ARCHAEOLOGICAL EXCAVATION AT LAND EAST OF BROCKHILL LANE, REDDITCH, WORCESTERSHIRE

Andrew Mann

With contributions by Alan Clapham, Nicholas Daffern, Laura Griffin, Tania Kausmally, Ruth Saffney and Gaynor Western

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3rd October 2012

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Project 3805
Report 1934
WSM 46074

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Part 1 Project summary

An excavation was undertaken under the direction of CgMs Consulting on behalf of Persimmon Homes at land east of Brockhill Lane, Redditch, Worcetsershire (NGR SP 0335 6849); HER ref WSM 46074). A Late Iron Age curvilinear enclosure was excavated which aligned approximately east to west with an entrance aligned to the south east. The enclosure was 59m long and was a maximum of 40m wide and covered an area of 0.18 hectares. The entrance was formed by two opposing butt end termini that were 6m apart. Only one very small internal feature, a pit, was identified. No internal structures survived and it is believed these were truncated during a period of landscaping at the site.

The original 'V' shaped ditch circuit was between 1.4-3.6m wide and between 0.7-1.6m deep and appears to have been purposefully backfilled. A radiocarbon date on charred bone within the primary fill was dated to 181 Cal BC-18 Cal AD. A later smaller 'U' shaped recut measured between 1,-2.6m wide and between 0.4-1.1m deep. The recut contained up to four different fills, which were more humic and contained greater amounts of cultural material, including pottery, worked stone, charcoal, fired cracked. A very rare Iron Age cremation, the first to be found in Worcestershire, was found in the upper fill of the recut ditch. The cremation debris contained the partial remains of a sub-adult thought to be under 16 years old at the age of death. The human remains also appear to have been mixed with the cremated remains of a small manmmal. However a radiocarbon date of 382-203 Cal BC recovered from a fragment of human bone suggests that the cremation was redeposited.

The enclosure was constructed during a period through the Middle to Late Iron Age when the numbers of settlements and enclosures increase dramatically regionally. In Worcestershire numerous small enclosed Middle and Late Iron Age settlements have been found although the curvilinear nature of the enclosure at Brockhill is thought to be the rarest of all the enclosure types regionally. The south easterly alignment of the enclosure entrance is also very common and appears to be intentional.

The pottery assemblage contained no Roman finds, suggesting it had been abandoned prior to the Roman conquest. The material assemblage recovered at the site contained Iron Age pottery of both Worcestershire and Warwickshire fabric types, as well as both Droitwich and Cheshire briquetage remains. While the stone beehive and saddle quern remains recovered were constructed of Millstone Grit (Derbyshire) and biotite granite (Church Streeton). Both illustrate the broad trading networks that the inhabitants were engaged with at brockhill while occupied.

Part 2 Detailed report

1. Planning background

An archaeological excavation was undertaken at land east of Brockhill Lane (NGR SP 0335 6849), Redditch, Worcestershire (Fig 1), under the direction of CgMs Consulting, on behalf of Persimmon Homes. The latter intend to construct a mixed use development of 171 dwellings, public open space and 4,738 square metres of Class B1 business space within the development area, for which a planning application has been submitted (R/11/0177).

The proposed development site was considered to include a heritage asset with archaeological interest, the significance of which may be affected by the application (WSM46351) namely an Iron Age enclosure identified during a previous evaluation (Miller 2011).

The project conforms to the *Standard and guidance for archaeological excavation* (IfA 2008) and *Standards and guidelines for archaeological projects in Worcestershire* (HEAS 2010)

The project also conforms to a brief prepared by HEAS (HEAS 2011a) and for which a project proposal (including detailed specification) was produced (HEAS 2011b).

2. Aims

The aims of the excavation were to excavate and record the Iron Age enclosure, identified during the evaluation, to establish its form, function and place it in its regional and national context.

3. Methods

3.1 Documentary search

Prior to fieldwork commencing a desk-based assessment was undertaken by CgMs Consulting (CgMs 2011). This contained the results of an HER search of the site and surrounding area and was subsequently consulted prior to the excavation.

3.2 Fieldwork methodology

3.2.1 Fieldwork strategy

A detailed specification was prepared by the Service (HEAS 2011b). Initially it was intended to excavate up to 50% of the enclosure ditch identified during the evaluation. Given the very wet and cold site conditions (Plate 1) and the paucity of finds recovered during the first half of the excavation this was reduced after discussions with the consultant (Myk Flitcroft) and with the Worcestershire County Council Planning Archaeologist (Mike Glyde). Subsequently it was decided to hand excavate approximately 20% of the enclosure and then to extend the excavated slots by 1-2m using a JCB and ditching bucket to recover more finds. In total 18% of the enclosure was hand excavated and a further 26m (16%) was removed using a JCB giving a total of 34%.

Fieldwork was undertaken between 9/1/12 and 17/2/12. The site reference number and site code is WSM 46074.

Deposits considered not to be significant comprising topsoil, subsoil and natural deposits thought to have been deposited during the construction of a balancing pond to the south of

the enclosure were removed using a 360º tracked excavator, employing a toothless bucket and under archaeological supervision. 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 Service practice (Worcestershire Archaeology 2012). On completion of excavation, excavated slots were reinstated by replacing the excavated material.

3.2.2 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.

3.3 Artefact methodology, by Laura Griffin

3.3.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (Worcestershire Archaeology 2012; Appendix 2).

3.3.2 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. The date was used for determining the broad date of phases defined for the site. All information was recorded on *pro forma* sheets.

Artefacts from environmental samples were examined, but none were worthy of comment, and so they not included below, nor included in the quantification table.

Pottery fabrics are referenced to the fabric reference series maintained by the Service (Hurst 1994).

3.4 Environmental archaeology methodology, by Alan Clapham

3.4.1 Sampling policy

The environmental sampling strategy conformed to standard Service practice (Worcestershire Archaeology 2012; Appendix 4). Samples were taken by the excavator from deposits considered to be of higher potential for the recovery of environmental remains. A total of 57 samples were taken from the site.

3.4.2 Method of analysis

The samples were processed by flotation using a Siraf tank. The flots were 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 scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammerscale. The flots were analysed using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by the Service, and a seed identification manual (Cappers *et al* 2006). Nomenclature for the plant remains follows Stace (2010).

The cell structure of all the non-oak charcoal samples was examined in three planes under a high power microscope and identifications were carried out using reference texts (Brazier and

Franklin 1961 and Hather 2000) and reference slides housed at the Worcestershire Historic Environment and Archaeology Service.

3.5 Osteological analysis methodology, by Gaynor Western

3.5.1 Sampling policy

One deposit of cremated bone was excavated and sampled individually from the upper fill (184) of a recut ditch [186] thought to be of Late Iron Age date.

The osteological analysis aims to provide a detailed description of the nature of the cremated bone present, to quantify and differentiate, where possible, between animal and human cremated bone, to assess the age, sex and presence of pathological changes and to identify any evidence of pyre technology used during the cremation process.

3.5.2 Methods of analysis

The cremated material was analysed according to the standards laid out in the guidelines recommended by the British Association of Biological Anthropologists and Osteologists in conjunction with the IFA (Guidelines to the Standards for Recording Human Remains, Brickley and McKinley (eds) 2004) as well as by English Heritage (Human Bones from Archaeological Sites: Guidelines for producing assessment documents and analytical reports, Centre for Archaeology Guidelines, 2002).

- The material was analysed macroscopically and where necessary with the aid of a magnifying glass for identification purposes.
- The material was sorted into three fractions of 10mm, 5mm and 2mm using UKAS accredited calibrated sieves.
- The material was weighed using calibrated digital scales to an accuracy of 0.1g.
- The material was analysed without prior knowledge of associated artefacts
- The material was recorded on an Access database, a copy of which is contained in the archive.
-

Osteological analysis was carried out to ascertain:

- The type of deposit
- Total weight of the bone
- Identification and quantification of human bone
- Demographic data
- Pathology data
- Degree of fragmentation
- Efficiency of the cremation
- Presence and type of pyre goods
- Presence and type of pyre debris

3.6 Faunal remains, by Tania Kausmally

3.6.1 Sampling policy

One deposit of cremated bone was excavated and sampled individually from the upper fill (184) of a recut ditch [186]. This appeared to be a mix of human and animal bone of Late Iron Age date.

The osteological analysis aims undertake the following;

- Establish quantity of remains
- Identification of elements present
- Identify remains to species
- Identify minimum number of individuals (MNI)
- Identify age and sex of the animal
- Identify extent of burning
- Evidence of butchery or animal disturbance

3.6.2 **Methods**

The analysis was carried out macroscopically and the identification recorded onto an Excel spreadsheet forming part of this report. Each fragment was weighed using calibrated digital scales to an accuracy of 0.1g. The colour was recorded according to Holden *et al.* 1995a and 1995b (see Western 2012, 11) and maximum measurement was recorded for each fragment. The remains were identified using the reference collection at the Institute of Archaeology, University College London.

3.7 Radiocarbon dating methodology, by Nicholas Daffern

Two sample were submitted for Accelerator Mass Spectrometry (AMS) dating to the Scottish Universities Environmental Research Centre (SUERC) radiocarbon dating laboratory.

The first sample (SUERC-39007 (GU26602)) was a fragment of unidentifiable burnt bone recovered by hand during excavation of the primary fill (131) of terminus cut [134] of the enclosure ditch. The second sample (SUERC-41609 (GU28320)), was a fragment of bone from a cremation in the upper fill (184) of the recut ditch [186].

No sources of contamination or non-contemporaneous carbon were evident during the fieldwork or during the sub-sampling.

All calibrated dates are identifiable by the prefix 'Cal'. Where calibrated date ranges are cited in the text, these are for 95% confidence.

4. Topographical and archaeological context

The topographical and archaeological context of the development site is considered in the desk-based assessment by CgMs Consulting (2011). In summary, the development site lies to the east of the Brockhill estate, between Lowan's Hill Farm and the Red Ditch from which Redditch is named (NGR SP 0328 6847). The land slopes south-eastwards towards the Red Ditch, falling some 24m over 300m.The underlying geology has been mapped as Triassic Mercia Mudstone (BGS 1989). The soils are mapped as reddish fine loam over clayey soils of the Whimple 3 Association (SSEW 1983). At the time of the fieldwork the development site comprised three fields of permanent pasture and, in the south-west, a smaller parcel containing a balancing pond.

No designated heritage assets are recorded within the development site although the surrounding area contains eight undesignated heritage assets, including traces of medieval or post-medieval cultivation to the east and west, and the 18th/19th century buildings of Lowan's Hill Farm to the north. Along with historical and cartographic evidence, these features implied that the development site has been farmland for centuries. A few finds of prehistoric and Roman material from the wider area suggested a limited potential for remains of settlement or other activity in these periods.

The entire proposed development site was subject to archaeological evaluation in April 2011 (Miller 2011). Forty trenches were excavated representing a 3.57% sample of the site.

The evaluation identified a large ditch in the south-west of the site crossing the trenches three times. The upper fills of the ditch contained Iron Age pottery, fire-cracked stones, and charcoal. This was interpreted as the defensive ditch of an Iron Age enclosure.

Some undated features were also identified in the vicinity, including a ditch, two gullies, a pit, seven postholes and some large, modern rubbish pits but overall in the remainder of the development site no features of archaeological significance were identified.

5. Results

5.1 Structural analysis

The trench and features recorded are shown in Figs 2-5 and plates 2-7.

5.1.1 Phase 1: Natural deposits

Across site, the Mercia Mudstone, or marl, was overlain by up to 0.5m of unmapped boulder clay derived from the marl and mid Pleistocene drift deposits of sand and gravel. This deposit varied in the proportion of marl to drift, but mostly it consisted of compact mid-reddish brown silty clays containing approximately 20% light yellowish brown sandy silts and gravels.

5.1.2 Phase 2: Bronze Age

Only a single small, abraded sherd of Early Bronze Age pottery was recovered from the site. This was a residual sherd within the Iron Age enclosure, cut [913], fill (914) excavated during the evaluation.

5.1.3 Phase 3: Late Iron Age

The main period represented is of Late Iron Age date and consists of a curvilinear enclosure formed by a large, recut ditch and a possible bank (Plate 2). The enclosure was kidney shaped and aligned approximately north east to south west with an entrance on the southern side, aligned to the south east (Fig 2). The enclosure was 59.2m long and was a maximum of 39.8m wide and covered an area of 0.18 hectares. The entrance was formed by two opposing butt end termini [134/133] and [138/136] which were 6.m apart (Fig 3-4, Plates 2-3). Central to but approximately 0.5m to the south of the entrance was an irregular cut feature, 4.6m long, 2.3m wide and 0.2m deep, context [200] (Plate 4). Due to its irregular sides and base this feature was interpreted as a tree throw, although as it contained some fire cracked stone it may have been contemporary with the main enclosure.

The original ditch cut was large and measured between 1.4-3.6m wide and between 0.7-1.6m deep. The ditch was noticeably larger at the entrance, where both termini were 1.6m deep and between 2.7and 2.8m wide. The majority of the sections were ‘V’ shaped in profile, although in sections [134], [126] and [160] towards the base the ditch sides became vertical and the base flattened to form a profile similar to a palisade trench (Fig 5, Plates 5-6). As no post pipes were identified and as the base of those slots were not compacted this interpretation could not be confirmed.

The original enclosure ditch contained up to three fills, although most were very uniform and similar to the natural marl. These firm and cohesive mid reddish/pinkish brown silty clays were also very sterile and only contained very occasional small charcoal flecks and fire cracked stone. In places the base of the primary fill and the base of the ditch appeared gleyed.

