

BEDFORDSHIRE ARCHAEOLOGY



VOLUME 22

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BEDFORDSHIRE

ARCHÆOLOGY

VOLUME 22 1996

BEDFORDSHIRE ARCHAEOLOGICAL COUNCIL

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Cover: watercolour of The Cottage, Manor Farm, Clipstone in 1916 by G S Proctor.
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See p 147 of this journal.

Contributors to *Bedfordshire Archaeology*

EVELYN BAKER, NDD, MIFA, FSA is Editor of Bedfordshire Archaeology and the Bedfordshire Archaeology Monograph series. Trained in fine art, she is Director of the Bedfordshire County Archaeology Service (Contracts and Consultancy), a section of the County Planning Department's Heritage Group based in the St Mary's Church Archaeology Centre in Bedford. She has a special interest in medieval floor tiles and making archaeology accessible to the general public. Formerly Council Member for the Society of Medieval Archaeology and the British Archaeological Association she is currently a Council Member for the Bedfordshire Archaeological Council and the National Medieval Floor Tile Census. Her publications include papers in Bedfordshire Archaeology, Rotterdam Papers, World Archaeology and the Studies in Cistercian Art and Architecture, Kalamazoo.

STEPHEN COLEMAN, BA, MIFA is a graduate of the University of Exeter. He is Currently Historic Environment Information Officer for Bedfordshire County Planning Department's Heritage Group with responsibility for the Historic Environment Record. He is also Secretary of the Medieval Settlement Research Group and a committee member of both the Bedford Archaeological and Local History Society and the Bedfordshire Local History Association. His main interests include landscape history.

JACKIE CRICK, BSc is currently employed as an Archaeological Supervisor with the Bedfordshire County Archaeology Service. She has worked on many excavations in Beds, Bucks and Herts since entering the archaeological profession in 1987. In 1993 she graduated in Heritage Conservation from Bournemouth University. Her main interests are architectural history and building recording. She is currently primarily involved in the post-excavation analysis of the deserted Saxon and medieval settlement at Stratton, Biggleswade.

MICHAEL DAWSON, MPhil, MIFA is a graduate of University College, Cardiff. Currently Senior Archaeological Field Officer with the Bedfordshire County Archaeology Service, he has undertaken many rescue projects in the county since 1987. His

main interest is the archaeology of Roman towns and this has involved him in fieldwork in Romania and Bulgaria.

DAVID FELL, BA is a graduate of the University of York. He is currently an Archaeological Supervisor with the Bedfordshire County Archaeology Service where he has worked since 1994. His current interests include Classical Greek archaeology and he is presently pursuing this subject at the University of Birmingham.

ROBIN HOLGATE, BSc, DPhil, AMA, FSA, MIFA is Curator of Luton Museum. He undertook his archaeological education at the Universities of London and Oxford, and his doctoral thesis on Neolithic settlement of the Thames Basin was published as a British Archaeological Report. He was previously Field Officer for Prehistory with the Institute of Archaeology Field Unit, University College, London. Publications include articles on prehistoric Britain and editing the recent volume of papers on Chiltern Archaeology: Recent Work (The Bookcastle).

ANN INSCKER read Archaeological Science at Bradford University before studying Archaeological Heritage and Museums at Cambridge. She began her professional career as Curator of Torquay Museum before taking up the post of Keeper of Archaeology at Bedford Museum in 1994.

EDWARD MCSLOY, BA (Hons) is a graduate of King Alfred's College, Winchester. He is currently an Archaeological Finds Supervisor with Bedfordshire County Archaeology Service. He specialises in prehistoric flintwork and ceramics, although his work involves dealing with finds from the whole spectrum of the county's archaeology. His interests include Roman and 'Dark Age' military history and archaeology.

