Middle Bronze Age and Middle Iron Age Occupation and Post-Medieval Limekilns at RAF Staff College, Broad Lane, Bracknell, Berkshire

by Jennifer Lowe

Thames Valley Archaeological Services
Occasional Paper 3
MIDDLE BRONZE AGE AND MIDDLE IRON AGE OCCUPATION AND POST-MEDIEVAL LIMEKILNS AT RAF STAFF COLLEGE, BROAD LANE, BRACKNELL, BERKSHIRE
MIDDLE BRONZE AGE AND MIDDLE IRON AGE OCCUPATION AND POST-MEDIEVAL LIMEKILNS AT RAF STAFF COLLEGE, BROAD LANE, BRACKNELL, BERKSHIRE

By Jennifer Lowe
## CONTENTS

- List of Figures........................................................................................................ iv
- List of Plates ........................................................................................................ iv
- List of Tables ........................................................................................................ iv

### SUMMARY ........................................................................................................1

### INTRODUCTION ..............................................................................................1

#### ARCHAEOLOGICAL BACKGROUND ..........................................................1

- The Evaluation ....................................................................................................2

### THE EXCAVATION ........................................................................................3

- Phase 1: Middle Bronze Age .............................................................................4
- Phase 2: Middle Iron Age ...................................................................................5
- Phase 3: Medieval ................................................................................................8
- Phase 4: Post-medieval .......................................................................................8
- Undated ................................................................................................................10

### THE FINDS ....................................................................................................10

- Prehistoric Pottery by Frances Raymond ..........................................................10
- The Middle Bronze Age Pottery .........................................................................10
- The Middle Iron Age Pottery ............................................................................12
- Discussion ............................................................................................................13
- Medieval and Post-medieval Pottery by Paul Blinkhorn ...................................14
- Struck Flint by Steve Ford ..................................................................................15
- Animal Bone by Matilda Holmes .......................................................................15
- Burnt Bone by Ceri Falys ...................................................................................18
- Metalwork and Slag by Jennifer Lowe ...............................................................18
- Ceramic Building Material by Jennifer Lowe .....................................................18
- Burnt Clay ............................................................................................................18
- Analysis of brick and tile samples by Alan Vince ............................................18
- Clay pipe .............................................................................................................19
- Radiocarbon Dating ............................................................................................19
- Carbonized Plant Remains and Charcoal by Lucy J E Cramp .........................19

### DISCUSSION ...............................................................................................21

- Acknowledgements ............................................................................................22
- References ..........................................................................................................23
List of Figures

Figure 1. Site Location within Berkshire and Bracknell, showing evaluation and excavation...........................................v
Figure 2. The excavated areas..................................................................................................................................................2
Figure 3. Area A, all excavated features.................................................................................................................................3
Figure 4. Selected sections. ......................................................................................................................................................4
Figure 5. Detailed plan of ditch junctions and vicinity of kiln...........................................................................................7
Figure 6. Detail of kiln 1019....................................................................................................................................................8
Figure 7. Prehistoric pottery..................................................................................................................................................13

List of Plates

Plate 1: Kiln 1019 looking west...............................................................................................................................................9
Plate 2: Kiln 1019 looking north...........................................................................................................................................10

List of Tables and Chart

Table 1: Middle Bronze Age pottery by context ................................................................................................................12
Table 2: Middle Iron Age pottery by context .....................................................................................................................12
Table 3: Medieval and later pottery by context ..................................................................................................................15
Table 4: Struck Flint................................................................................................................................................................15
Table 5a: Species Representation (fragment count)...........................................................................................................16
Table 5b: Fragment representation (epiphysis only count) ..................................................................................................16
Table 6: Radiocarbon date of charcoal from Ring Gully 1000 (KIA 33859) .................................................................19
Table 7: Charred plant remains.............................................................................................................................................20
Chart 1: Carcass part representation of the horse assemblage..........................................................................................17
Figure 1: Location of site within Berkshire and Bracknell, showing evaluation trenches and excavation areas.
MIDDLE BRONZE AGE AND MIDDLE IRON AGE OCCUPATION AND POST-MEDIEVAL LIMEKILNS AT RAF STAFF COLLEGE, BROAD LANE, BRACKNELL

by Jennifer Lowe

with contributions by Paul Blinkhorn, Lucy Cramp, Ceri Falys, Steve Ford, Matilda Holmes, Frances Raymond and the late Alan Vince

SUMMARY

An excavation within the grounds of the former RAF Staff College site, Bracknell revealed a number of features ranging in date from middle Bronze Age to post-medieval. Two phases of prehistoric activity were recorded: the middle Bronze Age represented by pits; and the middle Iron Age represented by pits and possibly two ring gully structures, one of which produced a radiocarbon date of 357–117 cal BC. A few sherds of medieval pottery point to only slight use of the site at this time. Much more activity was recorded for early post-medieval times with various ditched boundaries and pits, and an area of industrial activity dating from the mid 16th to 17th century which comprised two lime kilns and a well and may relate to the production of mortar for construction of Ramslade House which formed the original Staff College.

INTRODUCTION

An archaeological investigation was undertaken by Thames Valley Archaeological Services at RAF Staff College, Bracknell, Berkshire (SU 880 685), from September to November 2006. Planning permission had been granted by Bracknell Forest Borough Council to redevelop the site for residential purposes. Following the guidance in Archaeology and Planning (PPG16, 1990) and council policies on archaeology, a condition on the consent required a programme of archaeological works prior to development. The archaeological potential of the site had been highlighted initially in a desk-based assessment (WSP 2002) and confirmed by evaluation and a watching brief (OA 2005).

The site is located to the south of central Bracknell (Fig. 1). Two areas, A and B, roughly 2.1 ha in total were investigated, both located to the south-east of the RAF Staff college complex, and previously used as playing fields. The northern extent of the site is bounded by the London to Bracknell railway line, a dense area of woodland marks the east and south east edge of the site, while the Staff College buildings are located to the west and north-west. The majority of the site is relatively flat, at approximately 77m above Ordnance Datum. However, Area B in the north corner of the site, slopes downwards sharply towards the railway line, at c. 75m AOD. According to the British Geological Survey (BGS 1981) the underlying geology is Bagshot Beds. A fine sand was recorded in the majority of Area B and the northern half of Area A, becoming more clayey towards the southern half of the site.

ARCHAEOLOGICAL BACKGROUND

Bracknell is situated within the heathlands of south-east Berkshire, a topographical zone not noted for dense archaeological remains (Ford 1987). The heathlands, today, are not favoured for agriculture due to the poor quality of the soil and much land is given over to forestry (Jarvis et al. 1979). This is likely to have been the case for much of prehistoric and historic times and may go some way towards explaining the dearth of archaeological finds spots in this area. In medieval times much of the area lay within Windsor Forest and was subject to the restrictions of Forest Law. This said, the area surrounding the site is not completely devoid of archaeological remains. Two Bronze Age barrows, an Iron Age hillfort (Caesar’s Camp) and a Roman settlement (Wickham Bushes) are all located relatively close to the site. The Roman settlement is likely to be associated with the major Roman road connecting London to Silchester (Margary (1955) route 4a) and possibly the exploitation of iron ore (Ford 1987).

Bracknell is first mentioned in AD942 as Braccan heal meaning ‘nook of land of a man called Bracca’ (Mills 1998). Despite this early reference, the settlement does not appear in Domesday Book and there are no finds of Saxon date from the area (Ford 1987, map 35). Bracknell is not recorded on either Saxton’s 1607 map of Berkshire, or Speed’s 1610 map, but first appears on Morden’s map of 1695, when it is recorded as Bracknell Street, perhaps an indicator of the size of the settlement. According to Rocque’s map of 1761, Bracknell has developed further, but of more significance is the location of the present site, which is discernible on this map. To
the south of the town is a house named Ramslade, located within an area of open land. Land to the south of the house appears to be either scrub or forest and a second small building is located to the east within the cleared area. The house, Ramslade, is not recorded on any earlier maps, but is on subsequent Ordnance Survey maps. The house was later incorporated into the RAF Staff College, the rest of which was constructed in the 1950s and '60s. The site itself is located just to the east of the house, which Rocque, and all following maps consulted, show as undeveloped land.

The Evaluation

An evaluation was carried out across the area of the former playing fields (OA 2005). The 24 trenches (Fig. 1) revealed a series of linear features as well as a few isolated pits, and a spread of burnt flint towards the west of what became excavation Area A. Dating evidence was sparse from many of these features, but all of the small assemblage of pottery recovered was post-medieval. All the features revealed by the evaluation that fell within the subsequent excavation area were subsequently re-examined; the results are combined below.
THE EXCAVATION (Fig. 2)

Area A covered approximately 1.73ha; this was to be landscaped for sports pitches. Topsoil and subsoil were removed by a machine fitted with a toothless ditching bucket to expose the uppermost levels of archaeological interest. Area B, to the north of Area A, was to be made into a balancing pond. This area was a roughly rectangular shaped plot of approximately 0.45ha. Prior to the removal of topsoil the area sloped steeply down from south to north. At the northern end of Area B topsoil and subsoil were removed to reveal a fine yellow white sand. As stripping progressed towards the south it was revealed that the steep slope was artificial and towards the southern end up to 2m of made ground was removed from the area. The full extent of the made ground was not established but it did not extend into Area A, so it must originally have been levelling a steep step between the two areas: this step itself was also most probably artificial.

