

Archaeological investigations at land to the north of Roman Road and west of the A49, Holmer, Hereford, Herefordshire



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Worcestershire Archaeology
Archive and Archaeology Service
The Hive, Sawmill Walk,
The Butts, Worcester
WR1 3PD

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Date: 29th March 2018
Authors: Graham Arnold, Tom Rogers and Richard Bradley
garnold@worcestershire.gov.uk
Contributors: C Jane Evans, John Giorgi, Rob Hedge, Elizabeth Pearson and Ruth Shaffrey
Illustrators: Carolyn Hunt, Andrew Walsh, Peter Lovett and Laura Templeton
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Graham Arnold, Tom Rogers and Richard Bradley

With contributions by C Jane Evans, John Giorgi, Rob Hedge, Elizabeth Pearson and Ruth Shaffrey

Illustrations by Carolyn Hunt, Andrew Walsh, Peter Lovett and Laura Templeton

Summary

An archaeological strip, map and sample excavation was undertaken at land north of Roman Road, Holmer, Hereford (NGR SO 50219 42481). It was commissioned by Nick Rawlings, Planning Director for Bloor Homes Western Ltd, who have been granted planning permission for the erection of up to 460 dwellings on the site. This includes affordable housing, public open space, and a park and ride facility, alongside associated landscaping, drainage and other works.

The site consisted of a large area of agricultural land, encompassing some 22 hectares, on Hereford's northern fringe, north of Roman road and west of the A49, in the parish of Holmer.

A previous archaeological evaluation of the site had identified features of archaeological significance including a number of ditches and a corn drying oven. It was considered that the development had the potential to affect these assets and permission was granted subject to conditions including a programme of archaeological work.

Four areas were excavated covering an area of 10,500m, focussing on areas of high potential highlighted in the evaluation.

The excavation revealed the buried remains of features relating to a small medieval farmstead with settlement, field boundary and stock enclosure activity dating from the 9th – 13th Century AD, correlating with the founding of Holmer church to the southwest and the original settlement of Holmer.

A possible prehistoric storage pit in the northern area, with residual flint also found in some of the boundary ditches attributing which may relate to a probable prehistoric cremation cemetery recorded in the evaluation stage to the north-east, but outside the development area.

A group of ceramic loomweights were present in the base of a small sub-circular feature with an exceptionally rich charred plant assemblage. A sample of barley was scientifically dated to 722 - 945 cal AD.

A series of corn-drying field ovens were found to the west of the stock enclosures. A rubble floor of a threshing barn was recorded in the central area attributing to later activity on site, together with modern spreads of stone dating to later agricultural use of the site.

The findings demonstrate that, as suggested in the earlier works of the desk based assessment and evaluation stages of the project, the original Holmer settlement was centred around the church and later contracted to the current settlement that is all to the east of the church. A trackway in the south of the development area, recorded in the evaluation stage, but not affected by the development may have provided access between the settlement on the hill, which seems to have gone out of use by the time of the inclosure of the land during the 18th Century.

The project has provided a crucial insight into the early medieval settlement of the Hereford hinterland and Holmer parish.

Report

1 Project background

1.1 Reasons for the project

An archaeological strip, map and sample excavation was undertaken at Holmer West, on land to the north of Roman Road and west of the A49, Holmer, Hereford, Herefordshire (NGR SO 50219 42481; Figure 1). It was commissioned by Nick Rawlings, Planning Director for Bloor Homes Western Ltd (the Client), who have been granted planning permission for the erection of up to 460 dwellings on the site. This includes affordable housing, public open space, and a park and ride facility, alongside associated landscaping, drainage and other works (reference P150478/O). Permission was granted subject to conditions which included a programme of archaeological works.

The overall development site consists of a large area of agricultural land, encompassing some 22 hectares, on Hereford's northern fringe.

The project conforms to a brief prepared by Julian Cotton, Archaeological Advisor for Herefordshire Council (the Curator), setting out the requirements for an archaeological excavation of an area of archaeological potential (HA 2017). This had been identified following a desk-based assessment, geophysical survey and the results of archaeological evaluation (Walsh 2013; Stratascan 2013; Connolly 2014). This work had located a focus of activity comprising medieval settlement remains and a possible corn drier or oven and the excavation was targeted on these, within the constraints of currently retained hedgerows and services.

Consideration of the agreed masterplan and correspondence between Julian Cotton and Worcestershire Archaeology established that further areas of archaeological potential for the site (as identified during the evaluation) were not going to be affected by the development. This included a prehistoric cremation cemetery, located towards the far north-eastern site margin, and a cobbled trackway, located close to Holmer parish church in the south-east. These were either outside the final area of development or within a proposed green space and as such, with the proviso that no tree planting was undertaken across these features, it was determined no additional archaeological mitigation was required for these areas.

A project proposal (including detailed specification) for the works was produced by Worcestershire Archaeology and agreed with the Curator (WA 2017).

The project also conforms to recognised national standards detailed by the Chartered Institute for Archaeologists (*Standard and guidance: Archaeological excavation*; ClfA 2014a), as well as local guidance (*Standards for archaeological projects in Herefordshire: issue 1*; Herefordshire Archaeology 2004).

2 Aims

The overall aims and scope of the project were to locate, plan, excavate and record archaeological deposits in order to produce a comprehensive report and site archive.

The brief also provided a specific statement on the sampling strategy for the excavations:

It is anticipated that given the comparatively dispersed character of the remains likely to be present, these excavations will generally be of a 'strip map and record' character, with only such excavation as is necessary to properly understand and record the deposits and features revealed. As regards the extent of the strips required, a balance will need to be struck, which, whilst enabling reasonable consideration of the localities involved, avoids a disproportionately extensive scope of works.

Contingency should additionally be made for the proper treatment of any particularly important discoveries that might occur within the scope of the above works, or as may be reasonably inferred and justified beyond them.

3 Methods

3.1 Personnel

The fieldwork project was led by Graham Arnold (BA (hons.), MSc), who joined Worcestershire Archaeology in 2009 and has been practicing archaeology since 2002, assisted at various times by Richard Bradley (BA (hons.); MA; ACIfA), Jem Brewer (BA (hons.)), Elspeth Iliff (BA (hons.); MSc), Peter Lovett (BSc (hons.)), Andrew Mann (BA (hons.); MSc), Morgan Murphy (BA (hons.); MA), and Jamie Wilkins (BA (hons.)). The project manager responsible for the quality of the project was Tom Rogers (BA (hons.); MSc; MCIfA). Tom Rogers, Richard Bradley, Andrew Walsh and Jamie Wilkins assisted with preparation and editing of the report.

John Giorgi (BA, MSc) and Elizabeth Pearson (MSc; ACIfA) contributed the environmental report and C Jane Evans (BA, MA, MCIfA), Robert Hedge (MA Cantab) and Ruth Shaffrey (BA; PhD) the finds report.

Illustrations were prepared by Carolyn Hunt (BSc (hons.); PG Cert; MCIfA), Andrew Walsh (BSc; MSc; ACIfA; FSA Scot), Peter Lovett and Laura Templeton (BA; PG Cert; MCIfA).

3.2 Documentary research

As mentioned above, an archaeological desk-based assessment (DBA) had previously been produced (Walsh 2013). This document provided the detailed background research information for the project and, therefore, a brief summary of the results are presented below (section 4.2). Herefordshire Historic Environment Record (HER) and Hereford Archives were consulted during the preparation of the DBA to access records of archaeological sites, monuments and findspots within the vicinity, as well as readily available archaeological and historical information from documentary and cartographic sources relating to the site and the surrounding area. A site walkover survey was also conducted.

The assessment identified the presence of a series of cropmarks, visible on aerial photography, which were thought to be potentially indicative of Iron Age or Romano-British activity. It was also highlighted that the site is located adjacent to a Roman Road and that it had the potential for the survival of features related to this road, as well as due to the proximity to the Grade I listed medieval church at Holmer.

It was recommended that archaeological evaluation of the site should be carried out comprising geophysical survey and archaeological trial trenching. A Written Scheme of Investigation (WSI) for these works was produced and approved by the Herefordshire Council and these stages of work were carried out in 2013 and 2014 (Stratascan 2013; Connolly 2014).

3.3 Fieldwork strategy

A written scheme of investigation for the excavation was prepared by Worcestershire Archaeology (WA 2017), based on the previously agreed mitigation strategy approved by the Curator.

Fieldwork was undertaken between 7 September and 16 November 2017. The site reference number used by the Historic Environment Record to record archaeological "events", and site code used in the archive, is P5010. The location of the excavation within the overall development site is indicated in Figure 1.

The strip, map and sample excavation was focussed on a complex of shallow ditches, pits and postholes from which medieval pottery was recovered during the evaluation (Trenches 34, 35, 40, 42 and 43). This was divided into three areas mainly due to the presence of a retained hedgerow, known water services and an overhead electric cable, which constrained the layout (Areas 2, 3 and

4). Area 2 was to the south and measured 2055m². Area 3 was a central area measuring 2341m² and Area 4 was to the north, 4677m² in size (Figure 2).

To the west of these, a smaller area was opened around a stone structure found in evaluation Trench 18, thought likely to be a corn drier or oven (Area 1). This was 288m² in size (Figure 2).

Deposits considered not to be significant were removed under archaeological supervision using a 360° tracked excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012). On completion of the archaeological excavation, the areas were reinstated by groundwork contractors on behalf of the Client.

3.4 Structural analysis

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

3.5 Artefact methodology, by C Jane Evans

The finds work reported here conforms with the following guidance: for finds work by ClfA (2014b), for pottery analysis by PCRG/SGRP/MPRG (2016), for archive creation by AAF (2011), and for museum deposition by SMA (1993).

3.5.1 Recovery policy

The artefact recovery policy conformed to standard Worcestershire Archaeology practice (WA 2012; appendix 2). A small quantity of material was recovered from environmental samples (see below).

3.5.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A *terminus post quem* date was produced for each stratified context, where possible. The date was used for determining the broad date of phases defined for the site. All information was recorded on a Microsoft Access database.

Artefacts from environmental samples are included in the analysis.

The pottery was examined under x20 magnification and recorded by fabric type and form with reference to the Hereford fabric reference series (Vince 1985), which is cross-referenced in the online series maintained by Worcestershire Archives and Archaeology Service (www.worcestershireceramics.org).

3.5.3 Discard policy

Artefacts from topsoil, subsoil and unstratified contexts will be noted but not retained unless of intrinsic interest (eg worked flint or flint debitage, featured pottery sherds, and other potential 'registered artefacts'). All artefacts will be retained from stratified excavated contexts, with the exception of large assemblages of post-medieval or modern material, unless there is a specific reason to retain these, such as local production. The presence of discarded material will be noted and, where appropriate, a representative sample will be retained. Discard of finds will only be instituted with reference to museum collection policy and/or with agreement of the local museum.

3.6 Environmental archaeology methodology, by John Giorgi

The environmental project conforms to relevant sections of the *Standard and guidance: Archaeological excavation* (ClfA 2014) and *Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation* (English Heritage 2011).

Five environmental samples taken during the initial archaeological evaluation of the site, including from the fill of a medieval corn dryer, showed the presence of charred plant remains and charcoal (Connolly 2014). The subsequent archaeological investigations have provided an opportunity to recover further botanical data relating to agricultural practices in this part of the Lugg Valley, an important area for arable agriculture during the medieval and possibly earlier periods, following the research objectives set out in the Lower Lugg Archaeological Research Framework (Bapty 2007).

3.6.1 Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (2012). A total of 26 bulk soil samples (ranging in size from 10 to 40 litres), considered to be of high potential for the recovery of environmental remains, were collected. These mainly came from ditch, pit and oven fills, the majority of which were dated to the early medieval (11th-12th Century) period. Thirteen samples were initially selected for processing and assessment (highlighted in italics in Environmental Table 1 below).

Context	Sample	Feature type	Fill of	Period*	Phasing*	Sample volume (L)	Volume processed (L)
303	1	<i>Ditch</i>	305	<i>early medieval</i>	<i>11th-12th C</i>	20	10
311	2	Ditch	317	early medieval	11th - 12th C	20	0
344	3	<i>Pit</i>	345	<i>late Saxon</i>	<i>722-945 cal AD*</i>	30	10
355	4	Ditch	357	early medieval	11th - 12th C	20	0
122	5	<i>Drying oven</i>	117	<i>early medieval</i>	<i>11th-12th C</i>	10	10
121	6	<i>Drying oven</i>	117	<i>early medieval</i>	<i>11th-12th C</i>	20	20
115	7	<i>Drying oven</i>	117	<i>early medieval</i>	<i>1028-1184 cal AD*</i>	30	30
118	8	<i>Drying oven</i>	118	<i>early medieval</i>	<i>11th-12th C</i>	10	10
123	9	Pit	125	early medieval	11th - 12th C	10	0
344	10	<i>Pit</i>	345	<i>late Saxon</i>	<i>722-945 cal AD*</i>	30	10
129	11	<i>Drying oven</i>	139	<i>early medieval</i>	<i>11th-12th C</i>	20	20
131	12	<i>Drying oven</i>	139	<i>early medieval</i>	<i>11th-12th C</i>	20	20
134	13	<i>Drying oven</i>	138	early medieval	11th - 12th C	10	10
140	14	<i>Drying oven</i>	138	early medieval	11th - 12th C	10	0
408	15	Pit	410	early medieval	11th - 12th C	10	0
203	16	Ditch	205	early medieval	11th - 12th C	20	0
VOID	17	VOID	VOID	VOID	VOID	0	0
505	18	<i>Pit</i>	507	<i>?prehistoric</i>		20	10
508	19	<i>Pit</i>	509	<i>?early medieval</i>	<i>?12th C</i>	20	10
522	20	<i>Pit</i>	524	<i>?early medieval</i>	<i>?12th C</i>	20	10
451	21	<i>Ditch</i>	452	<i>medieval</i>	<i>?13th C</i>	10	10
216	22	Ditch	218	early medieval	11th - 12th C	10	0
527	23	Ditch	529	early medieval	11th - 12th C	20	0
260	24	Ditch	262	RB - medieval		10	0
255	25	Ditch	246	RB - medieval		10	0

249	26	Ditch	244	RB - medieval	20	0
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*C14 dates

Environmental Table 1: Environmental Samples

3.6.2 Processing, assessment and analysis

The samples were processed by flotation using a Siraf tank, with the flots collected on a 300µm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were fully sorted by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammer-scale. Assessment of the flots showed the presence of variable amounts of charred plant remains (largely cereal grains) in all thirteen selected samples, together with fragmented charcoal including potentially identifiable fragments (>2mm) in all the assessed flots.

The only other biological remains in the flots consisted of uncharred plant remains, including occasional seeds, for example *Polygonum aviculare* (knotgrass), *Chenopodium/ Atriplex* (goosefoots/oraches) and straw/stem and chaff fragments. These remains are probably of recent origin and intrusive because they are unlikely to have survived in the soils on site for long without charring or waterlogging. Large quantities of roots, along with a few earthworm eggs, were also noted in most of the flots.

Following assessment, the charred plant remains were sorted from the flots using a low power Olympus stereo light microscope (with a magnification of up to 40x) and identified using modern and charred reference material and reference manuals (Cappers *et al* 2012; Jacomet 2006). Nomenclature for the plant remains follows the *New Flora of the British Isles*, 3rd edition (Stace 2010).

Two particularly large flots, containing very rich charred plant assemblages, were recovered from a fill (344) of pit [345]. The flot from sample <3> was sub-sampled, resulting in 6.25% of the flot being sorted and quantified and the remaining fraction (93.75%) scanned to record the approximate abundance of species, potentially identifying additional species not included in the quantified results. The entire flot from sample <10> from this pit fill was also scanned according to the same method as sample <3>.

All the sorted charred plant remains included in the quantified results were counted except for very small cereal grain fragments (generally smaller than 2mm), indeterminate items and charcoal, estimated frequencies of which were made on the basis of the following rating system: + = 1-10; ++ = 11-50; +++ = 51-150; ++++ = 151-250; +++++ = >250 items. The same abundance scale was also used for the scanned fractions of the sub-sampled rich charred plant assemblages.

3.6.3 Discard policy

Samples will be discarded after a period of three months following submission of this report unless there is a specific request to retain them.

3.7 Animal bone methodology, by Elizabeth Pearson

Hand-collected animal bone was quantified by count and weight (g) by context. The results are presented in Environmental Table 2. As only a small proportion of this assemblage derived from datable deposits, no further work was carried out on this material.

context	Count	weight(g)	Feature type	period	Phase
104	1	22	Oven	Post-medieval	
129	10	0.5	Oven	Medieval?	
203	9	57	Ditch	undated	
208	4	88	Ditch	medieval	Late 12 th – early 13 th C

212	2	12	Ditch	Medieval	12 th – 14 th century
233	1	7	Modern Layer	Post-medieval	18 th century
249	8	12	Ditch	undated	
251	23	144	Ditch	undated	
255	18	182	Ditch	undated	
260	2	8	Ditch	undated	
303	15	78	Ditch	undated	
303	1	3	Ditch	late Saxon/early med	
306	50	226	Ditch	undated	
311	9	19	Ditch	Roman	
311	5	14	Ditch	Roman	
320	4	4	Ditch	undated	
325	2	1	Posthole	undated	
334	5	9	Ditch	undated	
336	2	4	Ditch	Post-medieval	
339	10	22	Ditch	undated	
383	2	6	Ditch	undated	
400	1	15	Ditch	undated	
404	35	58	Ditch	medieval	12 th century
411	3	30	Ditch	Roman	
416	50	107	Ditch	undated	
422	1	1	Ditch	medieval	
429	5	6	Ditch	Medieval?	
431	1	13	Modern Layer	undated	
511	4	168	Ditch	medieval	Later 12 th to 1400AD
513	46	42	Tree bowl	undated	
533	1	7	Pit	undated	
Totals	330	1365.5			

Environmental Table 2: Hand-collected animal bone

3.8 Statement of confidence in the methods and results

Based on the combined information from the geophysical survey, the evaluation trenching and the strip, map and sample excavation, the separate areas targeted allowed a characterisation of the archaeology to be made across a broad area of the landscape. Although it was apparent that the whole site complex was not exposed and it remains possible that further significant remains may have been present beyond the excavation limits, confidence may be attached to the results of the work undertaken within the defined mitigation areas. Overall, therefore, it is considered that the aims of the investigation have been achieved.