A single, small and unidentifiable charred bone fragment from the primary fill of terminus ditch [134], fill (131) was selected for radiocarbon dating. The sterile nature of these fills suggests that the enclosure infilled rapidly after construction or was purposefully backfilled. It is probable that the original upcast material had remained on site, possibly as an associated bank. This could not be confirmed however as where visible, the ditch fills appeared to have entered the ditch both from an internal and external direction, although more commonly from outside the enclosure.

The original ditch appeared to have been completely infilled prior to its recutting. However as the recut ran through the centre of the original enclosure ditch, the latter must have been slightly visible during its reinstatement. The recut ditch was less imposing than the original and had a shallower, gradual sloping 'U' shaped profile. It was also smaller than the original and measured between 1.-2.6m wide and between 0.4-1.1m deep. At the entrance however, like the original ditch, the recut was larger than the majority of the circuit. Here it completely truncated the original ditch, forming a wider, more imposing feature (Figs 2-4). The recut contained up to four different fills, which were more humic and contained greater amounts of cultural material, including pottery, worked stone, charcoal and fired cracked stone. As with the original ditch the lower fills appeared slightly gleyed in places. In the upper fill of cut [186], fill (184), there was also a spread of cremated bone that did not appear to be within a vessel or a cut. The material was subject to specialist analysis (see below).

Only one internal feature, pit [124] was identified. This heavily truncated, oval pit base contained a charcoal rich fill. It remains undated and therefore may not be contemporary with the enclosure.

5.1.4 Phase 4: Modern

In places it was evident that there had been some historic landscaping of the site, as a layer of re-deposited red clay and topsoil mix extended across excavation area, context (102). This is thought to represent a period of terracing/levelling at the site while a settling pond was constructed to the south. This layer lay below the modern sub and top soil. As a result of this landscaping the enclosure appears to have been truncated, although it was apparent that the ditch was larger and better preserved to the south and eastern end of the site.

5.1.5 Phase 5: Undated

As well as pit [124] and tree throw [200] there were also five other undated pit bases. These lay outside of the enclosure to the south and south east (Fig 2, Plate 7). They had been heavily trunated were sub-circular in plan with undulating concave bases. They contained a light blueish grey silty clay fills that was sterile except for occasional charcoal flecks.

5.2 Artefact analysis, by Laura Griffin

All hand-retrieved finds were examined and identified, quantified and dated to period. Where possible, a *terminus post quem* was produced for each stratified context, which was used for determining the broad date of structural phases. Records from the evaluation and the excavation were entered into a Microsoft Access 2000 database. Artefacts from environmental samples were examined, but none were worthy of comment and they have not been included in the overall quantification.

The total assemblage retrieved from the excavated area consisted of 300 finds weighing 3775g, with pottery forming the largest proportion amounting to 180 sherds. The great majority of material was of Middle and Late Iron Age date, the only exceptions being a highly abraded sherd thought to be of Bronze Age date and a 19th century coin (see Table 1).

Material	Type	Total	Weight(g)
Pottery	Bronze Age	1	6

Pottery	Iron Age	41	236
Pottery	Late Iron Age	23	798
Pottery	Middle Iron Age	115	956
Pottery	Briquetage	72	777
Fired clay	undiagnostic	31	90
Fired clay	furnace lining	9	56
Fired clay	mould	2	22
Copper alloy	coin	1	8
Copper alloy	fragment	1	1
Stone	heat shattered	1	49
Stone	quern	3	776

Table 1: Quantification of the artefactual assemblage

5.2.1 The pottery

Sherds were examined under x20 magnification and recorded by fabric type and form. Where possible, fabrics were referenced to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992; http://www.worcestershireceramics.org/). Those which could not be referenced to this series were classified using descriptive terms as defined by the Prehistoric Pottery Research Group in 2010. Diagnostic sherds were classified by form type on the basis of shape, size, rim type and decoration and where possible, categorised and dated using the appropriate published typology for the specific fabric type.

A total of 180 sherds weighing 1996g were retrieved from the site, and the assemblage was dominated by Iron Age pottery with the only exception being a single Bronze Age sherd. The level of preservation was variable with some pottery being extremely friable but other finds displaying only light abrasion. The results from analysis of this assemblage have been compared to assemblages from other local and regional sites in an attempt to identify any common themes. A selection of forms is illustrated in Fig 6.

Bronze Age

The earliest pottery from the site consisted of a single, highly abraded fragment of a reduced, poorly fired fabric which contained large lumps of grog and occasion sub-angular quartz (context 903). Although the sherd is undiagnostic and too small to firmly identify as being of a specific fabric type, the presence of grog and quartz inclusions would strongly indicate it to be of Early Bronze Age date (Robin Jackson, pers comm).

Iron Age

The remaining 179 sherds could be firmly identified as being of Iron Age date, with examples of fabrics and forms indicating settlement on the site from the Middle Iron Age onwards. The latest sherd within the group was identified as dating to the very end of the Late Iron Age/pre-conquest period.

5.2.2 Pottery Fabrics

Fabrics within the assemblage fell into two distinct categories – those of Malvernian production, and those displaying greater affinity with Warwickshire types (being predominantly quartz tempered). This is not surprising when considering the location of the site close to the distribution of quartz-tempered fabrics typical of the Warwickshire area.

Sherds of handmade Malvernian ware formed the greater part of the assemblage amounting to 107 sherds or 60%. The remaining fabrics were all essentially quartz-tempered with any variation largely being in the form of small amounts of additional temper. Such fabrics

appear to be a common characteristic of Iron Age assemblages from Warwickshire occurring in assemblages such as those from Park Farm, Barford (Cracknell and Hingley 1994), Lodge Farm, Long Lawford, Rugby (Havard *et al* 2007) and Meriden Quarry, Solihull (Stevens 2005). The only notable exception is the calcined flint tempered ware which is not thought to be of local production. These fabrics were classified as below (descriptive terms as defined by the Prehistoric Pottery Research Group 2010):

QU1 Medium quartz tempered
QU2 Coarse quartz tempered
QU3 Medium quartz with occasional quartzite and clay pellets
QU4 Medium quartz with occasional organic
SH1 Fine shell and quartz tempered
FT1 Calcined flint tempered

5.2.3 Pottery Forms

All diagnostic sherds came from jar forms which could be cross-referenced with types published from other local assemblages of similar date, such as Beckford (J Wills, in prep) and Park Farm, Barford (*op cit*). A number of the diagnostic sherds in the Malvernian ware fabric were decorated in a style characteristic of the Middle Iron Age period, with either a stamped or tooled decorative band just below the rim (Fig. 6, nos. 4 and 5). Those of quartz-based fabrics were all undecorated. Two forms were identified as being of definite Late Iron Age date, the most striking being that of a Belgic-style jar (fabric QU4; context 903; Fig. 6, no.6), which was handmade but appeared wheel-finished due to its fine burnishing and well-formed cordon. This form was reminiscent of other Warwickshire examples (cf Cracknell and Hingley 1994, fig. 8, no.33; and from Tiddington (Booth, WMRF seminar 3)).

Due to the small size of the assemblage and fragmentary nature of many of the sherds, it was not possible to record the pottery by 'Estimated Vessel Equivalent (EVE). However, all diagnostic sherds were illustrated and can be seen in Figure 6 (see catalogue below).

5.2.4 Discussion of the Iron Age pottery

Vessel sizes and evidence of use

Identifiable forms within the assemblage displayed a strong bias towards jars, with the only possible exception to this being the latest sherd in the group which was either a wide-mouthed jar or bowl. This would appear to be characteristic of assemblages from this region, with similar typological patterns of consumption also being noted in the assemblages from Clifton Quarry (Griffin 2011), Blackstone (Morris 2010), and Beckford (Wills, in prep).

The size of vessels was generally consistent, ranging from 130–160mm in diameter, with the exception of one very large example which measured 400mm across. Size of vessel is necessarily closely related to function, and so it has been suggested that small pots with a diameter of 100–190mm were for individual use, whilst those considered to be large or very large of 300–400mm upwards were used for food and drink preparation, and so for serving large groups of people and storage (Morris 2010).

There was very little direct evidence of use, for instance carbonised deposits, though a small number of sherds displayed external sooting and/or blackening presumably from being used for cooking over a fire.

5.2.5 Briquetage

A fairly sizable and significant assemblage of briquetage amounting to 72 sherds was retrieved from the site. The group fell into four fabric types (see Table 2 below) – sandy

(fabric 1), organic-tempered (fabric 2), marl-tempered (Beckford fabric BD 123) and stony 'VCP' (fabric 140). The latter of these fabrics makes the group of particular interest, being related to the Cheshire rather than Droitwich salt industry.

Although certainly not unique for this area, the presence of both Droitwich and Cheshire types is of interest. The location of the site at Brockhill is thought to be on the northernmost edge of salt supply from Droitwich, with Madeley Heath (7 miles away from Brockhill) being the most north-easterly find-spot to date (Hurst and Pearson 1996). In contrast, stony 'VCP' has a far more widespread distribution being found along the Welsh border, throughout the Midlands, and as far east as Fisherwick, Staffordshire (Morris 1985, figs 5–6 and 8–10). Calculation of a 'salt index' according to the established method (Morris 1983) for both types shows that despite the location of Brockhill being on the edge of the supply network, Droitwich briquetage is still the most common type on this site at 0.24 in comparison to 0.04 for that of Cheshire production.

As is often the case with briquetage vessels, very few diagnostic sherds were present within the group. Due to its method of manufacture this material frequently breaks along the coil junctions and it is also thought that vessels were deliberately smashed in order to access the salt they contained. This breakage results in the majority of briquetage found being fragmentary and the distinguishing of rim sherds from broken coil joins is particularly problematic. Only a single rim (stony VCP; context 130) was identified (see Fig 6, no.7).

Fabric code	Fabric name	Total	Weight (g)
1	Sandy briquetage	1	22
2	Organic briquetage	22	242
BD123	Marl-tempered briquetage	34	391
140	Stony 'VCP'	15	122

Table 2: Quantification of briquetage by fabric type

5.2.6 Briquetage Dating

The marl-tempered briquetage fabric has sometimes been considered to be of earliest of the Droitwich briquetage types (D Hurst, pers comm). Unfortunately, due to the shallow stratigraphy across the site and the paucity of datable form sherds, any relative dating of briquetage types could not be established at this site.

5.2.7 Regional significance

The geographical location of Brockhill has resulted in an interesting pottery assemblage displaying a combination of both Worcestershire and Warwickshire fabric types, as well as both Droitwich and Cheshire briquetage. Due to the unusual composition of the group, there are very few other sites with which this assemblage could be directly compared. In addition, the continuing non-publication of the major type-sites for Iron Age pottery in both regions (Beckford, Worcs; and Wasperton, Warks) has made the accurate identification and dating of form and fabric types from Brockhill, through their comparison with other sites, particularly problematic.

5.2.8 Other ceramic material

Fired clay

A small assemblage of 32 fragments of fired clay was retrieved from the site, and this was generally highly abraded and undiagnostic, apart from one small group which included

fragments of vitrified ceramic (contexts 107, 112 and 153) and part of a ceramic mould (context 209). The latter, when taken together, would indicate some sort of metalworking on the site, and more specifically the casting of copper alloy.

5.2.9 Metalwork

Copper Alloy

Copper alloy included a tiny fragment which is likely to be associated with the metalworking mentioned above (context 122). In addition, a George III coin dated 1807 was retrieved from the topsoil (context 900).

5.2.10 Stone, by Ruth Shaffney

Excavations at Brockhill produced three querns comprising one saddle quern fragment, one rotary quern fragment and one complete rotary quern. None are dated directly but assumed to be Late Iron Age in date.

The saddle quern from conetx (184)is incomplete but is 232mm wide suggesting it was in the region of 400mm in length originally. It is highly worn but does not retain specific wear marks indicating the direction of use. It is made from a pale biotite granite, which does not appear to have been used for rotary querns but was used for small numbers of millstones from the post-medieval period onwards. A recent geochemical and petrological study of these millstones unequivocally demonstrated them to have originated in the Criffel granite around Creetown in Dumfries and Galloway (Langford 2011, 53). The granite was transported by glaciers as far south as Church Stretton along a line known as the Wolverhampton line (Langford 2011, 53 referencing Wills 1948) and deposited as boulders along the way. The site at Brockhill is approximately 40km south of this line, indicating that the saddle quern was not a local find, but was transported a considerable distance. This was probably principally down the River Severn (Roe 2011) although that route would still have necessitated a 10km or so journey across land.

The two rotary querns are both upper stones of beehive querns with a handle socket that penetrates through to the hopper. One example is complete (context 170; Fig 7) and the other is a fragment of the upper rim and hopper (context 174). Both querns are of the pierced Hunsbury form (Philips 1950) and made of a coarse-grained and quartzitic sandstone, almost certainly from the Millstone Grit. The petrology of types of Millstone Grit exploited for querns has not been researched but the source is likely to be have been in Derbyshire and therefore not locally available. The stones are not from closely dated context but are likely to be Late Iron Age or earlier in date. Rotary querns of this date are not common, although an example of slightly larger diameter was found at nearby Stonebridge Cross (Miller et al 2004, 30).

The stones for both saddle and rotary querns at Brockhill had been transported some distance to reach the site. All of the quern fragments were from the re-cut ditch suggesting that the different types of quern were used contemporaneously. The differences in materials is also of note. Saddle querns were not commonly made of granite, but at Blackstone, just to the north, a similar pattern of exploitation was found, with biotite granite used for the saddle querns and a grit stone (in that case, Old Red Sandstone) for the rotary querns (Roe 2011). Further recording of saddle querns in the region may help pin down the pattern of quern use over time.