All archaeological features exposed were investigated by hand and a minimum 20% sample of all linear features was excavated.

The datable features in Area B were all post-medieval or modern, and of little interest. The whole area produced very few finds: just 13 sherds of pottery, all post-medieval, with the exception of a single sherd of medieval pottery from a post-
medieval ditch; a few fragments of tile, glass and clay tobacco pipe. The features in Area B do not appear in any way related to the activity in Area A, and are not discussed further; details are in the archive and the report concentrates on Area A (Fig. 3).

**PHASE 1: MIDDLE BRONZE AGE**

Only three features can be positively attributed to this phase: pits 406, 526 and a large hollow 1000, possibly the base of a burnt mound, as suggested by the evaluation (Fig. 3). Pit 521 may also belong in this phase. The few Bronze Age features were clustered towards the western edge of the site,
perhaps suggesting further activity beyond the limits of excavation in that direction.

Pit 406 was 0.56m in diameter and 0.15m deep. It was filled with a black/brown silty sand (462) and a grey/brown silty sand (463). A single small, abraded sherd of middle Bronze Age pottery was recovered from this feature as well as a small quantity of burnt bone. The bone could not be identified even to the level of human or animal, therefore it is not clear whether 406 was a cut containing pyre debris. However, pottery recovered from pit 526, some 43m to the north-west of 406 is commonly recorded in association with funerary deposits in the Thames Valley, perhaps lending weight to the feeling that the burnt bone from 406 is human.

A similar pit 521, was recorded to the north-west of 406. No finds were recovered from this feature, except a small quantity of burnt bone, again unidentifiable as human or animal. It is assumed to be contemporary with 406 based on the similarities in form.

Pit 526, further to the north-west of 406, produced a larger quantity of pottery; a total of 19 sherds, all middle Bronze Age. This feature was slightly larger than 406, measuring 0.58m by 0.32m and 0.29m deep. It was filled with a dark grey brown silty sand (689), and a mid orange brown loose sandy silt (690). Besides pottery only a piece of burnt flint and unfeatured fired clay were retrieved from fill 689.

Feature 1000 (excavated as quadrants as 547 and 548) was a large oval-shaped hollow approximately 10m by 5m and between 0.25–0.30m deep. The sides and base were very irregular and it did not appear to be a cut feature but rather, the artificial fill of a natural hollow. Quadrant 547 was filled with a brown/grey silty sand (799) and a lens on the western edge of the feature which was a black/brown silty sand (850). In addition to the total of over 200 sherds of middle Bronze Age pottery from the entire feature, 112 pieces of burnt flint, and struck flints comprising three flakes, a scraper and a core, were recovered. A single sherd of medieval pottery from the surface is clearly intrusive.

A single pit (524) adjacent to 1000 produced no dating evidence but a soil sample produced 12 fragments of burnt flint and a quantity of charcoal. Its proximity to hollow 1000 suggests that this shallow pit is also of middle Bronze Age date.

**PHASE 2: MIDDLE IRON AGE**

Middle Iron Age pottery was recovered from several features, which in contrast to the Bronze Age features, appeared to be clustered towards the east and south-east edge of the site.

A shallow ring gully, 1009, towards the south-east corner of the site, survived only as a segment of a circle approximately 12m in length. Towards the centre of the gully (Slot 340) the feature was 0.64m wide and 0.25m deep, but towards the ends of the gully, where it terminated (or petered out), it was only 0.26–0.35m wide and 0.05–0.07m deep. The base of the feature was heavily pitted and disturbed but no individual post settings could be defined. The few finds from the gully included 38 sherds from one slot (341); burnt flint was also recorded from slots 337, 340 and 342. A radiocarbon determination of 200±26 bc (KIA 33859) was obtained on charcoal from slot 340 (Table 6). This calibrates to an overall range of 357–117 cal BC or a most probable range of 234–151 cal BC (with 357–277 cal BC only marginally less likely). The problems of the calibration curve for this part of the middle Iron Age are well known and continue to provide uncertainties, but a broadly middle Iron Age date is at least assured. A single posthole (440) roughly 9m to the east of the gully, lay within the circuit of a (projected) circular structure but not at its centre (the projected circle being 13m in diameter). No finds were retrieved from the post hole therefore it is difficult to establish whether it is indeed associated with the ring gully, but as there were no other features in the vicinity it must be probable.

A second small section of possible ring gully, 1010, was recorded closer to the south-east corner. Only a very small section of the feature survived, approximately 5m in length; its function is unclear, but it is possible it represents a much smaller structure close to the large roundhouse. Its projected diameter was only around 4.2m. No finds were recovered from this feature.

Feature 537 was an isolated pit in the north-east corner of the site. It was 1.20m by 0.75m and 0.48m deep and contained six fills (772–7), yielding 65 sherds of middle Iron Age pottery, from fills 772 and 773. The pottery recorded appeared to be from two vessels only. In addition 44 fragments of burnt flint, eight pieces of slag and a fragment of burnt clay came from this feature.

Ditch 1003 crossed the south-east corner of the site, from north to south. No dating evidence was recovered from this feature but a single piece of burnt flint was retrieved from slot 303. This ditch was much deeper towards the north-east end (0.90m wide and 0.25m deep) becoming much shallower towards the south-west but remaining wide (0.85m wide and 0.10m deep).

A discontinuous ditch (1006, 1007) was on a similar alignment to and approximately 10m to the
west of 1003. At the north-east end, close to the eastern edge of site, ditch 1006 terminated (300). It was 0.84m wide and 0.61m deep and contained four fills (350–3). The profile of this feature changed dramatically towards the south where the terminal (317) was 0.30m wide and 0.09m deep. No finds were recovered from this section of the ditch but gullies 1004 and 1005 cut 1006 to provide relative dating. Ditch 1007 continued the feature to the south-west, terminating close to the southern edge of site, with a slight curve westwards as it progressed towards the limit of excavation. Here it had been recut (1008). No finds were recovered from the recut and only a single flint flake was recovered from slot 403 in ditch 1007.

A single tiny sherd of Iron Age pottery was the only find from gully 1001 (slot 323). Approximately 6m of this gully was recorded before it terminated just short of ditch 1003; it may have been contemporary with 1003, or at least with the boundary that 1003 marked. Two slots excavated, 323 and terminal 332, revealed this to be a shallow feature approximately 0.10m in depth and 0.40m wide. Gully 1001 was recut (1002) and the line continued west of ditch 1003, as 1004, also recut (1005). Both segments of gully on either side of 1003 terminated as they approached the line of 1003, suggesting that they post-dated it but respected its location. All three gullies (1001, 1003, 1004, and their recuts) post-date 1006/1007, but not necessarily by very much.

This complex of linear features is only cautiously phased to the Iron Age on the basis of the single sherd of Iron Age pottery recovered from gully 1001. These features on the whole seem more likely to be prehistoric than post-medieval for example, as most of the post-medieval features on Area A produced finds. It is possible that these ditches represent enclosure or a field system which may be contemporary with the ring gully structures.

**PHASE 3: MEDIEVAL?**

Area A as a whole produced a meagre total of three sherds of medieval pottery which points to its being well away from any hub of medieval activity. A single small pit 515, close to the north-west corner of site, is possibly the only medieval feature on site. This shallow oval feature was 0.33m by 0.14m and 0.12m deep. It had two fills: 652, a black silty clay and 653 a lighter grey silty clay, both with a high quantity of charcoal. A single sherd of medieval sandy ware was the only find. It is conceivable that the sherd is intrusive and this pit belongs in the Bronze Age, with the other similar features in this part of the site (its charcoal also matches the composition of the other Bronze Age charcoal): whichever is the case, it adds nothing to our knowledge of either period. The only other feature in Area A which yielded medieval pottery was post-medieval ditch 1011, with a single sherd.

**PHASE 4: POST MEDIEVAL**

Post-medieval activity was concentrated in the south of the site. This comprised a sequence of intercutting ditches, and pits, which were associated with two brick-built structures, interpreted as lime kilns. The dating evidence for this area of intense industrial activity is very sparse. Just 16 sherds of pottery were recovered from the entire complex and all suggest a date not earlier than the mid 16th-17th century, with 2 sherds of metropolitan slip ware from ditch 1017 and well 600 suggesting these features may belong at the later end of this range. Many of the features in this area produced no dating evidence. Stratigraphically, however, they are all either contemporary with, or predate the early post-medieval period.

One of the earliest features stratigraphically was ditch 1016. The line of this ditch could be traced immediately to the north of the kilns, curving slightly towards the western edge of excavation. The eastern end of ditch 1016 was completely removed by ditch 1020. It is likely that 1016 (0.60m deep) was a continuation of ditch 1011 which was similarly truncated by 1020 at its southern end. Towards the western limit of excavation it was recut on the same line (1015 and 1017), although towards the east these ditches veered off to the south where 1016 turned north. It was also recut (412) at the eastern end, where truncated by 1020. Unfortunately no dating evidence was recovered from the original ditch but a small amount of pottery and various post-medieval finds came from recuts 1015 and 1017.

Ditch 1011 crossed the site NW–SE (Fig. 3). It produced a single sherd each of Iron Age and medieval pottery and three much larger sherds of post-medieval pottery: the presumption would in any case have been for a post-medieval date due to its association with the industrial activity in this corner of the site. In addition to the pottery, four fragments of ceramic building material, six pieces of burnt flint, a single struck flint and a piece of chalk were all recovered from this feature. The presence of the chalk suggests that it became infilled while the lime kilns were in use, or at around the time they went out of use.

