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Land North of Broom Grange, Near Biggleswade, Bedfordshire:

An Archaeological Evaluation

Mark Knight & Anwen Cooper

with contributions by

Katie Anderson, Emma Beadsmoore, Adrian Challands,
Sam Lucy, Kate Roberts, Chris Swaysland, Jess Tipper and Leo Webley

Cambridge Archaeological Unit
University of Cambridge

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INTRODUCTION

The proposed development area covers c.55 ha of land to the west of Biggleswade, Bedfordshire, centred TL 1809 4360 (Figure 1). It is situated at the southern end of a broad gravel ridge and slopes steeply from the upper terrace (c. 35m OD) to the west, to the flood plain (c. 26m OD) to the east. The eastern boundary is defined by a small tributary of the River Ivel; the main river lies 250m further to the east. The underlying geology is Oxford clays overlain by glacial gravels and alluvial deposits along the eastern edge. The site is currently under arable cultivation.

Archaeological background

Evidence from stray finds, historical sources and previous archaeological investigations revealed a density of archaeology both within the Proposed Development Area (PDA) (Palmer 2003; Northamptonshire Archaeology 2003) and in the wider landscape (Cooper forthcoming; Cox 1995, 1996; Garrow 2000; Hatherley 2001; Mortimer 1997, 1998, 2002; Mortimer & McFadyen 1999). The reader is referred to the full reports for detailed background information; the results are summarised below.

The Bedfordshire Historic Environment Record provided evidence from documentary sources, aerial photographs and stray finds in the landscape surrounding the site. This included a barbed and tanged arrowhead found at the northern edge of the site (HER 16208); a medieval ring work and bailey overlying prehistoric and Roman archaeology to the north east (HER 468); medieval settlements at Holme (HER 461 & 465) and Broom (HER 17138); and documents relating to a small medieval settlement known as Frog's Hall (HER 14137), immediately to the north.

An extensive programme of investigation is ongoing at Broom Quarry immediately to the north west of the PDA. Initial and most recent stages of excavation here (Phases 1-3 & 8) focussed on known cropmark archaeology (Cox 1995, 1996) and uncovered activity spanning from the Neolithic to the later Saxon period. This included a scattering of later Neolithic pits, three later Neolithic/earlier Bronze Age funerary monuments, an extensive middle to later Bronze Age field system, two concentrations of later Bronze Age and Iron Age settlement, a rich Anglo Saxon cemetery and an isolated later Saxon pit.

Excavations during the intervening period (Phases 4-7) investigated areas of unknown archaeological potential in the southern and western part of the quarry (Mortimer & McFadyen 1999, Garrow 2000, Hatherley 2001, Mortimer 2002) and uncovered archaeology of middle Bronze Age to Medieval date. This included further evidence of the middle to late Bronze Age field system, ephemeral later Bronze Age settlement and clusters of middle to late Bronze Age pits. Later activity at the northern extent of this area (Phase 7) included an isolated late Saxon pit and a substantial 13th century AD enclosure.

An aerial photographic survey was undertaken by Air Photo Services in advance of the recent programme of trial trenching (Figure 2, Palmer 2003). Four major concentrations of archaeology were located along the edge of the flood plain of the

River Ivel at the eastern edge of the site. This included two dense groups of enclosures and driveways to the south and two more diffuse concentrations to the north, all of which were thought to represent Iron Age or Roman settlement. Three further areas of archaeology were identified on the upper slopes of the gravel terrace. A ring ditch was located in the north western corner of the site. A scatter of small enclosures at the southern end of the site was thought to represent Bronze Age settlement or monuments. A number of small, rectangular pits at the centre of the site were identified as possible Post Medieval quarries or Saxon *Grubenhauser*.

Geophysical survey by magnetic susceptibility and flux gradiometer was undertaken by a team from Northamptonshire Archaeology in September 2003 (Figure 3). The Magnetic Susceptibility survey covered the entire site. It produced high values over most of this area, except where it overlay the course of the palaeochannel. The Flux Gradiometer survey focussed on seven areas. Five of these were located in order to assess archaeology identified by aerial photographic survey. A further two investigated the wider context of these cropmarks and provided coverage across the development area. The results of this survey complemented and enhanced those from the aerial photographic survey; cropmark features were more clearly defined and new features were identified, most notably around the site of the possible Saxon *Grubenhauser*.

