
Total		27	7	12	4	1	1	6	0	12		

Table 8: Number of bones identified to taxa from samples

Period	Fish	Small mammal	Micro-mammal	Frog/ toad	Cattle	Sheep/ goat
3		1	9		2	5
4	1	1	6	2		

Table 9: Number of bones and teeth likely to provide ageing and metrical data for the major domesticates. MWS= mandibular wear stage; TWS= wear from individual teeth; fusion= bone fusion; meas= metrical data

		С	attle			Shee	ep/ goat		Pig				
Period	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas	
1			10										
2			1										
3	1		8		2		3	5					
4	1		5		1	1	4	2	1				
Undated			1										
Total	2	0	25	0	3	1	7	7	1	0	0	0	

# APPENDIX L: PLANT MACROFOSSILS

By Sarah F. Wyles

#### Introduction

A series of 20 environmental samples (706 litres of soil) were assessed (by Emma Aitken and Sarah F. Wyles, CA 2019) from a range of feature types and periods from across the site and the results of this assessment are tabulated in Table 10. The charred plant remains from a total of seven bulk soil samples were selected for further analysis from a range of features of medieval date, on the basis of the environmental assessment. Three samples were from Period 3 (pit 5059, pit/hollow T fill 5114 and ditch Q fill 5080) and four from Period 4 (pit 2027, ditch F fill 2014, ditch G fill 2042 and ditch O terminus fill 5118).

#### Methodology

The samples were processed following standard flotation methods, using a 250µm sieve for the recovery of the flot and a 1mm sieve for the collection of the residue. All identifiable charred plant remains from these samples were identified using a stereo-binocular microscope. The identifications follow the nomenclature of Stace (1997) for wild plants, and traditional nomenclature, as provided by Zohary *et al* (2012) for cereals. The results are recorded in Table 11.

#### Period 2: Anglo-Saxon/medieval (11th century or earlier)

#### Ditches

Small charred assemblages were recovered from Ditches C, D and L. These charred remains included freethreshing wheat (*Triticum turgidum/aestivum* type) grain fragments, seeds of stinking chamomile (*Anthemis cotula*) and oraches (*Atriplex* sp.) and charcoal fragments. These assemblages appear to be reflective of dispersed/wind-blown settlement waste and were not selected for further analysis.

# Period 3: Medieval (11th – 13th century)

#### Pit

The moderately large charred plant assemblage recovered from pit 5059 (sample 5003) was dominated by the cereal and possible crop remains. The cereal remains included those of free-threshing wheat, barley (*Hordeum vulgare*) and rye (*Secale cereale*) remains and grains greatly outnumbered the chaff elements. Other possible crop remains noted were those of celtic beans (*Vicia faba*) and garden peas (*Pisum sativum*) while a number of the oats (*Avena* sp.) may be of the cultivated variety (*Avena sativa*). The fragments of hazelnut (*Corylus avellana*) shell may be representative of the use of a wild food resource.

The weed seeds included seeds of vetch/wild pea (*Vicia/Lathyrus* sp.), stinking mayweed, clover/medick (*Trifolium/Medicago* sp.), red bartsia (*Odontites vernus*), sedge (*Carex* sp.) and goosefoot (*Chenopodium* sp.). This assemblage is likely to be indicative of waste material from food preparation and from processing stored grain, as the majority of the chaff elements of free-threshing wheat, such as culm nodes, tend to be removed in the field by threshing and winnowing prior to storage (Hillman 1981, 1984).

# Pit/hollow T

Fill 5114 (sample 5008) of cut 5113 of pit/hollow T produced a very high number of charred plant remains. Again cereal and possible crop remains were predominant within this assemblage. The cereal remains included large quantities of free-threshing wheat remains and smaller amounts of barley and rye grains. Grains greatly

outnumbered the chaff elements. Other possible crop or food source remains noted were those of beans and peas, brassicas and hazelnuts, while again a number of the oat grains may be of the cultivated variety.

The weed seeds included seeds of vetch/wild pea, stinking mayweed, brome grass (*Bromus* sp.), red bartsia (*Odontites vernus*), scentless mayweed (*Tripleurospermum inodorum*), curled dock (*Rumex crispus*), club-rush (*Schoenoplectus lacustris*) and fat-hen (*Chenopodium album*). There were also a number of sloe/hawthorn type (*Prunus spinosa/Crataegus monogyna*) thorn/twig fragments noted. This assemblage is likely to be indicative of waste material from food preparation and from processing stored grain.

A further four samples were assessed from pit/hollow T and these assemblages were comparable with that from fill 5114 (5008). A few additional weed seed species and other remains were identified in these assemblages. These include seeds of oraches, persicaria (*Persicaria* sp.), bedstraw (*Galium* sp.), clover (*Trifolium* sp.), sedge (*Carex* sp.), spike-rush (*Eleocharis* sp.), black bindweed (*Fallopia convolvulus*), ribwort plantain (*Plantago* lanceolata.), knotgrass (*Polygonum* aviculare), brambles (*Rubus* sp.) and rye-grass/fescue (*Lolium/Festuca* sp.),and hawthorn (*Crataegus monogyna*) stone fragments and tubers including false oat-grass (*Arrhenatherum elatius var bulbosum*).

### Ditch Q

A large charred plant assemblage was recorded from fill 5080 (sample 5004) of Ditch Q cut 5079. The cereal remains included large quantities of free-threshing wheat and smaller amounts of barley and rye, with grains greatly outnumbered the chaff elements. A few of the free-threshing wheat grains showed traces of germination. This level of germination may be reflective of a poorly stored or poor quality crop. Other possible crop or food source remains included beans and brassicas, with some of the oat grains also possibly being those of the cultivated variety.

The weed seeds included seeds of vetch/wild pea, stinking mayweed, red bartsia and curled docks. This assemblage is likely to be indicative of waste material from food preparation and from processing stored grain.

## Period 4: 13th – 14th century

## Pit

A very high number of charred plant remains were recovered from pit 2027 (sample 201), with cereal remains representing 54% of assemblage and other potential crops and food remains 26% of the assemblage. The cereal remains were dominated by those of free-threshing wheat with smaller numbers of those of barley and rye and other possible crop or food source remains included those of hazelnut, peas and beans and brassicas, with some of the oat grains also possibly being those of the cultivated variety.

The weed species included remains of vetch/wild pea, stinking mayweed, brome grass, red bartsia, fat-hen, docks (*Rumex sp.*), bristle club-rush (*Isolepis setacea*) and common reed (*Phragmites australis*). There were also a few monocot stem fragments and a bud noted. This assemblage is likely to be indicative of waste material from food preparation and from processing stored grain.

### Ditches

Fill 2014 (sample 200) of ditch F cut 2012 contained a very high number of charred plant remains, whilst a large charred plant assemblage was recorded from fill 2041 (sample 202) of ditch G cut 2040. Cereal and possible crop remains were predominant within these assemblages. The cereal remains included large quantities of free-

threshing wheat and smaller amounts of barley and rye, with grains greatly outnumbered the chaff elements. A few of the free-threshing wheat grains recorded from ditch F and Q showed traces of germination. This level of germination may be reflective of a poorly stored or poor quality crop. Other possible crop or food source remains included those of hazelnut, peas and beans and brassicas, with some of the oat grains also possibly being those of the cultivated variety.

The weed seeds included seeds of vetch/wild pea, stinking mayweed, brome grass, red bartsia, goosefoot, curled docks, and sedge. These assemblages are likely to be indicative of waste material from food preparation and from processing stored grain.

#### Ditch Terminus O

The very large assemblage recovered from fill 5118 (sample 5010) of cut 5117 of ditch terminus O was again dominated by cereal and possible crop/food source remains but in this instance there was a higher number of chaff elements. Cereal grains were still predominant, representing 50% of the assemblage but the chaff elements formed 23% of the assemblage. In the other assemblages, the chaff elements only comprised 6% or less of the plant remains. The cereal remains included those of free-threshing wheat, barley and rye, with those of free-threshing wheat being most numerous and again a few of those grains showed traces of germination. Other possible crop or food source remains included those of hazelnut, sloes (*Prunus spinosa*), apple type (*Malus sylvestris*), beans and brassicas, with some of the oat grains also possibly being those of the cultivated variety.

The weed seeds included seeds of vetch/wild pea, stinking mayweed, brome grass, red bartsia, cleavers (*Galium aparine*), fat-hen, knotgrass (*Polygonum aviculare*) and docks. This assemblage is likely to be representative of waste material from processing stored grain with some waste material from food preparation.

### Other features

A few charred remains were recovered from ditch H and pit 2157, including indeterminate grain fragments and a brassica seed. These assemblages are likely to be reflective of dispersed/wind-blown settlement waste.

## Undated

#### Pits

Moderate to high quantities of charred remains were recorded from pits 5003, 5007 and 5067. The charred cereal remains included free-threshing wheat grain fragments and some charred coleoptile fragments. The small to moderate quantities of charred weed seeds included seeds of possible vetch/wild pea, meadow grass/cat's-tails, dock, clover, brassica, stinking chamomile, oat/brome grass and rye-grass/fescue. There were also a few hazelnut shell fragments noted. These assemblages may be reflective of dumped domestic waste and they would be compatible with the Periods 2, 3 or 4 phases of activity on the site.