A short ditch, 1020, clearly truncated ditches 1011 and 1016 where they would have met (Fig. 5). The northern terminal (409) of this feature had a U-shaped profile approximately 2.45m wide and 0.74m deep. This terminal produced seven pieces of post-medieval ceramic building material while slot 428 produced 32 fragments. A single piece of burnt flint
was retrieved from 409. A recut (1022) was most clearly visible in the terminal (409), where it was a deep U-shaped, cut 1.67m wide and 1.10m deep, but as it progressed further south became deeper and wider, totally removing all trace of the original cut. No artefacts were recovered from the recut.

Pit 603/605 cut ditch 1022 and was in turn cut by ditch 1015. The pit contained no finds.

Ditch 1015, starting at the southern edge of excavation, close to kiln 1019, curved round to the west, past kiln 1018, and on towards the western limit of excavation. Ditch 1015 truncated 1016 and was truncated by 1017 (Fig. 4). The profile of 1015 in the northern/western slots was very distinct as a wide U-shape at the top, narrowing to a vertical-sided ditch with a flat base, between 1.05m and 1.20m deep. Further south, it became shallower, and where it exited the site, was only 0.43m deep. Finds included several pieces of post-medieval ceramic building material, animal bone, clay pipe, several lumps of chalk and a fragment of post-medieval bottle glass. A single piece of burnt flint was recovered from 602.
Figure 6: Detail of kiln 1019.
The relationship between ditches 1015–1017 was quite clear as they curved towards the western baulk, however in the area adjacent to kiln 1019, where the activity was more intense, the sequence of events was more difficult to establish. Ditch 1015 (here, 431=435) cut pit 434, which was observed in section only, this pit in turn cut ditch 1024 which crossed this area roughly north to south. A large quantity of animal bone was retrieved from 431=435, as well as a single sherd of mid 16th-century or later pottery. At this point ditch 1015 also cut pit 439, also only visible in section. Further to the south ditch 1015 (slot 444) cut the fills of pit 443 (=446), which was part of kiln complex 1019. Finds recovered from 1015 at this point include nine fragments of animal bone, post-medieval ceramic building material and a single piece of mid 16th-century (or later) pottery.

Close to the southern baulk (600), ditch 1015 cut ditch 1024 (601). The only find retrieved from 600 was a piece of 17th-century pottery.

Ditch 1017 appears to be a recut of 1015, following the same route as the earlier ditch, but not extending the full distance westwards, and not always visible in every segment investigated. The ditch maintained a similar profile, a wide U-shape, along its entire length and it remained consistently approximately 0.40m deep. Finds include a large quantity of animal bone from slot 502; approximately 900 fragments. Ditch slot 502 was adjacent to the pit associated with kiln 1018 and the upper fill of this pit also contained a large quantity of animal bone. Very little bone was recovered from elsewhere on the site making this large assemblage in a small area more prominent and again suggesting the ditch was still open when the pit was being filled. Other finds from 502 included eight iron nails and a knife blade, post-medieval brick/tile, four pieces of clay pipe, two pieces of slag and a sherd of 16th-century pottery. The remainder of 1017 produced similar finds, although significantly less bone, with post-medieval bottle glass and ceramic building material from nearly all slots. Only two sherds of pottery were retrieved, dating the filling to no earlier than the 17th century.

All the pottery from these ditches, along with the pits associated with the kilns, although sparse, consistently suggest 17th century dates for the disuse of these features, perhaps with start dates in the latter half of the 16th century. It is therefore possible to speculate that many of the other features producing post-medieval finds fit in to this chronology, suggesting that the industrial activity in this area was short lived, with the kilns having a sole use then being abandoned.

The two brick-built lime kilns (1018, 1019), assumed to be approximately contemporary based on design and construction, produced almost no pottery (3 sherds from 1018 only), and the brick samples taken from kiln 1019 are not closely datable in themselves. Kiln 1018 comprised two elements, a brick structure (522) and an associated pit (503, 527, 544). The kiln was formed of a semi-circle of bricks (682) 2.5m in diameter. The unbonded coursing of the structure comprised two rows of stretcher bricks onto a single header row. The interior surface of the bricks was highly vitrified, taking on a green glassy appearance, showing that they had been exposed to a high temperature. Scorching of the natural sand was also visible around the outside of the structure. Hand excavation, to a depth of 1.20m, revealed 11 fills (671–681), but not the base of the feature. The appearance of the fills suggests rapid backfilling after disuse. In comparison to kiln 1019, which was largely filled with bricks from the structure itself, very little ceramic building material was retrieved from inside kiln 1018; deposits 672, 679 and 680 all produced small amounts of post-medieval brick/tile. A small amount of animal bone was also recovered from deposits 672 and 679. The natural sand was exposed at the base of the kiln, by machine, at depth of 1.90m. At approximately 1.33m from the surface a brick ledge was exposed in the kiln. The bricks appeared highly burnt.

A large pit (503, 527, 544) was associated with the brick structure (1018), on its northern side. This was a wide U-shaped feature clearly cut by ditch 1017. It was excavated to a depth of 1.30m by hand and further to a total depth of 1.70m by machine. At 1.50m a brick surface was encountered which extended the length of the slot, and was approximately 0.80m wide. This may correspond with the brick ledge recorded in the kiln. There was no distinction between the fills of the kiln and the pit and it would appear that both features were backfilled simultaneously. Three large sherds of 16th- to 19th-century pottery were recovered from 544.
Raf Staff College, Bracknell

Kiln 1019 (Fig. 6, Pls 1 and 2) appeared more oval on the surface and clearly narrowed towards its eastern end, forming a flue, but was otherwise constructed similarly to 1018. The structure was approximately 3.8m long, including the flue, 2m wide and at least 1.03m deep; at the base, a solid white layer of lime/calcium carbonate overlay a brick floor, which sat directly on the natural sand geology which here was a bright orange colour. The natural sand surrounding the structure was also bright orange. The fills (663–669) of this feature were very different from those encountered in kiln 1018. Kiln 1019 was filled with a large quantity of bricks and building rubble which had clearly originally formed part of the structure, as many of the bricks retrieved were highly vitrified in appearance similar to the inside of the kiln. It seems that this structure was intentionally demolished, unlike kiln 1018 which appears to have been backfilled whilst still at least partially intact.

As with kiln 1018, structure 1019 also had a wide U-shaped pit associated with it. The fills again extended across both features, indicating that they had been backfilled simultaneously. Ditch 1015 and later features cut the pit fill, confirming that both kilns pre-date the later parts of the ditch complex.

Well 606 was excavated to a depth of 1.10m by hand and was further excavated by machine. The hand digging revealed no brick- or stone-work associated with the structure but this was later revealed during the deeper machine excavation. The well appeared to have been intentionally backfilled and again pottery recovered from the well (only a single sherd) gives a date of mid 16th century or later for the backfilling.

Slightly further to the west of the ditch complex, shallow gullies 1014 and 1013 formed a T-shape, with 1014 forming the head of the T approximately 8m long. Both ends of the feature were packed full of animal bone with 265 fragments retrieved from 447 and 124 fragments from 516; 516 also produced 3 fragments of post-medieval brick/tile. Gully 1013 (the stem of the T) cut ditch 1012 and also appeared to cut 1014 although the assumption is towards these gullies being contemporary. This gully was 0.43m wide and 0.25m deep towards its centre, only 0.05m deep at the terminus, and produced moderate quantities of bone throughout its length, with a small quantity of post-medieval ceramic building material. These are clearly post-medieval and most likely broadly contemporary with other linear features in this area. Of note is the high quantity of animal bone found in these features which may relate these gullies to ditch 1017 as these appear to be the only features on site producing such levels of bone, however their function remains unclear.

UNDATED

Several features in Area A remain undated. As these ditches appear to be in a zone of the site with relatively low level Iron Age activity it is conceivable that they are associated with this phase.

Ditch 1012, cut by gully 1013, extended from the south-west corner of site for approximately 27m, before terminating. No finds were recovered and as it was very different in fill and form to the other features in this area, it seems less likely to be contemporary with the industrial activity and perhaps more comparable with the prehistoric activity at the opposite end of the site.

THE FINDS

PREHISTORIC POTTERY BY FRANCES RAYMOND

The prehistoric assemblage from Area A is composed of 331 sherds, weighing 4.549kg. The earliest pottery from three features in the north-western part of this zone (406, 526 and 1000) is of middle Bronze Age date. The deposits include two partial globular urns from pit 526; and a mixed assemblage from hollow 1000, comprising further globular urn sherds, fragments from two miniature vessels and several other larger urns. The rest of the prehistoric pottery from the site dates to the middle Iron Age and is derived from an isolated pit in the north-eastern corner of Area A (537) and ring gully (1009) some 75m to the south.

The assemblage was analysed following the guidelines of the Prehistoric Ceramics Research Group (PCRG 1997). The recorded traits included fabric, form, decoration, surface treatment, colour, wall thickness, abrasion and sherd size. The material was quantified by context according to these categories and the results entered on a database, which is available as part of the project archive. The sorting by fabric was carried out with the aid of a binocular microscope at X20 magnification. The wares are identified by an alpha numeric code using...
the initial letters of the main inclusion types present followed by a number, which distinguishes between fabrics containing the same range of inclusions but in contrasting frequencies or size ranges. The letter codes include: F – burnt flint; gl – glauconite altered to limonite; M – mica; O – organic inclusions; S – sand; and sh – shell.