5.2.11 Catalogue of worked stone

Saddle quern fragment. Biotite granite - very pale pink / cream with grey patches and frequent (black) biotite mica. The under surface appears to be that of the original boulder while the grinding surface is extensively worn so that it is very smooth. The direction of wear

is not apparent and it is similarly worn across the surviving surface. Measures 232mm wide x 92mm thick. SF 18. Context (184)

Complete upper beehive rotary quern Probable Millstone Grit, coarse grained quartzitic sandstone, pale grey with some mica. Steep slightly curved sides with flat top. Steep cylindrical hopper measuring 90mm diameter x 100mm deep leading into a cylindrical feed pipe measuring 30mm diameter. There is an oval shaped handle socket measuring 65mm wide x 35mm high, which fully perforates the hopper. The quern is pecked neatly all over. Measures 300mm diameter x 230mm thickness. Context (170)

Beehive rotary quern fragment. Probable Millstone Grit, coarse grained quartzitic sandstone, pale grey with some mica. Part of flat rim around hopper, survives and evidence that the cone shaped hopper is separate from the feed pipe (although the latter does not survive). Part of a large handle socket that pierces the feedpipe at the base of the hopper, 78mm from the top. The handle measures approx 47mm wide, context (174).

5.3 Catalogue of illustrated finds

Pottery (Fig 6)

Middle Iron Age

1. Jar with inturned rim, fabric QU3, context 142
2. Jar with simple upright rim, fabric QU1, context 209
3. Jar with simple everted rim, fabric QU3, context 115
4. Jar with flat-topped rim and one internal facet with a band of stamped decoration, fabric 3, context 156
5. Jar with simple upright rim and decorated with a band of linear tooling, fabric 3, context 116

Late Iron Age

6. Belgic-style jar, fabric QU4, context 903

Briquetage

7. Jar, fabric 140, context 130

Other finds (Fig 7)

Beehive quern, context (170).

5.4 Environmental analysis, by Alan Clapham

The environmental evidence recovered is summarised in Tables 3-6.

A total of 39 samples from 38 contexts were processed and analysed, see Table 3 (appendix 1). The results of the analysis are presented in Tables 4-6. Twelve samples were studied from the original ditch fills and 26 from the later ditch re-cut. A single sample from a pit was also analysed. Very little in the way of identifiable charred plant remains were recorded. Many of the samples had charcoal present but in most cases the fragments were too small to obtain a reliable identification.

5.4.1 Original ditch fills

The samples from the original ditch fills produced very little in the way of charred plant remains (Tables 4 and 5) . No cereal or weed seeds were recovered from the samples and only oak (*Quercus* sp) charcoal was identifiable from three contexts (131) cut [134], (194)

cut [197] and (213) cut [215] (Table 5). Other remains extracted from the residues include occasional burnt large mammal bone fragments from contexts (131) and (213).

5.4.2 **Re-cut ditch fills (Table 6)**

Ditch cut [111]

Four samples from this ditch slot were analysed from three fills (108, 109 and 110). Only context (109) produced any charcoal that could be identified. The taxa recorded included Maloideae (apple/pear/whitebeam/hawthorn), oak, hazel (*Corylus avellana*), field maple (*Acer campestre*) and lime (*Tila* sp).

Ditch cut [114]

Three fills from this ditch slot were analysed (107, 112 and 113). Only context (113) produced any identifiable charcoal which was of a single piece of oak. A single hazel nutshell fragment was recorded from (112).

Other remains found in these contexts included occasional burnt bone fragments in contexts (107) and (112).

Ditch cut [119]

Four fills were analysed for environmental remains from this ditch slot (115, 116, 117 and 118). All four contexts produced identifiable charcoal, which included oak from all four contexts, Maloideae from contexts (115) and (118), hazel from (115) and (117) with two fragments of roundwood being noted in (115) and lime in (115).

Other plant remains were present in these samples and included hazel nutshell fragments in context (115) and a nutlet of greater pond-sedge (*Carex riparia*) in (118).

All four contexts also produced occasional fragments of burnt bone.

Ditch cut [133]

Three fills were studied from this ditch slot (121, 122 and 128). Charcoal was identified from all three contexts and 1 piece of Maloideae roundwood form (128), oak from (121) and (122), alder (*Alnus glutinosa*) from (122) and willow (*Salix* sp) and lime from (121). One spelt wheat (*Triticum spelta*) glume base and a fragment of indeterminate cereal grain were also recovered from context (121). Occasional small fragments of burnt large mammal bone were recorded from all three contexts with moderate amounts of briquetage fragments being found in the residue of 122.

Ditch cut [136]

Three fills were studied from this ditch slot contexts (129, 130, and 132) and identifiable charcoal was found in all three contexts. Fragments of Maloideae charcoal were found in (129) and (130) and oak was found in all three contexts.

Other remains included occasional burnt large mammal bone fragments in contexts (129) and (130) and moderate amounts of large mammal bone in (132).

Ditch cut [157]

A single fill, context (155), was analysed from this part of the re-cut ditch. Five fragments of oak charcoal were noted from this context along with occasional small fragments of burnt animal bone.

Ditch cut [166]

Two fills, contexts (152) and (153) were analysed from this slot and produced Maloideae and oak charcoal fragments. No other remains or artefacts were noted in the residues.

Ditch cut [171]

A single fill, context (170) was studied from this section of the re-cut ditch and oak and hazel charcoal were identified from it. Other remains included occasional small unidentifiable fragments of burnt animal bone.

Ditch cut [193]

Two fills, contexts (190) and (191) were analysed and both produced identifiable charcoal. Context (190) produced two fragments of Maloideae and (191) produced a single fragment of cherry/blackthorn (*Prunus* sp), 7 of Maloideae, 6 of oak and 2 fragments of hazel. Both contexts produced occasional small fragments of burnt large mammal bone.

Ditch cut [186]

Two fills were processed from this section of the ditch, contexts (184) and (185). Only context (185) produced any charcoal fragments including 5 fragments of Maloideae including 1 piece of roundwood and 4 fragments of oak.

Other remains included 96.9g of cremated bone in context (184).

Ditch cut [210]

A single fill, context (209) was analysed and produced no identifiable charcoal fragments. Other remains included occasional small fragments of large mammal bone.

Pit [202]

A single fill, context (201) was studied and produced no identifiable charcoal or other plant remains.

5.4.3 Discussion

The lack of charred plant remains and the paucity of the identifiable fragments of charcoal make it very difficult to draw any affirmative statements about the local habitat surrounding or economic strategies employed at this site. The tree taxa represented by the charcoal fragments suggests that the area around the site was scrubby, perhaps representing regeneration. The presence of Maloideae, most likely in this case to be hawthorn, blackthorn and hazel indicate the lower growing species with more substantial trees in the form of oak, field maple and lime being dotted in the landscape. The presence of willow charcoal and the greater pond-sedge nutlet suggests that there was water close by, possibly in the ditch bases. The lack of roundwood within the samples also suggests that woodland management was not being practised and therefore lends weight to the argument that the area was dominated by scrubby woodland.

There is a striking difference between the fill of the original ditch cut and the later re-cut is in the amounts of charcoal recorded. The original fill appears to be nearly void of any kind of archaeological evidence suggesting that this fill represents the slump of material into the ditch shortly after construction. The re-cut samples contained a fair amount of charcoal which may have been associated with the main period of activity on the site.

5.5 Osteological analysis, by Gaynor Western

Observations

The nature of the deposit of the cremated bone was assessed during field excavation and recorded on the relevant context sheets. This information was subsequently classified according to the categories suggested by Brickley and McKinley (2004) and recorded on the Access database provided.

Results

The bone fragments under analysis were recovered from the upper fill of a recut ditch [186]. The associated fill contained occasional fire-cracked stone and moderate charcoal flecking. Also found associated with the cremated bone were pottery sherds, although the bone did not appear to be contained within a vessel. The deposit has, therefore, been recorded as an 'unurned burial'.

5.5.1 Identification and quantification of cremated bone

It is clear from the analysis of cremated bone deposits that the deposition of both human and animal bone together is intentional and, therefore, it is imperative to approach the assessment of the cremated bone present holistically, as well as to attempt to identify human and animal elements.

Observations

The total amount of bone present in this context was weighed and subsequently analysed for identifiable fragments. These fragments were then weighed and recorded separately according the area of the body they originated from. Full quantification of bone is given in the database.

Results

The results of the quantification analysis are summarised in Table 7 below:

Context	**184**
Total Weight of Cremated Materials (g)	97.4
Total Weight of Identifiable ?Human Fragments (g)	13.9
Minimum Number of Individuals	1

Table 7: Results of the quantification of bone present

The quantity of cremated bone present is very small in comparison to the 1000g or thereabouts generally recovered from cremated bone burials containing complete adult individuals. A small number of elements were identified as human from morphological features of the bone, including one superior zygapophyseal (posterior) joint from the lower lumbar area of the spine, one rib head, one fragment of zygomatic bone (frontal process) and one unfused distal epiphysis from either a metacarpal or metatarsal bone (from the end of the palm of the hand or dorsum of the foot). There were no repeated elements present, so the fragments represent a minimum of only one individual.

Human bone can, on some occasions, be differentiated from animal bone on account of the density of the cortex (the outer wall) of long bone fragments. However, this method tends to discriminate positively for the identification of animal bone rather than conclusively identifying human individuals since there is invariably some overlap between the two given the potential number of skeletal elements and the variation between human individuals. Animal bone can be distinguished from human bone at the microscopic level by comparing

the circularity of osteons, with a correct classification of 76.5% of samples (Crescimanno and Stout 2012) but this technique has not been applied to cremated bone at present. Some long bone fragments found here appeared to be of a similar density observed in human bone and the general shape of the fragments suggest that if human, the fragments may possibly belong to the upper limb, more specifically that of humerus and possibly ulna. In addition, fragments of what may be the diaphysis of a metacarpal or metatarsal were present. However, no diagnostic landmarks were present and based upon cortical density alone, this should be treated as a tentative identification.

Overall, the identification from morphological features suggested that at least some of the bone was human. However, many of the fragments of bone were non-diagnostic and no conclusive evidence was present to differentiate the fragments from animal species. The areas of the body represented by the identified fragments consist of the torso and the extremities. It is clear that most areas of the body are not present and that there was no deliberate intention to inter the cremated remains of the complete body within this context.

5.5.2 **Demographic data**

This information is derived from the macroscopic examination and metric assessment sexually dimorphic elements (eg Gejvall 1981, Van Vark (1975) and Whal (1982) as well as analysis of dental and bone development recommended by Buikstra and Ubelaker (1994).

Observations

Observations of material present and any indicators of age and sex were noted on the recording forms contained on the database. No fragments present were large enough to allow metric assessments to be undertaken so any observations were based upon morphological features.

Results

Age

One unfused distal epiphysis of either a metacarpal or metatarsal was present. This indicates that skeletal development was not complete and that the individual was a sub-adult. Epiphyses fuse to the diaphysis between the ages of 14-16 years in metacarpals and the ages of 11-16 in metatarsals (Scheuer and Black 2004, 310 & 404), suggesting that the individual was under the age of 16.

Sex

Sex could not be assessed from any of the fragments present.

5.5.3 **Pathology Data**

Observations

Observations were recorded on the Access database forms present in the archive.

Results

One superior zygapophyseal joint from a lower lumbar vertebra was observed to exhibit a rounded and porotic surface which is commonly seen in conditions where non-union between bony elements has occurred, in this case across the pedicle of the vertebra (Plate 8). Non-union between elements can be the result of a congenital developmental anomaly or can also be secondary to fracture of the bone. Fractures to the pedicle of the lower lumbar vertebra, commonly the 4^{th} and 5^{th}, are reported in the clinical literature as resulting from biomechanical stress or single traumatic events and can co-occur with contralateral spondylolysis, a common developmental condition where the neural arch may become separated from the zygapophyseal joint situated above (Salter 1999, 372-3).

Overall, fractures to the lumbar vertebrae are rare (Robertson, 2012). Fracture of the pedicle is commonly reported in competitive sports patients and in active, often male, adolescents (Vaille *et al* 2007, 316; Weatherley *et al* 1991). In contrast, however, long periods of inactivity leading to osteoporosis or systematic pathology can result in weakening of the bone

and exposure to stress fractures, even in young patients (Obid *et al* 2012, 29). Chronic stress on the lower spine from poor posture can also be a causative agent (Sadiq 2006). In this case, the rounded nature of the pedicle suggests that the non-union of the separated vertebral units was long standing. Pedicle fractures are generally associated with chronic low back pain and required stabilisation to heal. A lack of the necessary surgical procedures required to stabilise the vertebral joint would have contributed to the non-union of the elements.

5.5.4 Bone fragmentation

Fragmentation of bone was assessed by sorting all bone fragments into three sieve fractions (10mm, 5mm and 2mm) and comparing the proportion of bone in each fraction (McKinley 2004). Measurement of the maximum bone fragment length is also recorded.

Observations

Observations of the weight of bone present in each sieve fraction and the percentage of each fraction of the total weight of bone were recorded on the Access database forms contained in the archive.

Results

Table 8 below summarises the results of the quantification of cremated bone present by sieve fraction weight and percentage of total weight. The analysis indicates that the majority of the fragments were between 5 and 10mm in length, with a proportion of larger fragments present. Maximum bone size for the sample was 24.5mm and estimated average was 8mm. Interestingly, several fragments could be re-associated into four separate elements. Four individual fragments possibly representing a metatarsal or metacarpal produced a composite fragment that measured 44.3mm in length after reconstruction. This indicates that it is highly likely that some fragmentation occurred as a post-deposition process and that some fragments could have been larger when they were originally deposited.