# **Discussion and summary**

There are no major differences between the composition of the assemblages from Period 3 and those from Period 4 features. Free-threshing wheat, rye and barley are the typical species of cereals within assemblages of medieval date in this part of Britain. (Greig 1991). There were no exotic species recorded within these assemblages and the environmental evidence may suggest that the site was of relatively low status. There are similarities between this assemblage and some assemblages from other medieval deposits from rural settlement sites in the wider area. Free-threshing wheat was recorded from Walton Lodge, Aylesbury (Giorgi 1989), and free-threshing wheat, barley, and rye from Grove Priory near Bedford (Robinson and Straker 1991) and

Prebendal, Aylesbury (Moffett 1989). The large assemblages of cereal remains are likely to be mainly indicative of waste material from the processing of stored grain (as the majority of the chaff elements of free-threshing wheat, such as culm nodes, tend to be removed in the field by threshing and winnowing prior to storage) and waste material from food preparation. Peas, beans and cultivated oats have also been found as crop species in other rural medieval assemblages, together with hazelnuts, and other wild fruit species such as sloes and crab apples. Peas were recorded from Walton Lodge, Aylesbury (Giorgi 1989), oats from Grove Priory (Robinson and Straker 1991) and beans, peas and oats from Prebendal Aylesbury (Moffett 1989)

The weed seeds are generally typical of those recovered from grassland, field margins and arable environments. The weed seeds assemblages provide an indication of the exploitation and use during the medieval period of a number of different environments, such as lighter drier soils as favoured by species such as poppy and red bartsia, heavier clay soils as shown by the presence of species such as stinking mayweed, damper soils and wetter environments as used by species such as curled docks, sedge, club-rush, bristle club-rush and common reed, and hedgerow/woodland edge environments typical of species such as hazelnut and sloe. The presence of some nitrogen loving species, such as fat-hen may be suggestive of some manuring taking place. The presence of low growing species, such as clover or medick and field madder, and twinning species, such as vetches/wild peas and cleavers, may suggest a low harvesting height by sickle (Hillman 1981). A seed that is more common in assemblages of Anglo-Saxon and medieval date (Greig 1991) is stinking mayweed, which is also thought to be linked with the increased cultivation of heavier clay soils (Green 1984) associated with the change to mouldboard ploughs from ards (Jones 1981; Stevens with Robinson 2004; Stevens 2009). The occurrence of this species in all of the analysed assemblages on this site, may indicate that the agricultural techniques employed on this site followed those typical for the period.

The charred plant assemblages analysed from this site appear to be reflective of a medieval rural settlement site and are comparable with others of this date. This data augments information on the general picture for the wider area.

## References

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Table 10: Assessment of Environmental Evidence

Feature	Context	Sample	Proce ssed vol (L)	Unproc essed vol (L)	Flot size (ml)	Roots %	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal > 4/2mm	Other	Snail ID	Analy sis
					-				Period 2: 11th Cent	ury or $< 11$	th Century	•			
Ditch C 2112	2114	203	20	20	<1	1	-	-	-	-	-	**/**	-	-	
Ditch D 2069	2071	204	20	20	5	1	**	_	Indet. + f-t wheat grain	*	Anthemis cotula, Atriplex sp.	**/***	moll-t**	Vertigo sp., Trochulus hispidus	
Ditch C	2071	204	20	20					gram			,	mont	Vallonia sp., Vertigo	
2053	2054	206	20	20	5	70	-	-	-	*	Atriplex sp.	*/**	moll-t**	sp.	
Ditch L 5057	5058	5011	20	0	1	<1	-	-	-	*	cf. <i>Brassica</i> sp.	*/-	brnt bn*, moll-t****, moll-a**	Vallonia sp., Trochulus hispidus, Aegopinella pura, Pupilla muscorum, Bithynia sp.	
	1	r	r		1	r	1		Period 3: 11	-13th Cent		1	1	I	
Pit 5059	5060	5003	20	20	35	<1	****	_	Indet., f-t wheat, + cf. rye grains. some germination.	****	nut fragments (cf. Corylus avellana), Vicia faba, Atriplex sp., Avena/Bromus sp. (some germination), Vicia/Lathyrus sp., Brassica sp., Anthemis cotula, Poa/Phleum sp.	***/****	sab**, moll-t****	Trochulus hispidus, Vallonia sp., Pupilla muscorum, Carychium sp.	PC
Hollow/ Pit T 5109	5110	5005	20	20	150	<1	****	-	Indet., f-t wheat grain (some germination), cf. barley grain	****	Corylus avellana shell frags, Atriplex sp, Avena/Bromus sp., cf. Crataegus monogyna, Rumex sp., Brassica sp., cf. Urtica urens, Persicaria sp., Anthemis cotula, Poa/Phleum.	****/*****	sab****, moll-t****	Trochulus hispidus, Vallonia sp., Oxychilus cellarius	
Hollow/ Pit T 5107	5108	5006	20	20	260	<1	****	*	Indet., hulled wheat (some vitrification), f-t wheat (some germination) + barley grains, cf. coleoptile frag	****	Vicia/Lathyrus sp., Galium sp., Avena/Bromus sp., hazelnut shell frags, cf. Trifolium sp., Persicaria sp., Atriplex sp., Poa/Phleum sp., Rumex sp., Anthemis cotula	****/****	sab***, moll-t****	Trochulus hispidus, Vallonia sp., cf. Ena/Merdigera sp., Pupilla muscorum, Carychium sp.	РC
Hollow/ Pit T 5111	5112	5007	20	20	440	<1	****	*	Indet., f-t wheat (some germination), barley + hulled wheat (v. poor pres) grains, rachis	****	Vicia/Lathyrus sp., Avena/Bromus sp., buds, Vicia faba, Galium sp., nut fragments, thorns, Rumex sp., tuber stem + tuber (incl Arrhenatherum elatius var. bulbosum), Carex sp., cf. Eleocharis sp., Poa/Phleum sp., Fallopia convolvulus., Anthemis cotula, Persicaria sp., Lolium/Festuca sp.,	****/****	sab**, brnt bn*, moll- t****, moll- a*	Trochulus hispidus, Cochlicopa, Bithynia sp., Vallonia sp., Pupilla muscorum, Carychium sp.	

											Brassica sp., Atriplex sp., Plantago lanceolata, Polygonum aviculare,				
Hollow/ Pit T 5113	5114	5008	20	20	105	<1	****		Indet., f-t wheat (some germination) + barley grains	****	Corylus avellana shell frags, Vicia/Lathyrus sp., Vicia faba, Avena/Bromus sp., tuber stems, Persicaria sp., Rumex sp., Atriplex sp., Rubus sp., Poa/Phleum sp., Anthemis cotula, cf. Carex sp.	***/****	sab***, moll-t****, moll-a*	Trochulus hispidus, Vallonia sp., Pupilla muscorum, Oxychilus cellarius, Bithynia sp., Carychium sp.	PC
Hollow/ Pit T 5115	5116	5009	20	20	190	<1	****	_	Indet., f-t wheat, barley + hulled wheat (vitrification present) grains	****	Corylus avellana shell frags, Vicia/Lathyrus, Vicia faba, Avena/Bromus sp., Crataegus sp., Rubus sp., tuber stems + tubers (incl. Arrhenatherum elatius var. bulbosum), Polygonum aviculare, Brassica sp., Atriplex sp., Urtica urens, Rumex sp., Lolium/Festuca sp., Poa/Phleum sp., Trifolium sp	****/*****	sab**, moll-t*****	Trochulus hispidus, Vallonia sp., Pupilla muscorum, cf Cochlicopa sp.	
Ditch Q 5079	5080	5004	20	0	45	<1	****	_	Indet., f-t wheat (some germination) + cf. hulled wheat grains	***	Vicia/Lathyrus sp., indet seed (cf. Avena/Bromus sp.), Rumex sp., Avena/Bromus sp., Poa/Phleum sp.	***/****	-		PC
		1			1				Period 4: 13th	-14th Cer	ntury	r			
Ditch F 2012	2014	200	20	20	30	5	****	*	indet + f-t wheat, grains, rachis	****	indet seed (cf. Avena/Bromus sp.), Atriplex sp., Brassica sp., Anthemis cotula	****/*****	sab*, moll- t*****, moll- a*	Trochulus hispidus, Vallonia sp., Pupilla muscorum, cf. Oxychilus cellarius, Bithynia sp., Carychium sp.	PC
Pit 2027	2029	201	20	20	60	2	****	_	Indet., f-t wheat + hulled wheat grains	****	Corylus avellana shell frags, Vicia/Lathyrus sp., Atriplex sp., cf. Avena/Bromus sp., Rumex sp., Poa/Phleum sp., Brassica sp.	****/*****	sab*, moll- t*, moll-a*	Trochulus hispidus, Bithynia sp., Cochlicopa, Anisus leucostoma	PC
Ditch G 2040	2041	202	20	10	30	1	****	-	Indet. + f-t wheat grain	**	Corylus avellana shell frags, Galium sp., Vicia/Lathyrus sp., Atriplex sp., Brassica sp., Rumex sp.	***/****	moll-t**	Trochulus hispidus, Vallonia sp., Pupilla muscorum	
Ditch H 2059	2060	205	20	20	15	<1	*	-	Indet. grain	*	<i>Brassica</i> sp.	**/*	moll-t****	Cepaea sp., Trochulus hispidus, Discus rotundatus, Cochlodina sp., Carychium sp., Vallonia sp.	
Pit	2158	207	20	20	<1	<1	-	-	-	-	-	**/*	-	-	