In summary, archaeological records and previous excavations revealed that the PDA was situated in a dense archaeological landscape, including evidence dating from the later Neolithic to the Medieval period. Aerial photographic and geophysical survey on the site itself confirmed this potential and highlighted at least seven possible concentrations of archaeology. This provided a basis for locating the subsequent trial trenches.

METHODOLOGY

Trial trenching

Evaluation trenches were located in order to assess the archaeology identified by aerial photography (Palmer 2003) and geophysical survey (Northamptonshire Archaeology 2003) and to provide coverage across the investigation area (Figure 4). A programme of 11000 square metres of 2m wide trenches and six 10m x 10m boxed areas was machine excavated providing a 2% sample of the 55 ha area. A further 1851 square metres of judgemental trenching was deployed in order to clarify and define archaeology recovered in the initial 2%. Overburden and the stripped surface of the trenches were scanned by eye and with a metal detector.

The trenches were machine excavated under archaeological supervision and all archaeological features were immediately planned. Excavation began once the site plan was completed. Following the identification of seven main concentrations of archaeology (Sites 1-7), the team worked together, moving across the area from site to site in order to facilitate the excavation process. A representative sample of features were tested by a combination of half sections of discrete features and 1m wide slots. Where it was considered important (e.g. cremation pits) features were fully excavated. Buried soils, alluvial deposits and other archaeological layers were sample excavated

in order to determine the character and density of archaeological material within them.

All finds were kept. The CAU-modified version of the MoLAS recording system was employed throughout: excavated stratigraphic entities (e.g. a cut, a fill) were recorded as individual contexts, with interrelated stratigraphic events (e.g. a ditch cut and its fill) assigned feature numbers. Sections were drawn at 1:10, base plans at 1:50. The photographic archive includes black and white, colour slide and digital images. Bulk environmental samples were taken from a representative cross-section of features and monolith samples were taken from the sequence of archaeological layers and colluvial deposits towards the edge of the flood plain.

Artefact survey

An artefact survey was carried out in order to determine densities of archaeological material in the plough soil and identify potential areas of activity. At 25m intervals along every trench of the initial scheme six buckets of plough soil (90 litres) were hand sorted for artefacts.

Metal detecting

All trenches and features were metal detected. This strategy was complemented by the targeted metal detecting of the plough soil and sub soil removed by machine stripping from a selected number of trenches relating to particular 'sites' identified in the field. In each case, finds from the plough soil and subsoil were collected, numbered and bagged every 10 metres along the trench, allowing the distribution of finds across the trenches to be plotted, and compared with those recovered from secure contexts.

RESULTS

Artefact survey

A total of 69 flints (36 worked and 33 burnt) were recovered from 243 x 6 bucket sampling points (Figures 5 & 6). The 36 worked pieces were distributed across the site and represent a broad and extremely low density scatter. 25 of the burnt pieces came from a single point (TP 150) and can be directly related to a buried feature (see Trench 25 in Site 1). The remaining 8 burnt fragments came from a spread situated at the extreme northern end of the site (Trenches 56, 57, 59 and 60) and from two centrally located trenches (Trenches 22 and 28). The flint located in Trench 22 corresponds with a burnt flint feature found sealed beneath the hillwash.

With the exception of Site 2, the distribution of worked material in the ploughsoil tended to correspond with areas in which no subsurface archaeological features were found. Overall the artefact survey complemented the results of earlier investigations at Broom Quarry. No clearly chronologically diagnostic tools were recovered, however the technological characteristics of some of the flint working waste indicated an