	Context 184
>10mm Weight (g)	22.3
>10mm Percentage of Total	*22.9%*
>5mm Weight (g)	50.4
>5mm Percentage of Total	*51.7%*
>2mm Weight (g)	22.1
>2mm Percentage of Total	*22.7%*
Assessment of Bone Content Percentage <2mm residue	100%

Table 8: Weight by fraction of cremated bone from (184)

The general paucity of material noted earlier in combination with the high level of fragmentation may indicate that the majority of the cremated remains from the complete body was collected and removed for separate mortuary treatment and that the material present here represents the residual cremain resulting from this process. It is pertinent to note that the two of the identifiable human fragments were small but complete bone elements. As individual elements they may have become separated from the core of the body during the cremation process or they may simply have been overlooked in the collection of the remainder of the identifiable, possibly larger, fragments.

5.5.5 Efficiency of the cremation

Observations

Observations were noted on the recording forms contained in the database. Generally, the bone was observed to be white in colour but some variation was noted. A small number of fragments were blue-grey in colour as a result of being incompletely oxidised during the cremation process. This included the unfused distal epiphysis from a metacarpal or metatarsal. Four fragments were noted as being blue-grey and black in colour, suggesting that they were only charred. Observations regarding dehydration of the bone were also noted.

Results

The results of the analysis of colour variation in the fragments of bone suggest that the vast majority of bone present was completely calcined or oxidised (Murray *et al.* 1993). This suggests that the bone had been exposed to a temperature of at least 600° for a substantial period of time. It is noteworthy that the fragments of higher density were those exhibiting the blue-grey variation in colour. These were generally long bone fragments. Some exhibited blue-grey colouration to the outer and inner cortices whilst others were white on the outer cortices with blue-grey colouration to the endosteal bone. The fragments observed as blue-grey with black endosteal bone were also of dense bone. It is interesting to note that the unfused distal epiphysis of the metacarpal or metatarsal was blue-grey in colouration. This is a highly cancellous, light bone and the colouration suggests either that, given its anatomical location in the extremities of the body, the element was separated from the core of the body early on during the cremation process or that the heat from the cremation was not disseminated equally around the body on the pyre.

Fissuring, transverse and longitudinal cracking was present on the vast majority of the elements contained in this context. Concentric cracking was also noted in two cranial fragments. This indicates that soft tissue was present on the bone when it was cremated. The presence of both transverse and longitudinal fissuring confirms that the bone has been cremated long enough for substantial amount of dehydration of the bone to occur, in concordance with the coloration of the bone.

5.5.6 Presence and type of pyre goods

Observations

Observations regarding the identification, quantification and percentage of identifiable animal bone present were recorded on sheets contained in the database. Most of the bone present was non-diagnostic and only 4.2g of bone could be positively identified as non-human. Those that were identified were small fragments of thin, flat bone representing cranial bone. The cortices of some long bones fragments were dense and were blue-grey in appearance but it could not be ascertained if these were human or faunal due to their small size.

Results

The deliberate inclusion of animal remains is documented in Ibn Fadlan's contemporary account of Viking cremations (Broendsted 1965), for example, reveals that the dead were often cremated with their pets and that pieces of meat from sheep, goats or pigs were placed by the head as a food offering. Animal remains appear to have been equally important in the role they played in cremation rituals during the Bronze Age; approximately 16% of burials of cremated bone contain faunal remains and typically include sheep or pigs and birds (McKinley 2001). The lack of grave goods found during the Bronze Age compared with the presence of pyre goods indicates that their presence is strongly linked to the funerary rituals carried out through the cremation (McKinley 2001).

In the Iron Age, human remains are scarce but some cremation burials that contain animal bone are known from the South East of England. One such late Iron Age burial situated in North Shoebury, Essex, included four vessels, believed to have contained food and drink, alongside a pigs backbone (http://www.finestprospect.org.uk/Iron%20Age/Iron%20Age.htm). The human remains were

deposited in the pit outside of the vessels. This appears to indicate that feasting or provision of food items for the dead was still an important aspect of cremation ritual at this time. Animal bone was recovered from 36 graves at the late Iron Age site of Westhampnett most commonly was identified as pigs and sheep/goats, although a small amount of cattle bone was also present, with very little bird bone being recovered from graves (McKinley *et al.* 1997, 73). The presence of cremated animal bone in the sample here indicates that the funerary ritual carried out at Redditch reflects the trends seen elsewhere during this period, though at present the specific species of animal has not been identified.

5.5.7 Presence and type of pyre debris

Observations

Observations regarding presence, quantity and type of pyre debris were made and recorded on the forms contained in the database.

Results

No pyre debris was observed to be present, the context consisting entirely of bone fragments. Only a very small quantity of charcoal was observed to be present amongst the flot sample. This, unfortunately, prevents any inferences to be made regarding pyre technology employed at this site. However, the completeness of the process of oxidation of the bone and the presence of fissuring suggests that the bone is the product of a cremation process and that the remains this small quantity of bone was deliberately disposed of in the ditch separately to any substantial amount of debris from the pyre itself.

5.5.8 Conclusion

Table 9 below summarises the findings of the osteological analysis of cremated bone deposit (184).

	Context 184
Type of deposit	Unurned burial
Total weight of cremated materials	97.4g
Quantification of bone -?Human	13.9g
Minimum Number of Individuals	1
Demographic data: Age	Sub-adult
Demographic data: Sex	Unobservable
Pathology data	Fracture of Lumbar Pedicle
Maximum Fragment Size	24.5mm (44.3mm reconstructed)
Degree of fragmentation – average fragment size	8mm
Efficiency of the cremation	Overall colour: White Blue/Grey (10%)
Presence and type of pyre goods	Animal bone: 4.2g

Presence and type of pyre debris	None

Table 9: Summary of Osteoarchaeological Observations [184]

The osteoarchaeological analysis of the cremated bone recovered from context [184] revealed that the 'unurned' burial contained the remains of one human individual who was sub-adult in age. All the cremated bone demonstrated evidence of cracking and fissuring, indicating that the bone was surrounded by soft tissue when it was burnt. The majority bone present had been fully oxidised through the cremation process, indicating that the cremation process was successful in reducing the body to cremain. However, only a small amount of cremated bone was present in comparison to what would be expected from the remains of a complete individual. McKinley (1993) found that modern cremation processes resulted in the production of between 1227.4g and 3001.3g of bone. From this she inferred that the cremation of a whole body and deposition of the remains in an archaeological context would realistically produce between 1001.5g and 2422g of cremated human bone.

The bone was highly fragmented and although some breakage is thought to have occurred through post-depositional processes, the sample appears to represent a deposit of residual bone that was left after the removal of the bulk of the cremated individual's remains for separate mortuary treatment. The bone also appears to have been deliberately gathered separately from any pyre debris. Amongst the small number of identified human fragments was part of a lower lumbar vertebra that displayed a pedicle stress fracture, often associated with a physically active lifestyle and most frequently found today in males. However, other underlying causes, such as a congenital weakness or systematic pathology may have made the element susceptible to fracture at this point without excessive biomechanical stress. A small number of fragments could also be positively identified as animal bone. The animal remains may represent pyre goods placed alongside the body as part of the cremation rituals.

The burial from Brockhill Lane, Redditch, is the only confirmed Iron Age deposit of cremated human bone in Worcestershire. During the Iron Age burials of inhumated and cremated remains are both comparatively sparse throughout the country. Some, therefore, suggest that excarnation was a predominant funerary rite during the period (Carr and Knuesel 1997; Cunliffe 1991) with the deliberate interment of human remains representing a rare or unusual event, in some later Iron Age cases with violent and punitive overtones (Craig *et al*. 2005; Redfern 2011; Western forthcoming). Inhumations dating to the later Iron Age have been discovered in a natural stream bank, possibly forming a boundary, at Church Lench in Worcestershire (SP 0234 5235) (Griffin *et al.* 2006) and at Wellington in Herefordshire (SMR No: 51633) (Jackson and Miller 2004). The skeletons from these latter burials are not reported to exhibit trauma associated with violence and appear to represent a different mode of funerary rite to that found commonly at prominent hillfort sites such as Danebury, Maiden Castle or more locally at Sutton Walls, Herefordshire (Kenyon 1950), and Kemerton Camp, Worcestershire (Hencken 1938). Such isolated inhumation practices could relate to the nature of contemporary pastoral farming and dispersed settlement (Griffin *et al*. 2006) where scattered but discrete interment of partially complete cremated remains and inhumations may be located in natural or artificial features forming the boundaries of settlements (Wait 1995; Griffin *et al*. 2006; Moore 2006).

It is generally observed that a re-introduction of cremated bone burial occurred during the late Iron Age. Much of the evidence for cremated bone burial for this period in England comes from the south east, where funerary rituals area thought to be influenced by the traditions of the Gallo-Belgic peoples of Northern France. These burials show evidence of Roman influence and grave goods include items of personal adornment and appearance, such as mirrors, brooches and chain mail, as well as feasting vessels, such as buckets and amphorae. Burials such as these may represent different ethnic affinities, social status and/or cultural influences and appear to be a minority rite. The largest excavated late Iron Age cremation burial site was found at Westhampnett in West Sussex and dates from 90-50BC (Williams 2008, 258-262). Here, 161 cremation graves were discovered, the majority of which were located in a defined area and surrounded by pyre sites. The burials respected a

circular, central area. The vast majority of the burials were unurned and possibly originally contained in organic containers (Fitzpatrick and Powell 1997, 38). Pyre goods here included brooches, bracelets, rings, knives, wooden, bone and metal artefacts. Pots were included in the burials as grave goods. Osteological analysis suggests that older individuals received more goods than younger ones. Evidence suggests that some pots were placed on the pyre and others may have been deliberately smashed. Animal bone was recovered from 36 graves (McKinley *et al.* 1997, 73), most commonly represented by pigs and sheep/goats, although a small amount of cattle bone was also identified. This is in contrast to a comparative under-representation of pigs and abundance of cattle remains from settlement contexts and suggests a deliberate selection of pig and sheep/goat for funerary ritual purposes (McKinley *et al*. 1997, 76). Most of the animal remains represented joints of meat though some may have been placed on the pyres complete. Pyres appear to have been constructed using oak and ash with willow, hazel, cherry, poplar and maple formed brushwood fuels and biers (Williams 2008). Pyre debris was found in low frequency within the burials, some of which contained complete individuals in contrast to others that only contained a token quantity of human bone. Outside of the south east area of England, evidence for cremated bone burial of human remains during this period is idiosyncratic and sporadic, requiring contextualisation at a local level.

5.6 Faunal remains, Tania Kausmally

The results of the analysis can be seen in Table 10. A total of 9.01g of faunal remains consisting of 17 fragments were analysed. The size varied from 6.1 to 19.8 mm, with each fragment weighing between 0.08-1.74g. The remains were identified as being from the cranial and metapodial regions, while the teeth fragments were identified as being from a smaller ruminant. Seven cranial fragments were flat bones, morphologically most similar to the maxillary region of a medium mammal. The remaining cranial fragments did not warrant further identification. The metapodial fragments were identified as one proximal portion, one distal portion and a possible shaft fragments from the same bone. Identification of species could only be established as being from a medium mammal, of sheep/goat or roe deer size. The remains derived from at least one animal.There we no distinguishing features that could help establish age or sex of the animal.

The colour of the remains suggested high burning temperatures of >600 degrees. The teeth were slightly less oxidized with a grey/black colour (Western 2012, 11).There was no evidence of butchery marks on the bones and no traces of animal activity such as gnawing and puncture marks.

Max size (mm)	Weight (g)	Colour	Element	Portion	Species	Completeness
9.6	0.12	Grey/black	Tooth	Crown	Medium ruminant	0-5%
6.8	0.08	Grey/black	Tooth	Crown	Medium ruminant	0-5%
19.8	0.98	White	Skull	Maxilla?	Medium mammal	0-5%
16	0.65	White	Skull	Maxilla?	Medium mammal	0-5%
13.7	0.42	White	Skull	Maxilla?	Medium mammal	0-5%
10	0.28	White	Skull	Maxilla?	Medium mammal	0-5%
12.6	0.33	White	Skull	Maxilla?	Medium mammal	0-5%
11.4	0.24	White	Skull	Maxilla?	Medium mammal	0-5%
9.8	0.19	White	Skull	Maxilla?	Medium mammal	0-5%
7.2	1.13	White	Metapodial	Distal	Medium mammal	0-5%
19.1	1.04	White	Long bone	Shaft	Medium mammal	0-5%

14.9	0.56	White	Long bone	Shaft	Medium mammal	0-5%
9.7	0.39	White	Long bone	Shaft	Medium mammal	0-5%
15.2	1.74	White	Metapodial/astragalus	Proximal	Medium mammal	0-5%
12.1	0.54	White	Skull	Fragment	Medium mammal	0-5%
6.8	0.24	White	Skull	Fragment	Medium mammal	0-5%
6.1	0.08	White	Skull	Fragment	Medium mammal	0-5%

Table 10: Results of the analysis of the faunal remains from Brockhill Lane, Redditch, Worcestershire

5.6.1 **Conclusion**

The small quantity of faunal remains uncovered from Brockhill Lane revealed the presence of at least one medium sized ruminant. The elements present represented the extremities of the animal i.e. the skull and metapodials. All elements were calcined suggesting incineration at high temperatures of >600 degrees (Holden 1995a and 1995b). The elements present are considered 'low food utility' and usually removed during primary butchering (O'Connor 2000, 165). This suggests that the animal(s) on the pyre were not the remains of a meal, but more like that of a complete animal. Alternatively, it may be possible that the remains of the animal(s) were deposited on the pyre as token elements after it had been butchered. However, interpretations are limited by the small quantity of animal bone present.

5.7 Radiocarbon dating, SUERC and Nicholas Daffern

5.7.1 **Results**

Two sample were submitted for Accelerator Mass Spectrometry (AMS) dating to the Scottish Universities Environmental Research Centre (SUERC) radiocarbon dating laboratory.