4 The site

4.1 Topography, geology and current land use

The site was, until recently, open agricultural fields under arable cultivation. The land slopes from a height of approximately 80m above Ordnance Datum (AOD) in the north, down to approximately 65m AOD along the Ayles Brook in the south-east. The area subject to strip, map and sample investigation occupied a broad plateau across multiple fields in the central part of the site, between 75m and 78m AOD.

The underlying geology is mapped as Raglan Mudstone Formation, overlain by superficial deposits of alluvium along the Ayles Brook in the south-east and hummocky glacial deposits along the western edge of the site. The soils are mapped as well drained fine silty soils of the Bromyard

association in the east, and well drained coarse loamy soils of the Escrick 1 association in the west (Walsh 2013).

4.2 Archaeological context

As detailed in the desk-based assessment (Walsh 2013) and briefly summarised here, a number of designated assets exist in close proximity to the site, including a scheduled monument (SAM 29884). This comprises a 14th century cross base, which is in good condition and believed to sit in or near its original position within the graveyard of the Grade I listed Church of St Bartholomew's (9452). The church is the parish church of Holmer, is located around 250m from the site investigations, and dates to the late 12th or early 13th century. It has a detached bell tower which is Grade II listed (1168081) and also has a Grade II listed pedestal tomb (1296573) within the graveyard.

The church is located west of the A49, but most of the medieval village of Holmer (25365 and 25750) appears to have been dispersed along a number of sinuous lanes to the east of the main road, suggesting that the main area of settlement could have drifted, developed or was moved after the church was founded. It derives its name from the Old English *hol mere*, meaning hollow pool. The manor was listed in the Domesday Survey of 1086, under the ownership of the Canons of Hereford, who had held it before the Norman Conquest. The survey records that there were four households, with four ploughs, and the manor was worth 10 shillings. A distinct area of eroded house platforms and plot boundaries, abutting an area of ridge and furrow, has been identified in this area (7016).

Regarding earlier activity, the desk-based assessment identified only limited evidence of prehistoric remains in the surrounding area, although a series of cropmarks visible on aerial photographs were recorded within the development site (48838). These were undated, but had the potential to be associated with Iron Age or Romano-British activity. The southern part of the site is also immediately adjacent to the Roman Road between Kenchester and Gloucester (5559), which is thought to have been constructed before AD 75.

Based on the recommendations of the assessment, both geophysical survey and archaeological trial trenching was undertaken across the development site. The geophysical survey (Stratascan 2013) identified a number of amorphous anomalies thought to represent small linear cut features of possible archaeological origin, including a roughly circular feature that could be indicative of a ring ditch. There was also a concentration of possible pit features identified towards the centre and north of the survey area.

Subsequently, a total of 58 trenches were excavated during the evaluation and archaeological remains of two broad periods were located; prehistoric and medieval.

At the northern edge of the site was a small cluster of round cremation pits (Trench 53). These were not dated but were considered to be prehistoric in date. An adjacent ditch may have formed an enclosing element. As mentioned above (section 1), this area fell outside the limit of the final development and was not addressed in the strip, map and sample project.

To the south-east, a palaeochannel was identified (Trench 46) that may have once linked with the Ayles Brook. Whilst medieval pottery was recorded from the upper fills of this channel, it was thought likely that this was an extant watercourse in the later prehistoric period, which may have formed a focus of activity.

In the central to eastern part of the development site was a complex of shallow ditches, pits and postholes, from which medieval pottery was recovered. To the west of this was a stone structure thought likely to be a corn drier or oven and to the east, close to Holmer parish church, was a cobbled surface, possibly a trackway. The pottery from this area largely comprised cooking pots and was interpreted as a domestic assemblage. Environmental evidence suggested that there was crop processing on a significant scale, and probably crop cultivation on-site.

It was concluded that the features might represent either a former farmstead peripheral to the settlement of Holmer, or what was once part of the village itself, with the village perhaps formerly more balanced and including occupation to the west of the church.

5 Structural analysis

The trenches and features recorded are shown in Figures 2-15.

5.1 Phase 1: Natural deposits

The natural substrate was encountered across the site as compact silty clay marl ranging in colour from mixed yellowish brown to pinkish red with patches of blue grey siltstone and patches of grey mudstone, consistent with the Raglan Mudstone formation. This was recorded at a depth of between 0.35 and 0.55m below ground level, depending on the site topography, with the ground sloping from north to south.

In addition, a natural channel filled with colluvium was identified in the southern part of Area 1, as seen previously in the evaluation stage (Trench 18).

5.2 Phase 2: Prehistoric deposits

A pit feature to the north-west of Area 4 was considered to be of prehistoric date [507]. This was sub-oval in shape, 1.25m in width and 0.32m deep, and contained a sequence of fills comprising redeposited natural, a dump of burnt material, and weathered clay deposits (Plate 1). An undiagnostic flint flake and a small piece of fired clay were recovered from within the burnt waste, as well as charred hazelnut shell (fill 505).

Elsewhere across the site, a small number of flints were residual finds in later features, including a Neolithic leaf arrowhead, providing limited additional evidence for prehistoric activity on site.

5.3 Phase 3: Roman activity

A small amount of Roman pottery was recovered from the site, with most being residual in later ditch fills in Area 3, though it was also occasionally found in Area 1 and 4. This was consistent with a background scatter of Roman pottery that was also identified during the evaluation trenching, perhaps reflecting low-level Roman agricultural activity alongside the nearby Roman road.

However, whilst also residual, an annular bead in pale green glass was identified as probably Roman in date and, although this could be a casual loss, it may suggest that there was once more high status activity in the vicinity.

5.4 Phase 4: Late Saxon deposits

Towards the north of Area 3 was pit [345], a small sub-circular feature 0.18m in depth, which was partially truncated by a later ditch. It had a dark grey burnt fill (344) which included frequent charcoal and charred grain, and at the base was a group of ceramic loomweights. Two of these were stacked and one was by their side, placed on to top of some stone slabs, along with broken fragments of at least one other weight (Figure 8; Plates 2-4). The fill also produced an exceptionally rich charred plant assemblage that consisted almost entirely of hulled barley, with a few oats, rye grains and traces of free-threshing wheat. A sample of the barley was scientifically dated to 722 - 945 cal AD with an 95.4% probability (Appendix 2), a date consistent with both the loomweights and the composition of the environmental assemblage.

Aligned north-east to south-west and close to the southern edge of Area 3 was a large boundary ditch [361], 1.36m wide and 0.54m deep, the upper part of which had been cut by a later, shallower ditch on a similar alignment. The full extent of the ditch was not ascertained but it clearly continued to the north-east, beyond the limit of excavation. The lower fills were indicative of slumped or re-deposited natural, with a slightly darker upper fill (358) that included charcoal and a Stafford-type jar rim. This was dated to the late 10th to early 11th century, considered to be the first phase of late Saxon pottery use in Hereford. Although not contemporary with the dating of the loomweight pit, this pottery does support the indication of a later Saxon presence, perhaps with some continuity of

activity. This precedes the more intensive ditch complex, which occupied much of the site area, and mainly dated to the earlier medieval period.

5.5 Phase 5: Early medieval/medieval deposits

Area 1 (Figure 3)

Within Area 1 was a phased sequence of structures in a closely associated group, identified as drying ovens. The ovens were constructed with sandstone and fired clay cut into the natural mudstone. They all had their flues orientated towards the prevailing wind (southwest), feeding highly fired clay bowl structures (Figure 10; Plates 5-7).

To the north-west, oven (group 116) consisted of a keyhole shaped cut [106] with a compact clay lining (107). This is all that survived of the oven structure, but rake-out deposits from the use of the oven were present in a flue area (127, 128). The structure had collapsed or been demolished (109) and then been backfilled with a firm silty clay (108), before being replaced by a new drying oven on a slightly different alignment (group 117).

For this secondary phase (group 117), a compact green clay (118) was used as a bedding layer for the keyhole shaped cut [110] and stone foundations (103). The stones comprised roughly shaped grey sandstone blocks and were placed on edge to form the flue entrance and part of the oven wall. These covered an earlier fill of the flue (122) and were also partially sealed by the main orange coloured fired clay lining in the oven itself (111). The clay lining incorporated some thin flat stones that appeared to form a floor structure (119).

Collapsed superstructure had infilled both the main part of the oven and the flue (112, 113) and this was covered by a dump of fire waste and stones (115) that included part of a sandstone quern. Free-threshing wheat from this deposit has been scientifically dated to 1028 - 1184 cal AD at 95.4% probability. The oven had subsequently been backfilled with firm silty clay (114), much like the earlier phase oven.

Around 2m to the south-east was a parallel sequence of drying ovens, again incorporating two clear phases. The earlier oven structure and flue (group 139) survived as an irregular oval cut [143] lined with orange coloured fired clay (136). This had been backfilled with compact sandy clay that included an iron nail (135).

The replacement drying oven (group 138) had truncated a large part of the earlier oven but was itself relatively well preserved. The cut [144] was a keyhole shape lined with reddish-orange fired clay around the sides and forming the floor (137). A charcoal-rich sand deposit, likely rake-out material, formed the initial fill of the flue (132, 134); this included fragments of fired clay and early medieval pottery. Within the main part of the oven was a partially surviving sandstone floor made from flat slabs (148); this was fire damaged but had been replaced by another floor (141) built on a clay bedding layer (147). This secondary floor was also fire damaged and cracked, with some stones removed, and had again been replaced. A further clay bedding layer (140) had been laid for both the upper floor, which comprised more flat stone slabs that had remained largely intact (133), and the flue entrance, built from roughly hewn sandstone blocks (142). Early medieval pottery was recovered from the clay bedding.

Corresponding with the oven sequence to the north-west, collapsed superstructure had infilled these ovens (131), although some stones packed into the flue entrance appeared to suggest deliberate demolition and blocking (130). Sealing and backfilling this was compact sandy clay deposit (129) which included pieces of stone and numerous fragments of early medieval pottery, as well as Roman material.

A ploughsoil had formed across the top of the ovens and finds dated to the late 18th century were identified within this layer (104).

In addition, Area 1 contained a single pit to the west of the ovens which had a charcoal rich fill [125]. It is possible that this was contemporary with their use.

Area 2 (Figure 4)

In Area 2, the southernmost area, numerous ditches ran from south-west to north-east and then turned to the north and, although the exact alignments remained uncertain, these were potentially associated with similar features located in Area 3. The ditches were generally small and are likely to have functioned as field or paddock divisions, but one on the eastern edge of the area was up to 3.00m wide [209/231], which suggests more of an enclosing function.

In the southern part of Area 2, ditch [215/221] re-cut ditch [218] and then arced around to the north. Similarly, in the south-east corner of Area 2 a right-angled ditch had multiple recuts, all running into the wide north-west to south-east aligned ditch [209/231]. Pottery from all of these features was broadly dated to the 11th to 14th century, with some examples indicative of a late 12th to 13th century date.

Area 3 (Figure 5)

Multiple ditches and gullies formed an intense complex of activity in Area 3, although it was difficult to define a coherent pattern of the layout due to the diffuse nature and uncertain alignment of many of these features.

As with Area 2, the ditches probably functioned as field or paddock divisions, though some larger examples could have acted as enclosures. Large ditches such as [407] in the centre of the area were over 2m wide and 0.62m deep and often had wide profiles, and many had flattened bases. Re-cutting was common, perhaps reflecting steady migration and continued use of the land. One ditch [343] clearly cut through the late Saxon pit containing the loomweights and a number of the ditches in this area had pottery of 11th to 14th century date, with Roman residual material.

Area 4 (Figure 6)

Area 4 contained a medieval ditch (531), orientated north-east to south-west, which terminated within the excavation area (Plate 10). This had been re-cut and included residual Roman material alongside 12th to 14th century pottery and was possibly to a field boundary ditch. Pits close to the northern edge of Area 4 were shallow but had a high amount of fired clay and charcoal, potentially being waste material associated with the drying ovens identified to the south-west.

5.6 Phase 6: Post medieval deposits

In Area 3 was a rough stone rubble surface in two patches (350/351), 0.22m in depth, thought to be consolidating material used to form the floor of an agricultural structure (group 374; Figure 15; Plates 8-9). This was damaged and fragmented but clearly overlay a series of earlier ditches and gullies, with a medieval or post medieval iron horse shoe recovered from the surrounding clay soil (349). Associated with the spread of stone were at least seven postholes packed with large stones, possibly stone pads for timber posts but, although these were suggestive of a building outline, the overall shape that these could have formed was not obvious.

Elsewhere in Area 3, towards the southern edge, a comparable spread of stone rubble was also located above a sequence of earlier ditches (431). This did not form a clear shape but could have been a surface; this contained a number of post-medieval horse shoes.

Similar diffuse spreads of stone rubble were present in Area 2 and dated to the 18th century (232) and (233). Layer (233) overlay a number of earlier ditches.

Furrows aligned north-east to south-west in both the southern (Area 2) central (Area 3) and northern areas (Area 4) ran across the main slope of the land. These were wide and shallow.

5.7 Phase 7: Modern deposits

A modern plough soil (100/200/300/500) overlay the subsoil and natural deposits in all areas and was between 0.20 and 0.35m deep, depending on the slope of the area. Modern ploughing is likely to have truncated some medieval deposits, particularly in the south at the bottom of the hill, and the shallow depth of the pits in Area 4 may also be attributed to this.

Modern land drains and drainage channels were present in the eastern side of Area 4. A line of modern fence posts and modern pitting were also recorded in Area 4, some of which were filled with modern brick rubble, similar to that used to fill land drains.

5.8 Undated

In Area 1, a small and shallow oval pit [146] of uncertain date was cut by a drying oven (group 138).

6 Artefactual evidence

6.1 Artefactual analysis, by C Jane Evans, with Rob Hedge and Ruth Shaffrey

The finds assemblage is summarised in Finds Tables 1 and 2. Artefacts were recovered in all four areas excavated, from 61 stratified contexts associated with a range of feature types. The bulk of the assemblage dated to the mid-late Saxon and early medieval period, but finds of Neolithic, Roman and post-medieval date were also present. A range of materials was recorded but pottery was the most common artefact type (133 sherds, 972.5g). Based on the pottery, artefact condition was generally poor; the majority of sherds were abraded and fragmentary with an average sherd weight of less than 10g, though this did vary between 15g and 1g by context. This probably reflects the fact that most sherds had been redeposited in ditch and oven backfills, furrows, layers and subsoil rather than coming from primary occupation deposits. Other finds of particular interest comprised a Neolithic arrowhead, mid-late Saxon loomweights and a decorated, early medieval bone pin.

period	material class	material subtype	object specific type	count	weight(g)
early Neolithic	stone	flint	leaf arrowhead	1	13.1
prehistoric	stone	flint	flake	2	3.66
			flake core	1	104
			rejuvenation flake	1	1.45
			scraper	1	3.39
Iron Age/Roman	ceramic	earthenware	pot	1	2
Roman	ceramic	earthenware	pot	17	214
Roman?	glass		bead	1	2.46
late Saxon/early medieval	bone	animal bone	pin	1	3
	ceramic	earthenware	pot	1	13
		fired clay	loomweight	2	1237
			loomweight frags	129	1573
late Saxon/medieval	stone	micaceous sandstone	whetstone	1	13

medieval	ceramic	earthenware	pot	102	608.5	
medieval/post-medieval	metal	iron	horse shoe	5	158	
post-medieval	ceramic	earthenware	brick	1	187	
			pot	11	127	
			tile	1	9	
post-medieval/modern	ceramic	earthenware	pot	1	8	
		fired clay	brick/tile	4	16	
undated	stone	sandstone	tile?	5	400	
	bone	animal bone	fragment	329	1362.5	
	ceramic	fired clay	fragment	675	1655.5	
			vitrified clay	4	28	
	metal	iron	hammerscale	fragment	1	-
			fragment	2	210	
			nail	4	135	
	stone	sandstone	quern	1	5500	
		gritstone	quern	1	11300	