2157					1										
Terminus O 5117	5118	5010	20	20	150	<1	****	_	Indet., f-t wheat + barley grains	****	Galium sp., tuber + tuber stem, Vicia/Lathyrus sp., nut fragments, Poa/Phleum sp., Atriplex sp., Persicaria sp., Fallopia convolvulus, Rumex sp., Anthemis cotula.	***/****	sab*, moll- t****	Trochulus hispidus, Vallonia sp., Discus rotundatus, Pupilla muscorum, Oxychilus cellarius, Carychium sp., cf. Cochlicopa sp.	РC
									Unpł	nased					
Pit 5003	5004	5000	20	10	25	2	***	_	indet + f-t wheat grains	*	cf. Vicia/Lathyrus sp (v. poor pres), Poa/Phleum sp.	** /***	sab*, moll-	Trochulus hispidus, Oxychilus cellarius, Vallonia sp., Vertigo sp., Carychium sp.	
Pit 5007	5004	5000	20	20	23	2	****	*	indet + f-t wheat grains, cf. coleoptile	**	Rumex sp., Trifolium sp., Anthemis cotula, Poa/Phleum sp., Brassica sp.	***/**	moll-t****	Trochulus hispidus, Vallonia sp., Oxychilus cellarius, Cochlicopa, Pupilla muscorum, Vertigo, Carychium sp.	
Pit 5067	5068	5002	6	0	30	<1	****	-	Indet. + f-t wheat grains	**	Corylus avellana shell frags, indet seed (c.f. Atriplex sp.), Avena/Bromus sp., Lolium/Festuca sp., Anthemis cotula, Poa/Phleum sp.	***/****	_	-	

Key: \* = 1–4 items; \*\* = 4–20 items; \*\*\* = 21–49 items; \*\*\*\* = 50–99 items; \*\*\*\*\* = >100 items

moll-t = terrestrial mollusc, moll-a = aquatic mollusc, sab = small animal bone, brnt bn = burnt bone, P = charred plants, C = charcoal

Table 11: Charred plant remains

Period		3 – 1	medieval (11-	13th C)		4 – medi	eval (13-1	4th C)
		-	Pit/Hollow		-			Ditch
Feature type		Pit	Т	Ditch Q	Pit	Ditch F	Ditch G	Terminus O
Cut		5059	5113	5079	2027	2012	2040	5117
Context		5060	5114	5080	2029	2014	2041	5118
Sample		5003	5008	5004	201	200	202	5010
Vol (L)		20	20	20	20	20	20	20
Flot size		35	105	45	60	30	30	150
%Roots		<1	<1	<1	2	5	1	<1
Cereals	Common Name							
Hordeum vulgare L. sl (grain)	barley	1	30	9	9	1	-	31
Triticum turgidum/aestivum (grain)	free-threshing wheat	37	202	57	99	163	50	109
Triticum turgidum/aestivum (grain) germinated	free-threshing wheat	-	-	6	-	8	-	5
Triticum turgidum/aestivum (rachis frags)	free-threshing wheat	8	10	3	2	7	1	83
<i>Triticum sp.</i> (grain)	wheat	-	-	-	-	-	-	4
Secale cereale (grain)	rye	2	3	4	2	2	cf. 2	5
Cereal indet. (grains)	cereal	27	77	54	59	62	38	36
Cereal frag. (est. whole grains)	cereal	13	26	20	30	40	15	16
Cereal frags (rachis frags)	cereal	-	-	-	-	-	-	8
Cereal frags (culm node)	cereal	-	-	1	-	2	1	2
Other Crops and Edible Species								
Corylus avellana L. (fragments)	hazelnut	9	15	-	66	30	5	13
Brassica sp. L.	brassica	-	1	5	8	3	2	5
Prunus spinosa L.	sloe stone	-	-	-	-	-	-	2
Malus sylvestris Miller type (pip + fruit)	apple	-	-	-	-	-	-	1
Vicia faba	celtic bean	1	3	5	1	-	1	2
Vicia faba/Pisum sativum L.	celtic bean/pea	2	7	1	5	-	2	-
Pisum sativum L.	реа	-	-	-	cf. 5	-	cf. 1	-
Avena sp. L. (grain)	oat grain	6	8	5	14	2	6	5
Wild Species								
Ranunculus sp.	buttercup	-	1	-	-	-	-	1
Thalictrum flavum L.	common meadow-rue	-	-	-	1	-	1	-

Papaver rhoeas/dubium L.	common/long-headed	_	2	_	1	-	_	_
Urtica dioica L.	common nettle	-	1	-	-	_		
Chenopodium sp. L.	goosefoot	3	5	_	4	2	1	2
Chenopodium album L.	fat-hen	5	2	_	4			1
Atriplex sp. L.	oraches	_	-	-	2	1	-	1
Polygonum aviculare L.	knotgrass	_	-		-	-		1
Rumex sp. L.	docks	_	5		5	1	1	3
Rumex crispus L. Type	curled dock	_	2	1	-	2	1	-
Vicia L./Lathyrus sp. L.	vetch/wild pea	5	4	6	25	15	6	27
Medicago/Trifolium sp. L.	medick/clover	1	-	-		2	-	1
Odontites vernus (Bellardi) Dumort.	red bartsia	1	22	2	3	3	2	5
Galium sp. L.	bedstraw	-	-	-	-	1	-	2
Galium aparine L.	cleavers	_	-	-	-	-	1	3
Lapsana communis L.	nipplewort	-	1		-		-	
Anthemis cotula L. (seeds)	stinking mayweed	5	17	2	4	11	2	15
Anthemis cotula L. (conglomeration of seeds)	stinking mayweed	-	-	-	-	-	1	10
Tripleurospermum inodorum (L.) Sch. Bip.	scentless mayweed	_	2		-		-	
Schoenoplectus lacustris Palla	club-rush	-	2	-	-		-	-
Isolepis setacea (L.) R. Br.	bristle club-rush	_	-		1		-	-
Carex sp. L. trigonous	sedge trigonous seed	- 1		_	_	1		
Lolium/Festuca sp. L.	rye-grass/fescue	-	-	-	-	1	-	-
Poa/Phleum sp. L.	meadow grass/cat's-tails	1	1		-	-	3	-
Avena L./Bromus L. sp.	oat/brome grass	8	18	10	17	19	11	- 14
Bromus sp. L.	brome grass	-	1	-	2	1	-	2
Phragmites australis (Cav.) Trin. Ex Steud. (culm)	common reed	_			1			-
Other Remains	common reed		_	_	1 1	_		_
Rosacaea thorn	rose type	_		-	-	-	- I	1
Prunus spinosa L./ Crataegus monogyna Jacq		_	_	_	_	_		
(thorns/twigs)	sloe/hawthorn type thorns	-	4	1	-	-	-	2
Monocot. Stem/rootlet frag		-	-	-	2	-	-	-
Bud		-	-	-	1	-	-	2
Tuber		1	-	-	-	1	-	-

## APPENDIX M: WOOD CHARCOAL

By Dana Challinor

## Introduction

Seven samples were analysed for charcoal; comprising three from Period 3, medieval (11th-13th centuries), and four from Period 4, medieval (13th-14th centuries). All derived from pits and enclosure ditches associated with the medieval settlement. There was no indication of industrial activities so the material probably represents fuel waste from domestic hearths and/or crop processing.

#### Methodology

Standard identification procedures were followed using identification keys (Hather 2000, Schweingruber 1990) and modern reference material. The charcoal was fractured and examined at low magnification (up to X45), with representative fragments examined in longitudinal sections at high magnification (up to X400). Fifty fragments per feature were identified. Observations on maturity and other features were made where appropriate. Classification and nomenclature follow Stace 1997.

# Results

Charcoal was moderately or abundantly preserved in the samples, but condition was poor, with generally small fragment sizes. Strong impregnation by silt and vivianite staining in most fragments indicate deposition in waterlain or partially waterlogged conditions. The condition inhibited visibility of anatomical structure, hampering identification and there was a component of indeterminate diffuse porous types in each sample. Diffuse porous taxa are often difficult to distinguish, even in well preserved material, and it is possible that additional taxa were present. Eight taxa were positively distinguished, all consistent with native species:

FAGACEAE:	<i>Quercus</i> sp., oak
BETULACEAE:	<i>Betula</i> sp., birch
	Corylus avellana, hazel
ROSACEAE:	Rosa sp., rose
	Prunus sp., blackthorn/cherry/plum
	Maloideae incl. Malus, apple; Pyrus, pear; Sorbus, service/whitebeam/rowan and Crataegus,
	hawthorn
ACERACEAE:	Acer campestre L. field maple
OLEACEAE:	cf. Ligustrum vulgare L., wild privet

The identification of the *Ligustrum* was not certain, since it is difficult to distinguish from Maloideae (and other diffuse porous taxa) but certain characteristics consistent with *Ligustrum* were recorded (1-2 seriate rays, heterogeneous rays and clear spiral thickenings). Additionally, some of the Maloideae exhibited slight variations (e.g. presence or absence of faint spirals) suggesting that more than one species was present, especially noted in the assemblage from ditch terminus O (sample 5010). This sample also contained apple (*Malus*) fruit remains in the charred plant assemblage, along with sloes (*Prunus spinosa*) and Rosaceae thorns (Wyles, this report). This tallies with the charcoal identifications and suggests that blackthorn, hawthorn and apple may have been the species present.