The first sample (SUERC-39007 (GU26602)) was a fragment of unidentifiable burnt bone recovered by hand during excavation of the primary fill (131) of terminus cut [134] of the enclosure ditch. The second sample (SUERC-41609 (GU28320)), was a fragment of cremated human bone from the upper fill (184) of the recut ditch [186].The results of the radiocarbon dating can be seen in Table 11 below and appendix 2.

No sources of contamination or non-contemporaneous carbon were evident during the fieldwork or during the subsequent sub-sampling.ll calibrated dates are identifiable by the prefix 'Cal'. Where calibrated date ranges are cited in the text, these are for 95% confidence.

It would appear from the results that the cremation within context (184) had been redeposited as it is earlier in date than the sample from the primary fill of the enclosure. The latter was recovered from a deep well stratified deposit (context 131), providing little opportunity for contamination so is thought to be accurate. It is therefore concluded that the cremation had either been curated or had been disturbed from its original position and redeposited within the re-cut ditch possible during backfilling. Even using the lower confidence levels at 68.2% probability the outlining dates of each sample only cross over for a couple of decades so they clearly represent two disparate episodes of deposition. Unfortunately however the length of occupation at the enclosure cannot therefore be estimated from the radiocarbon dating results.

Laboratory code	Context number	Material	$\delta^{13}C$ relative to VPDB	Radiocarbon Age BP	OxCal calibrated age (95.4% probability or 2 sigma)
SUERC-39007 (GU26602)	131	Unidentifiable burnt bone	-15.2 ‰	2065 ± 35	181 Cal BC – Cal AD 18
SUERC-41609 (GU28320)	184	Cremated human bone	-25.5 ‰	2221 ± 29	382 Cal BC – 203 Cal BC

Table 11: Radiocarbon date on charred bone from contexts (131)and (184)

6. Synthesis

6.1 Bronze Age

The single sherd of Bronze Age pottery suggests a human presence within the area before the construction of the Iron Age enclosure. The extent and type of activity undertaken cannot however be inferred from such a small material assemblage. As no Bronze Age features were identified and as there was only one residual sherd of earlier prehistoric pot within the Iron Age enclosure it is probable there was no earlier settlement at this location.

6.2 Late Iron Age

The curvilinear enclosure, constructed in the latter half of the first millennium BC fills the majority of the excavation area. The material assemblage recovered suggests that the recut enclosure represented a settlement, although it was not possible to establish whether it was permanently or seasonally occupied. Due to the lack of pottery and the apparent short life the first enclosure may have had a different primary role, although this function could not be established. The landscaping of the site in a later period is likely be the reason for the lack of any internal structures such as round house drip gullies or storage pits that are commonly found within similar enclosures. It also implies that the enclosure ditch was once much deeper and was more substantial than when excavated. Although large, the ditch circuit is also simplistic and therefore unlikely to be for defence, as has been put forward for some similar enclosures within the East Midlands (Meek *et al* 2004). The enclosure ditch does however appear excessive for just stock control or drainage and is more likely to have arisen from a regional trend during the period to physically mark social space (Moore 2006, 2007).

Due to the lack of residual finds and earlier features it would appear that the enclosure had not replaced an earlier unenclosed settlement of Bronze Age or Early Iron Age date. The unenclosed nature of Bronze Age and Early Iron Age settlements is becoming more apparent regionally and examples have been identified within the Upper Thames valley (Moore 2007), Staffordshire (Coates 2002), Worcestershire (Mann forthcoming) and Warwickshire. Conversely in southern England earlier prehistoric enclosed settlements are more common (Moore 2007). Although open these earlier settlements occupy an increasingly portioned landscape, defined by the construction of field boundaries, pit alignments and large boundary structures such as the Shire Ditch on the Malverns (Yates 2007). The apparent effort expended on these boundaries is in contrast to the effort used in demarcating settlements and during the later Bronze Age and Early Iron Age there is an apparent hiatus in settlement/enclosure construction (Moore 2006).

In contrast, by the Middle to Late Iron Age the numbers of settlements and enclosures constructed appears to increase dramatically. It is at this time that smaller enclosed settlements, such as at Brockhill dated to around between 181-18 AD, became the norm

regionally. Radiocarbon dates suggest that they started to emerge no earlier than the mid-fourth century and continued through the period (Moore 2007). This also coincides with the adoption of storage pits and the formation of regional pottery (located at the Malvern Hills) and industrial scale activities (such as salt production at Droitwich). They are constructed during a period of significant social change and are thought to reflect the increasing importance of the household group in the later Iron Age (Moore 2006, 2007). Within Worcestershire numerous small enclosed Middle and Late Iron Age settlements have been found (frequently through crop marks) including the at least partially excavated examples at Wyre Piddle, St John's (Worcester), Stonebridge Cross, Bath Road (Worcester), and Blackstone.

Regionally various forms of enclosures were adopted during the later Iron Age, although most shared broad characteristics, which the Brockhill enclosure also exhibits. A few multiple ditched examples exist (Knight and Howard 2004), however the majority had a single ditch circuit with a probable internal bank. The upcast from the cutting of the original ditch at Brockhill is thought to have remained on site, perhaps in the form of a bank, although it cannot be confirmed whether this was internal or external. The original enclosure may also have had a palisade and although not confirmed at Brockhill these have been identified surrounding similar enclosures such as Blackstone (Hurst *et al* 2009), Willington and Holme Pierrepont, Staffordshire (Knight and Howard 2004). As the fills of the original ditch were very similar to the natural marl it is also thought that the original ditch was not open for long and may have been purposefully backfilled. The ditch was however open long enough for standing water to settle in the ditch and gley its edge. The lack of finds and the sterile nature of the fills within the primary ditch also suggests that the enclosure may not have been inhabited until it had been recut, as subsequently the fills become more humic and contained greater amounts of material culture.

The later recutting of these enclosures is a frequent characteristic of those excavated, and it is also common for the original ditch to have been almost completely filled prior to its recutting, as at Blackstone (Hurst *et al* 2009). This suggests that as hypothesised these enclosures were less defensive than would appear, rather the enclosure's practical aim was to direct access to and from the settlement through a single entrance and to express the inhabitants' authority and prestige. As with the earlier cut it is difficult to confirm the presence of a bank, although there was preferential silting from the inside on three of the excavated slots suggesting it was internal.

The later prehistoric enclosures vary in plan regionally, and Moore (2006) has identified three main enclosure types including rectilinear/sub-rectangular, polygonal/irregular and curvilinear. The enclosure at Brockhill falls into the latter class which is thought to be the rarest of all the enclosure types regionally. The south easterly alignment of the enclosure entrance is also very common and appears to be intentional (Moore 2006) and may relate to the path of the sun (Knight and Howard 2004). As at Brockhill many of these enclosures are less than 1ha in size, with the average size of these enclosures often falling between 0.2-0.3ha (Moore 2006).

As at Brockhill it also seems that the majority of these new enclosed settlements did not evolve from earlier unenclosed settlements, although such instances exist at Frocester, Gloucestershire (Moore 2007), Enderby and Huncote in Leicestershire (Meek *et al* 2004) and in Warwickshire and the Welsh Marches (Wigley 2007). The formation of these enclosures within areas not previously occupied implies there must have been increased pressure on the land and resources due to a population rise (Moore 2007). The act of constructing new enclosures that intersect or merge with earlier field boundaries has also been interpreted as a way to affirm a group's access to local and possible scarce resources (Moore 2007). This phenomenon has been widely observed in the welsh Marches (Wigley 2007) and at Wasperton (Warwickshire), Wyre Piddle (Worcestershire) and Beckford (Worcestershire) (Moore 2007).

Whatever social changes prompted the adoption of these smaller enclosures they are for the most part likely to have acted as a settlement for an extended family or kin group. Comparable enclosures of this date usually contain a small number of roundhouses. There is however little evidence for status variation between the occupants based upon the roundhouse's form or through the finds discovered within. In areas there also appears to be a remarkable level of homogeneity between the enclosures (Moore 2006, Knight and Howard 2004). The lack of internal structures at Brockhill makes it impossible to gauge the numbers of occupants who may have lived at the settlement or the degree of homogeneity between this and other examples.

The lack of charred cereal remains or animal bones recovered at Brockhill also makes it difficult to assess the economic strategies employed at the site, however as it was situated on a relatively undulating hillside upon heavy clay soils it is likely the inhabitants were pastoral farmers. The cultivation of cereal crops, sometimes on an apparent industrial scale (Mann forthcoming) is commonly associated with settlements on lighter sandier soils on gravel terraces. The lack of barrel shaped deep storage pits which become common during the later Iron Age locally, also implies that cereals, a common find within such pits, was not being stored in great quantities or for any length of time at this site.

The enclosure was eventually abandoned and there was no evidence, in the form of pottery remains, to suggest that occupation continued into the Roman period. This implies the enclosure was relatively short lived. Similar patterns of short lived occupation and abandonment prior to the Roman period have also been recorded at Blackstone, Holt (Hurst e*t al* 2009), Fisherwick (Wigley 2003), Bengeworth, Evesham (Sworn forthcoming) and Whitemoor Haye (Coates 2002) and it may represent normal practices at this time.

The internment of a cremation in the upper fill of the enclosure may represent a closing act to the enclosure however as this cremation was dated to 382-203 cal BC it is likely to be redeposited. This may explain the lack of an associated vessel or cut.

6.3 Modern

A number of post-medieval and modern ceramic land drains were discovered in the excavation area and a 19th coin was recovered from the topsoil.

7. Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service 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.

A excavation was undertaken on behalf of CgMs Consulting under the direction of Persimmon Homes at land east of Brockhill Lane, Redditch, Worcestershire (NGR SP 0335 684); HER ref WSM 46074). A Late Iron Age curvilinear enclosure was excavated which aligned approximately east to west with an entrance aligned to the south east. The enclosure was 59.25m long and was a maximum of 39.87m wide and covered an area of 0.18 hectares. The entrance was formed by two opposing butt end termini that were 6.03m apart. Only one very small internal feature, a pit, was identified. No internal structures survived and it is believed these were truncated during a period of landscaping at the site.

The original 'V' shaped ditch circuit measured was between 1.4-3.6m wide and between 0.7-1.6m deep and appears to have been purposefully backfilled. A radiocarbon date, upon charred bone within the primary fill was dated to 2065±35 BP. A later smaller 'U' shaped recut measured between 1.-2.6m wide and between 0.4-1.1m deep. The recut contained up to four different fills, which were more humic and contained greater amounts of cultural material, including pottery, worked stone, charcoal, fired cracked stone and quern stone

fragments indicating that the enclosure had been a small settlement. The pottery assemblage contained no Roman pottery, suggesting it had been abandoned prior to the Roman conquest.

A very rare Iron Age cremation, the first to be found in Worcestershire, was found in the upper fill of the recut ditch. This was radiocarbon dated to 2221±29 BP, earlier than the date from the primary fill so is thought to be redeposited. The cremation debris contained the partial remains of a sub-adult thought to be under 16 years old at the age of death. The human remains also appear to have been mixed with the cremated remains of a small mammal.

8. Acknowledgements

The Service would like to thank the following for their kind assistance in the successful conclusion of this project, Myk Flitcroft (CgMs ConsultingLtd), Mike Glyde (Historic Environment Planning Officer, Worcestershire County Council and Persmmon Homes who provided the funding for the excavation.

9. Personnel

The fieldwork and report preparation was led by Darren Miller and Andrew Mann. The project manager responsible for the quality of the project was Tom Rogers. Fieldwork was undertaken by Darren Miller, Sean Rice, Chris Gibbs, Tim Cornah, Richard Bradley and Lara Bishop finds analysis by Laura Griffin, stone analysis by Ruth Saffney, environmental analysis by Alan Clapham, Osteological analysis by Gaynor Western, faunal remains analysis by Tania Kausmally and illustration by Steve Rigby and Carolyn Hunt.