Finds table 1: Quantification of the assemblage by period

Area/trench	Feature type	period	object specific type	count	weight(g)
1	Drying oven	Iron Age/Roman	pot	1	2
		medieval	pot	14	105
		prehistoric	flint flake	2	3.66
		Roman	pot	4	52
		Roman?	glass bead	1	2.46
		undated	animal bone frag	11	22.5
			fired clay frag	409	750

			fe fragment	1	16	
			fe nail	2	120	
			sandstone quern	1	5500	
	Plough soil/ subsoil	post-medieval	pot	9	110	
		post-medieval/modern	brick/tile	4	16	
2	Ditch	medieval	pot	35	239	
		undated	animal bone frag	66	503	
			fired clay frag	13	213.5	
	Layer	medieval	pot	1	2	
		post-medieval	pot	2	7	
		undated	animal bone frag	1	7	
	3	Ditch	early medieval	bone pin	1	3
			late Saxon/early med	pot	1	13
			late Saxon/medieval	whetstone	1	13
medieval			pot	26	121	
post-medieval			ceramic tile	1	9	
Roman			pot	10	18	
undated			sandstone tile?	1	9	
			animal bone frag	197	599	
			fired clay frag	25	72	
Surface		medieval/post-medieval	fe horse shoe	1	84	
Gully		early Neolithic	flint leaf arrowhead	1	13.1	
		undated	fe nail	1	10	
Layer		medieval	pot	13	69	
		medieval/post-medieval	fe horse shoe	4	74	
		prehistoric	flint scraper	1	3.39	
		undated	animal bone frag	1	13	
			fe fragment	1	194	

	Pit	late Saxon/early med	ceramic loomweight	2	1237	
			ceramic loomweight frag	129	1573	
		medieval	pot	1	0.5	
		undated	sandstone tile?	3	391	
			fired clay frag	104	152	
			vitrified clay frag	4	28	
			hammerscale frag	1		
	Posthole	medieval	pot	2	14	
		undated	animal bone frag	2	1	
			fe nail	1	5	
	Subsoil	undated	gritstone quern	1	11300	
	4	Ditch	medieval	pot	8	48
			prehistoric	flint flake core	1	104
Roman			pot	1	15	
undated			animal bone frag	4	168	
Furrow		medieval	pot	2	10	
		post-medieval	brick	1	187	
		undated	fired clay frag	2	3	
Pit		prehistoric	flint rejuvenation flake	1	1.45	
		undated	animal bone frag	1	7	
			fired clay frag	122	465	
Tree bowl		undated	animal bone frag	46	42	
U/S		post-medieval/modern	pot	1	8	
		Roman	pot	2	129	

Finds Table 2: Quantification of the assemblage by trench, feature type and period

6.1.1 Flint by Rob Hedge

Area		1	1	3	3	4	4	
Feature		Drying oven (group 117)	Drying oven (groups 138 and 139)	Gully [395]	Rubble layer [432]	Pit [507]	Ditch [529]	
Context		121	129	394	431	505	527	Total
Debitage	flake	1	1					2
	rejuvenation flake					1		1
	flake core						1	1
Tool	leaf arrowhead			1				1
	scraper				1			1
Quantity		1	1	1	1	1	1	6
Weight		0.73	2.93	13.1	3.39	1.45	104	125.6
Retouch?				1	1			33.3%
Edge-damage?								0.0%
Burnt?		1					1	33.3%
Artefact date range		10000BC - 43AD	10000BC - 43AD	4000 - 3000BC	10000 - 1500BC	10000BC - 43AD	10000BC - 43AD	

Finds Table 3: The worked flint

A small assemblage of 6 pieces of prehistoric worked flint, weighing 125.6g, was recovered. With the exception of a single flake from pit [507] — from which the only other find was an undiagnostic piece of fired clay — the flint is residual within later features. Condition is generally good, although the large flake core was somewhat abraded. None of the flint is illustrated.

Four of the pieces are typologically undiagnostic flake debitage: two flakes, a rejuvenation flake, and a crude flake core showing signs of thermal damage. All appear to be of a similar mottled mid-grey translucent flint; cortex, where present, is thick and chalky, indicating that it was probably sourced from non-local primary chalk deposits.

A side scraper fashioned from the same raw material was fashioned on a squat flake measuring 25 x 19 x 7mm, with cortex along the opposing lateral margin.

The other diagnostic artefact was a small (27mm x 15mm x 3mm), partially-flaked ogival leaf arrowhead, corresponding to Green's (1980) Type 4B/C, of early Neolithic date. With bifacial semi-invasive retouching along both lateral margins to the tip extending only around 3mm in towards the centre of the piece, it can be classified as a functional piece. It is made from translucent dark-grey flint, of markedly better quality than the remainder of the assemblage.

Given the small size of the assemblage it is difficult to ascertain whether it represents a single phase of activity. The arrowhead attests to an early Neolithic presence, but may be a chance loss. The remainder of the assemblage cannot be dated on typological grounds beyond the fact that it is indicative of Mesolithic to Bronze Age activity.

6.1.2 Pottery

Thirteen fabrics were recorded (Finds Table 4), well over half dating to the medieval period but also including Roman and post-medieval wares.

Roman pottery

The small Roman assemblage comprised mainly undiagnostic body sherds in Severn Valley ware (Hereford Fabric A1), sandy grey ware (cf Worcestershire fabrics 14 and 15), and handmade

Malvernian ware (Peacock 1967, 1968). The latter was produced from the Iron Age into the Roman period so could not be closely dated. Most came from ditch fills in Area 3 (Finds Table 2), though occasional sherds were also found in Areas 1 and 4. The only diagnostic piece was a hooked rim from a Severn Valley ware jar dating broadly to the 2nd to 3rd centuries (not illustrated; Webster 1976, fig 1.6), residual in an Area 1 medieval drying oven (group 117; fill 126).

period	fabric code	fabric common name	count	% count	weight(g)	% weight	rim EVE	% rim EVE
Iron Age/ Roman	Peacock A (1967/68)	Malvernian metamorphic	1	1%	2	0%	0	0%
Roman	A1	Severn Valley ware	14	11%	199	20%	0	0%
	(WORC14)	fine sandy grey ware	2	2%	6	1%	0	0%
	(WORC15)	coarse sandy grey ware	1	1%	9	1%	0	0%
late Saxon/ early med	G1	Stafford-type ware	1	1%	13	1%	0.11	14%
medieval	A7a	Hereford fine micaceous glazed ware	2	2%	10	1%	0	0%
	A8	Hereford unglazed ware	5	4%	12	1%	0	0%
	B1	Malvernian unglazed ware	53	40%	231.5	24%	0.25	33%
	C1	Worcester-type unglazed ware	19	14%	206	21%	0.15	20%
	D2	Cotswolds unglazed ware	23	17%	149	15%	0.25	33%
post-medieval	E6 CREA	creamware	6	5%	47	5%	0	0%
	SWSG	white salt-glazed stoneware	1	1%	5	1%	0	0%
post-med/ modern	E6	post-medieval/modern	5	4%	83	9%	0	0%
total			133	100%	972.5	100%	0.76	100%

Finds Table 4: Quantification of the pottery by period and fabric-type (non-Herefordshire fabric codes in grey)

Late Saxon pottery

One fragmentary sherd of pottery from Staffordshire was noted, dated to the late Saxon period (Finds Table 4, Fabric G1), a distinctive lid-seated jar rim characteristic of this ware (not illustrated; Goodwin 2014 25-6, fig 31.1). This vessel is earlier than the bulk of the assemblage described below, probably dating to the late 10th to early 11th century, the first phase of late Saxon pottery use in Hereford (Vince 2003, 7). This is a little later than the late Saxon loomweights, which have an associated radiocarbon date of late 8th to late 9th century (see Appendix 2).

Early medieval to medieval pottery

The assemblage of medieval pottery came mainly from ditch fills, in particular ditch [215], with smaller quantities coming from the drying ovens and other features. A range of sources was represented in the assemblage which, with the exception of two sherds, was composed exclusively of unglazed cooking wares. Most of the pottery was produced by the Malvern industry (Finds Table 4, Fabric B1), with vessels from Worcester and the Cotswolds also relatively common (Finds Table 4, Fabrics C1 and D2 respectively). Hereford wares were surprisingly poorly represented (Finds Table 4, Fabrics A7a and A8) given the proximity of the site to Hereford, but did include the only glazed vessel, probably a pitcher or jug.

The bulk of the assemblage comprised fabrics and forms dating to the late 11th-12th or 12th-13th centuries. It is likely, given the overlapping date ranges of the types represented, that this could reflect a floruit of activity in the 12th century, broadly contemporary with drying oven (group 117; fill 115) which had an 11th to late 12th century radiocarbon date. Diagnostic late 11th-12th century types included a Cotswolds unglazed ware jar (Figure 16.1) from drying oven (group 138); the sherd of Hereford fine micaceous glazed ware (not illustrated); and a Malvernian cooking pot (Figure 16.2), of a type noted by Vince as one of the earliest 12th century vessels in this fabric at Hereford (Vince 1985). While body sherds in Worcester unglazed ware could only be dated generally to the late 11th to mid-14th centuries, the only rim (Figure 16.3) dated slightly later in this range, from the early 12th-mid-14th century. Malvernian unglazed ware has a broad date range from the late 12th-14th century, though in Worcester it is most common in 13th century contexts (Bryant 2004, 200). The three rims recorded here were all late 12th century types (Figure 16.4, 16.5), so contemporary with body sherds of Hereford unglazed ware (Fabric A8), which has a late 12th to early 13th century date range. Given the date range of the assemblage more glazed wares might be expected, so the paucity of these is worth noting and may reflect the function or status of the site.

Catalogue of illustrated pottery (Figure 16)

- 1 Fabric D2, Cotswolds unglazed ware. Lid-seated rim jar (Vince 1985, fig 45.6). Diameter 26cm, Rim EVE 0.25. Area 1, drying oven group 138, fill 129.
- 2 Fabric B1, Malvernian unglazed ware. Cooking pot with a cordon below the rim (Vince 1985, fig 38.3), one of the earliest 12th century vessels noted in this fabric at Hereford. Diameter uncertain, Rim EVE 0.4. Area 3, posthole 367, fill 365.
- 3 Fabric C1, Worcester type unglazed ware (Fabric C1). Worcester type 1 cooking pot with a thickened, everted rim, the most common form found in Worcester type unglazed ware (Bryant 2004, 290 fig 177.3, 7). Diameter 21cm, Rim EVE 0.15. Area 2, ditch 215, fill 212
- 4 Fabric B1, Malvernian unglazed ware. A late 12th century cooking pot type (Bryant 2004, fig 184.3; Vince 1977, 264). Diameter 24cm, Rim EVE 0.05. Area 2, ditch 215, fill 212
- 5 Fabric B1, Malvernian unglazed ware. Similar form as above. Diameter 24cm, Rim EVE 0.11, Area 3, ditch 407, fill 404

Post-medieval to modern pottery

The only other pottery comprised a scatter of post-medieval to modern sherds associated with plough soil/subsoils in Area 1 and layers in Area 2. This included a post-medieval buff ware with manganese slip and the rim of a large bowl in a black-glazed post-medieval orange ware (Fabric E6), both dating to c AD 1700-1800, sherds of cream ware (Fabric E6 CREA) dating to c AD 1760-1790, and white salt-glazed stoneware (Fabric SWSG) dating to c AD 1720-1770.

6.1.3 Other artefacts

Glass bead

A single glass bead was recovered, from a fill of drying oven group 138 (Figure 17.6). The bead was associated with re-deposited sherds of Roman, as well as medieval pottery, the latter dating to

the late 11th to 12th century. Given this, and the potential date range of finds from the site, it cannot be securely dated.

Beads of this type were produced and used in the Roman period, but bead necklaces were not worn in the medieval period (Margeson 1983). Medieval rosary beads are more common finds, but these are often made of jet, shale, amber or bone rather than glass (Ottaway and Rogers 2002, 2948). A similar bead found in a late Saxon deposit at Winchester was thought to be Roman (Rees et al 2008, 215, fig 113.1319). On the balance of evidence it seems likely that this bead is a residual Roman find.

Figure 17: artefacts of bone and glass

- 6 Annular bead in pale green glass. Diameter 14.5mm, thickness 9.2mm, perforation diameter 3.4mm. Area 1, drying oven group 138, fill 129.
- 7 Gently curving, expanded head from a pin; lower part of the tapering shank broken off. It has a small perforation in the centre of the head, below which there is a band of incised cross hatch decoration, bounded top and bottom by a groove. Length extant 55mm, width at head 19mm sheep/goat long bone from limb. Area 3, ditch 305, upper main fill 303, SF1

Bone pin

The only bone artefact comprised the top half of an 'expanded head' pin (Figure 17.7), found in the upper fill of ditch [305] and made from a sheep or goat longbone (Liz Pearson pers comm). Such pins were used for fastening cloaks and tunics before buttons came into common use. They were often used in pairs, linked by chains or organic thread attached using the perforations. The surface of the pin is polished, probably from rubbing against the fabric of the garment. Its date is uncertain. Middle Saxon expanded head bone pins were found at Flixborough (Rogers et al 2009, fig 1.28, 656-7) but this form of dress fastening does not seem to have been used in the late Saxon period (Ross 1996, 455). Similar pins were also used in the early medieval period. It is perhaps most likely to date to the 11th to 12th century, contemporary with the medieval pottery and use of the ovens. It is not likely to be later, as such pins went out of use after the early 13th century (Rogers et al 2009).

Iron artefacts

A small assemblage of badly corroded iron artefacts was recovered, none of which came from contexts with well-dated associated finds and which in themselves were not closely datable. They were not therefore illustrated or submitted for x-ray. The assemblage comprised four nails, four fragments of horseshoe, and three unidentifiable fragments. The level of corrosion on the horseshoe fragments meant that nail hole types were not visible, based on their shape they could date to any time after c 1400.

Loomweights

Three ceramic loomweights were found together in a pit, two stacked and one by their side (Plates 3-4; Figure 18.9), along with broken fragments of at least one other weight. The pit also produced a significant quantity of charcoal and charred grain, providing good potential for radiocarbon dating. This was radiocarbon dated as 722 - 945 cal AD at 95.4% probability. All the loomweights were 'bun-shaped', with the hole in the middle smaller than the ring. These are thought to have replaced earlier types by the end of the 8th century (Walton Rogers 2009, 30). The associated radiocarbon dating is consistent with this, and provides additional secure dating for the type.

Late Saxon English weights usually weigh between 150-500g (ibid 288; Riddler 1999, 64), so the complete example here (Figure 18.8) is relatively heavy. Such weights are not always fired (Hamerow 1993, 68). While all the Holmer examples appeared to be fired there was some variability; the fact that one of the three stacked examples disintegrated during washing suggests that it was very poorly fired. There is also some variation in oxidisation and reduction on their surfaces. The edge damage on the more complete and better fired example might result from the

weights knocking together during the weaving process (ibid 46), but might represent spalling during firing, a possibility that is discussed further below.

A loomweight of similar date is recorded from a site a couple of miles to the south of Hereford, at Bullinghope (Evans 2008, 10-11, plate 14), alongside a range of contemporary stone and metal finds (ibid plates 15-19). Bun-shaped loomweights of a similar date were also recorded on a site in central Hereford (Boucher 1999). These were found in a line within the blackened deposits of a burnt Saxon building, presumably having fallen from the loom during the fire.

Figure 18: Saxon loomweights

- 8 Complete bun-shaped loomweight, damaged on one edge. Diameter 123-127mm, maximum thickness 46mm, perforation diameter 27mm, weight 645g. Area 3, pit 345 407 fill 344, SF4
- 9 Near complete bun-shaped loomweight. Diameter 121-128mm, maximum thickness 48mm, perforation diameter 30mm, weight 592g. Area 3, pit 345 407 fill 344, SF5

Stone

Fragments of naturally occurring red sandstone were found across the site and were used as floor tiles in the ovens and corn drier (eg Plates 5-7). Most of this material was not retained. Three fragments had been placed alongside the loomweights in pit [345], so were recorded, together with a sample from ditch [305] (fill 303).

Two samples of quernstone, along with photographs and drawings, and the whetstone were sent to Ruth Shaffrey for specialist comment (see below).

The worked stone by Ruth Shaffrey

The three items of worked stone comprise fragments from two rotary querns and a complete whetstone (Figure 19). The whetstone was recorded by the author. The report on the rotary querns is based on drawings and petrographical analysis of samples.

Almost half a lower rotary quern (Figure 19.10) with a narrow but fully perforated spindle socket was recovered from the subsoil (301). Based on the sample, the quern is made from what appears to be Withington Stone, from the local Raglan Mudstone formation (Silurian Old Red Sandstone). While Withington stone is best known as a post-medieval building stone (Jenkinson 2012, 13), Roman and medieval querns of it are known from the general area (Roe 2004; Roe 2010). Saxon querns are not common in the region and the narrow spindle socket is more indicative of a Roman date. The second quern (Figure 19.11) fragment is made from a fine-grained banded sandstone, probably also from the Raglan Mudstone formation. This fragment was found in the fill of a drying oven (group 117), with an associated 11th-12th century radiocarbon date. However, it is not a diagnostic fragment typologically and could be medieval or residual from Roman or Saxon activity.

A single small whetstone (Figure 19.12) was found in a ditch [390] running under a post-medieval surface, but there were no associated finds to provide better dating. This has not been deliberately shaped but rather has made use of a small elongate pebble for sharpening along the edges. Such a form is more typical of Saxon or medieval whetstones than Roman and is likely to have belonged to a personal toolkit, rather than being part of a workshop's equipment.