Roundwood pieces were common in the assemblages, mostly representing material of small diameter of  $\leq$ 12 years. Oak heartwood was also relatively common, showing that more mature wood was also utilised, with some roundwood of >26 years' growth. Some fragments of *Corylus* from sample 5010 exhibited insect tunnels and charred fungal hyphae.

	Period	3 medieval (11th-13th centuries)			4 medieval (13th-14th centuries)			
	Feature type	Pit	Pit/ Hollow T	Ditch Q	Pit	Ditch F	Ditch G	Terminus O
	Cut	5059	5113	5079	2027	2012	2040	5117
	Context	5060	5114	5080	2029	2014	2041	5118
	Sample	5003	5008	5004	201	200	202	5010
<i>Quercu</i> s sp.	oak	39 (sh)	9 (rs)	6 (rh)	30 (hs)	39 (hr)	39 (hsr)	10 (rs)
<i>Betula</i> sp.	birch	1						
Corylus avellana L.	hazel		10r	21 (r)				18 (r)
Alnus/Corylus	alder/hazel			4r	1	1		
<i>Rosa</i> sp.	rose							1r
Prunus sp.	blackthorn/ cherry type		9r	5r	1	4r		7r
Maloideae	hawthorn group	3r	13r	3r	14 (r)	2	6 (1r)	9r
Prunus/Maloideae			5r		2			2r
Acer campestre L.	field maple	1						
cf. <i>Ligustrum vulgare</i> L.	wild privet			5r				
Bark						1	3	
Indeterminate	diffuse porous	6 (r)	4r	6r	2	3	2	3r

Table 12: Charcoal results

# Discussion

Despite some variations between individual samples, the charcoal evidence from Hanslope was quite consistent, indicating continuity in both resource availability and supply. There are no significant differences between the two phases represented. Typical firewood comprised logs from oak trunkwood, supplemented with smaller branch or stem wood from a range of trees, including hazel, blackthorn, hawthorn and apple. Birch, field maple and possibly privet were occasionally used. All of the taxa found are hardwoods, which have moderate or high calorific burning properties and the oak heartwood would provide a sustained burn. The presence of edible tree fruits and nuts, as well as charcoal, in several of the samples suggests the possibility that some of the charcoal may represent pruning waste but the majority of the wood is likely to have derived from a deliberate supply of firewood. The insect tunnels and fungal decay in some of the hazel charcoal is consistent with the burning of wood that has been pre-seasoned. By the time of Domesday, all woodlands were in known ownership and subjected to some form of woodland management (Rackham 2006). Firewood was usually supplied as bundles or faggots from coppiced wood or timber offcuts. While there is no direct evidence in the charcoal to indicate coppicing, the age

ranges of the roundwood was appropriate for short-rotation coppice, with oak on a longer rotation, by which time heartwood had formed.

## References

- Hather, J.G. 2000 *The Identification of Northern European Woods; A Guide for Archaeologists and Conservators,* London, Archetype Publications
- Rackham, O. 2006 Woodlands, London, Collins
- Schweingruber, F.H. 1990 Anatomy of European Woods, Bern/Stuttgart .Verlag Paul Haupt
- Stace, C. 1997 New Flora of the British Isles 2nd Edition, Cambridge, Cambridge University Press

#### **APPENDIX N: MOLLUSCS**

By Sarah F. Wyles

#### Introduction

The presence of mollusc shells has also been recorded during the assessment of the 20 environmental samples from the site. Nomenclature is according to Anderson (2005) and habitat preferences according to Kerney (1999) and Davies (2008). The results are tabulated in Table 10 in Appendix L.

# Period 2: Anglo-Saxon/Medieval (11th century or earlier)

Moderate quantities of mollusc shells were noted in the assemblages from ditches C, D and L. These shells included those of the open country species *Vertigo* sp., *Vallonia* sp., and *Pupilla muscorum*, the intermediate species *Trochulus hispidus*, and the shade loving species *Aegopinella pura*. Within sample 5011 from ditch L there was also the presence of a number of shells of the aquatic species *Bithynia* sp, which favours moving water.

## Period 3: Medieval (11th – 13th century)

Large numbers of terrestrial mollusc shells were recovered from pit 5059 and hollow/pit T but were not recovered from ditch Q. The assemblages included shells of the open country species *Vertigo* sp., *Vallonia* sp., and *Pupilla muscorum*, the intermediate species *Trochulus hispidus* and *Cochlicopa* sp., and the shade loving species *Aegopinella pura, Carychium* sp., *Oxychilus cellarius* and *Ena/Merdigera* sp. Two of the samples (5007 and 5008) from hollow/pit T contained a small number of shells of the aquatic species *Bithynia* sp.

#### Period 4: 13th – 14th century

Low to high quantities of terrestrial mollusc shells were recorded from ditches F, G and H, terminus O and pit 2027 but were not present in the sample from pit 2157. These shells included those of the open country species *Vallonia* sp., and *Pupilla muscorum*, the intermediate species *Trochulus hispidus*, *Cochlicopa* sp. and *Cepaea* sp. and the shade loving species *Carychium* sp., *Oxychilus cellarius*, *Discus rotundatus* and *Cochlodina laminata*. Small numbers of aquatic mollusc shells were recorded from ditch F and pit 2027 (samples 200 and 201 respectively). These mollusc shells were identified as *Bithynia* sp. and *Anisus leucostoma*. *Anisus leucostoma* is a species indicative of areas of seasonal flooding and desiccation.

#### Undated

The samples (5000 and 5001) from pits 5003 and 5007 contained high numbers of mollusc shells which included those of the open country species *Vallonia* sp., *Vertigo* sp., and *Pupilla muscorum*, the intermediate species *Trochulus hispidus* and *Cochlicopa* sp., and the shade loving species *Oxychilus cellarius* and *Carychium* sp. No mollusc shells were recovered from pit 5067.

#### Summary

There are similarities in the mollusc assemblages from periods 2, 3 and 4. The mollusc assemblages appear to be indicative of a well- established open landscape, with possibly areas of longer unkempt grass, and there is some evidence for some aquatic environments on the site during these periods.

# References

Anderson, R. 2005 'An annotated list of the non-marine Mollusca of Britain and Ireland', *Journal of Conchology* **38**, 607-637

Davies, P. 2008 Snails Archaeology and Landscape Change, Oxford, Oxbow Books

Kerney, M.P. 1999 Atlas of the Land and Freshwater Molluscs of Britain and Ireland, Colchester, Harley

### APPENDIX O: RADIOCARBON DATING

### By Emma Aitken

Radiocarbon dating was undertaken in order to confirm the date of a foot bone from cattle (*Bos Taurus*) from within fill 5702 of Roman ditch E (Table 13; Chart 1). The sample was analysed during July/August 2019 at Scottish Universities Environmental Research Centre (SUERC), Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow, G75 0QF, Scotland. The methodology employed by SUERC Radiocarbon Laboratory is outlined in Dunbar *et al.* (2016).

The uncalibrated dates are conventional radiocarbon ages. The radiocarbon ages were calibrated using the University of Oxford Radiocarbon Accelerator Unit calibration programme OxCal v4.3.2 (2017) (Bronk Ramsey 2017) using the IntCal13 curve (Reimer *et al.* 2013).

### References

Bronk Ramsey, C. 2009 'Bayesian analysis of radiocarbon dates', Radiocarbon 51 (1), 337-360

- Dunbar, E., Cook, G.T., Naysmith, P., Tripney, B.G., Xu, S. 2016 'AMS 14C dating at the Scottish Universities Environmental Research Centre (SUERC)', *Radiocarbon* **58** (1), 9–23
- Reimer, P.J., Bard, E., Bayliss, A., Beck, J.W., Blackwell, P.G., Bronk Ramsey, C., Grootes, P.M., Guilderson, T.P., Haflidason, H., Hajdas, I., HattŽ, C., Heaton, T.J., Hoffmann, D.L., Hogg, A.G., Hughen, K.A., Kaiser, K.F., Kromer, B., Manning, S.W., Niu, M., Reimer, R.W., Richards, D.A., Scott, E.M., Southon, J.R., Staff, R.A., Turney, C.S.M., & van der Plicht, J. 2013 'IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP', *Radiocarbon* 55 (4), 1869–1887

Feature	Lab No.	Material	Radiocarbon age	δ <sup>13</sup> C	-	ratio	Calibrated radiocarbon age 95.4% probability	-
Ditch E, fill 5702		Animal bone: Cattle foot bone ( <i>Bos Taurus</i> )	1869 ± 27 yr BP	-21.9‰	6.8‰	3.3	(95.4%)	83-170 cal AD (58.5%) 194-210 cal AD (9.7%)