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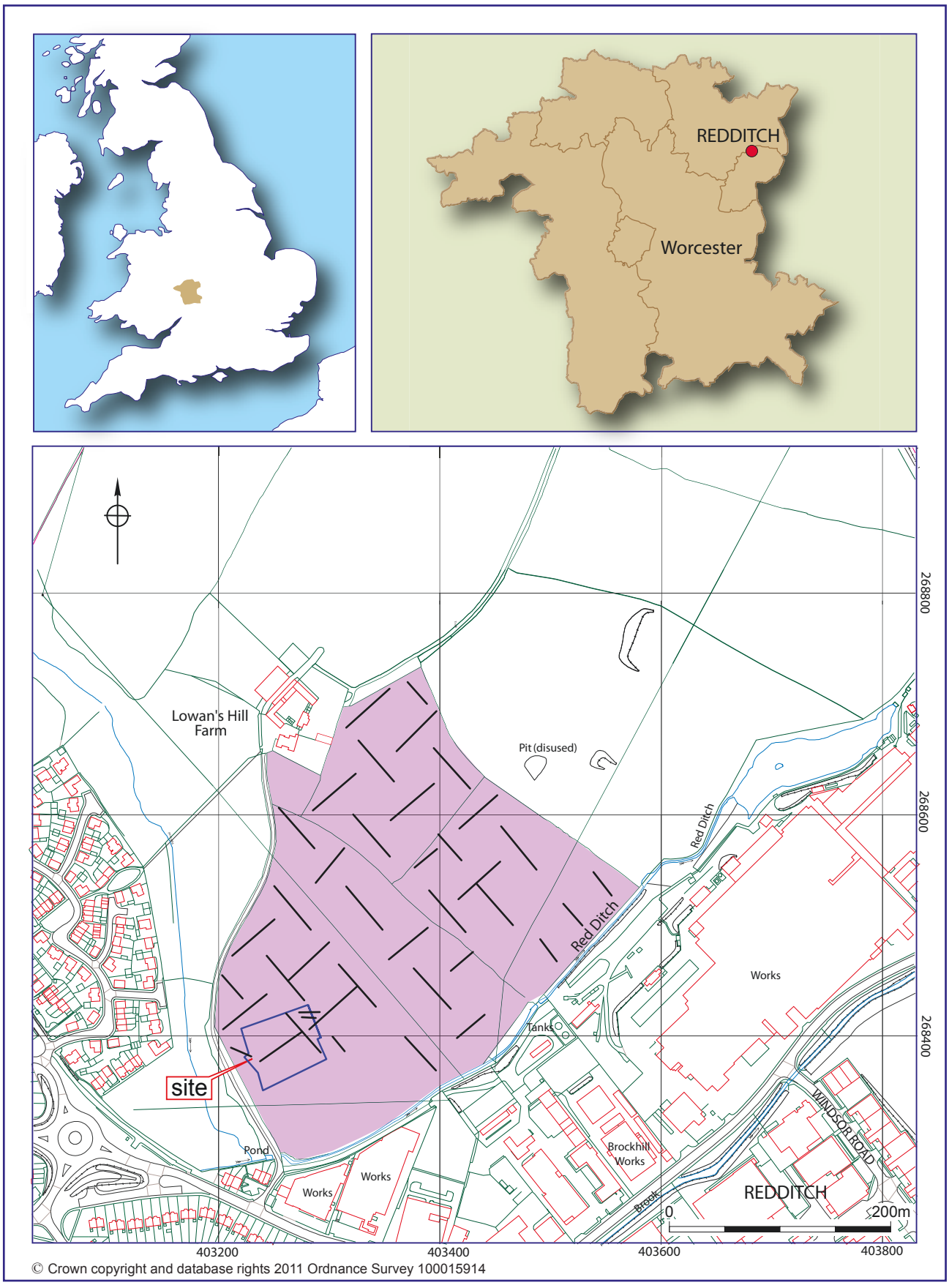
Figures



Location of the site *Figure 1*

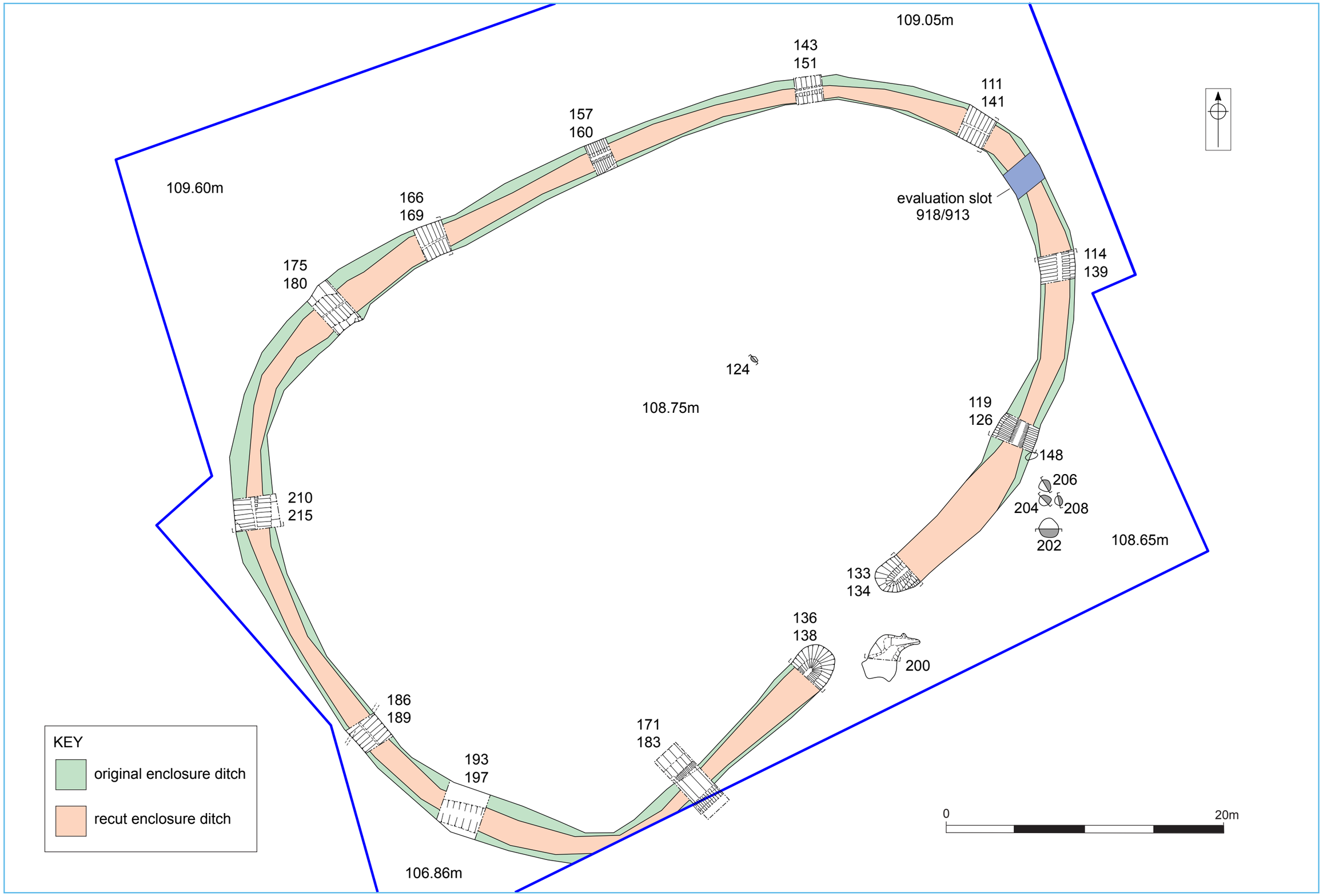


Figure 2: Plan of Late Iron Age enclosure

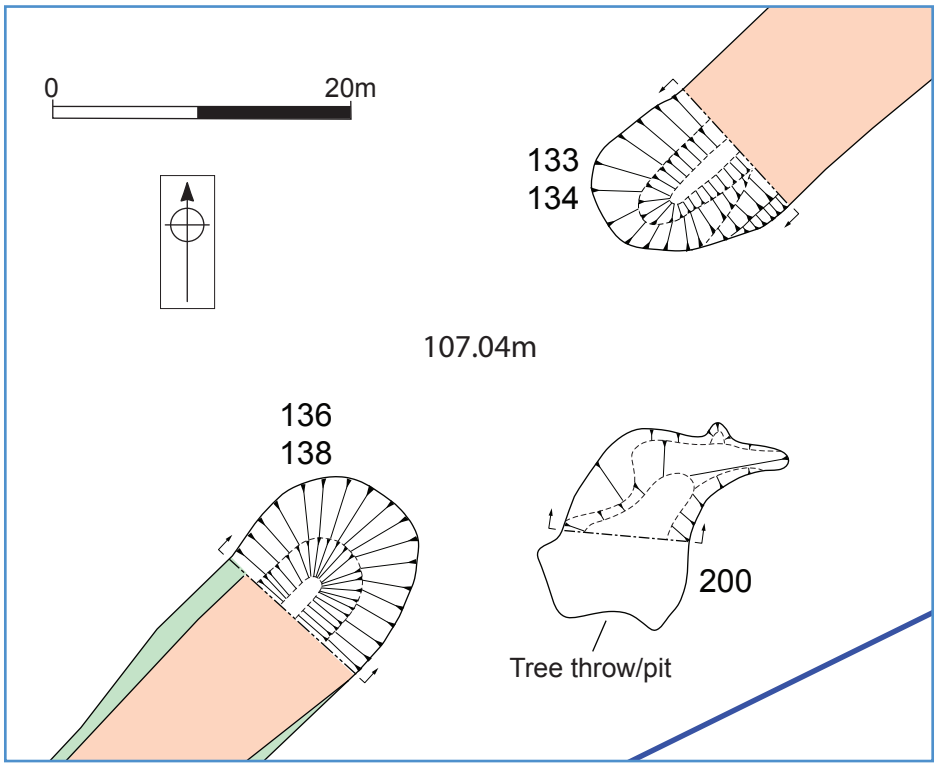


Figure 3: Plan of enclosure entrance

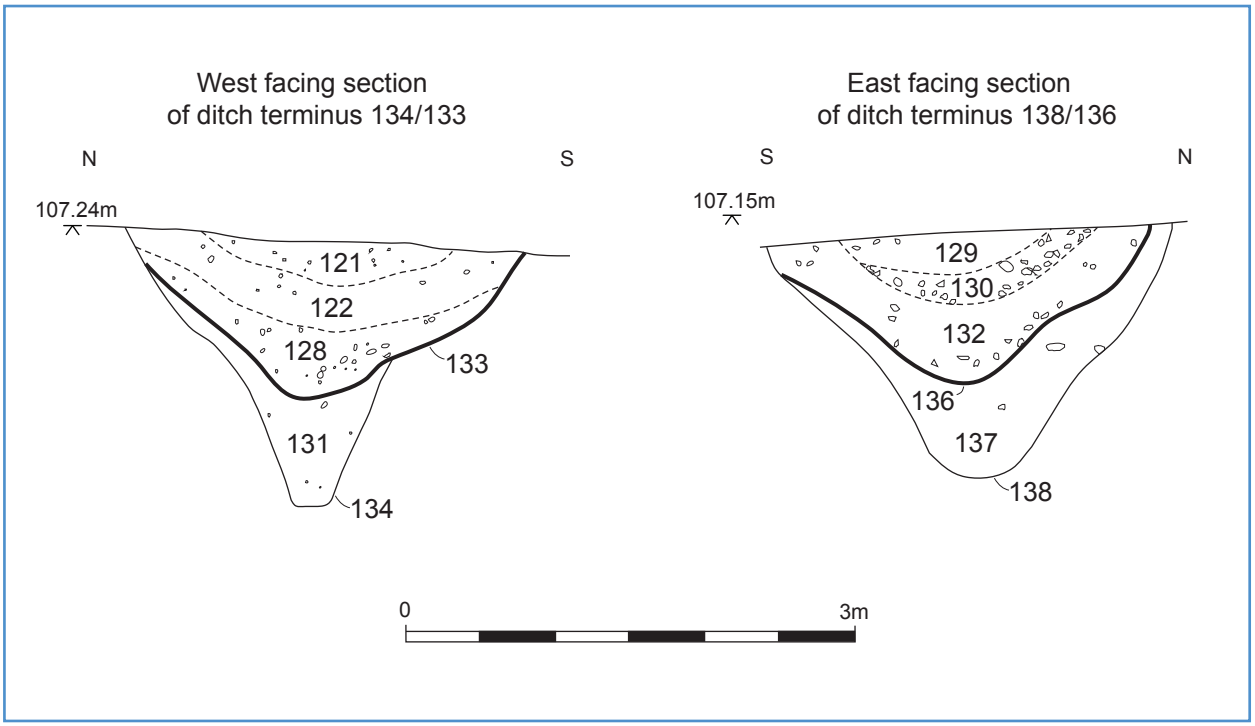
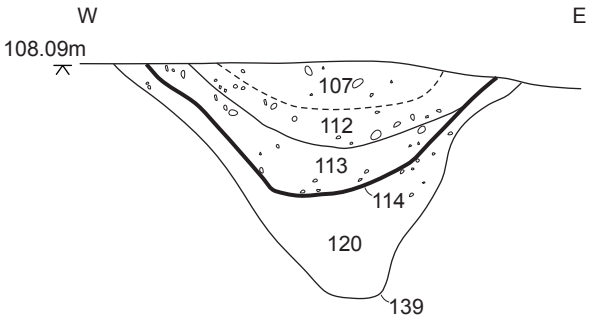
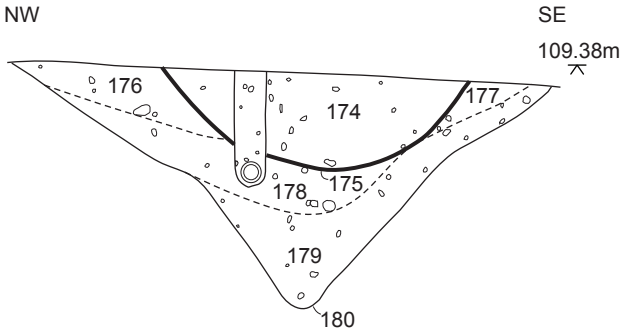


Figure 4: Enclosure ditch termini sections

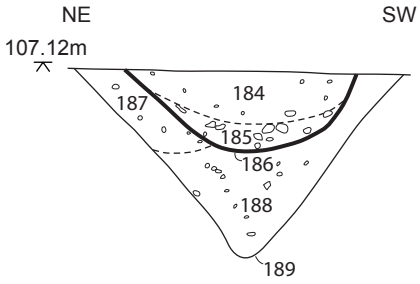
South facing section of enclosure ditch 139/114