ANTHONY MAULL has a Certificate in British Archaeology from the University of Birmingham. He is currently an Archaeological Supervisor with the Bedfordshire County Archaeological Service. He has worked in field archaeology since 1976 and has supervised a wide range of sites. His interests include rural settlement in Roman Britain and he

has a particular interest in waterlogged material. He has developed special skills in excavation techniques to deal with river valley sites and the materials which come from them.

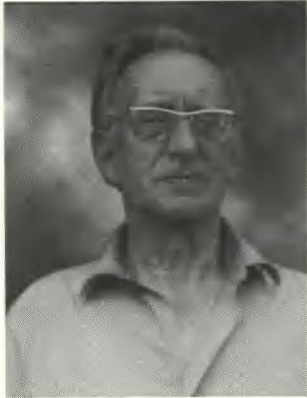
CHRIS PICKFORD is the County Archivist for Bedfordshire, a post he has held since 1986. His research interests include churches, clocks and bells, and he is working on a series of three volumes on Bedfordshire churches for the Bedfordshire Historical Record Society. The second volume is due for publication in 1997.

DREW SHOTLIFF, MA is currently employed as a Senior Archaeological Field Officer with Bedfordshire County Archaeology Service. He has studied both history and archaeology at the Universities of Oxford and Birmingham respectively. He has worked as a field archaeologist for the last fifteen years both within the UK and overseas. His current interests include Saxon and medieval rural settlement and archaeological methodology.

Obituary

Les Speed, Archaeologist, Natural Historian and "Balloonatic"

LESLIE AUGUSTUS SPEED, 1906 – 1995



There will be many people throughout the county of Bedfordshire, and beyond, who will remember Les Speed with affection, gratitude and respect, for his seventy years of stalwart work with the county's Natural History Society, the Bedford Archaeological Society and the Bedfordshire Archaeological Council. For those unfortunate not to have known him, this small tribute will explain why he has won his place in Bedfordshire and national history, and why he will be so greatly missed by those who shared his companionship in so many fields of activity.

Professionally he won international fame for his work at Cardington in the pioneering days of airships. When he retired he was head of the drawing office. He worked on the design team for the R101 from 1925 until its destruction in 1930 (with Les apparently attributing the disaster to the huge amounts of whisky taken on board). He continued in the Cardington drawing office, working on, among other projects, the barrage balloons and blimps which were such an important part of our nation's defence during the second world war. This interest in things aeronautical extended to a passion for kite flying, and demonstrations of his skill led to a number of television appearances, including a Blue Peter adventure on Dunstable Downs.

As a person he was indomitably enthusiastic and energetic, with no problem so great that it did not have a solution somewhere. Hugely practical, he

had his own workshop where he could "run up" any tool or implement to fit the bill. Unusually for a man, he was an expert embroiderer and even made his own shirts.

Les was active during the main era of society digging that James Dyer called "*those halcyon days of amateur archaeology*". Dyer reports that he "*stirred the Bedford Archaeological Society into action, and in the 1950's brought Bedford into line with Luton, Dunstable and Ampthill to cope with the huge amount of crucial rescue archaeology that was necessary as a result of the post war construction boom. In an indirect way he paved the way and proved the need for setting up County Archaeological Officer posts and professional units. He organised the practical arrangements for rescuing sites in advance of the bulldozers, enthusing bands of volunteers during evenings and weekends. Many a youngster was encouraged by him and his constant good humour – and although archaeology was done on a shoe-string then, compared with today's budgets, Les often dug deep into his own pocket to fund the work.*"

He was far sighted enough to realise that these important discoveries required reporting to a wider audience, and was a force behind the founding of the Bedfordshire Archaeological Council and the birth of this, its journal, in 1962, then *The Bedfordshire Archaeological Journal*. Indeed, typically generous, he under-wrote the first three volumes, thus ensuring the future of the journal as an important part of the Council's responsibilities, a major contribution to the county's rich archaeological heritage.