Table 13: Radiocarbon dating results

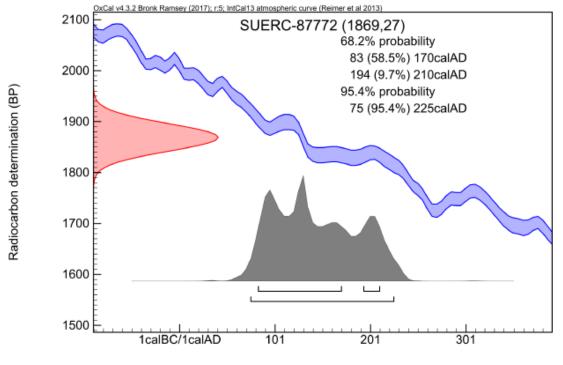


Chart 1: Radiocarbon dating graph

Calibrated date (calBC/calAD)

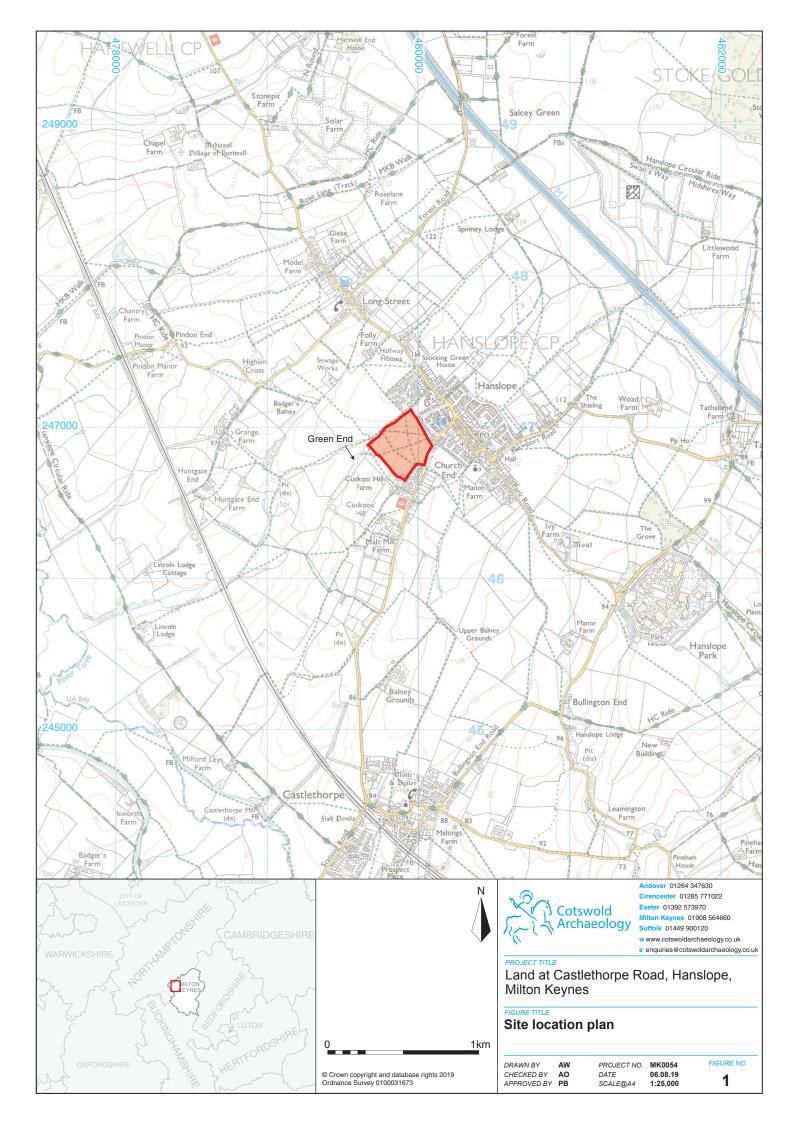
### APPENDIX P: OASIS REPORT FORM

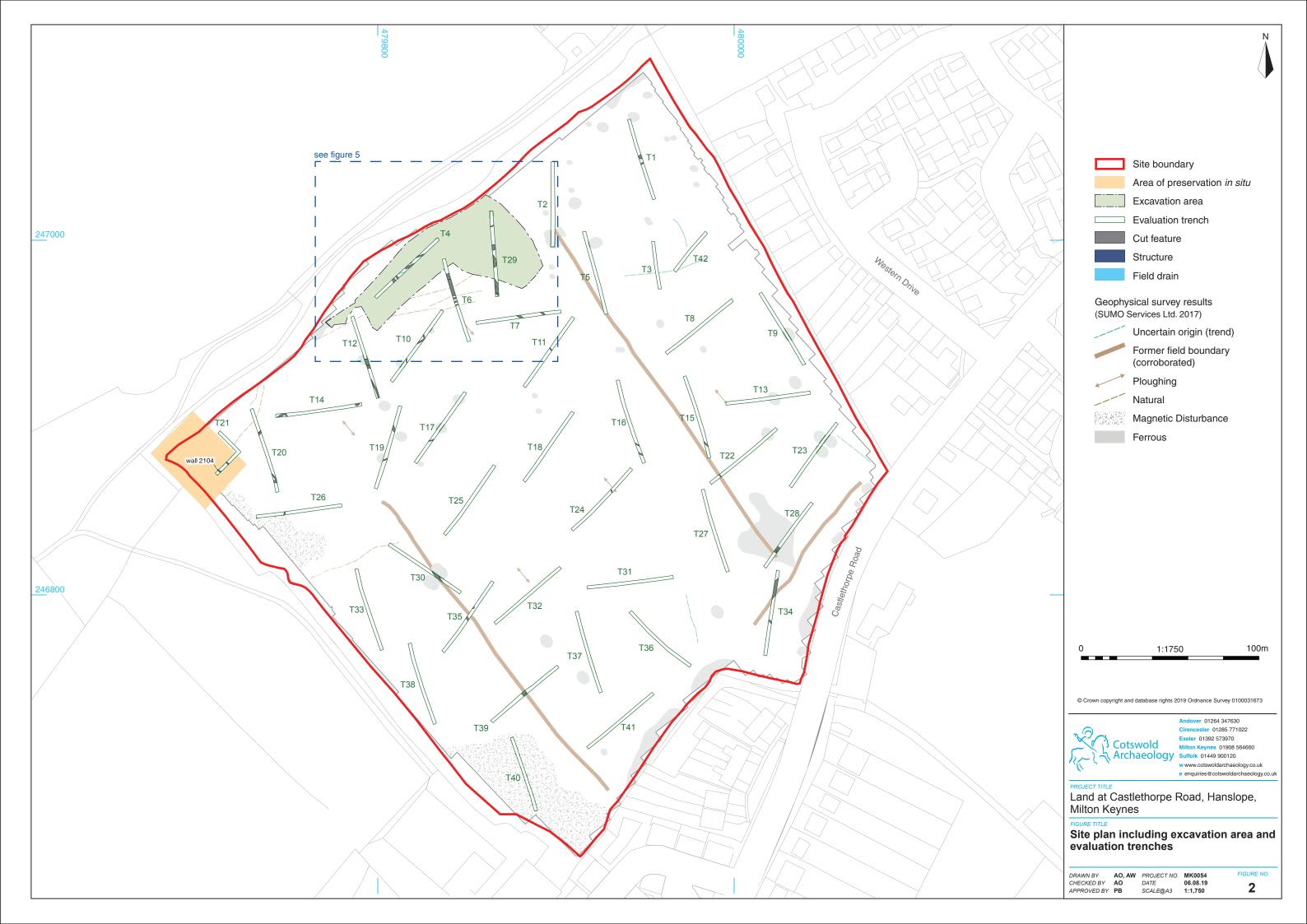
# PROJECT DETAILS

Project name	Land at Castlethorpe Road, Hanslope, Milton Keynes
Short description	A programme of archaeological investigation was undertaken by Cotswold Archaeology between April and June 2018 on land at Castlethorpe Road, Hanslope, Milton Keynes. The work was commissioned by Gerry Wait of Triskelion Heritage, on behalf of Bloor Homes, and involved the excavation of an area of 0.33ha in the north of the development site.
	The excavation revealed four distinct phases of occupation dating from the Roman period until the 14th century. The earliest activity encountered within the site was a single ditch of Early Roman date, running roughly parallel to a palaeochannel, which also contained a small assemblage of heavily abraded Roman ceramic fragments. A second phase of occupation comprised a series of ditches of 11th- century or earlier date in the western half of the area, which formed an enclosure probably extending further to the north-west, beyond the limits of excavation and a set of ditches likely forming a droveway along its eastern side. Subsequently, between the 11th and 13th centuries, enclosures and a pit containing midden material likely to belong to the now deserted hamlet of Green End, situated to the immediate west of the site, were established in the western part of the excavation area. During the 13th and 14th centuries the enclosures were reworked and expanded to the east, with seven ditches aligned parallel with and perpendicular to the base of the valley in which the site was located. These features appeared to follow very similar alignments to those of earlier phases of activity. A moderate assemblage of medieval finds was recovered from the site, along with palaeoenvironmental evidence, which suggest habitation in the near vicinity. The results of the fieldwork appear to support the theory that the village of Hanslope originated during the Anglo-Saxon period, subsequently growing to the sizeable settlement recorded by the Domesday survey. Evidence for the prolonged occupation of the satellite settlement at Green End, to the west of the site, was also
	encountered.
Project dates	April-June 2018
Project type	Excavation
Previous work	Heritage Desk Based Assessment (CA 2016) Field Evaluation (CA 2017)
Future work	Unknown
PROJECT LOCATION	
Study area (M <sup>2</sup> /ha)	0.33 ha
Site co-ordinates	479825 246969
PROJECT CREATORS	
Name of organisation	Cotswold Archaeology
Project Brief originator	Milton Keynes Council/Triskelion Heritage
Project Design (WSI) originator	Cotswold Archaeology
Project Manager	Stuart Joyce (fieldwork); Peter Boyer (Post-Excavation)
Project Supervisor MONUMENT TYPE	Ralph Brown; Jay Wood Ditch – Roman
	Ditch – Roman Ditch – medieval
	Enclosure - medieval
	Pit - medieval
	Posthole - medieval
SIGNIFICANT FINDS	Lithics – prehistoric
	Ceramics – Roman