South west facing section of enclosure ditch 180/175



North west facing section of enclosure ditch 189/186



West facing section of enclosure ditch 160/157

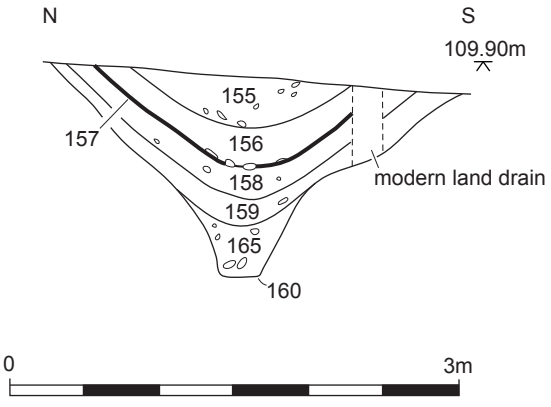
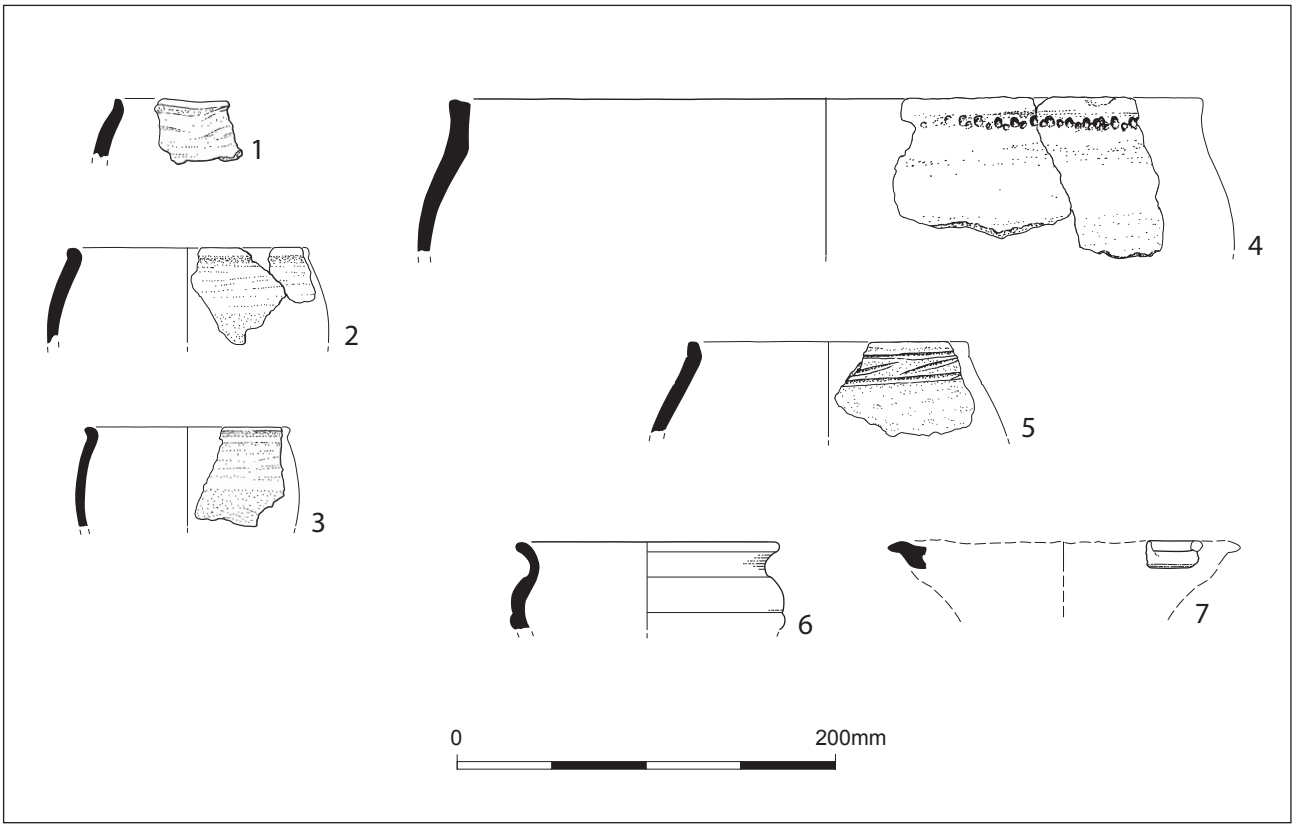
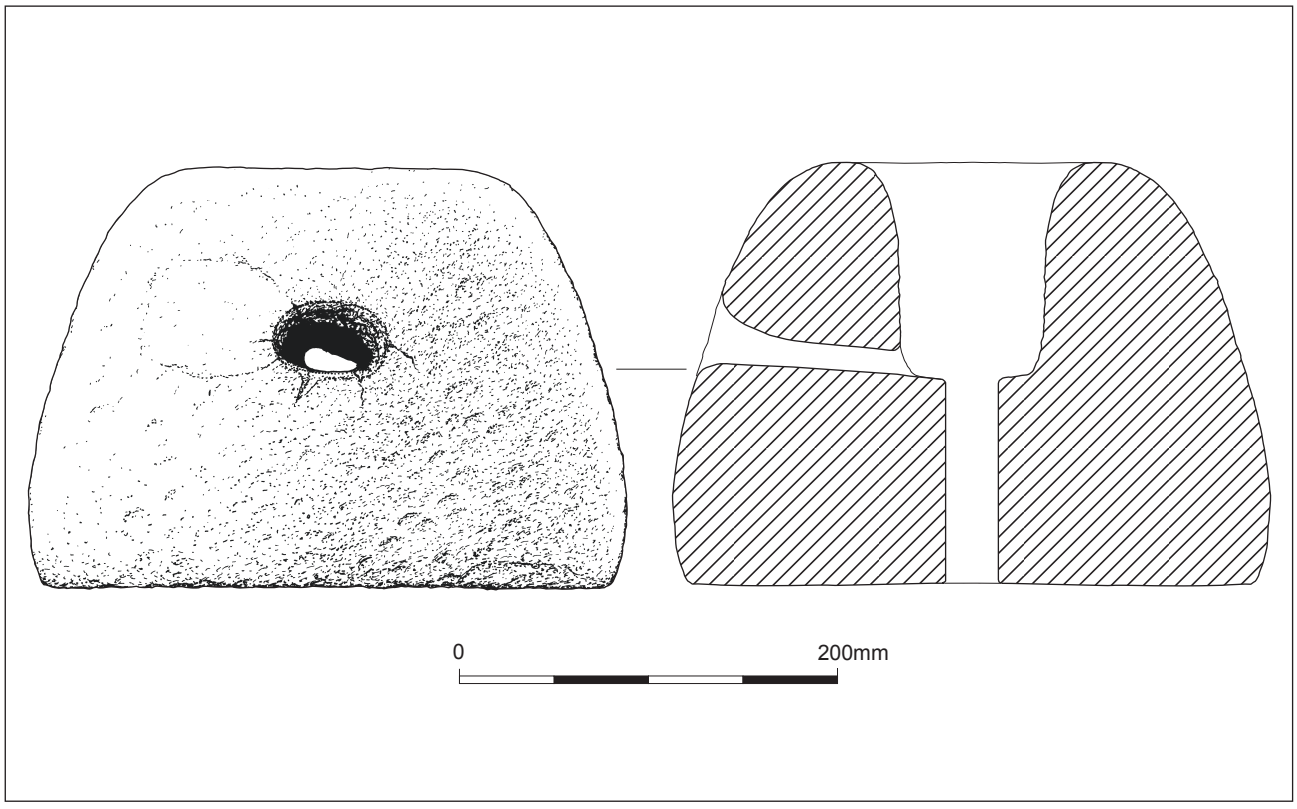


Figure 5: Enclosure ditch sections



Iron Age pottery and briquetage *Figure 6*



Beehive Quern *Figure 7*

Plates

Plate 1: general site conditions facing west

Plate 2: terminus 134/133 facing east (2m scale)

Plate 3: terminus 136/138 facing west (2m scale)

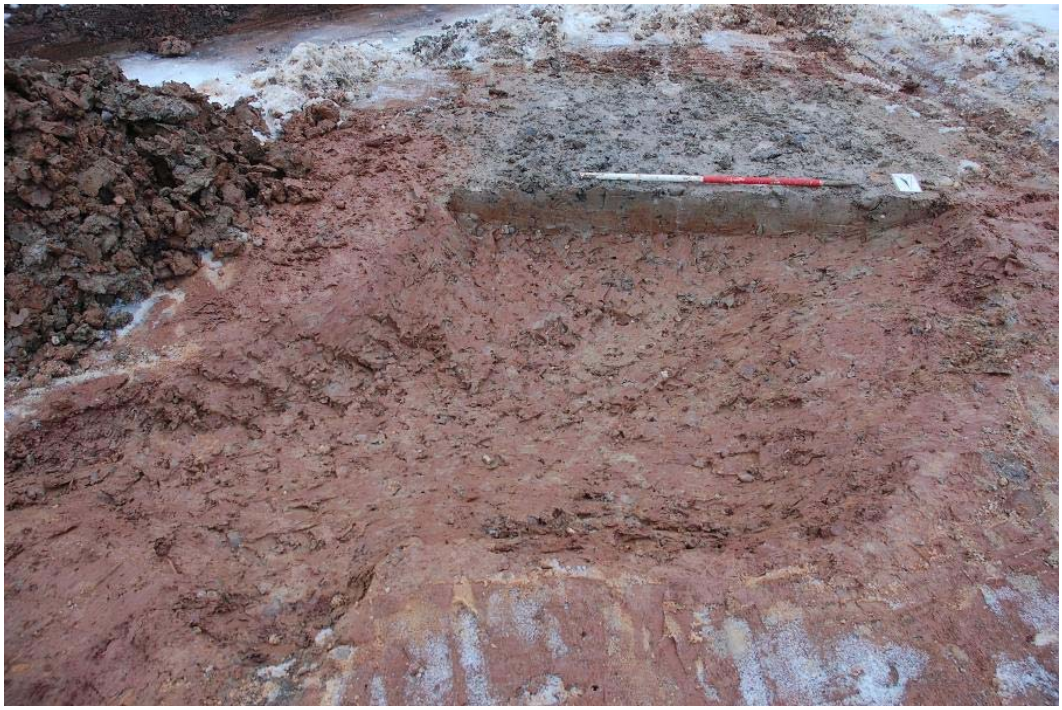


Plate 4: pit/tree throw 200 facing south west (1m scale)

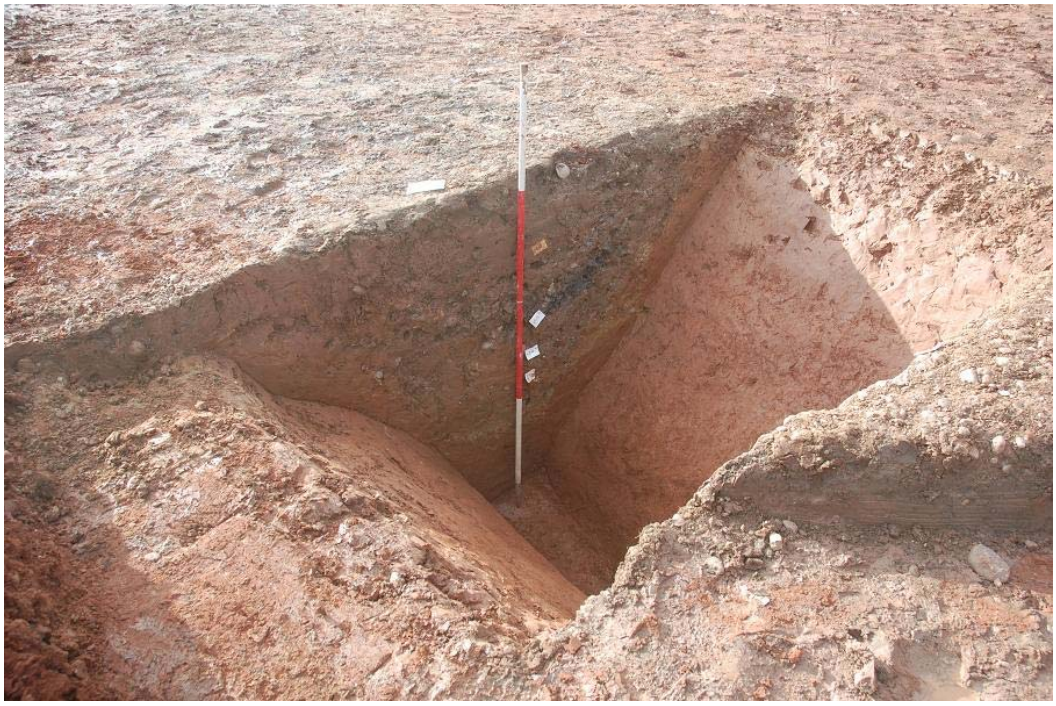


Plate 5; enclosure ditch 126/119 facing north west (2m scale)

Plate 6: enclosure ditch 160/157 facing west (2m scale)

Plate 7: pits 204, 206 and 208 south west (1m scale)

Plate 8: Non-union of a Lower Lumbar Zgyapophyseal Joint (Anterior view on left, inferior on right.)