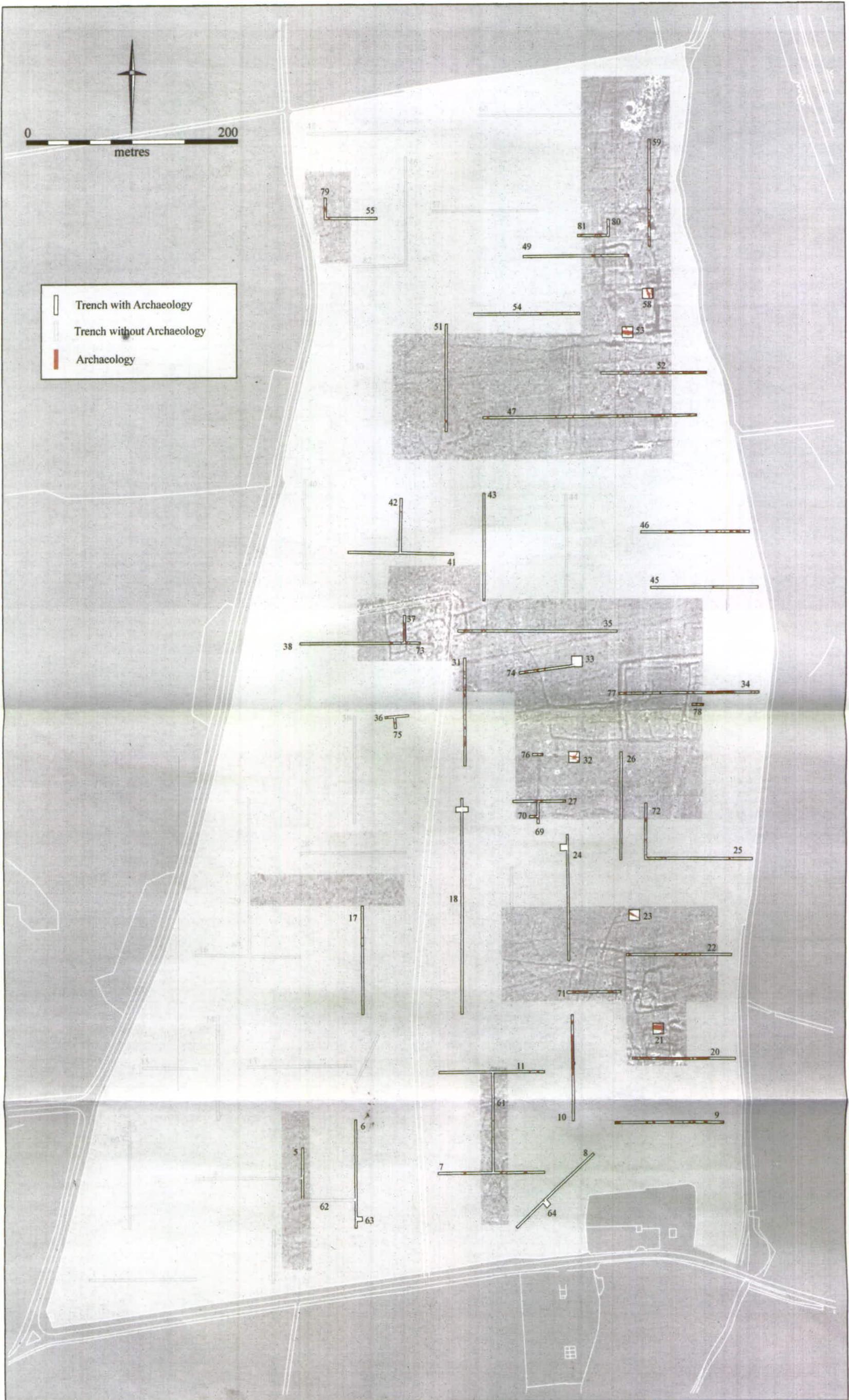


Figure 3: Trench location superimposed on geophysical survey

earlier Neolithic through to later prehistoric presence in the landscape. A more detailed summary is provided below (see Beadsmoore in Appendices).

Metal detecting survey

The metal detecting survey focused on four sites in particular (Sites 2, 4, 5 and 7). These were chosen in order to compare sites of different periods (Sites 2 and 4 being essentially Iron Age and Sites 5 and 7 being Roman). Three main types of metal work were recovered, bronze coins (Roman), lead weights (Roman) and bronze buttons (modern). The distribution of these three different materials produced three different patterns (Figure 7). The seven Roman coins were restricted to Roman Sites 5 and 7 (Trenches 10, 21 & 52). Two of the three lead weights came from the Iron Age Site 2 and one from Site 5.