	Ceramics – medieval Metal objects - medieval Animal bone – Roman	
PROJECT ARCHIVES	Animal bone medieval Intended final location of archive (museum/Accession no.)	Content (e.g. pottery, animal bone etc)
Physical	Buckinghamshire County Museum/ AYBCM : 2018.44	Ceramics, animal bone, worked flint, ceramic artefacts, CBM, fired clay, iron artefacts, copper alloy artefacts, worked stone artefacts, worked bone artefacts environmental flots and ecofacts
Paper	Buckinghamshire County Museum/ AYBCM : 2018.44	Context register sheets, context sheets, drawing register sheets, section drawings, survey sheets, digital photo registers, bulk finds sheets, registered artefact registers, sample register sheets
Digital	Buckinghamshire County Museum/ AYBCM : 2018.44.	Database, digital photos, digital survey data
BIBLIOGRAPHY	Archaeology Data Service (ADS)	<u> </u>

CA (Cotswold Archaeology) 2019 Land at Castlethorpe Road, Hanslope, Milton Keynes: Archaeological Excavation CA report MK0054\_1

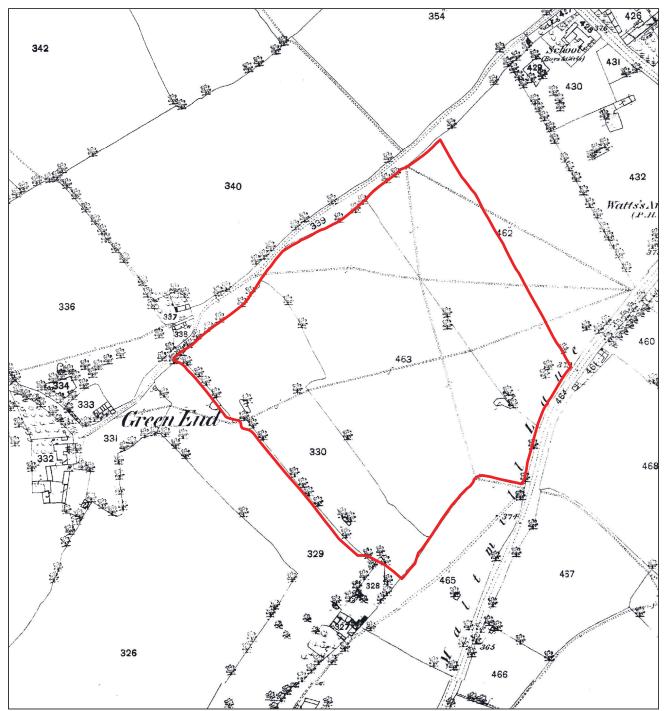






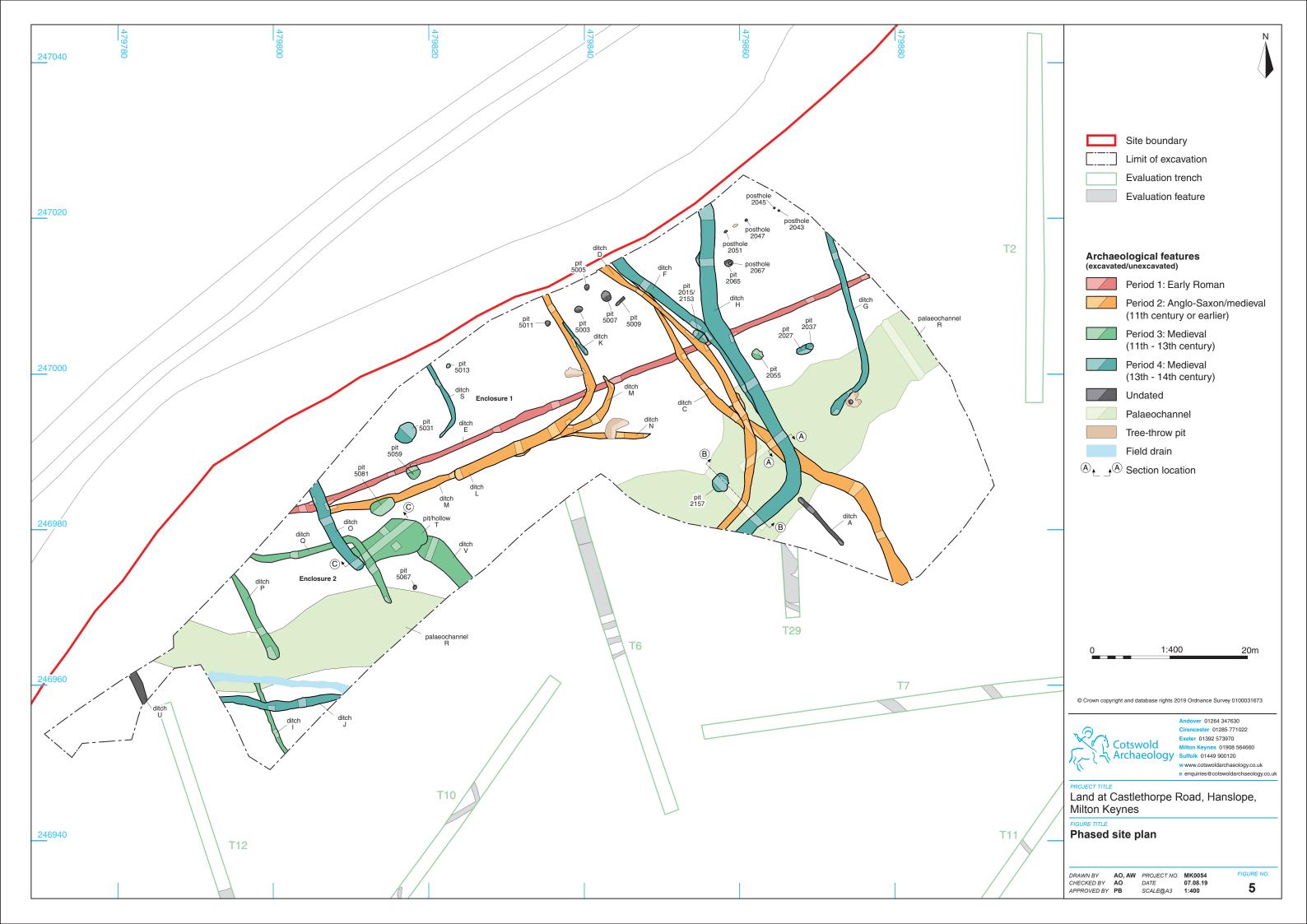
Extract from the Watts Estate Map of Hanslope, 1779

Site boundary			1	Cotswold Archaeology	Andover 01264 347630 Cirencester 01285 771022 Exeter 01392 573970 Milton Keynes 01908 564660 Suffolk 01449 900120 w www.cotswoldarchaeology.co.uk e enquiries@cotswoldarchaeology.co.uk
				PROJECT TITLE Land at Castlethorpe Milton Keynes	Road, Hanslope,
				Extract from the Wat Map of Hanslope, 17	
	0	1:5000	250m	DRAWN BY AW PROJECT NO CHECKED BY DJB DATE APPROVED BY PB SCALE@A4	MK0054         FIGURE NO.           19.11.19         3



Extract from the 1st Edition Ordnance Survey Map, 1881

Site boundary			Ň	Andover 01264 347630 Cirencester 01285 771022 Exeter 01392 573970 Milton Keynes Archaeology Archaeology PROJECT TITLE Land at Castlethorpe Road, Hanslope, Milton Keynes		
	0	1:4000	200m	FIGURE TITLE Extract from the 19 Ordnance Survey		
			Loom	DRAWN BY AW PROJEC		
Mapping © Landmark Information Group, purchased from www.promap.co	o.uk			CHECKED BY DJB DATE APPROVED BY PB SCALE@	19.11.19 <b>4</b>	