The Middle Bronze Age Pottery

The middle Bronze Age assemblage consists of 226 sherds, weighing 3031g (Table 1). Much of this material came from hollow 1000, while a small group of sherds largely derived from two globular urns was found in a pit some 20m to the west (526). A second pit 30m to the south (406) produced a single fragment of contemporary pottery.

Fabrics

Five middle Bronze Age fabrics are represented and all are tempered with evenly distributed crushed burnt flint. This is the only inclusion type in three of the wares, where it occurs in common to very common frequencies (F/1; F/2; and F/3). The distinction between the three fabrics rests largely on the size range of the flint, which is fine in F/1 (up to 2mm), coarse in F/2 (up to 9mm) and medium sized in F/3 (up to 4mm). The finest of these wares (F/1) is further distinguished by being relatively hard in comparison with the other two.

The two remaining fabrics additionally contain evenly distributed, very fine to fine angular quartz sand (up to 0.2mm) and both are soft (FS/1 and FS/2). FS/1 is very similar to the wares described above (F/1–3), being tempered with very common burnt flint in the same medium size range as F/3 (up to 4.0mm). The sand is present in only moderate quantities and the low frequency and small size of the grains may indicate that it occurred naturally within the clay being exploited. FS/2 is of a contrasting character to the other four wares, containing only moderate quantities of medium to coarse burnt flint (up to 5.0mm) and common sand.

Vessel Styles and the Character of the Deposits

Pit 406 produced a single moderately abraded wall sherd that could have been residual. Pit 526 yielded an assemblage in fresh condition that is likely to have been selected deliberately for deposition. Most of the sherds from this feature are derived from two

Figure 7: Prehistoric pottery.
globular urns made from the same fine flint tempered fabric (F/1). The larger of the two (Fig. 7: 1) is represented by 10 sherds (595g) that include 43% of the rim and upper walls and rather less of the belly, lower walls and base. Six of the sherds refit (579g) and the largest fragment is 220mm across. The smaller globular urn (Fig. 7: 2) is represented by six sherds (136g). Five of these (132g) from about 14% of the vessel, refit.

The two globular urns are similar in profile with dark grey exteriors but carry contrasting shallow-tooled designs. On the larger, short diagonal tool marks are arranged in two bands bordered by horizontal lines (Fig. 7: 1). This vessel has been burnished on both surfaces and has a single oval boss that is likely to have been one of an opposed pair. The decoration on the second globular urn may well have been created by a comb and comprises a band of horizontal lines on the belly set below a curvilinear motif (Fig. 7: 2). The burnishing on this vessel is confined to the exterior.

Single wall fragments from three other vessels were incorporated in the fill of the pit. One of these is decorated with a row of deep oval impressions (not illustrated) and is likely to be derived from a third globular urn. The sherd is made from the same fine flint tempered fabric (F/1) as the two illustrated vessels, has been burnished on both surfaces and has a dark grey exterior. The other two sherds are made from somewhat coarser wares (F/3 and FS/1) and have smoothed surfaces. These characteristics suggest that they are unlikely to be derived from globular urns, although unfortunately there is no evidence for vessel form.

The larger assemblage from hollow 1000 (Table 1) is of contrasting character. Only 16% of the sherds are fresh with the rest being either lightly (48%) or moderately (36%) abraded. This suggests that at least some were exposed to weathering prior to burial. The pottery is derived from a minimum of ten vessels, two of which appear to be represented by multiple fragments. These groups include 56 wall and base sherds (382g) from a globular urn (not illustrated). This carries the same decoration and surface treatment as one of the vessels from pit 526 (Fig. 7: 2) and is made from an identical fine flint tempered ware (F/1) with a surface colour that varies between dark grey and reddish brown. An additional wall sherd in the same fabric is embellished with a small boss (not illustrated) that may be part of this same urn.

The second group is composed of 69 sherds (685g), which are sufficiently similar in character to suggest their derivation from a single vessel (not illustrated). The few featured sherds indicate that this is either a bucket or a sub-biconical urn with a base diameter of approximately 130mm, a simple upright rim similar to vessel 5 (Fig. 7) and a horizontal cordon. Approximately 55% of the base and lower walls of this vessel are represented with only small fragments of the rim and cordon present. The urn is made from a fairly coarse fabric (FS/2), has a partially burnished and partially smoothed exterior that is predominantly brown.

The assemblage includes a number of sherds which provide rather more evidence for the forms of the vessels from which they are derived. These include two miniature tub-shaped vessels (Fig. 7: 3 and 4), one with an applied boss and a mending hole that has clearly been drilled after firing (Fig. 7: 3). In both cases the fabrics are relatively coarse (3 – FS/2; 4 – F/3) and only 15% of the rim and upper walls are present. Vessel 3 has a smoothed yellowish brown exterior, while the dark grey surface of 4 does not appear to have been treated.

Rim fragments from larger urns include one in fabric FS/2, with a smoothed brown exterior. This might be part of a bucket or sub-biconical urn, but too little of the profile survives for an identification of vessel form (Fig. 7: 5). A rim fragment from another vessel with an applied horizontal cordon and a greyish brown exterior (Fig. 7: 6) is made from a particularly coarse fabric (F/2). In spite of this both surfaces have been carefully smoothed. The only other featured sherds are derived from an urn with a simple upright rim and a brown smoothed exterior (Fig. 7: 7), made from a medium grade flint tempered ware (FS/1).

**Table 1:** Middle Bronze Age pottery by number and weight (in g) of sherds per context by fabric type

<table>
<thead>
<tr>
<th>Feature</th>
<th>406</th>
<th>526</th>
<th>1000</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>F/1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>735</td>
</tr>
<tr>
<td>F/2</td>
<td>1</td>
<td>6</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>F/3</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>FS/1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>74</td>
</tr>
<tr>
<td>FS/2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Totals</td>
<td>1</td>
<td>6</td>
<td>19</td>
<td>822</td>
</tr>
</tbody>
</table>
The Middle Iron Age Pottery

The Middle Iron Age assemblage consists of 105 sherds, weighing 1518g (Table 2). Virtually all of this material comes from pit 537 and ring gully 1009. The exceptions include a tiny sandy sherd from gully 1001 in the south-east corner of Area A and a shell tempered wall sherd from post-medieval ditch 1011.

The Fabrics

Most of the Middle Iron Age sherds are made from two soft, predominantly sandy fabrics. The first (FMOS/1) contains very common angular quartz grains which are very fine to fine (up to 0.2mm). The sand is accompanied by sparse quantities of coarse burnt flint (up to 5.0mm), white mica (up to 0.2mm) and organic inclusions visible as linear voids (up to 6.0mm long). The second sandy fabric (gls/1) is characterized by very common medium to coarse sub-rounded grains of quartz and quartzite (up to 1.0mm). Sparse particles of well-rounded glauconite (up to 0.5mm) are also present.

The other two Middle Iron Age wares are both tempered mainly with shell and like the sandy fabrics are soft in character. The first (feSsh/1) contains common shell (up to 6.0mm) and sparse sub-rounded quartz (up to 0.8mm) and iron ore (<0.06 to 0.5mm). The second (Ssh/1) is tempered with moderate amounts of shell (up to 4.0mm) and sparse medium grained, angular quartz sand (up to 0.5mm).

Vessel Styles and the Character of the Deposits

With the exception of a single vitrified fragment all of the pottery from pit 537 is derived from two jars and is moderately to heavily abraded (Fig. 7: 8 and 9; and see Table 2). The rim top of one of the vessels (8) has been pinched to create a cabled effect. Traces of burnishing survive on the exterior which varies in colour from very dark grey to strong brown and red. The vessel is made from a glauconitic sandy ware (gls/1) and the sherds include 42% of the rim and 80% of the base (diameter 90mm, not illustrated). The second jar (9) also has a short neck and high shoulder, but is undecorated with a smooth brown exterior. The vessel is made from a contrasting sandy fabric (FMOS/1) and in this case 37% of the rim and the entire base (diameter 90mm, not illustrated) are present.

Ring gully 1009 produced a small group of moderately abraded sherds that are likely to be derived from a single thick walled vessel (9 to 13mm) with a brown burnished exterior (Table 2). This is made from the same glauconitic sandy ware (gls/1) used for the decorated jar (8) from pit 537. Two fragments from a Middle Iron Age saucepan pot (Fig. 7: 10) were found on the adjacent surface. This has a dark brown burnished exterior and is made from a shell tempered fabric (Ssh/1).

Discussion

The Middle Bronze Age

The character of the Middle Bronze Age assemblage from pit 526 is consistent with a placed deposit. The general proximity of the possible human cremated bone might suggest that the two globular urns were part of the paraphernalia of a funerary ritual. Their incomplete character indicates that they were broken prior to burial and this is reminiscent of practices elsewhere in the middle Thames Valley. At the Wood Lane site in Cippenham, some 16km to the north, globular urn sherds had been placed inside a larger urn and in two pits close to another cremation (Raymond 2003a, 77). Approximately half of two globular urns were represented in one of the pits (Raymond 2003a, 75–6), while a few rim sherds from one of these vessels had also been placed in the second pit but also produced 75% of a large undecorated globular urn (Raymond 2003a, 73–5). The recovery of sherds from a single vessel in more than one feature at Cippenham may also be paralleled at the Staff College site. The combined recurrence of the unusual swag and horizontal motifs on the vessel from hollow 1000 may indicate that it is part of the same globular urn represented in pit 526 (Fig. 7: 2). Even if the fragments are derived from separate vessels the shared decoration increases the likelihood that they were produced and used by the same individuals, and may have been deposited in the two features over a relatively short space of time, possibly as part of a single event.