Modern buttons represented the main distribution of material and were found across all four sites. Site 4 and the western edge of the adjoining Site 5 had the greatest concentration however and these it seems can be related to an increased and deliberate ploughing of old uniforms into south-eastern fields. During our work we were frequently visited by the former owner of the land covered by Sites 4 and 5 and he could remember buying large amounts of shoddy (ripped up-clothing for manure) in the 1950's to improve his soil (Mr Newman pers.comm.).

Trial trenching

The evaluation identified seven different sites or concentrations of features and these are described in numerical order (Sites 1-7, Figure 8). On a broad level Sites 1 and 3 can best be described as being predominantly Bronze Age in date, whereas Sites 2 and 4 are early to middle Iron Age and Sites 5, 6 and 7 early Roman. Sites 5 and 6 also contained prehistoric deposits and Site 6 had Saxon features.

Site 1 - Trenches: 24, 25, 26, 72 (Figure 9)

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Site 1 was situated in the hollow between the adjacent promontories occupied by Site's 5 and 6. It consisted of a burnt flint mound F.112, two curvi-linear gullies F.113, F.108, pit features F.99, F.100, F.114, and two boundary ditches F.101, F.111, all of which appeared to be later prehistoric in date. (Trench 25 also included the same north-south silt-filled hollow as was recorded within Trenches 20, 22 (Site 5) and 34 (Site 6) bounded on its western side by a Roman ditch). The features were masked by a 0.50m deep deposit of colluvium which was continuous with the hillwash deposits identified within the terrace edge trenches of Site's 5 and 6 where it buried Roman features but was truncated by medieval cultivation.

The burnt flint mound F.112, consisted of a spread of dark grey silty sand that included abundant fragments of burnt flint and charcoal. The spread extended over an area of 9m (E-W) and covered a small irregular hollow F.85 that contained a pale grey fill (the same as the buried soil observed in Trench 22 of Site 5) and included a Early Neolithic flint core. The western edge of the burnt flint spread appeared to have

F.28 and similarly a single posthole F.27 located to the south was also found to be empty.

F.27 Pit?/post-hole; [89] Diameter 0.4m; depth 0.15m. Circular in plan, with concave sides and U-shape base. One fill: (88) Mid-brown, silty sand with frequent small gravel inclusions.

F.28 E-W Ditch with two possible postholes in base, palisade ditch?; [92] Length 1.3m; width 1.04m; depth 0.47m. Linear in plan with steep convex sides increasing in gradient with a small trench at its concave base. Two fills: (90) Orange brown silty sand with approx 50% pebble inclusions, loose texture. (91) Dark silty sand with very few pebble inclusions.

Trenches 36 and 75 were cut to investigate a single ring-ditch cropmark F.37 sited to the south of the main Site 2 complex. The two trenches confirmed its circularity but also demonstrated the feature to have an east-facing opening. Part of its circuit was excavated in Trench 75 and as with many of the nearby enclosures the artefacts were of Iron Age date and restricted to its uppermost fills.

F.37 E-W Ditch; [118] Length 2.10m; width 1m; depth 1.13m. Curvi-linear in plan with steep sides and concave base. Five fill sequence: (113) Dark grey sandy-silt, some gravel, pottery in fill. (114) Light grey silty-sand. Some gravel, badly preserved bone near base of fill. (115) Light brown sand (redeposited natural). (116) Dark grey sand, frequent small gravel, pottery and bone in base of fill. (117) mixed grey brown sandy silt.

Site 3 - Trenches 55, 79 (Figures 12 & 13)

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Located in the north-western corner of the investigation area, Site 3 was represented in the aerial survey as a c.35m diameter ring-ditch encompassing a circular central feature (c.15m in diameter). The western perimeter of both the ring-ditch and central feature disappeared under the existing roadway that flanked the site. Trenches 55 and 79 were positioned as an L-shape to confirm the position/existence of the encircling ditch. It was impossible to trench the internal feature as it was situated within the standoff area of an Anglian Water pipeline.

The ditch measured 3.80m in width and 1.12m in depth and had a rounded profile. It proved difficult to excavate because of the 'clean' character of its fills which closely resembled the underlying natural. The only material to come out of this feature were three diagnostically Early Bronze Age flints. An isolated patch of charcoal was also recorded about midway up the ditches profile.