Figure 19: the worked stone

- 10 Lower rotary quern fragment. Withington Stone (from the Raglan Mudstone). Coarse-grained gritstone with frequent pink feldspar and rounded quartzite pebbles. Almost half a probable lower stone with narrow fully perforated socket of conical profile. The grinding surface appears to have been pecked but is worn smooth around the circumference. The quern measures approximately 410mm diameter x 70-110mm thick. Area 3, subsoil 301
- 11 Rotary quern fragment. Fine-grained slightly micaceous feldspathic sandstone with obvious banding. Probably from the Raglan Mudstone formation. The quern measures approximately 410mm diameter x approx 60mm thick. Area 1, oven group 117, fill 115

- 12 Whetstone. Very fine-grained grey micaceous sandstone. Flat elongate pebble that has seen some use as a whetstone, particularly along the edges. Measures 63 x 15 x 6mm. Area 3, ditch 390, fill 389

6.1.4 Site dating

context	material class	material subtype	object specific type	count	weight(g)	start date	end date	tpq		
101	ceramic	earthenware	pot	1	3	1760	1790	1760-1800		
				1	28	1700	1800			
				1	5	1720	1770			
104	bone	animal bone	fragment	1	22			1760-1800		
	ceramic	earthenware	pot	3	37	1760	1790			
				3	47	1700	1800			
	fired clay	fragment	2	33						
brick/tile			4	16						
115	stone	sandstone	quern	1	5500			undated		
	ceramic	fired clay	fragment	97	125					
118	ceramic	fired clay	fragment	34	26			undated		
121	ceramic	fired clay	fragment	103	204			undated (prehistoric?)		
	stone	flint	flake	1	0.73					
122	ceramic	fired clay	fragment	4	7			undated		
129	bone	animal bone	fragment	10	0.5			1066-1200		
	glass		bead	1	2.46	late 1st?	4th?			
	stone	flint	flake	1	2.93					
	ceramic	fired clay	fragment	42	104					
				earthenware	pot	1	2			
						10	54		1066	1200
						1	17		late 1st	4th
						2	26		late 1st	4th
1	9	late 1st	2nd							
131	ceramic	fired clay	fragment	104	226			undated		

	metal	iron	nail	1	56			
132	metal	iron	fitting	1	16			undated
134	ceramic	fired clay	fragment	23	25			1066-1200
		earthenware	pot	1	11	1066	1200	
135	metal	iron	nail	1	64			undated
140	ceramic	earthenware	pot	3	40	1066	1200	1066-1200
203	bone	animal bone	fragment	9	57			undated
	ceramic	fired clay	fragment	5	87			
208	bone	animal bone	fragment	4	88			late 12th-early 13th
	ceramic	earthenware	pot	1	2	late 12th	early 13th	
				1	2	1075	1350	
212	bone	animal bone	fragment	2	12			late 12th-early 13th
	ceramic	earthenware	pot	12	33	1200	1400	
				4	14	late 12th	late 12th	
				5	124	early 12th	1350	
				4	10	late 12th	early 13th	
213	ceramic	earthenware	pot	5	31	1075	1350	1200-1350
				2	8	1200	1400	
216	ceramic	earthenware	pot	1	15	1075	1350	1075-1350
219	ceramic	fired clay	fragment	6	110			undated
225	ceramic	fired clay	fragment	1	16			undated
232	ceramic	earthenware	pot	1	2	1760	1790	1760-1790
233	bone	animal bone	fragment	1	7			1760-1790
	ceramic	earthenware	pot	1	5	1760	1790	
				1	2	1066	1200	
249	bone	animal bone	fragment	8	12			undated
251	bone	animal bone	fragment	23	144			undated
255	bone	animal bone	fragment	18	182			undated
	ceramic	fired clay	fragment	1	0.5			

260	bone	animal bone	fragment	2	8			undated
301	stone	gritstone	quern	1	1880			undated
303	bone	animal bone	fragment	15	78		12th	10th-12th
	bone	animal bone	pin	1	3	10th		
	ceramic	fired clay	fragment	2	14			
	stone	sandstone	tile?	1	9			
306	bone	animal bone	fragment	50	226			undated
	ceramic	fired clay	fragment	13	8			
311	bone	animal bone	fragment	14	33			late 1st-2nd
	ceramic	earthenware	pot	1	5	late 1st	2nd	
320	bone	animal bone	fragment	4	4			undated
323	ceramic	fired clay	fragment	1	10			undated
325	bone	animal bone	fragment	2	1			undated
	metal	iron	nail	1	5			
334	bone	animal bone	fragment	5	9			undated
336	bone	animal bone	fragment	2	4			1540-1899
	ceramic	earthenware	tile	1	9	1540	1899	
339	bone	animal bone	fragment	10	22			undated
342	ceramic	fired clay	fragment	1	2			undated
344	ceramic	fired clay	loomweight	2	1237	late 8th	late 9th *	late 8th-late 9th
	ceramic	fired clay	loomweight frags	129	1573	late 8th	late 9th *	
	ceramic	fired clay	vitrified clay	4	28			
	ceramic	fired clay	fragment	104	152			
	stone	sandstone	tile?	3	391			
	metal	hammerscale	fragment	1				
346	ceramic	earthenware	pot	5	7	late 1st	4th	
349	metal	iron	horse shoe	1	84			1066-1899
358	ceramic	earthenware	pot	1	13	mid 9th	early 11th	mid 9th-early 11th

365	ceramic	earthenware	pot	2	14	early 12th	mid 12th	early 12th
381	ceramic	earthenware	pot	4	4	1200	1400	1200-1350
				2	22	1075	1350	
383	bone	animal bone	fragment	2	6			1066-1200
	ceramic	earthenware	pot	5	17	1066	1200	
				2	3	late 1st	4th	
				1	1	late 1st	2nd	
389	stone	Micaceous sandstone	whetstone	1	13			
391	ceramic	earthenware	pot	1	0.5	1200	1400	1200-1400
394	stone	flint	arrowhead	1	13.1			1066-1899
	metal	iron	nail	1	10			
400	bone	animal bone	fragment	1	15			undated
404	bone	animal bone	fragment	35	58			late 12th
	ceramic	fired clay	fragment	6	33			
		earthenware	pot	7	60	late 12th	late 12th	
411	bone	animal bone	fragment	3	30			late 1st-4th
	ceramic	fired clay	fragment	2	5			
		earthenware	pot	1	2	late 1st	4th	
416	bone	animal bone	fragment	50	107			undated
422	bone	animal bone	fragment	1	1			1075-1350
	ceramic	earthenware	pot	2	4	1066	1200	
				4	10	1075	1350	
429	bone	animal bone	fragment	5	6			undated
431	bone	animal bone	fragment	1	13			1540-2050
	stone	flint	flake	1	3.39			
	ceramic	earthenware	pot	11	35	1200	1400	
				1	13	1200	1400	
				1	21	1066	1200	
	metal	iron	object	1	194			

			horse shoe	4	74	1540	2050	
438	ceramic	earthenware	pot	2	4	1075	1350	1075-1350
505	stone	flint	flake	1	1.45			undated (prehistoric?)
	ceramic	fired clay	fragment	1	2			
508	ceramic	fired clay	fragment	107	421			undated
511	bone	animal bone	fragment	4	168			1200-1400
	ceramic	earthenware	pot	8	48	1200	1400	
513	bone	animal bone	fragment	46	42			undated
522	ceramic	fired clay	fragment	14	42			
527	stone	flint	core	1	104			late 1st-4th
	ceramic	earthenware	pot	1	15	late 1st	4th	
533	bone	animal bone	fragment	1	7			undated
554	ceramic	earthenware	brick	1	187	1540	1899	1540-1899
			pot	2	10	11th	12th	
		fired clay	fragment	2	3			
U/S	ceramic	earthenware	pot	1	102	late 1st	4th	
				1	27	2nd	3rd	
				1	8			

Finds Table 5: Summary of context dating context order (= radiocarbon dating evidence)*

6.1.5 Period discussion

Prehistoric

The excavations produced six worked flints, five of which were residual in later contexts. These provide evidence for a small level of early Neolithic and general Mesolithic to Bronze Age activity in the vicinity of the site. Given the indications of early Bronze Age activity in the flint from the evaluation (Griffin and Hedge 2014), much of the flint, with the exception of the Neolithic arrowhead, may also date to the latter part of this range.

Roman

There was very little evidence for Roman activity, given the proximity of the Roman road. This is consistent with previous fieldwork along the road (Vaughan 2010; Jacobs and Griffin 2010; Griffin and Hedge 2014).

Mid-late Saxon

The mid-late Saxon finds are of particular significance given that previous fieldwork along the road did not find any evidence of post-Roman or Saxon sites or stray finds (Vaughan 2010). The fact that the loomweights have an associated radiocarbon date allows them to contribute to the wider

dating of the type. Also of interest is the possibility that they may have been produced on site. The three complete loomweights appear to have been carefully placed in the pit, with two stacked together. This is not a typical pattern of rubbish disposal in which finds are randomly dumped. In addition, the associated fill is rich in charcoal and charred cereal grain. These two factors suggest the feature may be a firing pit. A simple firing technology was used for making pottery during the Saxon period, using either open bonfire kilns or clamp kilns, in which the pottery and fuel were covered with an insulating layer of turves (Historic England 2015). This level of technology would have been ideally suited to the casual production of household items such as loomweights. Excavations at Blue Bridge Lane in York have produced evidence for loomweights being fired this way (Spall and Ashby 2005, F225B). There, a bonfire kiln was set in a small slumped hollow in the top of a refuse pit. Excavation of this feature produced two complete and several fragmentary examples *in-situ*, and numerous small fragments from loomweights that had shattered during firing. The kiln was used to fire both annular and intermediate type weights, typologically earlier than the bun-shaped examples found at Holmer, and was associated with a sceat of Archbishop Ecgberth, indicating a probable mid-8th century date.

The occurrence, and likely manufacture, of these loomweights also reflects the presence of textile weaving, probably at a household level, and presumably other domestic activity somewhere nearby.

Early medieval/medieval

The small medieval pottery assemblage reflects domestic activity in the vicinity during the 11th-12th centuries. This is slightly earlier than suggested by the evaluation, which produced glazed wares dating to at least the 13th century (Griffin 2014). This dating is consistent with the radiocarbon date obtained from one of the ovens, suggesting that the pottery and the ovens were in use at the same time, and supporting the dating proposed by Vince (1985) for medieval pottery from Hereford. The paucity of glazed wares perhaps reflects the earlier date range of this assemblage or a more utilitarian character for the activity on the site.

Post-medieval

No significant post-medieval finds were recovered.

6.1.6 Discard and retention

The Roman, Saxon and medieval finds should be retained. The post-medieval finds need not be retained, but any discard would need to be agreed with the receiving museum.

7 Environmental evidence

7.1 Charred plant remains, by John Giorgi

Results are shown in Environmental Table 3.

7.1.1 Prehistoric

A small amount of charred plant remains, consisting of fragments of unidentifiable cereal grain and several fragments of hazel nutshell (*Corylus avellana*), were found amongst a dump of waste material in the fill (505) of pit [507] in Area 4. These remains were dated to the prehistoric period with flint being noted in the fill. The few charred plant remains, however, do not shed any more light on the date of this context.

7.1.2 Late Saxon (8th – 10th Century)

Two samples from the same fill (344) of Pit [345] in Area 3 produced exceptionally rich charred plant assemblages. Radiocarbon dates on eight barley grains from sample <3> returned a date range of 722 - 945 cal AD at 95.4% probability.

The charred plant assemblages in both samples were dominated by very well-preserved grains of six-row hulled barley (*Hordeum vulgare*) which accounted for 92% of the identifiable grains in the

sorted fraction of sample <3>. The sorted fraction of sample <3> had a projected density of 2,136 items per litre of processed soil. There were smaller numbers of oat (*Avena*) grains with occasional florets and floret bases in the scanned fractions indicating the presence of both cultivated oat (*Avena sativa*) and wild oat (*Avena fatua*). It is not possible, however, to distinguish wild from cultivated oats on the basis of grain morphology alone although most of the well-preserved oat grains in the sorted fraction were large (5 to 7mm) which may very tentatively point to the presence of cultivated oat. The presence of small but still significant amounts of oat may perhaps suggest the cultivation of these two cereals together as dredge (spring sown oats and barley) but mixing may have occurred following harvesting or from the use of the same fields for growing different crops. Other cereal remains in the two samples included relatively very small amounts of rye (*Secale cereale*) grains and traces of free-threshing wheat (*Triticum aestivum/turgidum* type).

There were also relatively very small numbers of weed seeds with corn cockle (*Agrostemma githago*) and large wild grass (*Poaceae*) seeds including brome (*Bromus*) being the most common. Other typical arable weeds were represented by occasional seeds of common chickweed (*Stellaria media*), black bindweed (*Fallopia convolvulus*), cleaver (*Galium aparine*) and stinking chamomile (*Anthemis cotula*). The weed seeds suggest the use of loamy and clayey soils similar to those in the immediate vicinity of the site while *Stellaria media* and *Fallopia convolvulus* on the one hand, and *Galium aparine* on the other, may tentatively suggest both spring and autumn sowing of cereals respectively. Both *Stellaria media* and *Anthemis cotula* are fairly short weeds which may indicate harvesting of cereals fairly low on the straw.

These rich charred plant assemblages represent a virtually clean deposit of hulled barley which may have been accidentally burnt while being dried before storage or use or may have actually been burnt in storage, with the grain subsequently being dumped into the pit. The majority of the weed seeds are large and of a similar size to grains and are often found in virtually clean and stored cereal deposits with these weed seeds requiring hand-sorting from the grain.

7.1.3 Early medieval to medieval (11th to 13th Century)

Charred plant remains were analysed from nine sampled fills dating to the early medieval and medieval period; six from fills associated with three drying ovens in Area 1; two from pit fills in Area 4; and one from a ditch fill in Area 3.

Drying ovens

The charred plant remains in three samples were examined from drying oven group 117, two from the fills of the flue (121 and 122), and one from a dump of fire debris (115).

The samples from (115) and (121) produced fairly rich and broadly similar but poorly preserved charred plant assemblages consisting virtually entirely of charred cereal grains and pulses. The dominant cereal grains in both these samples were free-threshing wheat, accounting for c 88% of the identifiable grains in both samples, with traces of free-threshing rachis fragments in the two fills including evidence for hexaploid bread wheat (*Triticum aestivum* type). Very small numbers of rye, barley and oat grains were also present in these two samples. A single grain of hulled emmer/spelt wheat (*Triticum dicoccum/spelta*) in the dump of fire debris (115) is probably residual or a relic from past harvests. Almost 50% of the counted grains in both these samples were unidentifiable while a large number of grain fragments in both could not be quantified.

These two rich charred plant assemblages also contained significant amounts of charred pulses, although these were also very poorly preserved and fragmented, lacking surface detail and therefore difficult to identify to species or even genus. A small number of the better preserved seeds, however, were tentatively identified as pea (*Pisum sativum*) and possible broad bean (*Vicia faba*). It is likely that many of the other large legume seeds and fragments also probably belong to cultivated pulses including beans and peas.

There were virtually no weed seeds in either (115) or (121) except for single ones of stinking chamomile (*Anthemis cotula*), which may be indicative of the cultivation of heavier soils, and a few large wild grass seeds and wild grass/cereal culm node fragments.

These two deposits represent very similar and virtually clean assemblages of mainly free-threshing wheat grain and pulses, probably accidentally burnt while being dried in the oven at different times before storage and/or use. The pulses may have been cultivated as part of crop rotation to restore nitrogen levels and fertility to the soils.

The other flue fill (122) sample from (oven group 117) produced only a small charred plant assemblage, again consisting almost entirely of cereal grains. This was mainly free-threshing wheat and a few rye, barley and oat grains, presumably debris from use(s) of the oven for drying crops.

Charred plant remains were examined from two samples associated with drying oven group 139; from collapsed oven debris (131) and an overlying backfill (129). Fill (131) contained a fairly good-sized but poorly preserved charred plant assemblage consisting mainly of grains, most (70%) of which were not identifiable except for small numbers of hulled barley, rye and free-threshing wheat grains. There were also some weed seeds particularly small leguminous seeds plus a few large weed seeds including *Fallopia convolvulus* and large wild grass seeds including *Bromus*. A few wild grass/cereal culm node fragments were also present. The oven backfill (129) sample produced just a small number of cereal grains (free-threshing wheat, oat and possibly barley) along with a tentative identification of common vetch (cf *Vicia sativa*) and a few large wild grass seeds. The charred plant remains in both these samples presumably derive from the use of the ovens.

Pits

The sampled fills (522) and (508) of two shallow pits [524] and [509] in Area 4 produced small and very modest amounts of charred plant remains, both containing just a few cereal grains (traces of free-threshing wheat, barley and rye) and a small range of wild plant/weed seeds with the best, albeit still limited, species range in pit fill (508). Stinking chamomile (*Anthemis cotula*) was relatively well represented in both fill samples along with a few spike-rush (*Eleocharis*) seeds. There was also a sedge (*Carex*) seed in pit fill (508) along with a few wild large and small grass seeds. A blackberry/ raspberry (*Rubus*) seed, also in pit fill (508) may be from hedgerow/scrub vegetation close-by.

The small charred plant assemblages in these two fills probably represent debris from domestic hearths, the little crop-processing debris perhaps used as fuel together with a few grains accidentally burnt during the final stages of crop cleaning/food preparation. The presence of *Anthemis cotula* may suggest the use of heavier soils for cultivation while *Carex* and *Eleocharis* could tentatively point to the use of damper areas of ground, possibly closer to the river, for growing crops; the remains of these two plants, however, may derive from grassland vegetation gathered for various on-site uses including as flooring/roofing materials.