The globular urns belong to a group of broadly related vessels with a distribution centred on the Thames Valley. A number of these have proportions rather different from the Staff College urns, with a height similar to or greater than their maximum
girth. By contrast vessel 1 is almost twice as wide as it is tall, while the height of vessel 2 is less than its maximum girth, giving both the appearance of bowls. The dimensions and profile of 2 are most closely replicated by a small globular urn from the Wood Lane site in Cippenham (Raymond 2003, fig. 3.25: 5), while the proportions of both vessels are echoed by two urns from Ashford Common, Sunbury about 19km to the east (Barrett 1973, fig. 2: 15 and 16). The combination of applied bosses and shallow tooled decoration that occurs on vessel 1 is also seen on the Wood Lane vessel, while the shallow tooled decorative design on 1 is echoed closely by one of the Ashford Common urns (Barrett 1973, fig. 2: 15). The horizontal grooves below a swag pattern on a sherd from Yiewsley (Barrett 1973, 121) approximately 23km to the north-east sound very similar to the motifs on 2, while the row of oval impressions on the sherd from pit 526 recall the punctuation marks on the Wood Lane urn.

The fine flint tempered fabric and burnished surfaces that characterize both vessels are also features of many, although not all, of the Thames Valley globular urns. Published examples include vessels from the Sunningdale barrow on the Surrey-Berkshire border about 8km east of Bracknell (Barrett 1973, 121), Ashford Common (Barrett 1973, fig. 2: 15 and 16), Cippenham (Raymond 2003a, 73–7), and from the western suburbs of London within 28km of Bracknell; and two embossed cups from the Shortheath Lane cremation cemetery in Sulhamstead (Mepham 1992, fig. 24: 4) some 24km west of Bracknell, and two embossed cups from the Stoneyfield cemetery in Farnham (Needham 1987, 111 and fig. 5.8: 1) approximately 20km to the south. Practices involving the deposition of these vessels close to human burials that seem broadly analogous to those at the Staff College have been noted at Old Way Lane, Cippenham, where an embossed miniature had been placed in a pit next to a cremation burial (Raymond 2003, fig. 24: 4 and fig. 4.21: 2). The position of the row of bosses on these vessels varies from the belly to a location closer to the rim, as is the case with vessel 3 (Fig. 7). Miniatures more akin to 3 in this respect include the example from Sulhamstead (Mepham 1992, fig. 24: 4) and two from a cremation cemetery in the nearby village at Sulham (Abercromby 1912, 455e and 455f). The relatively coarse flint tempered fabrics used for both miniatures at the Staff College (F/3 and FS/2) are fairly typical of such vessels, having been noted as a characteristic of the examples from Shortheath Lane (Mepham 1992, 77), and various sites in Surrey (Needham 1987, 111).

Middle Iron Age
The character of the middle Iron Age pottery is consistent with contemporary regional groups. Round shouldered jars with short upright necks similar to vessels 8 and 9 tend to feature prominently in the local assemblages. Examples of these vessels occur at Fairclough Farm in Bracknell (Timby 2003, fig. 4.5: 7), Thames Valley Park in Reading (Mepham 1997, fig. 36: 1 and 10) and Riseley Farm, Swallowfield (Lobb and Morris 1993, 53). Cabled or scalloped rims as on vessel 8 are a less common feature of groups of middle Iron Age pottery, with single examples noted from Fairclough Farm (Timby 2003, fig. 4.5: 2) and Snowy Fielder Way, Isleworth (Timby 1996, fig. 6.36).

The prominence of sandy fabrics is a recorded characteristic of some of the middle Iron Age assemblages from the region, occurring at Fairclough Farm (Timby 2003), Riseley Farm (Lobb and Morris 1993), Thames Valley Park (Mepham 1997) and Snowey Fielder Way (Timby 1996). More specifically, the glauconitic sandy ware (gS/1) is similar to a fabric recorded at Fairclough Farm (Timby 2003, 103, Fabric 7).
**GRE: Post-medieval Redwares**, Mid 16th – late 18th century. Fine sandy earthenware, usually with a brown or green glaze, occurring in a range of utilitarian forms. Such ‘country pottery’ was first made in the 16th century, and in some areas continued in use until the 19th century. Probably manufactured at a number of local centres. 24 sherds, 659g.

**SLIP:** ‘Metropolitan’-type slipware, 17th century (Crossley 1990, 251). Range of fine sandy fabrics. Abundant grey quartz up to 0.2mm, occasional mica. Produced c. 1615–1700 at a number of sources, with the Harlow kilns being the best documented. Usually produced in a range of flat-wares (dishes, bowls) but closed vessels also occur. 2 sherds, 66g.

**ES: English Stoneware,** 1680 onwards. Hard, grey stoneware with brown salt-glaze. Wide range of table and utilitarian wares. 2 sherds, 44g.

**CRW:** Creamware, 1750–1820 (Barker 1999). A cream-coloured earthenware made from the same calcinated flinty clay used to make Staffordshire white salt-glazed stonewares. However, Creamwares were fired at different temperatures, and had a lead glaze, resulting in a rich cream colour. The range of forms for this ware was usually table wares, particularly plates and bowls, often with moulded decoration on the rim. 3 sherds, 7g.

**TABLE 3:** Medieval and later pottery by number and weight (in g) of sherds per context by fabric type

<table>
<thead>
<tr>
<th>Group</th>
<th>Cat</th>
<th>Deposit</th>
<th>MSW</th>
<th>NO.</th>
<th>Wt.</th>
<th>NO.</th>
<th>Wt.</th>
<th>NO.</th>
<th>Wt.</th>
<th>NO.</th>
<th>Wt.</th>
<th>NO.</th>
<th>Wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1029</td>
<td>101</td>
<td>151</td>
<td>1</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>103</td>
<td>-</td>
<td>surface</td>
<td>-</td>
<td>1</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>106</td>
<td>157</td>
<td>-</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>157</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1028</td>
<td>118</td>
<td>172</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>37</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1030</td>
<td>123</td>
<td>180</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>1032</td>
<td>141</td>
<td>254</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>82</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>1030</td>
<td>142</td>
<td>257</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1030</td>
<td>145</td>
<td>259</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1011</td>
<td>349</td>
<td>454</td>
<td>1</td>
<td>14</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1017</td>
<td>413</td>
<td>466</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1015</td>
<td>431</td>
<td>484</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1015</td>
<td>444</td>
<td>570</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1017</td>
<td>507</td>
<td>591</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>81</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1017</td>
<td>502</td>
<td>583</td>
<td>-</td>
<td>-</td>
<td>6</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1011</td>
<td>541</td>
<td>787</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>152</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1015</td>
<td>543</td>
<td>790</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1018</td>
<td>544</td>
<td>791</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>155</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1015</td>
<td>600</td>
<td>854</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>606</td>
<td>861</td>
<td>1</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>62</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>32</td>
<td>24</td>
<td>659</td>
<td>2</td>
<td>66</td>
<td>2</td>
<td>44</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**STRIKED FLINT BY STEVE FORD**
A small collection comprising just 9 struck flints was recovered during the course of the excavation (Table 4). The collection comprised 7 flakes, a core and a scraper. Several of the pieces are fresh, whereas others are slightly weathered and one is patinated. None of the pieces are closely datable but are likely to be of Neolithic or Bronze Age date.

**ANIMAL BONE BY MATILDA HOLMES**
Bones were identified using the author’s reference collection, and further guidelines from Cohen and Sarsatson (1996), Hillson (1992), Prummel (1988) and Schmidt (1972). Due to anatomical similarities between sheep and goat, bones of this type were assigned to the category ‘sheep/goat’, unless a definite identification using guidelines from Prummel and Frisch (1986) or Payne (1985) could be made. Bones that could not be identified to species were, where possible, categorized according to the relative size of the animal represented (small – rodent / rabbit sized, medium – sheep / pig / dog size, or large – cattle / horse size). Ribs and vertebrae (except for 1st and 2nd cervical and sacrum) were not identified to species. All fragments were recorded (Table 5).
Tooth wear and eruption were noted using guidelines from Grant (1982) and Silver (1969), as were bone fusion (Amorosi 1989, Silver 1969), metrical data (von den Driesch 1976), anatomy, side, zone (Serjeantson 1996), pathology, butchery, bone working, size and condition (Lyman 1994) of the bones.

The assemblage is being treated as all of 16th to 17th century in date: just 22g of unidentifiable burnt bone from ?Bronze Age pit 521 and 30g similarly from pit 406, was not of this date range.

### Activity Centres

The bones were all recovered from the area surrounding kiln 1018 and, to a lesser extent, kiln 1019, mostly from ditches. All the bones from medium sized animals, as well as the greatest concentration of fragments from large mammals, cattle and horse, were recovered from deposits which centred in and immediately to the west of kiln 1018. The larger mammal bones covered a slightly wider area, but still concentrated around the kilns.