F.147 Ring ditch; [305] Width 3.80m; depth 1.12m. Linear in plan with gently sloping sides that become steeper to a squarish uneven base. Seven fill sequence: (304) Medium brown silty sand including some gravel. (307) Medium brown orange slightly silty sand, full of gravel. (308) Medium brown silty sand with some gravel. (309) Medium greyish brown silty sand, virtually no gravel and a large patch of charcoal. (310) Pale brown slightly silty sand. (311) Medium orangey brown slightly silty sand, full of gravel. (312) Orangey sand, full of gravel.

Given the diameter, character and inclusions of the ring ditch it is very likely that it represents an Early Bronze Age round barrow, an interpretation seemingly confirmed by the presence of a central 'mound' feature on aerial photographs.

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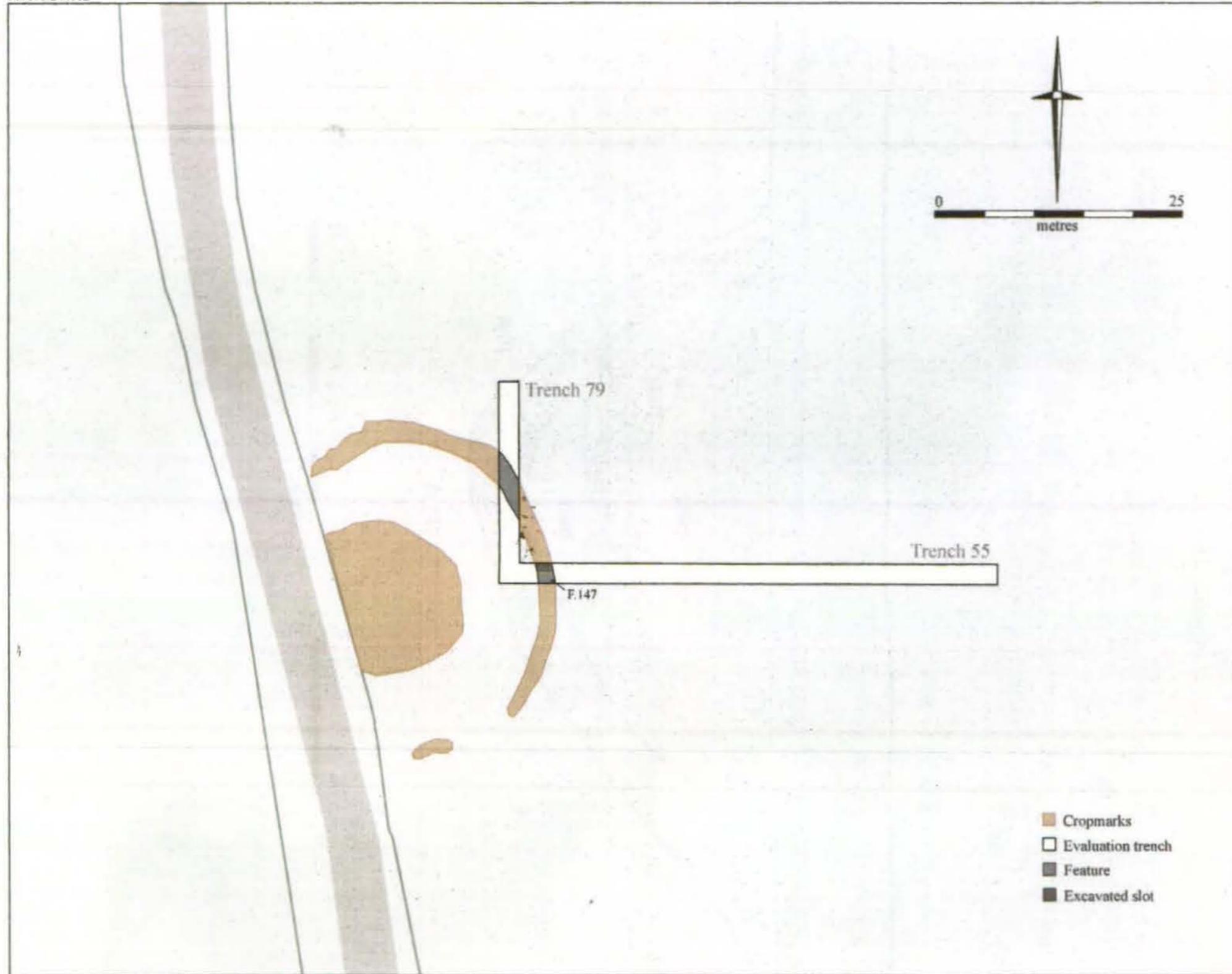