General site photograph, looking south-west



w www.cotswoldarchaeology.co.uk e enquiries@cotswoldarchaeology.co.u

PROJECT TITLE Land at Castlethorpe Road, Hanslope, Milton Keynes

# FIGURE TITLE Site photograph

 DRAWN BY
 TB, AW
 PROJECT NO.
 MK0054

 CHECKED BY
 AO
 DATE
 06.08.19

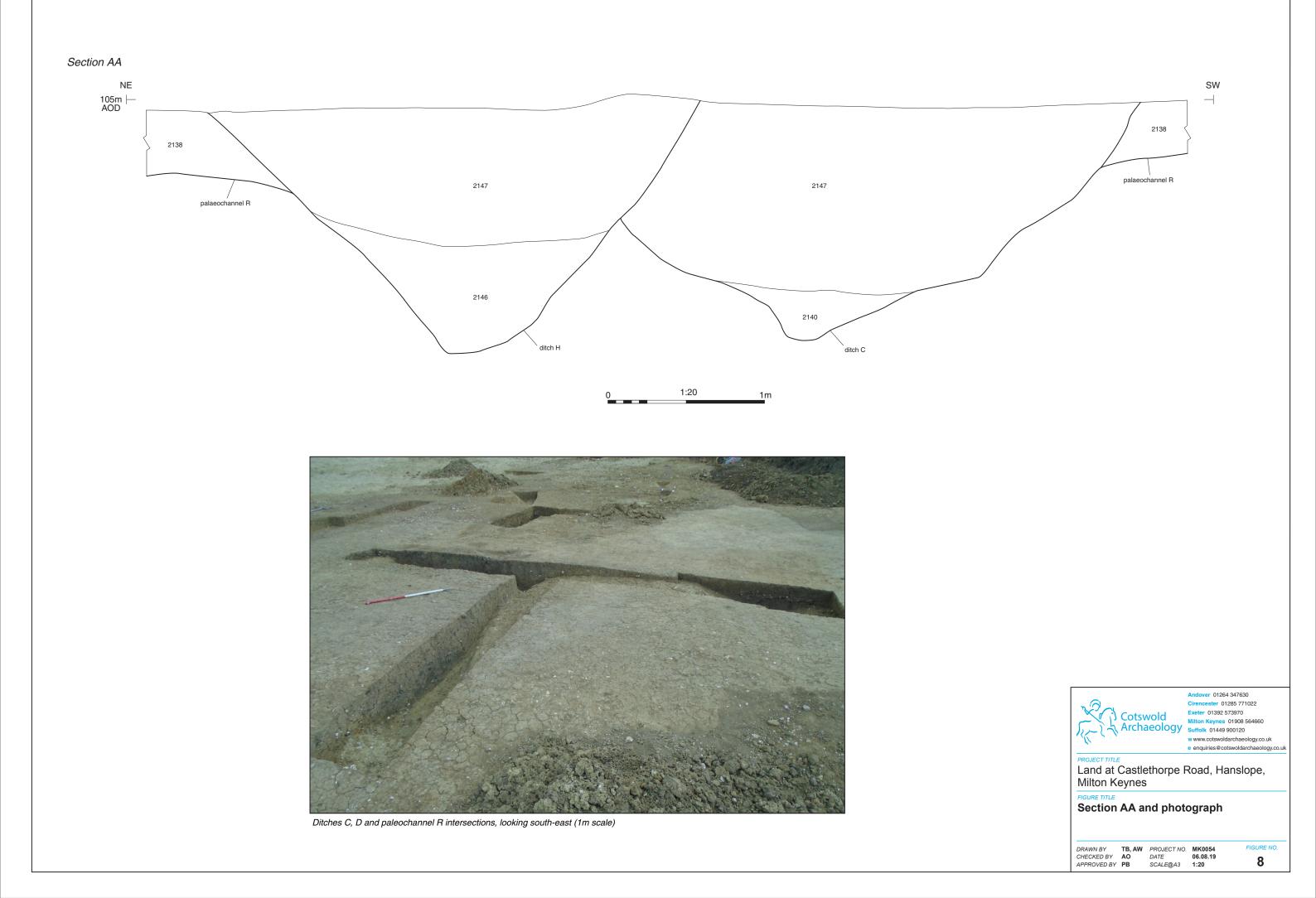
 APPROVED BY
 PB
 SCALE@A3
 NA

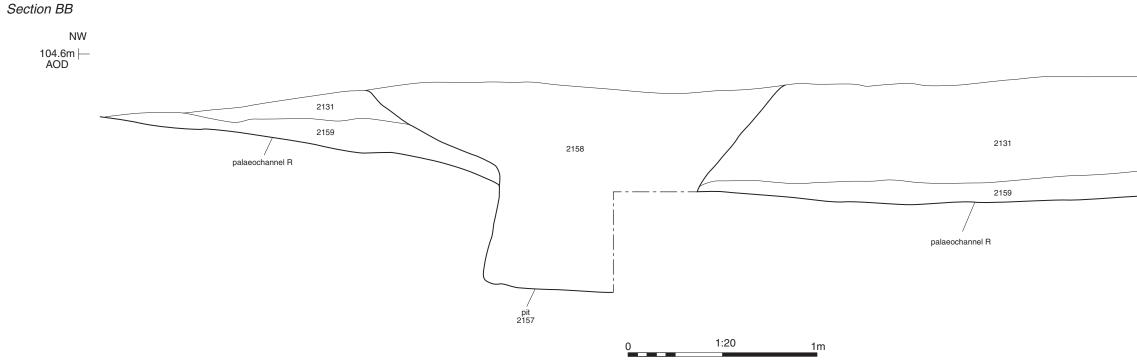
FIGURE NO. 6



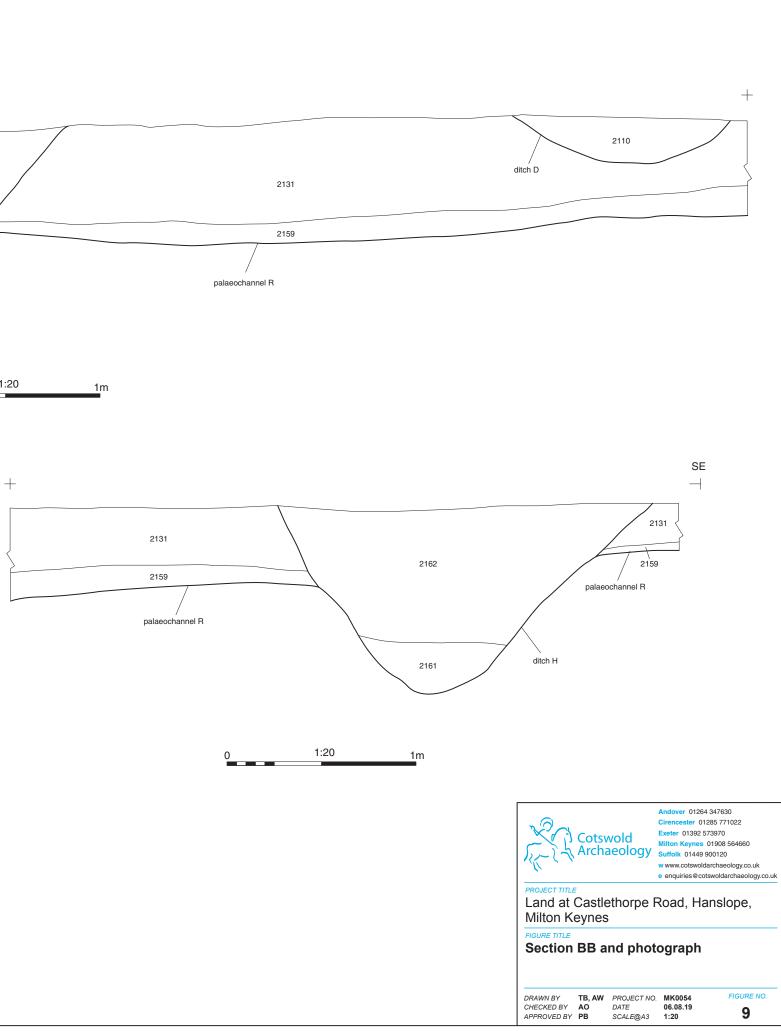
Central site area (ditches M, L and E), looking south-west

Andover 01264 347630 Cirencester 01285 771022 Exeter 01392 573970 Milton Keynes 01908 564660 Suffoik 01449 900120 w www.cotswoldarchaeology.co.uk e enquiries@cotswoldarchaeology.co.uk	
Land at Castlethorpe Road, Hanslope, Milton Keynes	
FIGURE TITLE Photograph of central site area (ditches M, L and E)	
DRAWN BY AW PROJECT NO. MK0054 CHECKED BY DJB DATE 21.11.19 APPROVED BY PB SCALE@A4 NA 7	