### Table 5: Animal Bone

#### Table 5a: Species Representation (fragment count)

<table>
<thead>
<tr>
<th>Species</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>53</td>
<td>11</td>
</tr>
<tr>
<td>Sheep / Goat</td>
<td>90</td>
<td>18</td>
</tr>
<tr>
<td>Pig</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Horse</td>
<td>343</td>
<td>70</td>
</tr>
<tr>
<td>Fallow deer</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total Identified</td>
<td>488</td>
<td></td>
</tr>
<tr>
<td>Large Mammal</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>Medium Mammal</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Small Mammal</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Unident. Mammal</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1430</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 5b: Fragment representation (epiphysis only count)

<table>
<thead>
<tr>
<th>Anatomy</th>
<th>Horse</th>
<th>rel.%</th>
<th>Cattle</th>
<th>rel.%</th>
<th>s/f</th>
<th>rel.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandible*</td>
<td>8</td>
<td>53</td>
<td>2</td>
<td>20</td>
<td>6</td>
<td>86</td>
</tr>
<tr>
<td>Maxilla*</td>
<td>5</td>
<td>33</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zygomaticus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occipitale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st Cervical</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Cervical</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Sacrum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metacarpal P</td>
<td>3</td>
<td>20</td>
<td>3</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metacarpal D</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Metatarsal P</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Metatarsal D</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Metapodial P</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td>5</td>
<td>71</td>
</tr>
<tr>
<td>Metapodial D</td>
<td>9</td>
<td>60</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>1st phalange**</td>
<td>10</td>
<td>67</td>
<td>5</td>
<td>100</td>
<td>7</td>
<td>100</td>
</tr>
<tr>
<td>2nd phalange**</td>
<td>6</td>
<td>40</td>
<td>3</td>
<td>30</td>
<td>2</td>
<td>29</td>
</tr>
<tr>
<td>3rd phalange**</td>
<td>3</td>
<td>20</td>
<td>3</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scapula D</td>
<td>4</td>
<td>27</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Humerus P</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Humerus D</td>
<td>2</td>
<td>13</td>
<td>2</td>
<td>20</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Radius P</td>
<td>4</td>
<td>27</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radius D</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pelvis</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Femur P</td>
<td>1</td>
<td>7</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Femur D</td>
<td>4</td>
<td>27</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tibia P</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tibia D</td>
<td>15</td>
<td>100</td>
<td>1</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>26</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mandibles and maxillas with molars

** Phalanges counts altered to compensate for their relative frequencies

### The Assemblage

Although a small assemblage of 488 bones was identified to species (34% of all fragments), a substantial proportion of these, some 343 fragments (70%) were horse remains (Table 5a) coming from a minimum number of 11 individuals. Cattle and sheep/goat were present in much smaller but noteworthy quantities (11 and 18% respectively), the only other species represented being a single bone each of pig and fallow deer.

Horse bones were all fused indicating a mature population and the eruption of teeth also suggests that horses were older than 3 years at death, although one 3rd molar was not yet in wear, indicating an animal less than 4½ years old. Only four bones were complete enough for wither heights to be calculated (Keisewalter 1974), which revealed the presence of three animals between 15 and 15.2hh (small horse) and one of 12.2hh (pony). A number of bones contained signs of pathological changes, including a 2nd phalanx which had bony growths on the medial aspect of the proximal articular surface, a tarsal which contained signs of eburnation on the articular surface and a mandible with a bony growth on the lateral aspect of the diastema.

Cattle bones were all fused, and a wear stage of 46 was calculated from a mandible, suggesting a mature population at the time of culling. No bones were complete enough for shoulder heights to be calculated.

A number of sheep were positively identified, but no goat bones, suggesting that sheep were the most common, if not sole contributor to the ovicaprid assemblage. The majority of bones fusing...
before 36 months were fused, with the exception of one distal metatarsal from an animal less than 28 months old. There was only one late fusing bone present which was unfused, which indicates that one animal was killed before reaching 3 years of age. However, evidence from the tooth wear data suggests older animals, as five of the six mandibles suitable for calculating wear stages gave values between MWS 35 and 41, which is well over 4 years of age the other, though, was from an animal around 6 months of age. There were no bones suitable for the calculation of shoulder heights.

Although the samples are small it is likely, from the consistency of mortality data, that horses, cattle and sheep/goats were all used for secondary products before being slaughtered, as nearly all were past their prime meat ages. The near absence of pelvis fragments, and small number of measured bones has meant that sexing the assemblage has not been possible, although it is likely that horses were kept for riding, driving and/or haulage, cattle may have been used for traction or milking, and sheep for their wool or milk. There is evidence that sheep were occasionally culled at prime meat ages (6 months and c. 2 years), which may indicate a compromise in the local market for animals kept for secondary products, or could have been evidence for natural deaths from a local flock. The absence of neonatal or very young animals suggests that this was not a site where animals were bred.

**Carcass Representation and Butchery**

Table 5b shows the number of fragments found from different parts of the skeleton using an epiphysis count (Grant 1975) for the cattle, sheep and horse assemblages. Frequencies are similar for all species, where head, lower leg and feet bones are the most common elements recorded, and are present in far greater numbers relative to other carcass parts than may be expected if complete carcasses were deposited on site. Upper limb bones and vertebrae were also present, but in far lower numbers. This significantly larger proportion of bones associated with the head, lower legs and feet compared to those associated with upper limbs and vertebrae has been calculated as a percentage of all fragments identified to anatomy, and is similar for horse (85%), cattle (84%) and sheep/goat (90%). The horse assemblage is large enough for detailed interpretation to be attempted.

It appears that the lower leg was commonly removed and deposited as waste, due to the large numbers of metapodials and phalanges recovered (Chart 1). Associated with this are significant quantities of distal tibiae found in the assemblage, which were probably removed as part of the hock joint – bones from this area (distal tibiae, astragali and calcanei) were often heavily butchered. Butchery of the metapodial, radius, tibia and humerus shafts suggests they were commonly split vertically with a chopper type implement, a type of butchery that may have been used to remove marrow from the long bones. Other evidence for the butchery of bones transversely across the shaft was noted on femora, radii and ulnae and proximal tibiae, most likely due to the disarticulation of the carcass into joints of meat.

The head was best represented by maxilla and mandible fragments, which appear to have been
removed just after the area of the cheek teeth, as there is very little evidence for other parts of the skull. Particularly notable by its absence is the occipital joint, which may be expected if the head had been removed at the neck. This pattern may be indicative of the removal of the brain from the skull, where the cranium was smashed - the relatively fragile fragments resulting from this not surviving.

The bones bearing most meat (vertebrae, pelvis, scapulae and upper legs) are not as common on this site as may be expected if deposits were domestic in nature, consisting of food waste. The removal of head and lower legs is traditionally indicative of primary butchery waste, being the parts removed once the animal has been killed, bled and hung. It is also unlikely that these remains are the waste products of tanning (processing cattle skins) or tawrying (processing sheep, horse and deer skins), as there is no evidence on such sites that skulls, particularly of larger animals, were left attached to hides (Dobney et al. 1996; Rixson 1989).

**Discussion**

This site is interesting in its industrial nature, the bones being so closely related to lime kilns. The predominance of primary butchery waste from an aged population of cattle, sheep and more particularly horses suggests that some processing of carcasses centred around the western kiln. It is possible that this was a secondary use for this structure, once it had gone out of use.

The low frequencies of limb bones suggests that they were taken elsewhere with the meat they held, for consumption. The presence of butchered horses poses a problem, as there is little evidence of horses being eaten at this point in history. Since the Papal prohibition of human consumption of horsemeat in the 8th century, horse meat was considered taboo in nature, consisting of food waste. The removal of head and lower legs is traditionally indicative of primary butchery waste, being the parts removed once the animal has been killed, bled and hung. It is also unlikely that these remains are the waste products of tanning (processing cattle skins) or tawrying (processing sheep, horse and deer skins), as there is no evidence on such sites that skulls, particularly of larger animals, were left attached to hides (Dobney et al. 1996; Rixson 1989).

After their death, horses were only deemed useful for their hides and the flesh for feeding to dogs (Davis 2002), which therefore suggests that the meat from the butchered carcasses at this site was used for feeding to dogs. A broadly similar assemblage of horse remains was recovered from post-medieval deposits at Dudley Castle (Thomas 2000), although there, the animals’ heads were removed prior to deposition and the metapodials were absent, a phenomenon indicative of their being sent elsewhere for bone working. It was suggested that, in that case, the animals were butchered for feeding to the castle’s pack of hounds.

**Summary**

In conclusion, a number of mainly old animals – particularly horses but also cattle and sheep – were brought to this site, either on the hoof or as complete carcasses, for primary butchery. The skulls may have been smashed to allow removal of the brain, marrow was extracted from other bones, and the main meat bearing bones removed with the meat and taken elsewhere, most likely (for horse at least) for feeding to hounds. The front part of the head, mandibles, lower legs and feet of these animals were then disposed of on this site.

**Burnt Bone by Ceri Falys**

Two small deposits of burnt bone were recovered from middle Bronze Age pits 406 and 521. The features were each whole-earth excavated in a single spit (samples 16 and 23, with volumes of 15 and 25 litres, respectively). The deposits were floated and wet-sieved over a 2mm mesh. For each context, the bone was removed from large quantities of charcoal and very occasional small subangular burnt flints.

A total of 256 fragments of bone were recovered, weighing just 30g combined. Overall, the burnt bone fragments were chalky white, although some were slightly discoloured by the large amount of charcoal present. The white colour indicates the bone was fully oxidized in the burning process, reaching temperatures over 600°C (McKinley 2004). The maximum fragment size in each deposit was 21mm and 33mm, but fragments this large were rare. Almost all of the bone in each context was smaller than 5mm. This degree of fragmentation made it impossible to assign the bone even to human or animal, let alone any more specific identification. These deposits cannot be regarded as cremation burials: even calling them ‘pyre debris’ is debatable.