Figure 12: Site 3

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Landscape settings

The proposed development area can be sub-divided into three major topographic zones: *terrace top*, *floodplain promontories* and *dry valleys*. The terrace top was essentially flat and covered almost all of the western half of the investigation area, the floodplain promontories extended eastwards off the terrace top and were separated by a series of dry valleys that sloped down into the floodplain. The seven identified sites were situated and utilised different aspects of this landscape (Figure 22): Site 1 (Neolithic/Bronze Age) was situated in a dry valley; Sites 2, 3 and 4 (Bronze Age/Iron Age) were located along the edge of the terrace top; and Sites 5, 6 and 7 (Roman) occupied the three floodplain promontories. In broad terms three different topographic zones were being exploited at different times. However, all the evidence indicates that within the proposed development area, it was only the eastern fringe of the terrace top that was subject to permanent occupation and that the focus of settlement was on the edge of the Ivel tributary floodplain.

Landscape chronologies (Figures 23 & 24)

Neolithic – Although Neolithic material was sparse from the evaluation, it is possible to identify two secure contexts demonstrating a 4th millennium BC presence. Buried soil horizons sealed beneath Bronze Age contexts located within Sites 1 and 5 contained worked flint and stone (most notably part of a polished stone axe). Residual material, including a flake from a Langdale axe, was also identified from Site 5 and approximately 50% of the flint recovered in the bucket sampling survey can be attributed to the Neolithic.

Bronze Age – The evaluation identified three types of feature dating to the Bronze Age: a probable round barrow (Site 3), two burnt mounds (Sites 1 and 5) and a pair of isolated cremations Trench 18. Although suggested as a possibility by the aerial photographic survey, the barrow no longer existed as a raised earthwork and a significant portion of it has been truncated by the adjacent road, together with the route of the Anglian Water pipeline. The profile of the ditch (U-shaped) and the appearance of its fills (clean) are consistent with those found around Bronze Age barrows as is the presence of Late Neolithic/Early Bronze Age arrow rough-out on its surface. The aerial survey shows a similar monument located 200m to the south-west (Palmer 2003) and at least one other exists immediately north-east of Brooklands Farm (Mortimer pers. comm.). Taken together, the three barrows are parallel to the alignment of the two ring-ditches excavated at Broom Quarry Phases 1, 2 and 3 (Mortimer 1998, 1999), and mirror the orientation of the middle Bronze Age fieldsystem located there also (ibid).

If correctly interpreted, the two burnt mounds represent typical Bronze Age waters-edge features and add a new complexity to the monument/fieldsystem landscape described above. Elsewhere burnt mounds have been dated by radiocarbon determination and produced dates from the 2nd millennium BC (Welch 1997; Beamish & Ripper 2000).

Although left unexcavated, the pair of cremations recorded at the end of Trench 18 appeared to have consisted of small pits containing cremated bone in a matrix of pyre material. There was no indication on the surface to suggest that cremations were accompanied by urns. A Middle Bronze Age linear cremation cemetery was excavated in detail in Phase 3 of the Broom Quarry excavations and out of the 42 cremation pits present, 28 were also buried without urns (Mortimer 1999).

The distribution of Bronze Age artefacts from the ploughsoil sampling was similar to that of Neolithic material, with a sparse scatter across the proposed development area. It should be noted however that the late Bronze Age unenclosed settlement recorded in phase 4 at Broom Quarry was marked only by a slight rise in flint densities during ploughsoil sampling.

Iron Age – The evaluation identified features containing material from the early, middle and late Iron Age. Pottery dating to the early Iron Age was restricted to the southern end of the evaluation area (Site 4) and occurred within a group of unenclosed pits and postholes. A nearby D-shaped enclosure had middle Iron age pottery in its upper fills matching a pattern recorded in the main conglomeration at Site 2. The aerial and geophysical surveys indicated Site 2 to comprise a series of rectangular, D-shaped and circular enclosures covering an area nearly 300m in length with a northern and southern focus separated by a small gap. The southern focus also contained multiple, circular pit features, both inside and outside of the boundary features which produced pottery of the same type as was found within the capping fills of the enclosure ditches.