Ditches

The upper main fill (303) of ditch [305] in Area 3 contained a fairly rich although poorly preserved charred plant assemblage consisting mainly of cereal grains and mainly free-threshing wheat including a few rachis fragments indicative of hexaploid bread wheat. There were also a small number of oat grains and traces of rye and possibly barley, the presence of the latter, however, being confirmed by the recovery of a barley rachis fragment. Over half of the quantified cereal grains in this sample could not be identified. There were only a small number of weed seeds including from *Anthemis cotula*, *Galium aparine* and large wild grasses including *Bromus*.

This material represents a virtually clean assemblage of mainly free-threshing (bread) wheat grains which may have been accidentally burnt while being dried before use/storage or possibly burnt in storage, with the grains subsequently being dumped into the ditch. The presence of *Anthemis cotula* may again point to the use of heavier soils for growing crops.

The fill (451) of ditch [452] in Area 3 produced a fairly good-sized charred plant assemblage broadly similar to the remains in ditch fill (303), and consisting largely of cereal grains again mainly of free-threshing wheat with a small number of rachis fragments showing the presence of hexaploid bread wheat. Other cereals were represented by a few rye, barley and oat grains. There

were a very small number of weed seeds including from sheep's sorrel (*Rumex acetosella*) and large wild grasses including *Bromus* while a single fragment of charred hazelnut shell was also found in this sample.

These remains also represent an almost completely clean assemblage of mainly free-threshing (bread) wheat grains which may have been burnt while being dried before use/storage or possibly burnt in storage, with the grains then dumped into the ditch.

			Period	?PREH	SAXON			EARLY MED				
			Date range		C14 date 722 to 945 cal AD			11th to 12th Century (C14 date 1028-1184 ca				
			Area	4	3			1				
			feature	PIT	PIT	PIT	OVEN	OVEN	OVEN	OVEN	OVEN	
			cut number	507	345	345	103	110	110	110	144	
			context number	505	344	344	118	115	121	122	129	
			sample number	18	3	10	8	7	6	5	11	
			vol processed soil (l)	10	10	10	10	30	20	10	20	
			vol flot (ml)	10	450	300	12	45	110	12	3	
			%flot sorted		6.25%							
			%flot scanned			93.75%	100.00%					
Latin name	Family	Common name	Habitat									
Cereal grains												
<i>Triticum dicoccum/spelta</i> type	Poaceae	emmer/spelt wheat	F					1				
<i>T. aestivum/turgidum</i> type	Poaceae	free-threshing wheat	F			+	1	15	28	2	1	
<i>T. cf. aestivum/turgidum</i> type	Poaceae	?free-threshing wheat	F				7	46	76	4	1	
<i>Triticum</i> spp.	Poaceae	wheat	F			+		13	12			
cf. <i>Triticum</i> sp(p).	Poaceae	?wheat	F				1	40	50	4	1	
<i>Triticum/Secale cereale</i> L.	Poaceae	wheat/rye	F				6	2	4			
<i>Secale cereale</i> L.	Poaceae	rye	F		7	+++	+++	2	1	4		
cf. <i>S. cereale</i>	Poaceae	?rye	F		5			6	4	10	1	
<i>Hordeum vulgare</i> L.	Poaceae	barley, hulled twisted	F		373							
<i>H. vulgare</i> L.	Poaceae	barley, hulled straight	F		94	+++++	+++++				1	
<i>H. vulgare</i> L.	Poaceae	barley, hulled indet	F		670			1			1	
<i>H. vulgare</i> L.	Poaceae	barley, indet	F		12			5				
cf. <i>H. vulgare</i>	Poaceae	?barley	F						2		1	
<i>Avena fatua</i> L.	Poaceae	wild oat floret	A			+						
<i>Avena</i> sp(p).	Poaceae	oat	AF		72	+++++	+++++	2	3	1	1	
cf. <i>Avena</i> spp.	Poaceae	?oat	AF		22			3				
Cerealia indet.	Poaceae	indet. cereal	F	1	70	+++	+++	52	91	184	10	4

			Period	?PREH	SAXON			EARLY MED				
			Date range		C14 date 722 to 945 cal AD			11th to 12th Century (C14 date 1028-1184 ca				
			Area	4	3			1				
			feature	PIT	PIT	PIT	OVEN	OVEN	OVEN	OVEN	OVEN	
			cut number	507	345	345	103	110	110	110	144	
			context number	505	344	344	118	115	121	122	129	
			sample number	18	3	10	8	7	6	5	11	
			vol processed soil (l)	10	10	10	10	30	20	10	20	
			vol flot (ml)	10	450	300	12	45	110	12	3	
			%flot sorted		6.25%							
			%flot scanned			93.75%	100.00%					
Latin name	Family	Common name	Habitat									
Cerealia indet.	Poaceae	indet cereal fragments <2mm	F	+	++			++	+++	+++	++	+
Cereal chaff												
<i>Triticum aestivum</i> type	Poaceae	hexaploid wheat rachis	F					3	1			
<i>T. aestivum/turgidum</i> type	Poaceae	free-threshing wheat rachis	F					3	1			
<i>Secale cereale</i> L.	Poaceae	rye rachis fragment	F									
<i>Hordeum</i> spp.	Poaceae	barley rachis fragments	F									
<i>Avena sativa</i> L.	Poaceae	cultivated oat floret bases	F			+						
<i>Avena fatua</i> L.	Poaceae	wild oat floret bases	A			+						
<i>Avena</i> spp.	Poaceae	oat floret chaff fragments	AF			+						
Cerealia	Poaceae	indet. cereal rachis fragments	F			+						
Other plant/weed seeds												
<i>Corylus avellana</i> L.	Betulaceae	hazel nut shell fragments	C	3								
<i>Atriplex/Chenopodium</i> sp(p).	Amaranthaceae	orache/goosefoot etc	AB			+	+					
<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	common chickweed	AB				+					
<i>Agrostemma githago</i> L.	Caryophyllaceae	corncockle	AB		1	++	++					
<i>Fallopia convulvulus</i> (L.) A Love	Polygonaceae	black bindweed	AB				+					
<i>Rumex acetosella</i>	Polygonaceae	sheep's sorrel	ABD									
<i>Rumex</i> sp(p).	Polygonaceae	dock	ABCD		1	+	+	1				
<i>Rubus fruticosus/idaeus</i>	Rosaceae	blackberry/raspberry	CDF									

			Period	?PREH	SAXON			EARLY MED				
			Date range		C14 date 722 to 945 cal AD			11th to 12th Century (C14 date 1028-1184 ca				
			Area	4	3			1				
			feature	PIT	PIT	PIT	OVEN	OVEN	OVEN	OVEN	OVEN	
			cut number	507	345	345	103	110	110	110	144	
			context number	505	344	344	118	115	121	122	129	
			sample number	18	3	10	8	7	6	5	11	
			vol processed soil (l)	10	10	10	10	30	20	10	20	
			vol flot (ml)	10	450	300	12	45	110	12	3	
			%flot sorted		6.25%							
			%flot scanned			93.75%	100.00%					
Latin name	Family	Common name	Habitat									
<i>Pisum sativum</i> L.	Fabaceae	pea	F					3				
cf. <i>Pisum sativum</i>	Fabaceae	?pea	F					4	2			
cf <i>Vicia sativa</i>	Fabaceae	?common vetch	BDF								1	
cf. <i>V. faba</i>	Fabaceae	?broad bean	F						4			
<i>Vicia/Pisum</i> sp(p).	Fabaceae	bean/pea (>4mm)	F					8	20			
<i>Vicia/Lathyrus</i> sp(p).	Fabaceae	vetch/tare/vetchling (<2mm)	ABCD			+		1			1	
<i>Vicia/Lathyrus/Pisum</i> sp(p).	Fabaceae	vetch/tare/vetchling/pea (>2mm)	ABCDF					8	112			
<i>Vicia/Lathyrus/Pisum</i> sp(p).	Fabaceae	vetch/tare/vetchling/pea (<2mm)	ABCD			+			1			
Fabaceae indet	Fabaceae	large cotyledons, frags (>2mm)	ABCDF					41	85			
Fabaceae indet	Fabaceae	small cotyledons, frags (<2mm)	ABCD						6			
Fabaceae indet	Fabaceae	small rounded legumes	ABCD				+			1		
<i>Verbena officinalis</i> L.	Verbenaceae	vervain	D									
<i>Galium aparine</i> L.	Rubiaceae	cleaver	ABC			+	+					
<i>Anthemis cotula</i> L.	Asteraceae	stinking chamomile	AB			+	+	1	1			
Asteraceae indet.	Asteraceae											
<i>Eleocharis palustris/uniglumis</i>	Cyperaceae	spike-rush	E									
cf. <i>Eleocharis</i> sp.	Cyperaceae	spike-rush	E									
<i>Carex</i> sp(p).	Cyperaceae	sedge	CDE									

			Period	?PREH	SAXON			EARLY MEDIEVAL				
			Date range		C14 date 722 to 945 cal AD			11th to 12th Century (C14 date 1028-1184 cal AD)				
			Area	4	3			1				
			feature	PIT	PIT	PIT	OVEN	OVEN	OVEN	OVEN	OVEN	
			cut number	507	345	345	103	110	110	110	144	
			context number	505	344	344	118	115	121	122	129	
			sample number	18	3	10	8	7	6	5	11	
			vol processed soil (l)	10	10	10	10	30	20	10	20	
			vol flot (ml)	10	450	300	12	45	110	12	3	
			%flot sorted		6.25%							
			%flot scanned		93.75%	100.00%						
Latin name	Family	Common name	Habitat									
<i>Bromus</i> sp(p).	Poaceae	brome	ABD			+	+					
cf. <i>Bromus</i> sp(p).	Poaceae	?brome	ABD								2	
Poaceae indet.	Poaceae	grasses (large seeds)	AF		8	++	+	1	1	2		
Poaceae indet.	Poaceae	grasses (small seeds)	AF			+	+		1			
Poaceae indet.	Poaceae	grass/cereal culm node/internode	AF					1	2			
indeterminate		stem fragments (thin ribbed)										
indeterminate		wood charcoal		+++++	++	+++++	+++++	+++++	+++++	+++++	+++++	
indeterminate						+	+	+	+	+		
TOTAL				4	1335			79	299	608	25	13
<i>item density (per litre of processed soil)</i>				0.4	2,136e			7.9	10	30.4	2.5	0.7

Item frequency: + =1-10; ++ = 11-50; +++ = 51-150; ++++=151-250; +++++ = >250 items

e = projected density based on sub sample

Habitat: A = cultivated ground; B = disturbed ground; C = woodlands, hedgerows, scrub etc; D = grasslands, meadows and heathland; E= aquatic/wet habitats; F = cultivar

Environmental Table 3: The charred plant remains

7.2 Period discussion

7.2.1 Prehistoric

A few charred hazelnut shell fragments and traces of unidentifiable grain in pit fill (505) may potentially be from prehistoric contexts but only radiocarbon dating of these remains can confirm this. There is large body of archaeobotanical evidence for the collection of wild foods particularly hazelnut shell during the prehistoric period (Grieg 1991, 301; Moffett *et al* 1989, 247) although the gathering of wild foods has continued throughout history, with a charred hazelnut shell fragment also found in a medieval ditch fill (451) from the site.

7.2.2 Late Saxon

An exceptionally rich Saxon charred plant assemblage from pit fill (344) consisted virtually entirely of six-row hulled barley, but with some oats, fewer rye grains and only traces of free-threshing wheat. All four cereals are the main grains identified in archaeobotanical assemblages from Saxon contexts in England (Grieg 1991, 315). Charred plant remains from other sites close by also suggest that barley and oats may have been significant crops during the Saxon period around Hereford; for example, six-row hulled barley and in one instance oat, dominated charred plant assemblages in late Saxon deposits (8th to 11th century) from Cathedral Close, Hereford, where it was suggested that the barley may have been used by the monks for brewing beer (Pearson 1996). Other Saxon sites in Hereford have also produced large amounts of barley grains, for example, in a 7th to 8th Century oven in Victoria Street (Arthur and Hood 1985).

The barley in the pit fill may have potentially used for on-site brewing, although no definite evidence for this activity in the form of sprouted grains or loose coleoptiles was found; barley may have also been used as bread (despite there being a preference for white leavened wheat bread at the time (Hagen 1994, 125)) or used in gruel or porridge, a significant part of the Saxon diet (Ibid. 60). Oat, barley and rye meal was also used in cereal pottage (Wilson 1991, 197). Barley and oats may have also been used for animal fodder, although the cleanliness of the barley assemblages suggests that these grains were probably destined for human consumption.

The few weed seeds associated with the barley grains also provided potential evidence for the cultivation of the cereals on the loamy and clayey soils around the site as well as possibly both the spring and autumn sowing of crops with tentative, albeit limited, evidence for the harvesting of cereals by cutting fairly low on the straw.

7.2.3 Early medieval/medieval

The medieval samples showed that free-threshing (hexaploid bread) wheat was the main cereal in the richest charred grain assemblages including from two fills of oven group 117 in Area 1 and from two ditch fills (303 and 451) in Area 3. There were significantly smaller amounts of rye, (hulled) barley and oat grains. The charred grains found in the drying ovens would have been indicative of the final use of these features and therefore it is possible that earlier uses of the ovens may have included the drying of other crops, as suggested by the relatively large amounts of pulses found together with the free-threshing wheat grains in the two rich charred plant assemblages from oven group 117. The smaller amounts of other cereals may also derive from previous uses of the oven although it may also reflect the use of the same fields for growing different crops, these other cereals possibly harvested as weeds of the free-threshing wheat grains. The large amounts of free-threshing wheat grains also in two ditch fills does suggest that this may have been the main cereal being cultivated and used on the site at the time. This is in contrast to the earlier Saxon evidence from the site showing the presence of mainly barley and oats although this is based only on the charred plant remains from one pit fill.

Charred plant remains from several medieval sites close-by within the Lugg Valley, however, show a more mixed picture in terms of the cereals being cultivated and used in this area during this period. Thus, rich assemblages of free-threshing wheat grain burnt in situ were found in a late

Saxon/early medieval (10th to 12th century) aisled building at Sutton St Nicholas, a short distance to the north-east (Pearson 2000) and also in a 13th to 14th century oven from Wellington Quarry to the north of Holmer (Pearson 2011). On the other hand, another 13th to 14th century oven, also from Wellington Quarry, contained a rich deposit of barley while a 11th to 12th century pit from the same site produced large amounts of grain of mostly rye and even greater amounts of barley and rye/barley chaff (Ibid.), suggesting that a range of cereals were being grown in this part of the Lugg Valley during the medieval period.

Free-threshing wheat, the main grain in the medieval samples from the site, was the most commercially valuable cereal in the medieval period (Hammond 1995, 2) and the favoured bread making grain with wheaten flour also being used for pies and pastries. The other cereals in the samples, rye, barley and oats, although represented by significantly smaller numbers of grains, may however have also been used for bread and in pottage (Campbell *et al* 1993, 24-5) with barley and oats also being used as animal fodder. There was no evidence in the form of sprouted grains or loose coleoptiles to suggest that any of the grains from the medieval samples were being used for on-site brewing.

The large amounts of pulses found with the cereal grains in the two rich charred plant assemblages from oven group 117 included pea and probably beans while common vetch may be present in oven group 139. Pulses, including peas, beans and vetches, are often found in medieval deposits in England but usually only in small amounts (Greig 1991, 323, Moffet 2006, 53). Beans and peas may have been used for human food, together with cereals for bread and in pottage, particularly by the poor and following failed cereal harvests (Wilson 1991, 201-2) as well as for animal feed. The pulses in the corn dryer may have also been grown as a means of restoring nitrogen to the soil as part of crop rotation (Campbell *et al* 1993, 134).

The spatial distribution of the charred plant remains from the medieval samples may provide an insight into different activities taking place across the site although this is based on the remains from a relatively small number of samples. The drying of the cereals in the ovens was taking place, possibly at some distance from the main area of occupation which would have avoided potential conflagrations within the farmstead/settlement. Kilns for drying crops and located on the margins of fields and away from settlement are common in the medieval period in Wales and were in use into the 19th Century (William 1984).

The two fairly rich assemblages of mainly free-threshing wheat grains in ditch fills in Area 3, may indicate possible areas of grain storage close-by and/or that activities associated with the final stages of crop-cleaning and food preparation were taking place in this area of the site. In Area 4 to the north, the few charred grains and wild plant/weed seeds in the two pit fill samples probably represents hearth debris indicative of low-level/domestic activities taking place in this part of the site.

There is limited botanical evidence from the site for investigating other aspects of crop husbandry in the medieval period with only a small range of weed seeds identified in the samples. The presence of *Anthemis cotula*, however, in five of the ten medieval samples, may suggest the cultivation of heavier soils at the time. This weed seed was also common along with very large amounts of crop-processing debris and cereal grains in early medieval deposits just to the north at Wellington Quarry which together with extensive ridge and furrow around the site was taken as evidence that a significant area around Wellington was being cultivated by the 11th/12th Century (Pearson 2011, 159). This was during the Warm Period (950 to 1250 AD) which may have allowed arable expansion onto previously poorly drained land including the floodplain of the River Lugg. A similar agricultural expansion may have also taken place around Holmer with *Anthemis cotula* perhaps pointing to the cultivation of the heavier soils of the floodplain, free-threshing wheat also growing best on such soils.