**Metalwork and Slag by Jennifer Lowe**

A total of 23 iron objects were recovered all from post-medieval contexts (106, 502, 503, 504, 507, 525, 528 and 545). A knife blade came from ditch 1017 and a large bracket from ditch 1015. The rest of the objects were nails. Fifteen pieces of iron slag were recovered from four contexts (443, 502, 503 and 543). Eight of these pieces came from middle Iron Age pit 537, suggesting that some ironworking was taking place within close proximity to the site. All the other slag was from post-medieval contexts where it is no more than ‘background noise’.

**Ceramic Building Material by Jennifer Lowe**

A total of 366 fragments of ceramic building material were retrieved, the majority of which came from the ditches surrounding the kilns in Area A. Analysis of brick samples from both kilns and Well 606 was
carried out (see below) as well as a pantile retrieved from the well. A large number of pantiles were also recovered from the upper fill of pit 528 associated with kiln 1018. Besides the complete bricks retrieved from the kilns, well and surrounding features the remainder of the assemblage was fragmentary, largely undiagnostic but would appear to be of post medieval date. Area B produced just 23 brick fragments all of which were undiagnostic.

**BURNT CLAY**

Pieces of undiagnostic burnt clay were recovered from pits 526 (Bronze Age) and 537 (Iron Age).

**ANALYSIS OF BRICK AND TILE BY ALAN VINCE**

The material is consistent with a post-medieval date but it is not possible to provide a closer date nor, without further analysis, to establish where the material was produced.

**Brick**

Three brick samples were analysed, one each from kilns 1018 and 1019 and well 606. That from kiln 1018 consists of parts of two or more bricks, bonded together with clay of an identical colour and texture. It is vitrified throughout and shattered. Rare, rounded flint pebbles up to 20mm across are present in the fabric. That from kiln 1019 was part of the kiln wall and was bonded with clay of similar colour and texture to the brick, which contains moderate subangular quartz and sparse sandstone fragments. The only obvious difference is that the bonding clay contains some angular clay/iron inclusions. The brick was made in a sanded mould and measured 225 by 105 by 55mm.

**Pantile**

The pantile has a square nib, a hand-rounded top edge and a knife-cut side. Traces of mortar are present on the upper surface. The fabric is oxidized and contains moderate angular and rounded brown-coated quartz grains up to 0.4mm across. The base has moulding sand of similar character adhering to it together with sparse sub-angular white flint up to 2.0mm across and muscovite laths up to 0.2mm across. These characteristics are too widespread in sands and clays in south-east England for them to be used to determine the source of the tile.

The three bricks could all be of local manufacture and the fact that those from the kilns were bonded with clay of similar character to that of the bricks suggests that the kilns might have been built from bricks made on site. The pantile is similar in character. Pantiles in the British Isles first came into use in the later 16th century but are uncommon except along the east coast until a century later, and in some areas of the country later still, perhaps not until the later 18th or early 19th centuries. The bricks are undatable although hand-moulded bricks of this kind were still being made in the later 19th century.

The bricks used in the kilns and well, therefore, could date from any time between the later 16th and the 19th centuries. If the earliest (mid 16th century) date for these features is indeed true then the material becomes of some interest as an early example of local brick manufacture.

**CLAY PIPE**

Eight pieces of clay tobacco pipe stem were retrieved from four contexts of which two were in Area A: ditches 502 (1017), and 609 (1015). A stem fragment with spur intact was recovered from ditch 1017 (502). The initials ‘PR’ on this pipe may be the mark of Newbury pipe maker Philip Richard who was working c. 1660 (Oswald 1975).

**RADIOCARBON DATING**

A single radiocarbon determination was obtained by the University of Kiel on charcoal from ring gully 1009 (slot 340, fill 390) giving a range of 357–117BC at two sigma (Table 6) with a likeliest discrete range (although only 46% probability) of 234–151 BC. Details of method are in the archive; in short, the result is considered reliable, although subject to the vagaries of the calibration curve for this period. The calibrated dates were calculated using the INTCAL98 curve (Stuiver et al. 1998).

**TABLE 6: Radiocarbon date of charcoal from ring gully 1000 (KIA 33859)**

<table>
<thead>
<tr>
<th>Radiocarbon Age: BP 2168 ± 26</th>
<th>Calibrated Age: cal BC 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Sigma Range: (Probability 95.4 %)</td>
<td>cal BC 357–277 42.5%</td>
</tr>
<tr>
<td>259–242 3.8%</td>
<td>234–151 46.3%</td>
</tr>
<tr>
<td>132–117 2.8%</td>
<td></td>
</tr>
</tbody>
</table>

**CARBONIZED PLANT REMAINS AND CHARCOAL BY LUCY J E CRAMP**

Samples of sediment, from 1–30 litres, taken from 42 deposits dated from the Bronze Age to the post-medieval period, were sieved for environmental remains. Details of methodology are in the archive. Initial sorting revealed that 23 samples were worthy of analysis (Table 7); the remaining samples contained no material of significance. All of the material recovered was carbonized.

**Charcoal**

Oak (*Quercus* sp.), cherry/blackthorn-type (*Prunus* sp.) and a few fragments of hazel (*Alnus* or *Corylus* sp.) were identified. Oak was present in reasonable abundance, although fairly fragmentary, in the majority of samples from the Iron Age and later phases. However, Bronze Age deposits were heavily
dominated by cherry/ blackthorn-type charcoal, with other species sparsely represented. The charcoal from three of the Bronze Age deposits was relatively abundant and found in larger fragments than the majority of samples (>7mm length). The difference in the prevalence of tree species represented might suggest either a change in wood availability or a shift from the exploitation of scrub to more established woodland between the Bronze Age and Iron Age.

Other plant remains
Very few other plant remains were recovered: no more than a single example of any taxon per deposit, except for seven of oats (*Avena* sp.) from a post-medieval ditch. Isolated weed seeds of goosegrass (*Galium aparine*) and chickweed (*Stellaria media*) were found in a middle Iron Age gully; these are common arable or rural weeds.

**TABLE 7: Charred plant remains**

<table>
<thead>
<tr>
<th>Sample</th>
<th>16</th>
<th>17</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>33</th>
<th>34</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut</td>
<td>406</td>
<td>406</td>
<td>521</td>
<td>524</td>
<td>526</td>
<td>547</td>
<td>547</td>
<td>548</td>
</tr>
<tr>
<td>Deposit</td>
<td>462</td>
<td>463</td>
<td>662</td>
<td>685</td>
<td>689</td>
<td>850</td>
<td>799</td>
<td>851</td>
</tr>
<tr>
<td>Type</td>
<td>Pit</td>
<td>Pit</td>
<td>?Cremation</td>
<td>Pit</td>
<td>Pit</td>
<td>Hollow</td>
<td>Hollow</td>
<td>Hollow</td>
</tr>
<tr>
<td>Phase</td>
<td>MBA</td>
<td>MBA</td>
<td>?MBA</td>
<td>MBA</td>
<td>MBA</td>
<td>MBA</td>
<td>MBA</td>
<td>MBA</td>
</tr>
<tr>
<td>Sample vol. (L)</td>
<td>15</td>
<td>5</td>
<td>25</td>
<td>25</td>
<td>20</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Cereal</td>
<td><em>Avena</em> sp.</td>
<td>Oat</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weed seeds</td>
<td><em>Stellaria media</em></td>
<td>Chickweed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Galium aparine</em></td>
<td>Goosegrass</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal</td>
<td><em>Quercus</em> sp.</td>
<td>Oak</td>
<td>+</td>
<td>+++</td>
<td>++++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Cf. Quercus</em> sp.</td>
<td>+</td>
<td>++++</td>
<td>++++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Alnus</em>/<em>Corylus</em> sp.</td>
<td>Alder or hazel</td>
<td>+</td>
<td>++</td>
<td>++++</td>
<td>++++</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>30</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut</td>
<td>336</td>
<td>337</td>
<td>339</td>
<td>340</td>
<td>341</td>
<td>342</td>
<td>345</td>
<td>537</td>
<td>537</td>
</tr>
<tr>
<td>Deposit</td>
<td>386</td>
<td>386</td>
<td>389</td>
<td>391</td>
<td>394</td>
<td>395</td>
<td>399</td>
<td>775</td>
<td>777</td>
</tr>
<tr>
<td>Group</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
<td>1009</td>
</tr>
<tr>
<td>Type</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Gully</td>
<td>Pit</td>
</tr>
<tr>
<td>Phase</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
<td>MIA</td>
</tr>
<tr>
<td>Sample vol. (L)</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Cereal</td>
<td><em>Avena</em> sp.</td>
<td>Oat</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weed seeds</td>
<td><em>Stellaria media</em></td>
<td>Chickweed</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Galium aparine</em></td>
<td>Goosegrass</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal</td>
<td><em>Quercus</em> sp.</td>
<td>Oak</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+++</td>
<td>++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td><em>Cf. Quercus</em> sp.</td>
<td>+</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Alnus</em>/<em>Corylus</em> sp.</td>
<td>Alder or hazel</td>
<td>+</td>
<td>++</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Prunus</em> sp.</td>
<td>Cherry, blackthorn etc.</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>21</th>
<th>31</th>
<th>32</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut</td>
<td>515</td>
<td>426</td>
<td>348</td>
<td>348</td>
</tr>
<tr>
<td>Deposit</td>
<td>653</td>
<td>476</td>
<td>352</td>
<td>453</td>
</tr>
<tr>
<td>Group</td>
<td>1028</td>
<td>1011</td>
<td>1011</td>
<td>1011</td>
</tr>
<tr>
<td>Type</td>
<td>Pit</td>
<td>Ditch</td>
<td>Ditch</td>
<td>Ditch</td>
</tr>
<tr>
<td>Phase</td>
<td>?Medieval</td>
<td>P Med</td>
<td>P Med</td>
<td>P Med</td>
</tr>
<tr>
<td>Sample vol. (L)</td>
<td>5</td>
<td>-</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Cereal</td>
<td><em>Avena</em> sp.</td>
<td>Oat</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Weed seeds</td>
<td><em>Stellaria media</em></td>
<td>Chickweed</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><em>Galium aparine</em></td>
<td>Goosegrass</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal</td>
<td><em>Quercus</em> sp.</td>
<td>Oak</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><em>Cf. Quercus</em> sp.</td>
<td>+</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Alnus</em>/<em>Corylus</em> sp.</td>
<td>Alder or hazel</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Prunus</em> sp.</td>
<td>Cherry, blackthorn etc.</td>
<td>+++</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ present, ++ some, +++ much
DISCUSSION