Recent work to the immediate north-west of the investigation area at Broom phase 8 revealed a similar conglomeration of pits and enclosures extending over an area of 200m, that included both enclosed and unenclosed elements (Cooper forthcoming, Figure 25). The majority of the settlement features contained early pottery whereas the later material was very much associated with the upper profiles and re-cuts of the enclosure elements.

The latest Iron Age material occupied the same spaces as the earliest Roman features (Sites 5 and 7). In particular, was a large circular pit replete with the base fragment of a wheel made pedestal urn and articulated animal remains found in close association with Roman deposits (Site 5). The exact relationship between the latest Iron Age contexts and the earliest Roman contexts could not be addressed within the limits of the evaluation but there is every indication to suggest that sites such as 5, 6 and 7 had their origins in the late Iron Age. Sites 5, 6 and 7 may be classified as linear sites characterised by limited fieldsystems, double-ditched drove ways, and enclosures as recognized at other Bedfordshire sites such as Warren Villas and Eastcotts which have also demonstrated late Iron Age origins (Dawson 2000).

Romano-British – The aerial survey extended beyond the edges of the investigation area and was able to identify two further paddock/enclosure/drove way complexes, one to the north of the site and one to the south. These occupied the same floodplain promontory positions as Sites 5, 6 and 7 and therefore confirmed a pattern of a site roughly every 200m. The ceramic assemblage recovered from the three evaluated sites was uniform and consistently within the same 'Romanising' through to the end

Type	Quantity
Chip	1
Primary flake	1
Secondary flakes	4
Tertiary flakes	2
Retouched flake	1
Core rejuvenation flakes	2
Opposed platform cores	2
Unworked burnt chunks	219

Table 2 – Site 1 flint

The material was recovered from a variety of contexts. One opposed platform core, the plunging core rejuvenation flake and a primary flake, were in a layer, F.143. The other opposed platform blade core, from pit F.85, was beneath a burnt flint layer F.112. This group of material does not seem to be residual and therefore dates the contexts to the earlier Neolithic. Pit F.85 and the burnt flint layer F.112 also yielded the 219 unworked burnt flint chunks. Although the rest of the material from Site 1 is still earlier Neolithic, it was recovered from later features F.114 and F.108 and is therefore residual.

Site 3

Site 3 yielded only two flints from one feature, a ring ditch, F.147. One is a diagnostically Beaker barbed and tanged arrowhead roughout, the other is a tertiary flake which although not clearly chronologically diagnostic, is the product of a technology compatible with Beaker/earlier Bronze Age flint working.

Sites 2 and 4

Type	Quantity
Chunk	1
Secondary flakes	4
Tertiary flakes	3
Tertiary blade	1
Irregular core	1
Unworked burnt chunks	2

Table 3 – Site 2 flint

The 12 flints recovered from Site 2 (Table 3) comprise flint working waste and a couple of unworked burnt chunks. The majority of the material was generated by an expedient technology with no evidence for structured or controlled core reduction. The core is irregular, with unmodified platforms from which flakes were removed with hard stone hammers with no perceptible concern over the form of the removals. The material could be dated to the middle Iron Age features, F.3 and F.35, it was

Broom Quarry

Potential Mineral Sterilisation



KEY

-  PRIMARY AREAS OF ARCHAEOLOGICAL INTEREST
-  OTHER AREAS OF POTENTIAL ARCHAEOLOGICAL INTEREST
-  POTENTIAL ADDITIONAL STERILISATION OF MINERAL
-  POTENTIAL BOX CUT/STERILISATION OF MINERAL/DIFFICULT TO RESTORE
-  PROPOSED MINERAL EXTRACTION BOUNDARY

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Tarmac
Tarmac Quarry Products Limited

Land and Minerals Department
Millfields Road, Utteringham, Wokerhampton
West Midlands WV6 6P
Tel +44(0)1902 353522, Fax +44(0)1902 494511
E-Mail: lp@tarmac.co.uk

BROOM QUARRY

POTENTIAL MINERAL STERILISATION

LSS Models Used To Create Plot
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