Appendix 1 Specialist tables

Context	Sample	Feature type	Fill of	Position of fill	Ditch cut	Slot no.	Processed
108	1	Ditch	111	Upper	Re-cut	1	Yes
109	2	Ditch	111	Secondary	Re-cut	1	Yes
110	3	Ditch	111	Primary	Re-cut	1	Yes
140	4	Ditch	141	Primary	Original	1	No
142	5	Ditch	143	Primary	Re-cut	6	No
150	7	Ditch	151	Primary	Original	6	No
174	8	Ditch	175	Primary	Re-cut	11	No
176	9	Ditch	180	Upper	Original	11	Yes
177	10	Ditch	180	Upper	Original	11	Yes
178	11	Ditch	180	Secondary	Original	11	Yes
179	12	Ditch	180	Primary	Original	11	No
152	13	Ditch	166	Upper	Re-cut	8	Yes
153	14	Ditch	166	Secondary	Re-cut	8	Yes
154	15	Ditch	166	Primary	Re-cut	8	No
167	16	Ditch	169	Secondary	Original	8	No
168	17	Ditch	169	Primary	Original	8	No
155	18	Ditch	157	Secondary	Re-cut	7	Yes
156	19	Ditch	157	Primary	Re-cut	7	No
158	20	Ditch	160	Upper	Original	7	No
159	21	Ditch	160	Secondary	Original	7	No
165	22	Ditch	160	Primary	Original	7	Yes
184	23	Ditch	186	Secondary	Re-cut	13	Yes
184	24	Ditch	186	Secondary	Re-cut	13	No
185	25	Ditch	186	Primary	Re-cut	13	Yes
187	26	Ditch	189	Secondary	Original	13	Yes
188	27	Ditch	189	Primary	Original	13	No
107	28	Ditch	114	Upper	Re-cut	2	Yes
112	29	Ditch	114	Secondary	Re-cut	2	Yes
113	30	Ditch	114	Primary	Re-cut	2	Yes
120	31	Ditch	139	Primary	Original	2	No
115	32	Ditch	119	Upper	Re-cut	3	Yes
116	33	Ditch	119	Tertiary	Re-cut	3	Yes
117	34	Ditch	119	Secondary	Re-cut	3	Yes
118	35	Ditch	119	Primary	Re-cut	3	Yes
146	36	Ditch	126	Primary	Original	3	Yes
121	37	Ditch	133	Upper	Re-cut	4	Yes
122	38	Ditch	133	Secondary	Re-cut	4	Yes
128	39	Ditch	133	Primary	Re-cut	4	Yes
131	40	Ditch	134	Primary	Original	4	Yes
170	41	Ditch	171	Upper	Re-cut	10	Yes
172	42	Ditch	171	Secondary	Re-cut	10	No
173	43	Ditch	171	Primary	Re-cut	10	No
129	44	Ditch	136	Upper	Re-cut	5	Yes
130	45	Ditch	136	Secondary	Re-cut	5	Yes
132	46	Ditch	136	Primary	Re-cut	5	Yes
137	47	Ditch	138	Primary	Original	5	No
198	48	Ditch	197	Primary	Original	12	No

201	49	Pit	202	Primary			Yes
190	50	Ditch	193	Upper	Re-cut	12	Yes
191	51	Ditch	192	Secondary	Re-cut	12	Yes
194	53	Ditch	197	Upper	Original	12	Yes
209	55	Ditch	210	Primary	Re-cut	14	Yes
211	56	Ditch	215	Tertiary	Original	14	Yes
212	57	Ditch	215	Tertiary	Original	14	Yes
213	58	Ditch	215	Secondary	Original	14	Yes
214	59	Ditch	215	Primary	Original	14	Yes
109	60	Ditch	111	Secondary	Re-cut	1	Yes

Table 3: Environmental samples taken from Brockhill

Context	Sample	Large mammal	Charcoal	Comment
107	28	occ	occ	
109	60		abun	
112	29	occ	occ	
113	30		occ	
115	32	occ	occ	
116	33	occ	occ	occ briquetage fragments
117	34	occ	mod	
118	35	occ	occ	
121	37	occ	mod	
122	38	occ	occ	mod briquetage fragments
128	39	occ	occ	
129	44	occ	occ	
130	45	occ	occ	
131	40	occ	occ	
132	46	mod	occ	
152	13		mod	
153	14		mod	
155	18	occ	occ	
165	22		occ	
170	41	occ	occ	
176	9		occ	
178	11		occ	
184	23		abun	occ pot fragments, 96.9 g of cremated bone, charcoal too small to id
185	25	occ	occ	
187	26		occ	
190	50	occ	occ	
191	51	occ	occ	
201	49		occ	
209	55	occ	occ	occ pot fragments
211	56		occ	
212	57		occ	
213	58	occ	occ	

Table 4: Other remains and artefacts recovered from the residues from Brockhill, Redditch, WSM 46074 (occ = occasional; mod = moderate; abun = abundant)

Latin name	Common name	131	146	165	176	177	178	187	194	211	212	213	214
Quercus sp	oak	3	-	-	-	-	-	-	20	-	-	1	-

Table 5: Charcoal identified from the original enclosure ditch

Latin name	Common name	107	108	109	109	110	112	113	115	116	117	118	121	122	128	129	130	132	152	153	155	170	184	185	190	191	201	209
Charcoal																												
Prunus sp	cherries/blackthorn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Maloideae	apple/pear/whitebeam/hawthorn	-	-	-	5	-	-	-	4	-	-	2	-	-	1rw	4	2	-	2	2	-	-	-	4 +1rw	2	7	-	-
Quercus sp	Oak	-	-	-	8	-	-	1	5	2	6	14	2	1	-	6	2	10	8	8	5	9	-	4	-	6	-	-
Alnus glutinosa	alder	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana	hazel	-	-	-	3	-	-	-	7+2rw	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-
Salix sp	willow	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acer campestre	field maple	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tilia sp	lime	-	-	-	2	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other remains		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triticum spelta glume base	spelt wheat	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeterminate cereal grain		-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana nutshell fragments	hazel nut	-	-	-	-	-	1	-	4	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
Carex riparia nutlet	greater pond-sedge	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 6 Charcoal and other charred plant remains identified from the recut and other features at Brockhill

Appendix 2 Radiocarbon dating report

Appendix 3 Technical information

The archive (site code: WSM 46074)

The archive consists of:

115	Context records AS1
20	Field progress reports AS2
4	Photographic records AS3
321	Digital photographs
1	Drawing number catalogues AS4
33	Scale drawings
2	Context number catalogues AS5
57	Sample records AS17
1	Sample number catalogues AS18
57	Flot records AS21
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:

Worcestershire County Museum
Museums Worcestershire
Hartlebury Castle
Hartlebury
Near Kidderminster
Worcestershire DY11 7XZ
Tel Hartlebury (01299) 250416

Summary of data for Worcestershire HER

Material	Type	Total	Weight(g)
Pottery	Bronze Age	1	6
Pottery	Iron Age	41	236
Pottery	Late Iron Age	23	798
Pottery	Middle Iron Age	115	956
Fired clay	undiagnostic	31	90
Fired clay	furnace lining	9	56
Fired clay	mould	2	22
Copper alloy	coin	1	8
Copper alloy	fragment	1	1
Stone	heat shattered	1	49
Stone	quern	3	776

Table 1: Quantification of the artefactual assemblage

Fabric code	Fabric name	Total	Weight (g)
1	Sandy briquetage	1	22
2	Organic briquetage	22	242
BD123	Marl-tempered briquetage	34	391
140	Stony 'VCP'	15	122

Table 2: Quantification of briquetage by fabric type

Context	Sample	Feature type	Fill of	Position of fill	Ditch cut	Slot no.	Processed
108	1	Ditch	111	Upper	Re-cut	1	Yes
109	2	Ditch	111	Secondary	Re-cut	1	Yes
110	3	Ditch	111	Primary	Re-cut	1	Yes
140	4	Ditch	141	Primary	Original	1	No
142	5	Ditch	143	Primary	Re-cut	6	No
150	7	Ditch	151	Primary	Original	6	No
174	8	Ditch	175	Primary	Re-cut	11	No
176	9	Ditch	180	Upper	Original	11	Yes
177	10	Ditch	180	Upper	Original	11	Yes
178	11	Ditch	180	Secondary	Original	11	Yes
179	12	Ditch	180	Primary	Original	11	No
152	13	Ditch	166	Upper	Re-cut	8	Yes
153	14	Ditch	166	Secondary	Re-cut	8	Yes
154	15	Ditch	166	Primary	Re-cut	8	No
167	16	Ditch	169	Secondary	Original	8	No
168	17	Ditch	169	Primary	Original	8	No
155	18	Ditch	157	Secondary	Re-cut	7	Yes
156	19	Ditch	157	Primary	Re-cut	7	No
158	20	Ditch	160	Upper	Original	7	No
159	21	Ditch	160	Secondary	Original	7	No
165	22	Ditch	160	Primary	Original	7	Yes
184	23	Ditch	186	Secondary	Re-cut	13	Yes
184	24	Ditch	186	Secondary	Re-cut	13	No

185	25	Ditch	186	Primary	Re-cut	13	Yes
187	26	Ditch	189	Secondary	Original	13	Yes
188	27	Ditch	189	Primary	Original	13	No
107	28	Ditch	114	Upper	Re-cut	2	Yes
112	29	Ditch	114	Secondary	Re-cut	2	Yes
113	30	Ditch	114	Primary	Re-cut	2	Yes
120	31	Ditch	139	Primary	Original	2	No
115	32	Ditch	119	Upper	Re-cut	3	Yes
116	33	Ditch	119	Tertiary	Re-cut	3	Yes
117	34	Ditch	119	Secondary	Re-cut	3	Yes
118	35	Ditch	119	Primary	Re-cut	3	Yes
146	36	Ditch	126	Primary	Original	3	Yes
121	37	Ditch	133	Upper	Re-cut	4	Yes
122	38	Ditch	133	Secondary	Re-cut	4	Yes
128	39	Ditch	133	Primary	Re-cut	4	Yes
131	40	Ditch	134	Primary	Original	4	Yes
170	41	Ditch	171	Upper	Re-cut	10	Yes
172	42	Ditch	171	Secondary	Re-cut	10	No
173	43	Ditch	171	Primary	Re-cut	10	No
129	44	Ditch	136	Upper	Re-cut	5	Yes
130	45	Ditch	136	Secondary	Re-cut	5	Yes
132	46	Ditch	136	Primary	Re-cut	5	Yes
137	47	Ditch	138	Primary	Original	5	No
198	48	Ditch	197	Primary	Original	12	No
201	49	Pit	202	Primary			Yes
190	50	Ditch	193	Upper	Re-cut	12	Yes
191	51	Ditch	192	Secondary	Re-cut	12	Yes
194	53	Ditch	197	Upper	Original	12	Yes
209	55	Ditch	210	Primary	Re-cut	14	Yes
211	56	Ditch	215	Tertiary	Original	14	Yes
212	57	Ditch	215	Tertiary	Original	14	Yes
213	58	Ditch	215	Secondary	Original	14	Yes
214	59	Ditch	215	Primary	Original	14	Yes
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117	34	occ	mod	
118	35	occ	occ	
121	37	occ	mod	
122	38	occ	occ	mod briquetage fragments
128	39	occ	occ	
129	44	occ	occ	

130	45	occ	occ	
131	40	occ	occ	
132	46	mod	occ	
152	13		mod	
153	14		mod	
155	18	occ	occ	
165	22		occ	
170	41	occ	occ	
176	9		occ	
178	11		occ	
184	23		abun	occ pot fragments, 96.9 g of cremated bone, charcoal too small to id
185	25	occ	occ	
187	26		occ	
190	50	occ	occ	
191	51	occ	occ	
201	49		occ	
209	55	occ	occ	occ pot fragments
211	56		occ	
212	57		occ	
213	58	occ	occ	

Table 4: Other remains and artefacts recovered from the residues from Brockhill, Redditch, WSM 46074 (occ = occasional; mod = moderate; abun = abundant)

Latin name	**Common name**	131	146	165	176	177	178	187	194	211	212	213	214
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Table 5: Charcoal identified from the original enclosure ditch

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Charcoal																												
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Maloideae	apple/pear/whitebeam/hawthorn	-	-	-	5	-	-	-	4	-	-	2	-	-	1rw	4	2	-	2	2	-	-	-	4 +1rw	2	7	-	-
Quercus sp	Oak	-	-	-	8	-	-	1	5	2	6	14	2	1	-	6	2	10	8	8	5	9	-	4	-	6	-	-
Alnus glutinosa	alder	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana	hazel	-	-	-	3	-	-	-	7+2rw	-	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	2	-	-
Salix sp	willow	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Acer campestre	field maple	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tilia sp	lime	-	-	-	2	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other remains		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triticum spelta glume base	spelt wheat	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indeterminate cereal grain		-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corylus avellana nutshell fragments	hazel nut	-	-	-	-	-	1	-	4	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
Carex riparia nutlet	greater pond-sedge	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 6 Charcoal and other charred plant remains identified from the recut and other features at Brockhill

Context	**184**
Total Weight of Cremated Materials (g)	97.4
Total Weight of Identifiable ?Human Fragments (g)	13.9
Minimum Number of Individuals	1

Table 7: Results of the quantification of bone present

	Context 184
>10mm Weight (g)	22.3
>10mm Percentage of Total	*22.9%*
>5mm Weight (g)	50.4
>5mm Percentage of Total	*51.7%*
>2mm Weight (g)	22.1
>2mm Percentage of Total	*22.7%*
Assessment of Bone Content Percentage <2mm residue	100%

Table 8: Weight by fraction of cremated bone from (184)

	Context 184
Type of deposit	Unurned burial
Total weight of cremated materials	97.4g
Quantification of bone -?Human	13.9g
Minimum Number of Individuals	1
Demographic data: Age	Sub-adult
Demographic data: Sex	Unobservable
Pathology data	Fracture of Lumbar Pedicle
Maximum Fragment Size	24.5mm (44.3mm reconstructed)
Degree of fragmentation – average fragment size	8mm
Efficiency of the cremation	Overall colour: White Blue/Grey (10%)
Presence and type of pyre goods	Animal bone: 4.2g
Presence and type of pyre debris	None

Table 9: Summary of Osteoarchaeological Observations [184]

Laboratory code	**Context number**	**Material**	**$\delta^{13}C$ relative to VPDB**	**Radiocarbon Age BP**	**OxCal calibrated age (95.4% probability or 2 sigma)**
SUERC-39007 (GU26602)	131	Unidentifiable burnt bone	-15.2 ‰	2065 ± 35	181 Cal BC – Cal AD 18

Table 10: Radiocarbon date on charred bone from context (131)