Single seeds of *Fallopia convulvulus* and *Galium aparine* may suggest the spring and autumn sowing of cereals while *Anthemis cotula* may again very tentatively indicate the reaping of the

cereals fairly low on the straw; certainly straw would have been a valuable commodity for various uses at the time including thatching and flooring/ bedding materials.

7.3 Animal bone, by Elizabeth Pearson

A total of 1.37kg (330 fragments) of large mammal bone was hand-collected during excavation, much of which derived from undated contexts. As a result, no further analysis was carried out on this assemblage.

7.4 Radiocarbon dating, by Elizabeth Pearson

The results are conventional radiocarbon ages are listed in Appendix 2. The calibrated date ranges for the samples have been calculated using the High Probability Density Range Method (Bronk Ramsey 2009) and are quoted with end points rounded outwards to ten years. The probability distributions of the calibrated dates in Graphs 1 and 2 in Appendix 2. They have been calculated using OxCal v4.2 (Bronk Ramsey 2009) and the current internationally-agreed atmospheric calibration dataset for the northern hemisphere, IntCal13 (Reimer *et al* 2013).

8 Summary and discussion

Prehistoric

One pit feature was dated to the prehistoric period, based on flint and charred hazelnut shell recovered from a burnt fill within. Elsewhere across the site, a small number of flints were residual finds in later features, including a Neolithic leaf arrowhead, providing limited additional evidence for prehistoric activity. It is possible that prehistoric land use was widely dispersed, but this small-scale evidence may potentially relate to the cremation pits uncovered to the north during the evaluation trenching.

The site lies slightly above the western edge of the Lower Lugg Valley which has been described as a regionally important area of Neolithic/early Bronze Age settlement (Bapty 2007). Much of the activity within the Lower Lugg Valley has been identified at Wellington Quarry some 6km to the north of the site. There was considerable prehistoric activity at Wellington, including an early Neolithic pit group, a middle Neolithic pit circle, a wealthy Beaker burial and three ring ditches (Jackson and Miller 2011). Wellington Quarry lies on alluvial and gravel deposits of the Lugg valley floor, whilst the Holmer site is on the higher Raglan Mudstone. Activity at Holmer may have been focussed on the Ayles Brook, which crosses the eastern part of the site and runs along the southern edge to join the Lugg in Hereford.

Roman

The site lies on the northern side of Roman Road, which leads to the Roman Town of Kenchester (Magnis or Magna) some 6km to the west. The limited amount of Roman pottery surviving within later features is probably indicative of low level agricultural activity or a casual spread of pottery of this date, possibly through the process of manuring.

Late Saxon

Saxon activity was limited, but significant, and comprised a pit from which a stack of loom weights was recovered, and a ditch that included Stafford-type late Saxon pottery.

The loomweights were stacked on top of sandstone slabs, which showed evidence of firing and it is thought that the loom weights may have been left in situ following this firing. This is likely to have been small scale domestic production for loom weights as and when needed, but is clear evidence of Saxon occupation in the close vicinity, as is the pottery and the ditch. The nature of this settlement is not clear, but it may be that there was continuity of occupation from the late Saxon period into the medieval period.

Early medieval/medieval

The majority of activity recorded on the site was dated to between the 11th and 13th Century. These included a number of ditches thought to be a series of stock enclosures and field boundaries in the eastern area and a sequence of drying ovens in the west.

The nature of these features and the finds assemblage may indicate that this is the site of a former farmstead, perhaps forming the western part of the village of Holmer. As mentioned above, although the church lies to the west of the A49, most of the surviving settlement is dispersed along sinuous lanes to the east of the main road. The results of the site investigations here suggest either that the settlement was formerly more balanced, with the church at the centre of the village, perhaps prior to contraction following the famine and pestilence of the 14th Century, or that an earlier phase of settlement has been abandoned and then shifted eastwards over time.

Ovens with a similar keyhole plan have also been found elsewhere in Herefordshire, most notably at Wellington Quarry during excavations between 1986-1996 (Jackson and Miller 2011, 144-147). This was dated to the medieval period, although later, between the 13th and 14th Centuries, and had a similar collapsed clay structure covering a sandstone floor. The ovens also contained a large amount of charred cereal grains. Drying ovens such as these were used to parch grain prior to storage. Their presence on the top of the hill, in an agricultural setting, also suggests a response to unfavourable conditions for cereal cultivation in the 13th and 14th Century in Herefordshire. It also suggests the area was under cultivation in this period.

Crop processing was also demonstrated in the the fills of some of the ditches and pits in Areas 3 and Area 4. This demonstrates that cereals were being cultivated on site and ties in with a possible open field system of agriculture. The settlement seems to have shrunk and been deserted by the time of the inclosure acts and enclosing of the land.

Post medieval

Deposits included the rubble surface of an agricultural building and other spreads of stone and are thought to be later activity on the site. These overlay and had truncated the earlier medieval settlement activity. The presence of later post-medieval furrows further enforces the agricultural use of the land for drainage and cultivation of cereal crops. These were on the same alignment as the land drains recorded in the central and southern areas.

8.1 Environmental overview, by Elizabeth Pearson

There is a noticeable difference in the dominant cereal crops at Holmer from the late Saxon to the medieval period. The abundant charred cereal crop waste in pit [345] was dominated by six-row hulled barley, whilst in the medieval ovens, pits and ditches, free-threshing wheat was the dominant cereal. Although the late Saxon phase at Holmer is represented by a limited number of features, the dominance of barley at this time may be significant as rich deposits of charred barley grains have also been recovered from ovens at Hereford Cathedral (Pearson 1996), dated recently to approximately 750 – 1050 AD (pers. obsv) and a 7th to 8th century oven at Victoria Street, Hereford (Arthur and Hood 1985).

An increasing dominance in free-threshing wheat, starting in the 'long eight century' has been discussed by McKerracher (2018) and by other authors (Banford 2014, Hamerow 2014). Free-threshing wheat is an advantageous crop on heavy clay soils, and as a result the possibility that this crop was associated with the expansion of arable farming on to heavier clay-rich soils countryside has been discussed by several authors in recent years. The soils in the immediate vicinity of the Holmer excavation are slightly acid loamy and clayey with impeded drainage, with soils further afield (particularly to the south around Hereford) being freely draining lime-rich soils (Soilscapes 2018). It is possible that the cultivation of free-threshing wheat may have facilitated more intensive use of the soils on which the site is located by the medieval period, compared to the 8th to 11th centuries. Although McKerracher (2018) also recognises the increasing dominance of free-threshing wheat, he suggests a more nuanced change from the late Saxon into medieval period, with the most appropriate crops being increasingly matched to local soils. Oats and rye

were more frequently grown on acidic and poor soils. Only small amounts of these two crops were present in both late Saxon and medieval periods. However, barley, which grows well on light, well drained soils, may have been well matched to the light, lime-rich soils found beyond Holmer over a large area, and hence prior to the medieval period, may have been the most advantageous cereal to cultivate. As the number of rich assemblages of late Saxon to early medieval date are, at present, limited, this is a tentative interpretation which may change when new data comes to light, and would benefit from the modelling of radiocarbon dates from existing material and that which may arise from fieldwork in the future.

From the limited evidence to date, it appears that evidence for the processing of cereals in bulk, on a scale that necessitates the use of specialist structures such as drying ovens and storage in buildings, is more common in the Lugg valley north of Hereford than in surrounding parts of Herefordshire and west Worcestershire during the late Saxon and medieval periods. This distribution probably also coincides with the development of the open field system in this area. Arable agriculture may not necessarily be dominant (as hay meadow and pasture were also important, particularly on the lower lying areas close to the river), but appears to be relatively significant, compared to surrounding areas.

The open fields found along the Lugg valley are an outlier of the main zone of highly regular open fields and nucleated settlement, in a champion or feldon landscape, that is often referred to as the 'central province' for example, more recently by Hall (2014), Rippon (2008) and Williamson (2013).

8.2 Research frameworks

The Saxon finds in particular address research aims defined for Herefordshire during this period. The Resource Assessment highlights the paucity of artefacts dating to this period, and the importance of gathering evidence for industry (Cotton 2003, 4), referring specifically to loomweights as a source of this evidence. Specialist study is identified as a clear research priority, in order that 'such discoveries achieve their full study,' while Alan Vince's assessment of the ceramic evidence identified the use of C14 dating as a primary research aim (Vince 2003). The well-dated Saxon finds from Holmer thus address a number of research aims, and will contribute to wider studies of the period.

Alan Vince in the West Midlands Post-Roman Research Agenda stated that:

'Although there is evidence for late 9th to mid 11th-century pottery in each of the counties of the West Midlands, almost all of these finds come from defended sites, which may or may not have been towns at this time. Even where pottery is found on rural sites it is in such small quantities that it suggests that pottery was hardly used (or that the areas occupied in the pre-conquest period have not been found). If the region was only tentatively using pottery at this time then it contrasts strongly with the situation to the south, where pottery of late 10th/early 11th century date is now turning up frequently on rural excavations, as well as with the situation immediately to the east, in Northamptonshire, Nottinghamshire, Derbyshire and Cheshire, however, still have few finds of late 9th to 11th century pottery outside of the urban centres and it may be that the West Midlands and these counties have a similar use of pottery at this time. Alternatively, it is quite likely that the appropriate rural sites still await discovery' (Vince 2004, 6).

Tim Hoverd (Herefordshire Archaeology) suggested in a 2004 seminar (Hoverd 2004) on Medieval Herefordshire that:

That the evidence for former villages centred around parish churches, as well as tightly clustered hamlets during the medieval period is considerable. Evidence for former open field systems is widespread, both as fossilised traces in modern field boundaries, and as ridge and furrow, and as sometimes substantial linear terraces. However, the archaeological investigation of any such sites and fields to date is virtually nil.

This work has provided information on the villages and hamlets centred around the parish churches in Herefordshire and links to the open field system.

Looking wider afield, this site may have interest to a national study 'Feeding Anglo-Saxon England (FarmSax)'. This is an ERC-funded project based at the Universities at Oxford and Leicester (2017-2021). It focusses on the development of an agricultural revolution between 800 and 1200AD from a bioarchaeological perspective. This is specifically looking at how the analysis of charred cereal grains, using a series of radiocarbon dates and stable isotope analysis may provide information on crop and animal husbandry techniques (McKerracher 2018).

9 Publication summary

Worcestershire Archaeology has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, Worcestershire Archaeology intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

An archaeological strip, map and sample excavation was undertaken at land north of Roman Road, Holmer, Hereford (NGR SO 50219 42481). It was commissioned by Nick Rawlings, Planning Director for Bloor Homes Western Ltd, who have been granted planning permission for the erection of up to 460 dwellings on the site. This includes affordable housing, public open space, and a park and ride facility, alongside associated landscaping, drainage and other works.

The site consisted of a large area of agricultural land, encompassing some 22 hectares, on Hereford's northern fringe, north of Roman road and west of the A49, in the parish of Holmer.

A previous archaeological evaluation of the site had identified features of archaeological significance including a number of ditches and a corn drying oven. It was considered that the development had the potential to affect these assets and permission was granted subject to conditions including a programme of archaeological work.

Four areas were excavated covering an area of 10,500m, focussing on areas of high potential highlighted in the evaluation.

The excavation revealed the buried remains of features relating to a small medieval farmstead with settlement, field boundary and stock enclosure activity dating from the 9th – 13th Century AD, correlating with the founding of Holmer church to the southwest and the original settlement of Holmer.

A possible prehistoric storage pit in the northern area, with residual flint also found in some of the boundary ditches attributing which may relate to a probable prehistoric cremation cemetery recorded in the evaluation stage to the north-east, but outside the development area.

A group of ceramic loomweights were present in the base of a small sub-circular feature with an exceptionally rich charred plant assemblage. A sample of barley was scientifically dated to 722 - 945 cal AD.

A series of corn-drying field ovens were found to the west of the stock enclosures. A rubble floor of a threshing barn was recorded in the central area attributing to later activity on site, together with modern spreads of stone dating to later agricultural use of the site.

The findings demonstrate that, as suggested in the earlier works of the desk based assessment and evaluation stages of the project, the original Holmer settlement was centred around the church and later contracted to the current settlement that is all to the east of the church. A trackway in the south of the development area, recorded in the evaluation stage, but not affected by the development may have provided access between the settlement on the hill, which seems to have gone out of use by the time of the inclosure of the land during the 18th Century.

The project has provided a crucial insight into the early medieval settlement of the Hereford hinterland and Holmer parish.

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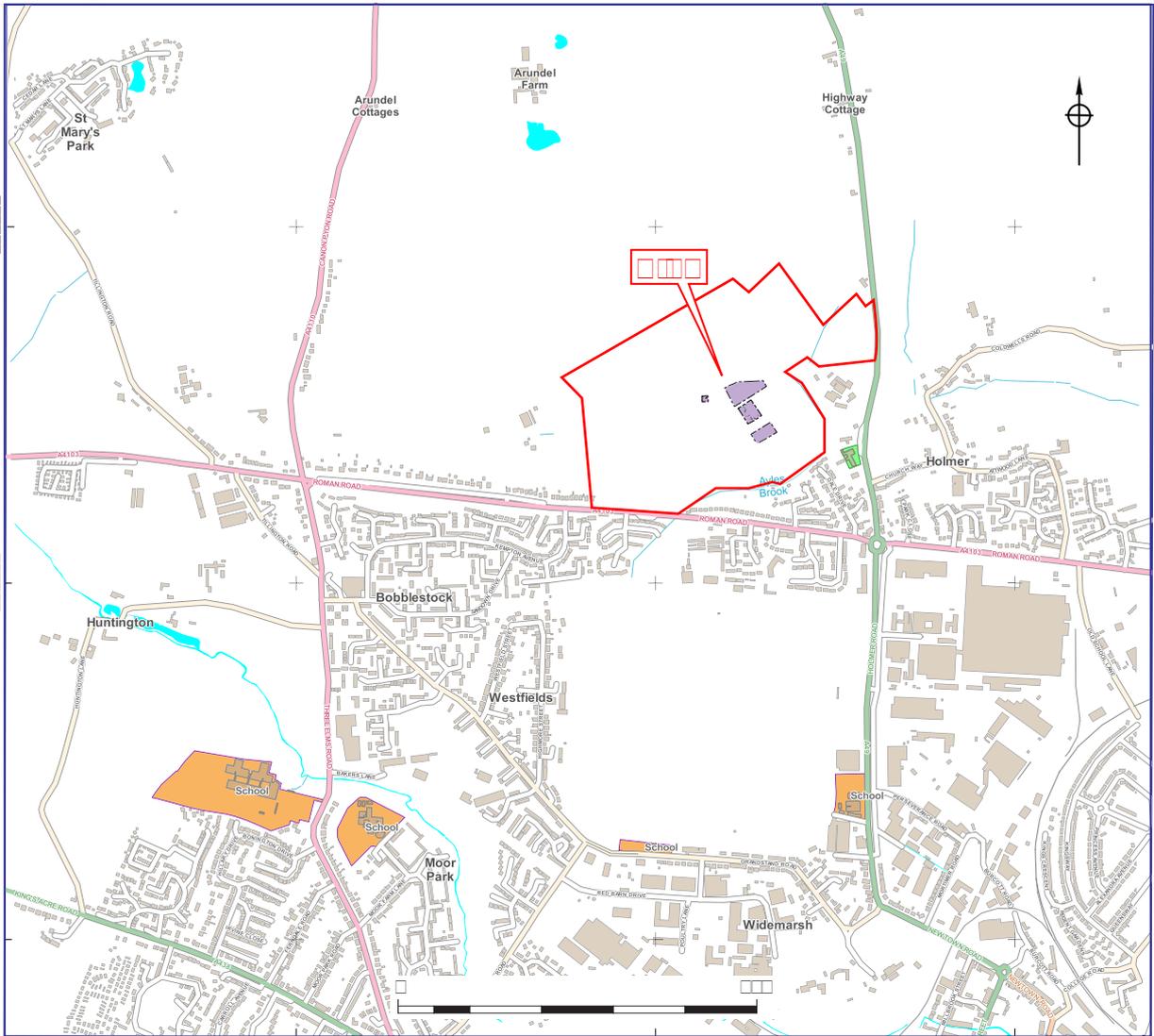
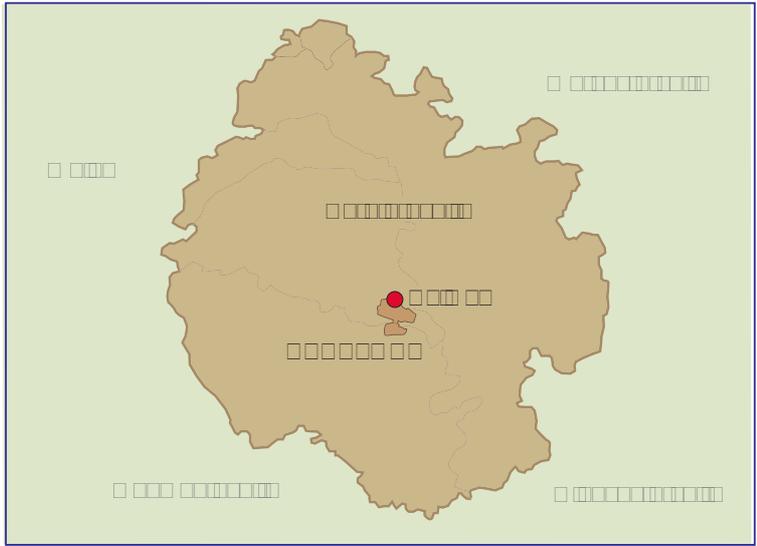
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Figures