The fieldwork carried out at the former Staff College, Bracknell identified activity ranging in date from the middle Bronze Age to the early post-medieval periods.

The middle Bronze Age activity comprised a small number of pits and a larger hollow of uncertain function. It is unclear if these deposits are related to funerary activity, or occupation, or both. The pits contained pottery, wood charcoal and a few struck flints, but no other artefactual or faunal remains. The pottery present is all well paralleled at other sites in the region, and the combination of types and state of preservation suggest deliberate placement rather than rubbish disposal. The range of deposits, though, appears to be fairly typical of middle Bronze Age occupation in the Middle Thames Valley as a whole, albeit relatively few locations are recorded. A number of multi-period sites on the gravel terraces of the Thames and Kennet Valleys have revealed isolated features, usually pits, of middle Bronze Age date, as at Knights Farm, Burghfield (Bradley et al. 1980). Less common are midden deposits such as that within the upper fill of a ring ditch at Old Way Lane, Cippenham (Ford et al. 2003). Most unusual, are deposits comprising ditches, gullies, pits and post-built structures as at Weir Bank Stud Farm, Bray (Barnes and Cleal 1995).

These deposits are, nevertheless, noteworthy for their rarity. Middle Bronze Age evidence for the environs of Bracknell and south-east Berkshire in general is surprisingly rare despite the much increased level of fieldwork since the last overview was compiled (Ford 1987; Ford 2012). Much of the evidence for the middle Bronze Age is derived from burial deposits. A cremation cemetery comprising 23 urned and 2 un-urned cremation burials is recorded from a round barrow at Sunninghill (Barrett 1973) to the east, and in the Blackwater valley to the south, is a large flat cremation cemetery ('urnfield') with at least 35 urns at Moor Place, Yateley (Piggott 1928).

The middle Iron Age activity recorded on the site, dated by pottery and a radiocarbon determination likely to fall in the 3rd or 2nd century BC, would appear to comprise an unenclosed settlement with just one, possibly two house sites, and one very isolated pit belonging to this period. Much less securely dated but possibly of Iron Age date is a complex of three ditches, all recut, which may be contemporary with the settlement, marking out fields or enclosures to the south and east.

Evidence of Iron Age occupation sites in the area is still rare but such ephemeral traces of occupation are increasingly recognized in the archaeological record, as at Baird Road, Arborfield (Hammond 2011) and at Fairclough Farm, Bracknell (Torrance and Durden 2003). They provide a marked contrast with the large, dense enclosed sites considered, until relatively recently, as typical of farms of the period (Cunliffe 1984, 34). A local example of the latter is perhaps represented by the site at Park Farm, Binfield (Roberts 1995) though possibly of slightly later date. The site here is lacking many of the traits commonly found on sites of this period, such as 4-post structures, storage pits, and complexes of gullies acting as animal pens, and enclosure in all its forms. In this latter respect, the significance of the ditched features in the vicinity of the ring gullies is difficult to assess due to the uncertainty of their chronology, but if contemporary, these could indicate the presence of facilities for stock enclosure. Nevertheless it is considered that the site is likely to represent part of a basic farmstead of relatively low status.

Post-medieval activity on site was represented by field boundaries and drains in Area B and a small industrial activity zone with further field boundaries in the south-west corner of Area A, where a sequence of ditches and two lime kilns was recorded. The lime kilns were similar in design and it would seem that they were broadly contemporary in the mid 16th to 17th century. Up until the early 16th century, lime kilns were generally used for producing mortar, however by the mid 16th century there are many references to lime being utilized as a soil improver (Williams 2004). Also around this time there was an increased need for brick production in the construction of larger houses, which also led to an increase in demand for lime burning. Up until the middle of the 18th century, lime kilns were generally temporary structures and none of the kilns extant today were constructed before this time. Prior to this period the kilns were often constructed for a single use then left to decline. Occasionally the structures were reconstructed and reused, but there was no evidence of this here.

The size of the kilns at Staff College does not suggest major industrial production of lime, and also the suggested date for these kilns, i.e., prior to the 18th century, suggests that they were most likely constructed for a single use. It is not clear whether this was for agricultural or construction purposes. The sandy soils at Staff College would most likely warrant an alkaline soil improver, however it is equally likely that the lime was utilized in the construction of a large house, for example at...
Ramslade House itself, situated in close proximity to the site. The construction date for this house is unknown but it is conceivable that the kilns were constructed to produce mortar for the building.

The industrial activity in this corner of the site appears to have continued after the kilns went out of use as suggested by the high quantity of animal bones recovered from the area surrounding the kilns. The nature of the assemblage, predominantly bones from older animals including cattle and sheep but predominantly horses, is indicative of an animal processing area, and less likely the waste from consumption. It is not clear for what purpose the bones were being processed but it is of some interest that this small corner of the site appears to have had two phases of industrial activity within a short period of time.

ACKNOWLEDGEMENTS
The excavation was commissioned and funded by Taylor Wimpey West London and was carried out to a written scheme of investigation based on design briefs produced by WSP Environmental (WSP 2005) and approved by Mr David Thomason of Berkshire Archaeology, archaeological advisers to the Bracknell Forest Borough Council.
REFERENCES

Abercromby, J, 1912, A Study of the Bronze Age Pottery of Great Britain and Ireland and its associated grave goods, Oxford

Amorosi, T, 1989, A postcranial guide to domestic neonatal and juvenile mammals, Brit Archaeol Rep (Internat Ser) 533, Oxford


Crossley, D, 1990, Post-Medieval Archaeology in Britain, Leicester


Dobney, K M, Jaques, S D and Irving, B G, 1996, Of Butchers and Breeds: Report on vertebrate remains from various sites in the City of Lincoln, Lincoln Archaeol Stud 8, Lincoln

Driesch, A von den, 1976, A guide to the measurement of animal bones from archaeological sites, Cambridge, Mass


Ford, S, 1987, East Berkshire Archaeological Survey, Berkshire County Counc Dept Highways and Planning Occas Pap 1, Reading


Hillson, S, 1992, Mammal Bones and Teeth, London

Jarvis, M, Hazelden, J and Mackney, D, 1979, Soils of Berkshire, Memoir Soil Survey Great Britain, Harpenden


Lyman, R L, 1994, Vertebrate Taphonomy, Cambridge


Margary, I D, 1955, Roman Roads in Britain, London


Needham, S, 1987, ‘The Bronze Age’, in J Bird and D G Bird (eds), The Archaeology of Surrey to 1540, Guildford, 97–137


Oswald, A, 1975, Clay pipes for the Archaeologist, Brit Archaeol Rep (Brit Ser) 14, Oxford

Payne, S, 1985, ‘Morphological distinctions between the mandibular teeth of young sheep, Ovis, and goats, Capra’, J Archaeol Sci 12, 139–47


Piggott, S, 1928, ‘Finds from Moor Place Farm, Yateley’, Berkshire, Buckinghamshire, Oxfordshire Archaeol J 32, 69–73


Rixson, D, 1989, ‘Butchery evidence on animal bones’, Circera, 6, 49–62


Williams, R, 2004, Limekilns and limeburning, Princes Risborough

WSP, 2005, ‘The Staff College, Bracknell, Archaeological Desk Based Assessment’, WSP unpubl rep, Basingstoke
Middle Bronze Age and Middle Iron Age Occupation and Post-Medieval Limekilns at RAF Staff College, Broad Lane, Bracknell, Berkshire

by Jennifer Lowe

An excavation within the grounds of the former RAF Staff College site, Bracknell revealed a number of features ranging in date from middle Bronze Age to post-medieval. Two phases of prehistoric activity were recorded: the middle Bronze Age represented by pits; and the middle Iron Age represented by pits, two ring gully structures, dated by radiocarbon, and field boundaries. A few sherds of medieval pottery point to only slight use of the site at this time. Much more activity was recorded for early post-medieval times with various ditched boundaries and pits, and an area of industrial activity dating from the mid 16th to 17th century which comprised two lime kilns and a well and may relate to the production of mortar for construction of Ramslade House which formed the original Staff College.