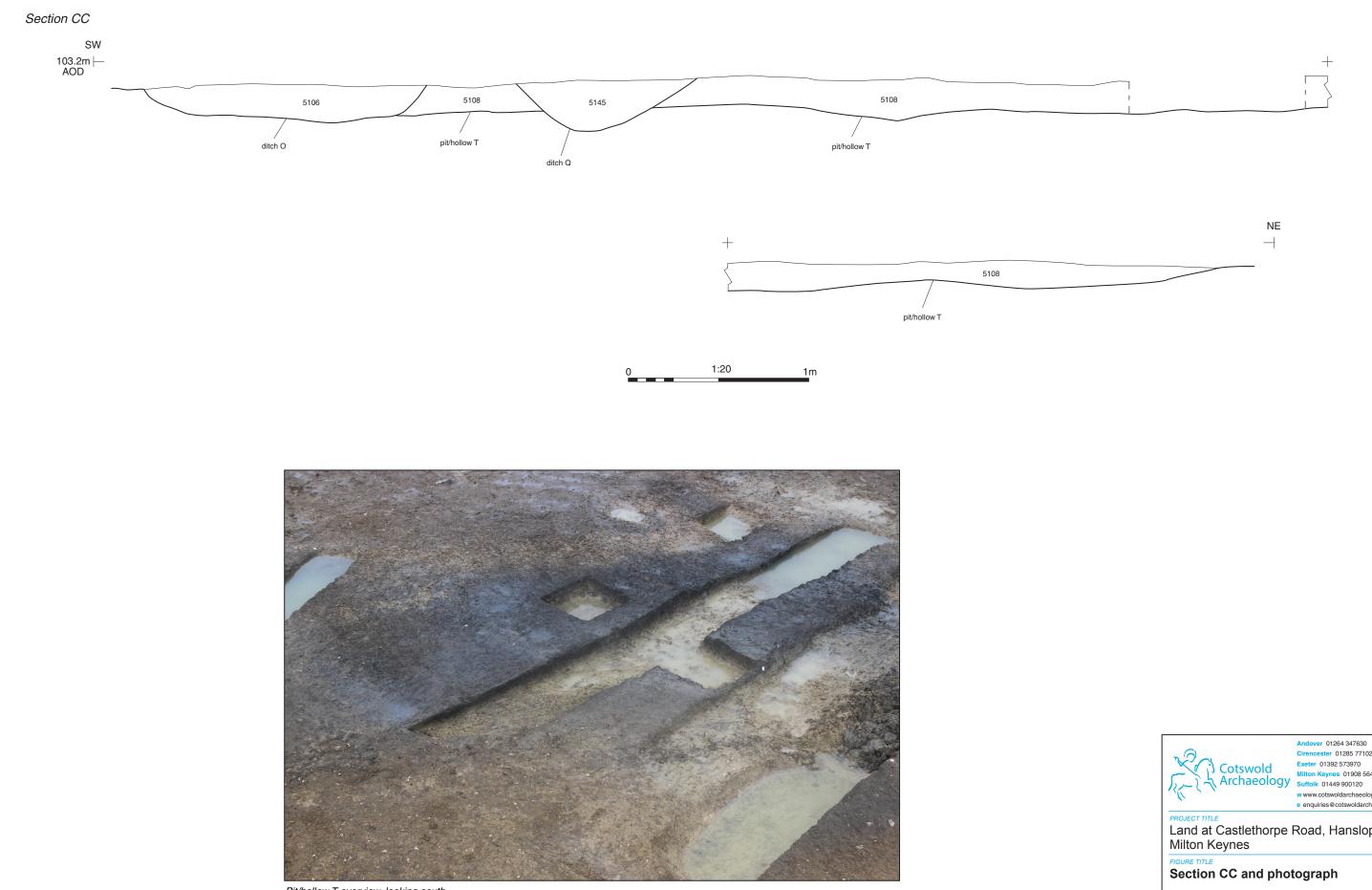








Paleochannel R with ditches D and H and pit 2157, looking north-east (2m scale)



Pit/hollow T overview, looking south

Andover 01264 347630 ster 01285 771022 Exeter 01392 573970 Milton Keynes 01908 564660 w www.cotswoldarchaeology.co.uk e enquiries@cotswoldarchaeology.co.u

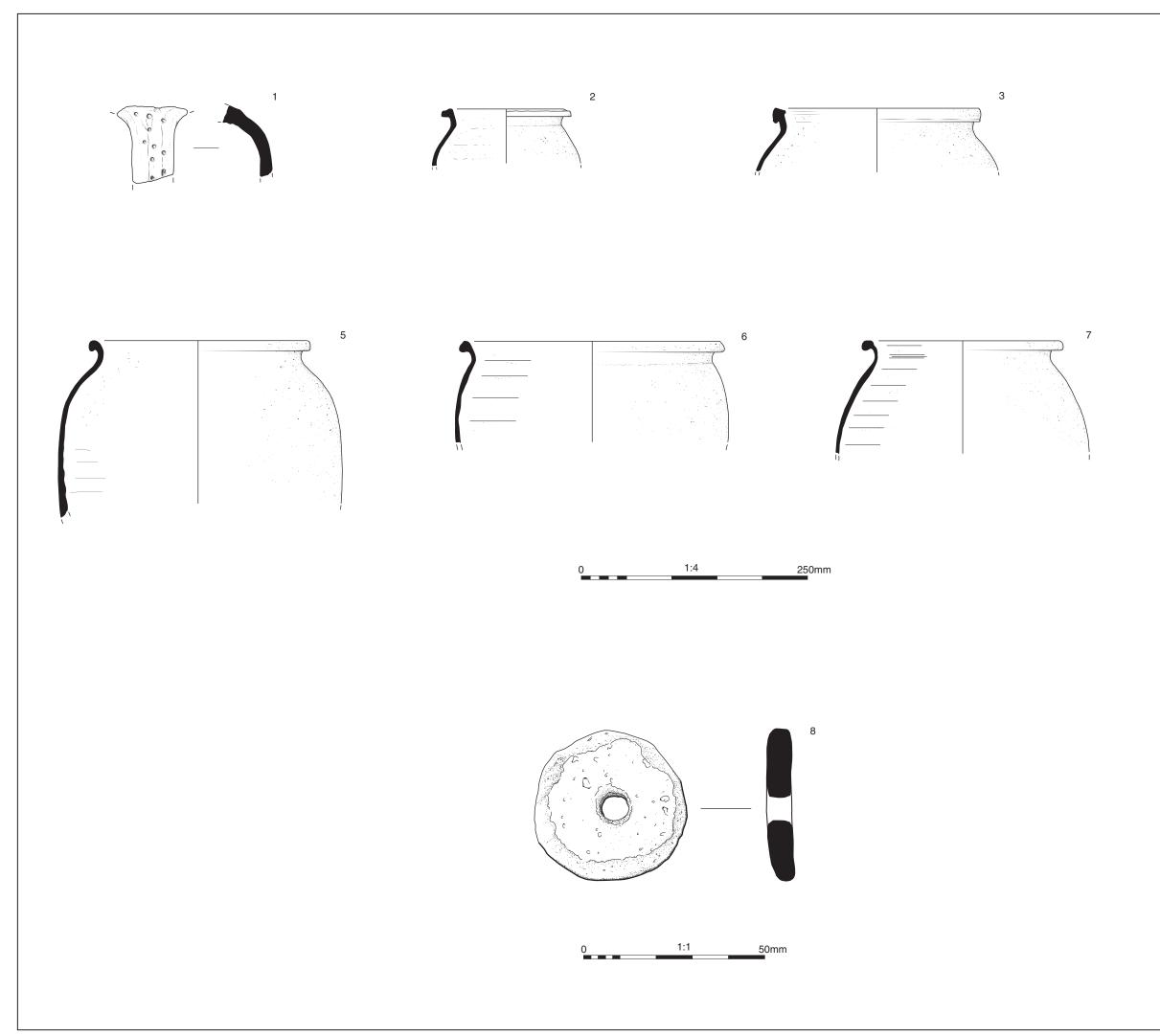
Land at Castlethorpe Road, Hanslope, Milton Keynes

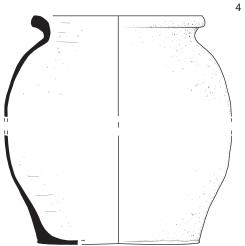
 DRAWN BY
 TB, AW
 PROJECT NO.
 MK0054

 CHECKED BY
 AO
 DATE
 06.08.19

 APPROVED BY
 PB
 SCALE@A3
 1:20

FIGURE NO. 10







Andover 01264 347630 ester 01285 771022 ton Keynes 01908 564660 w www.cotswoldarchaeology.co.uk e enquiries@cotswoldarchaeology.co.u

PROJECT TITLE Land at Castlethorpe Road, Hanslope, Buckinghamshire FIGURE TITLE

Medieval pottery and spindle whorl

DRAWN BY EE CHECKED BY DJB APPROVED BY PB

 PROJECT NO.
 MK0054

 DATE
 23.05.19

 SCALE@A3
 1:4; 1:1

FIGURE NO. 11



# **Andover Office**

Stanley House Walworth Road Andover Hampshire SP10 5LH

t: 01264 347630

### **Cirencester Office**

Building 11 Kemble Enterprise Park Cirencester Gloucestershire GL7 6BQ

t: 01285 771022

## **Exeter Office**

Unit 1, Clyst Units Cofton Road Marsh Barton Exeter EX2 8QW

t: 01392 573970

# **Milton Keynes Office**

Unit 8 - The IO Centre Fingle Drive, Stonebridge Milton Keynes Buckinghamshire MK13 0AT

t: 01908 564660

# Suffolk Office

Unit 5, Plot 11, Maitland Road Lion Barn Industrial Estate Needham Market Suffolk IP6 8NZ

t: 01449 900120