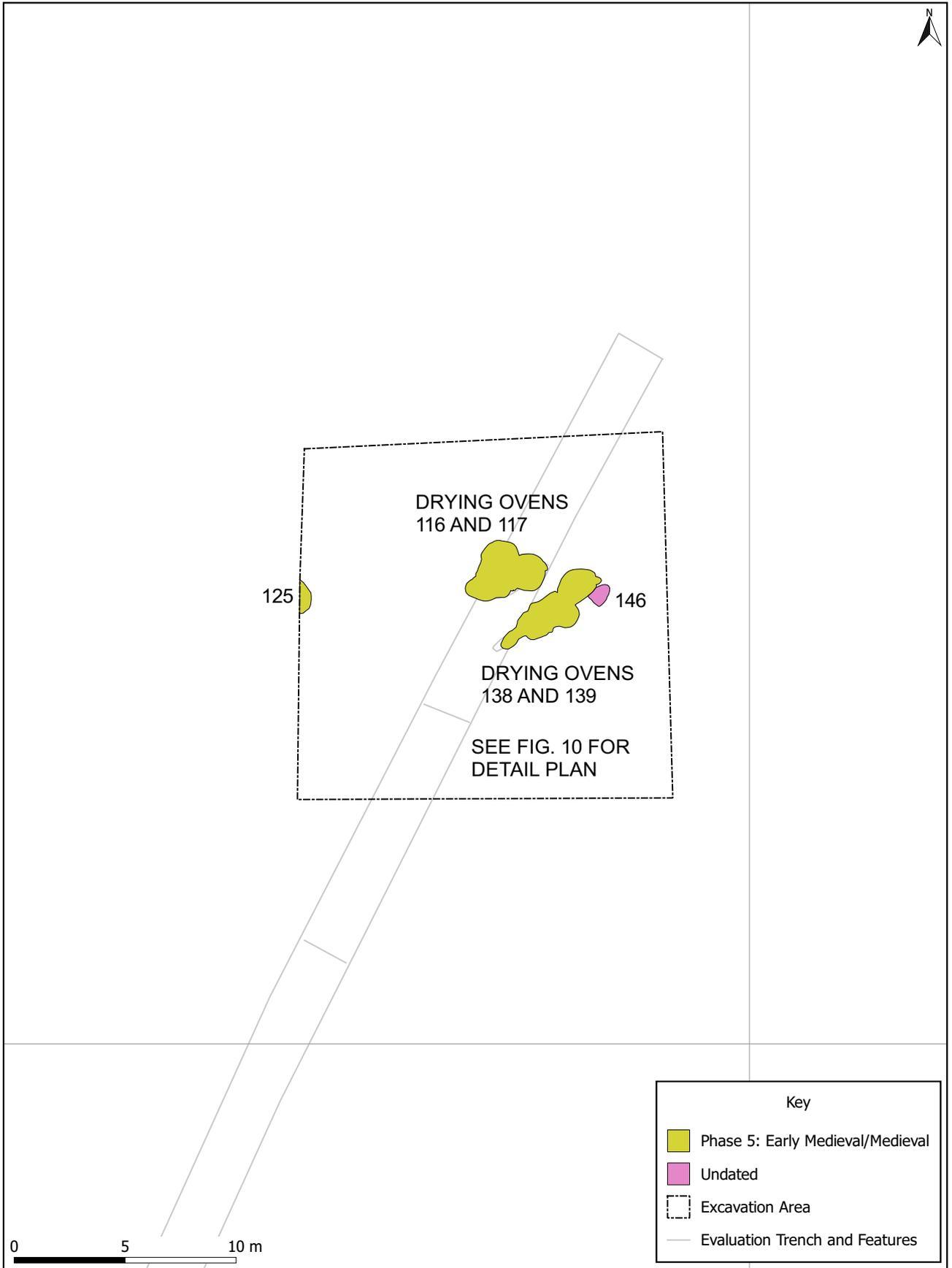


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Areas and features

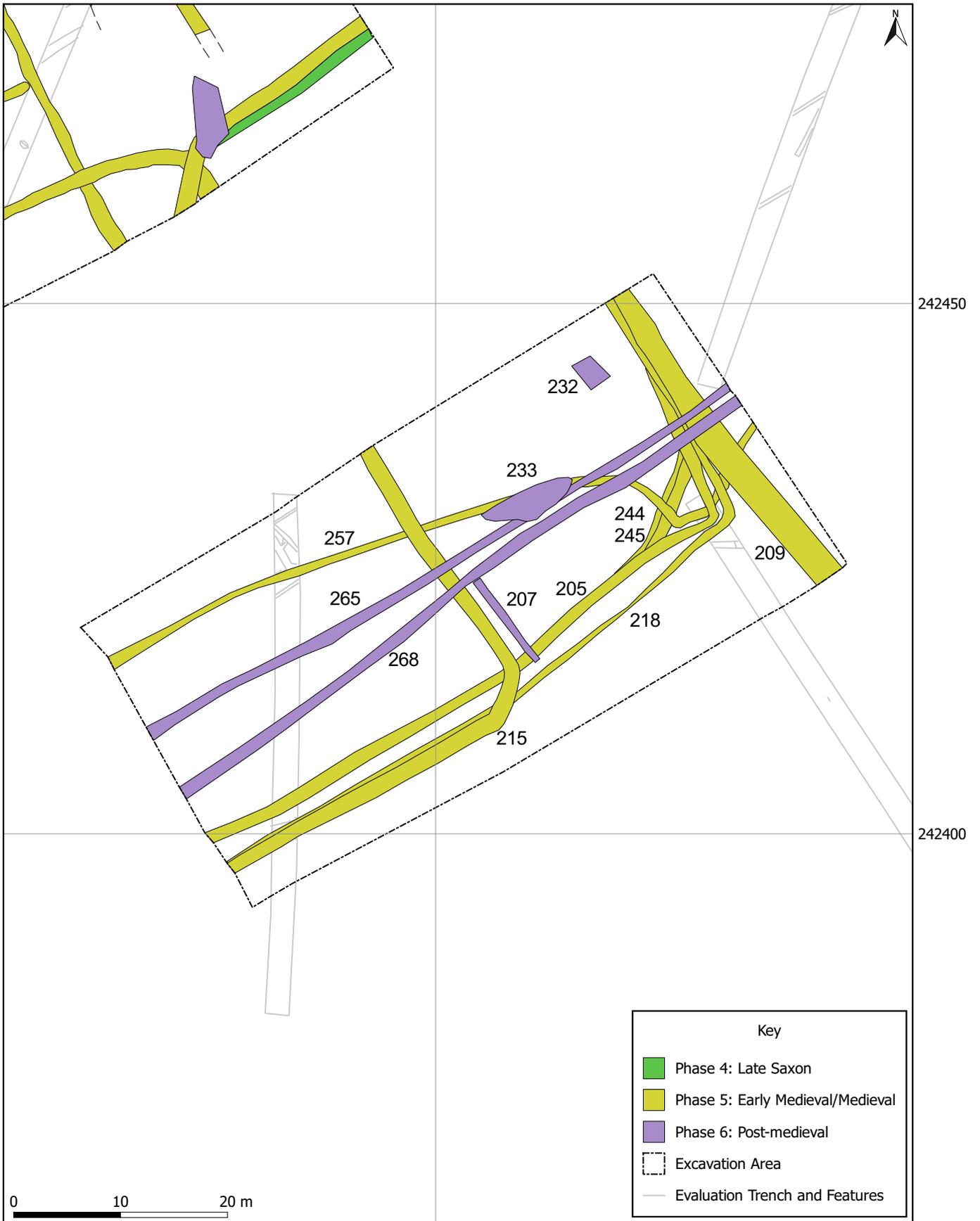
Figure 2



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Area 1

Figure 3



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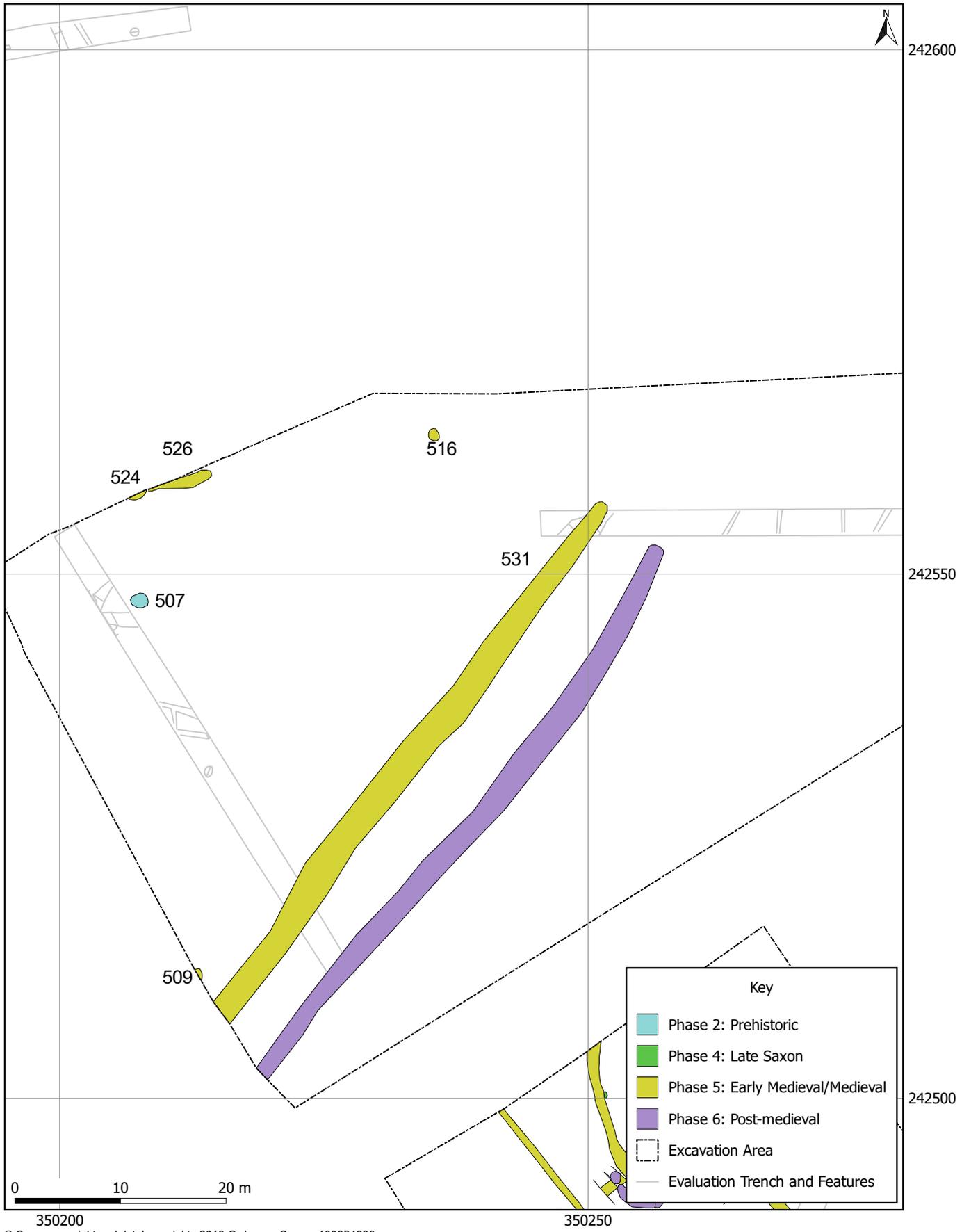
Area 2

Figure 4



Area 3

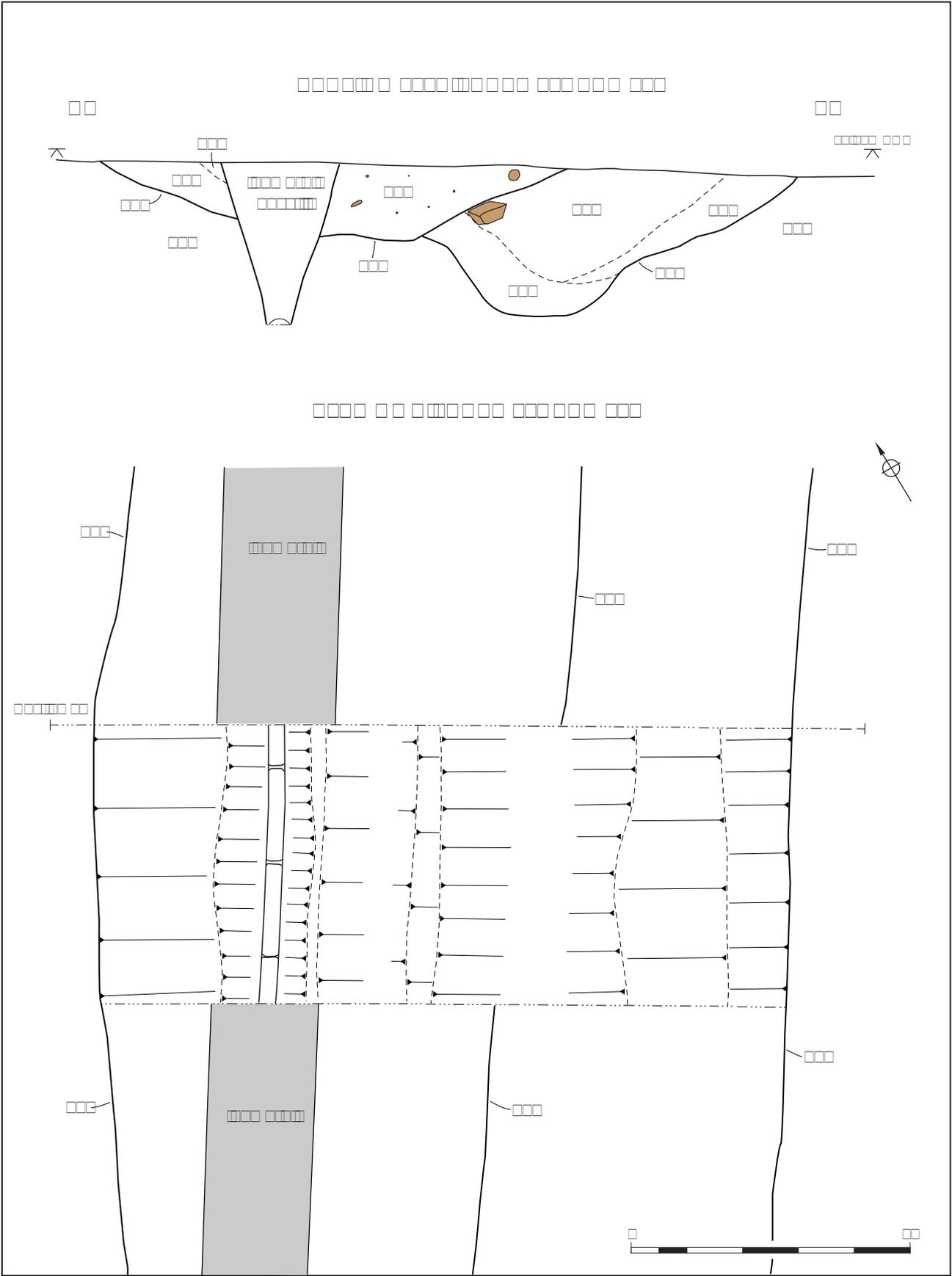
Figure 5



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Area 4

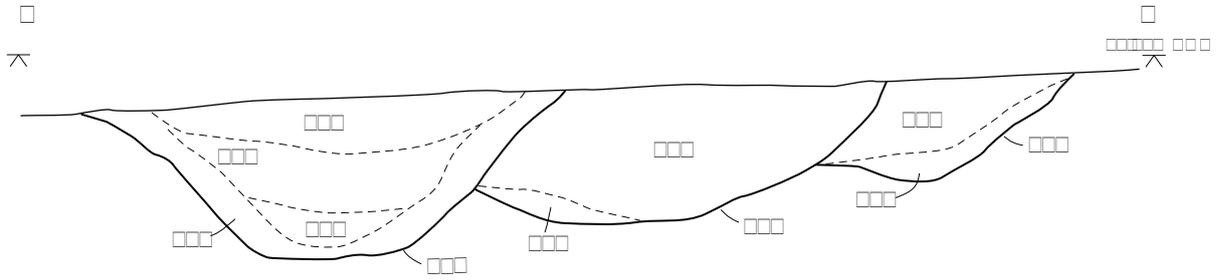
Figure 6



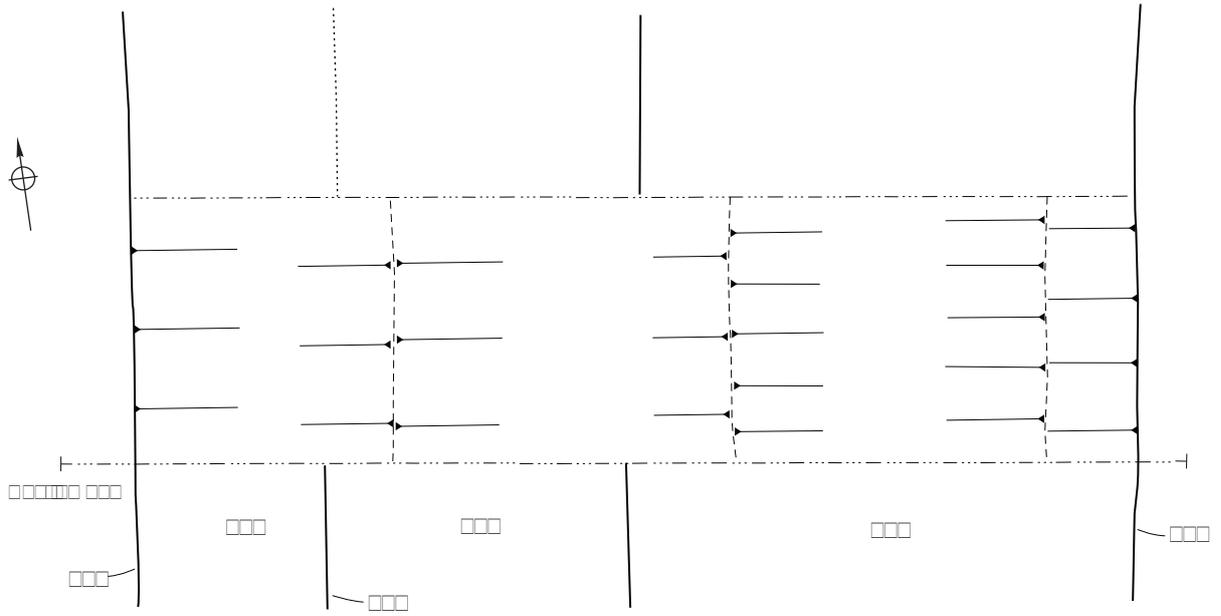
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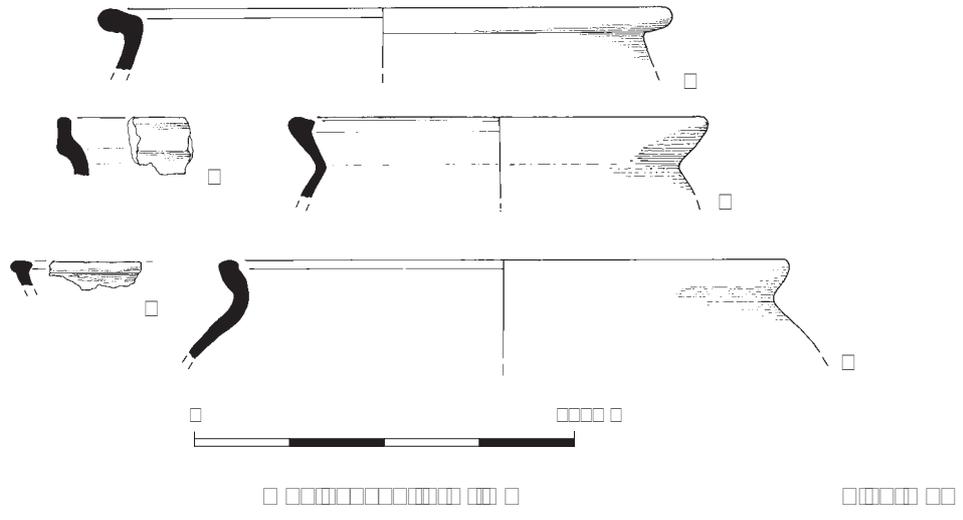


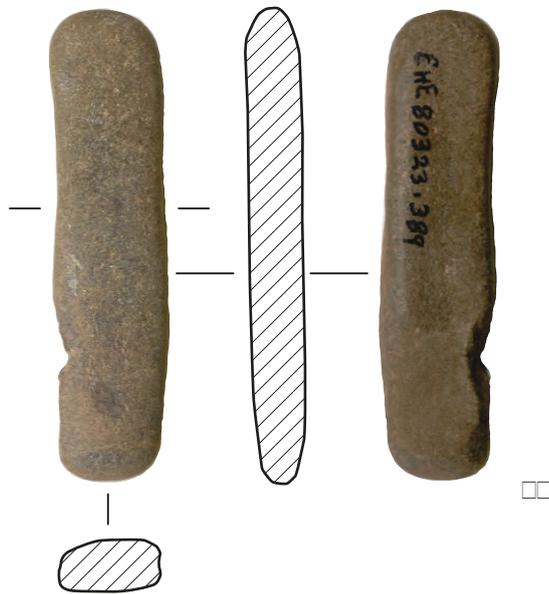
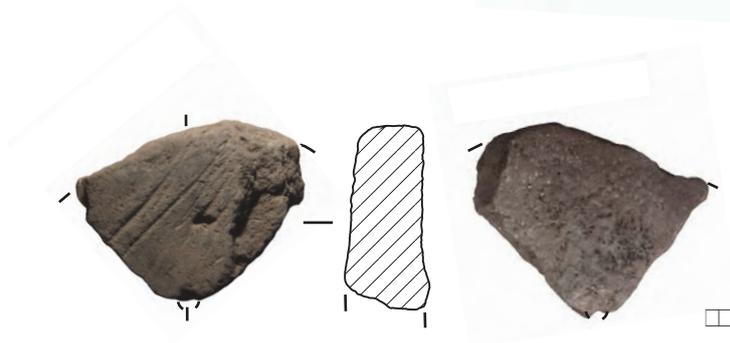
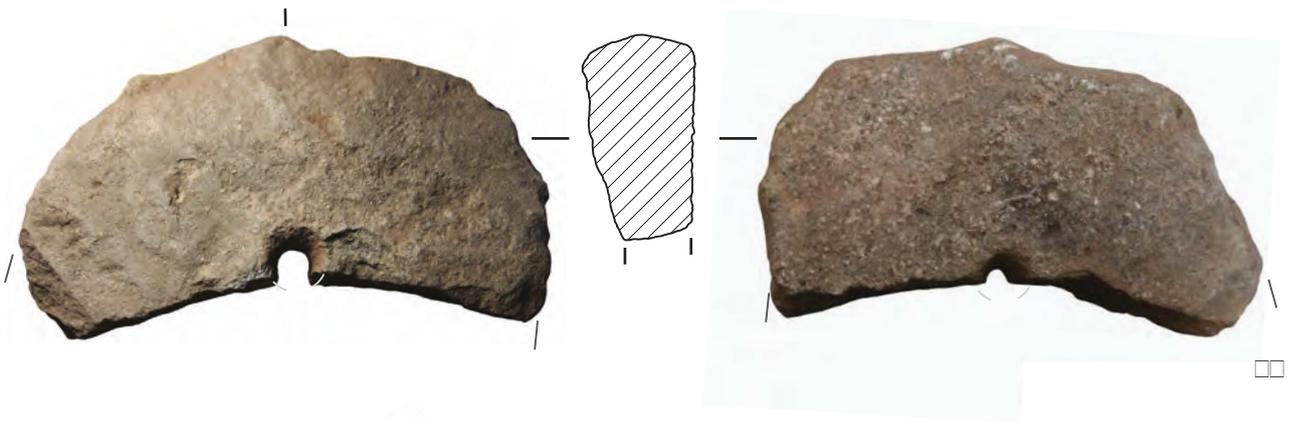
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Plates



Plate 1: Prehistoric pit [507] in Area 4, facing south-west (1m scale)



Plate 2: Ditch [343] cutting pit [345] with loomweight visible in section (1m scale)



Plate 3: Pit [345] including Saxon loomweights (0.5m scale)



Plate 4: Close up of stacked loomweights in situ (0.5m scale)



Plate 5: Drying ovens 116 (left) and 117 (right) fully excavated (2x1m scales)



Plate 6: General view of the corn dryers being recorded



Plate 7: Drying ovens 139 (foreground) and 138 (2x1m scales)



Plate 8: Rubble surface (348), part of group 374 (1m scales)



Plate 9: Section through rubble surface (348), part of group 374 (1m scales)



Plate 10: Field boundary ditch re-cuts in Area 4 (1m scales)

Appendix 1: technical information

The archive (site code: EHE80323)

The archive consists of:

328	Context records AS1
6	Field progress reports AS2
7	Photographic records AS3
511	Digital photographs
2	Drawing number catalogues AS4
120	Scale drawings
5	Context number catalogues AS5
1	Recorded finds records AS13
1	Sample number catalogues AS18
4	Trench record sheets AS41
1	Box of finds
1	CD-Rom/DVDs
1	Copy of this report (bound hard copy)

The project archive is intended to be placed at:

Hereford City Museum and Art Gallery
Broad Street
Hereford
HR4 9RU

A copy of the report will be deposited with the Historic Environment Record (HER) and OASIS as appropriate.

Appendix 2

Beta Analytic Radiocarbon dating report



REPORT OF RADIOCARBON DATING ANALYSES

Elizabeth Pearson

Report Date: February 27, 2018

Worcestershire Archaeology

Material Received: February 15, 2018

Laboratory Number

Sample Code Number

Conventional Radiocarbon Age (BP) or
Percent Modern Carbon (pMC) & Stable Isotopes

Calendar Calibrated Results: 95.4 % Probability
High Probability Density Range Method (HPD)

Beta - 487813

P5010/344/3

1190 +/- 30 BP

IRMS δ13C: -22.8 o/oo

(89.0%) 766 - 898 cal AD (1184 - 1052 cal BP)
(3.5%) 924 - 945 cal AD (1026 - 1005 cal BP)
(2.9%) 722 - 740 cal AD (1228 - 1210 cal BP)

Submitter Material: Charred cereal grain: Hordeum vulgare

Pretreatment: (charred material) acid/alkali/acid

Analyzed Material: Charred material

Analysis Service: AMS-Standard delivery

Percent Modern Carbon: 86.23 +/- 0.32 pMC

Fraction Modern Carbon: 0.8623 +/- 0.0032

D14C: -137.69 +/- 3.22 o/oo

Δ14C: -144.65 +/- 3.22 o/oo(1950:2017)

Measured Radiocarbon Age: (without d13C correction): 1150 +/- 30 BP

Calibration: BetaCal3.21: HPD method: INTCAL13

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.



REPORT OF RADIOCARBON DATING ANALYSES

Elizabeth Pearson

Report Date: February 27, 2018

Worcestershire Archaeology

Material Received: February 15, 2018

Laboratory Number

Sample Code Number

Conventional Radiocarbon Age (BP) or
Percent Modern Carbon (pMC) & Stable Isotopes

Calendar Calibrated Results: 95.4 % Probability
High Probability Density Range Method (HPD)

Beta - 487814

P5010/115/7

920 +/- 30 BP

IRMS δ13C: -22.9 o/oo

(95.4%) 1028 - 1184 cal AD (922 - 766 cal BP)

Submitter Material: Charred cereal grain: Triticum sp free-threshing

Pretreatment: (charred material) acid/alkali/acid

Analyzed Material: Charred material

Analysis Service: AMS-Standard delivery

Percent Modern Carbon: 89.18 +/- 0.33 pMC

Fraction Modern Carbon: 0.8918 +/- 0.0033

D14C: -108.21 +/- 3.33 o/oo

Δ14C: -115.41 +/- 3.33 o/oo(1950:2017)

Measured Radiocarbon Age: (without d13C correction): 880 +/- 30 BP

Calibration: BetaCal3.21: HPD method: INTCAL13

Results are ISO/IEC-17025:2005 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: $\delta^{13}\text{C} = -22.8$ o/oo)

Laboratory number **Beta-487813**

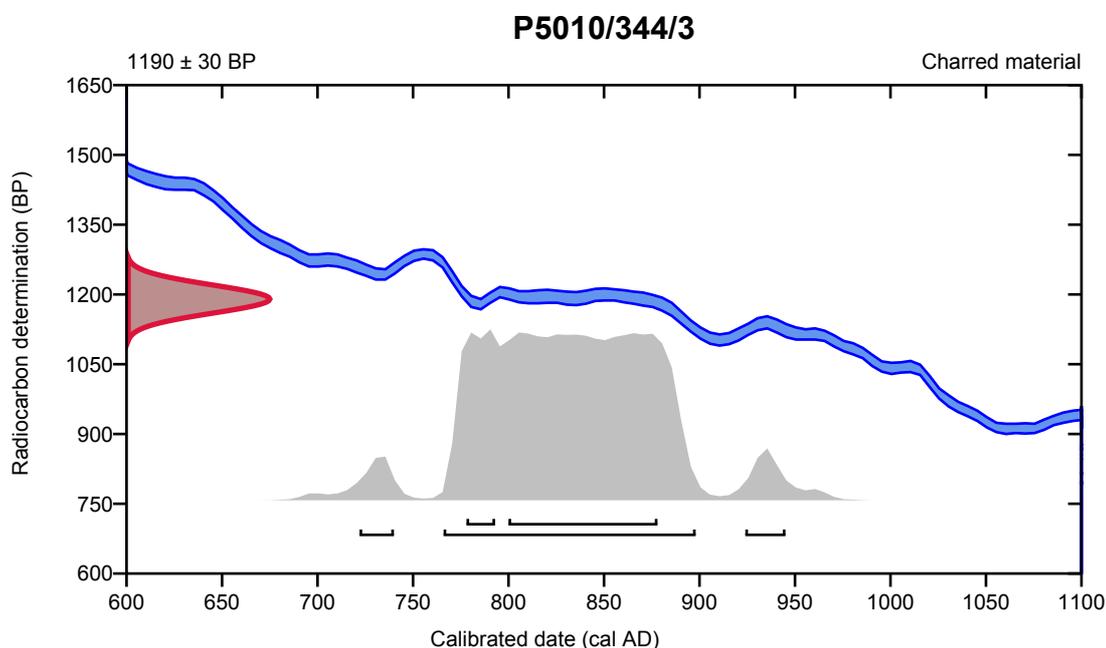
Conventional radiocarbon age **1190 \pm 30 BP**

95.4% probability

(89%)	766 - 898 cal AD	(1184 - 1052 cal BP)
(3.5%)	924 - 945 cal AD	(1026 - 1005 cal BP)
(2.9%)	722 - 740 cal AD	(1228 - 1210 cal BP)

68.2% probability

(57.2%)	800 - 878 cal AD	(1150 - 1072 cal BP)
(11%)	778 - 793 cal AD	(1172 - 1157 cal BP)



Database used
INTCAL13

References

References to Probability Method

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

References to Database INTCAL13

Reimer, et.al., 2013, *Radiocarbon*55(4).

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: $\delta^{13}\text{C} = -22.9$ o/oo)

Laboratory number **Beta-487814**

Conventional radiocarbon age **920 \pm 30 BP**

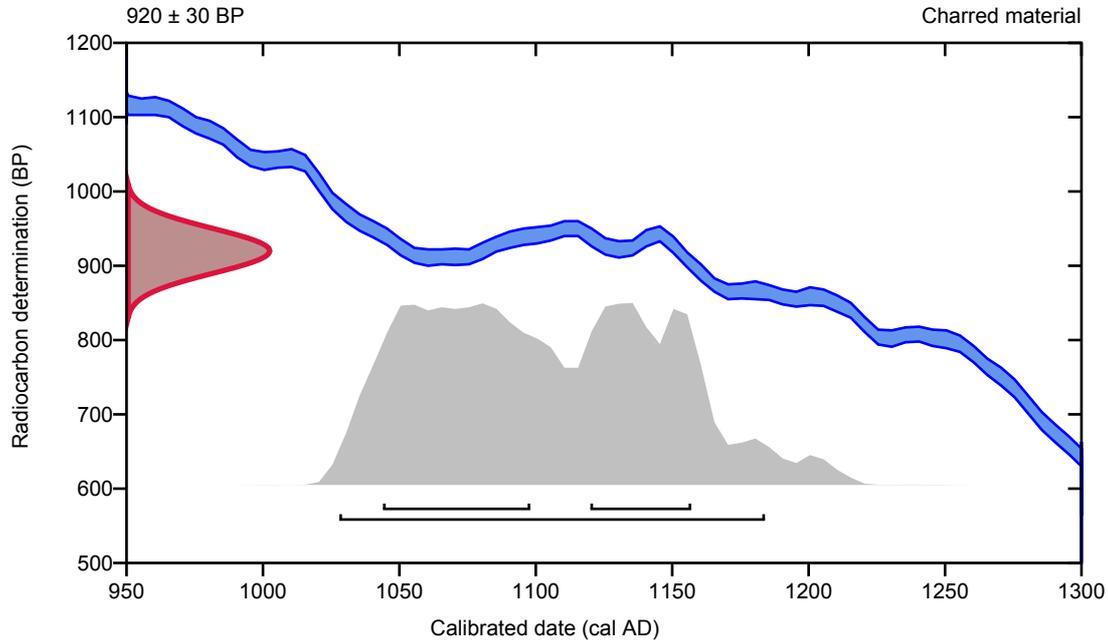
95.4% probability

(95.4%) 1028 - 1184 cal AD (922 - 766 cal BP)

68.2% probability

(41.9%) 1044 - 1098 cal AD (906 - 852 cal BP)
(26.3%) 1120 - 1157 cal AD (830 - 793 cal BP)

P5010/115/7



Database used
INTCAL13

References

References to Probability Method

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

References to Database INTCAL13

Reimer, et.al., 2013, *Radiocarbon*55(4).