Les, a kindly, sensible, down – to – earth character lived to a ripe and very active old age, walking out vigorously on the day he suddenly died, 16th March 1995, aged eighty-nine. We owe him a huge debt of gratitude.

Evelyn Baker 13 May 1996

Thanks are due to James Dyer, David Johnston and Richard Wildman whose obituaries for Les I have mined. The photograph was kindly supplied by The Airship Heritage Trust.

Plantation Quarry, Willington: Excavations 1988-1991

MICHAEL DAWSON

With contributions by R Clark, E Hutchins, T A Jackman, E R J McSloy, A F Roberts,
A M Slowikowski, D Enright, R A Houseley, B Biddle

SUMMARY

Quarrying at Willington led to the excavation of several sites dating from the Neolithic to the late Iron Age. These form part of the continuing investigation of the archaeological landscape east of Bedford providing further insights into the development of an area already notable for the extent and complexity of its archaeology.

INTRODUCTION

In 1988 excavation ahead of gravel extraction at Plantation Quarry led to the identification of a Neolithic mortuary/burial enclosure in which a young female had been buried, crouched and accompanied by a single red deer antler. In 1989 further quarrying led to salvage excavations of the truncated remains of a late Iron Age/Romano-British enclosure. In the summer of 1990 three further sites were investigated, including two Bronze Age ring ditches, a second Iron Age enclosure and two penannular ditches crossed by a post alignment. In 1991 the remains of an Iron Age complex comprising a double enclosure was sampled during salvage excavation.

All archaeological recording at Plantation Quarry took place in response to an expansion in quarrying by Redlands Aggregates Ltd; Redlands funded the excavation and have shared the cost of post excavation analysis and publication with the Bedfordshire County Archaeology Service.

THE REPORT

This report is made up of material gathered over three years of excavation by Bedfordshire County Archaeology Service (BCAS). The square enclosure, site 1, was directed by M Dawson and supervised by T A Jackman who prepared the archive report; sites 2, 3, 4 and 5 were directed by R Clark and supervised by S Robinson, and sites 6 and 7 were directed by R Clark with J Prentice and A Maull.

In the report which follows these conventions have been used: context numbers where referring to fills are expressed as (**) and where cuts as [**]; section numbers are shown on plans preceded

by S and context numbers illustrated on sections.

Standard conventions have been used to illustrate the pottery, with an external view on the right and an internal view and section on the left. All the vessels were hand made; the sections are therefore all hatched in. Where coil construction could be seen in the section this has been indicated by a wavy line.

THE LANDSCAPE

Plantation Quarry, Willington, lies east of Bedford within a loop of the River Ouse, close to the modern village of Willington. On the north it is bounded by the river and to the south by a tributary stream, the Elstow Brook. The Elstow Brook today joins the main river north of Dog Farm but aerial photographs indicate that both the river and the tributary streams have occupied several different courses and the prehistoric landscape may have been part of a significantly more abraded river system than currently (Rogerson 1987). All the Neolithic and Bronze Age monuments in this report occupy gravel sites in the valley, which remained as prominent islands whilst the areas between them were gradually filled by alluvial deposits (Robinson 1992). The later Iron Age and Romano-British sites tend to cluster on the edge of the first gravel terrace at the edge of the flood plain in a pattern noted elsewhere in the Ouse valley at Warren Villas (Dawson & Maull this volume) and at Eastcotts (BCAS 95/14). Both prehistoric and Romano-British sites occupy areas which today are prone to flooding.

Historical evidence suggests that before enclosure the area was under common field arable with the exception of areas on the river bank and immediately adjacent to the tributaries and village centres. The sites in this report were first noted from cropmarks located during the 1950s on a series of aerial photographs now in the Cambridge University collection (HF 31, TO 41, VO 15, YK 25, 29, 30, YO 99, YT 17-19, YT 30). A commercial black poplar plantation was established in the area between 1958 and 1962, and since then extensive felling and the extraction of sand and gravel have had a considerable impact on the landscape.

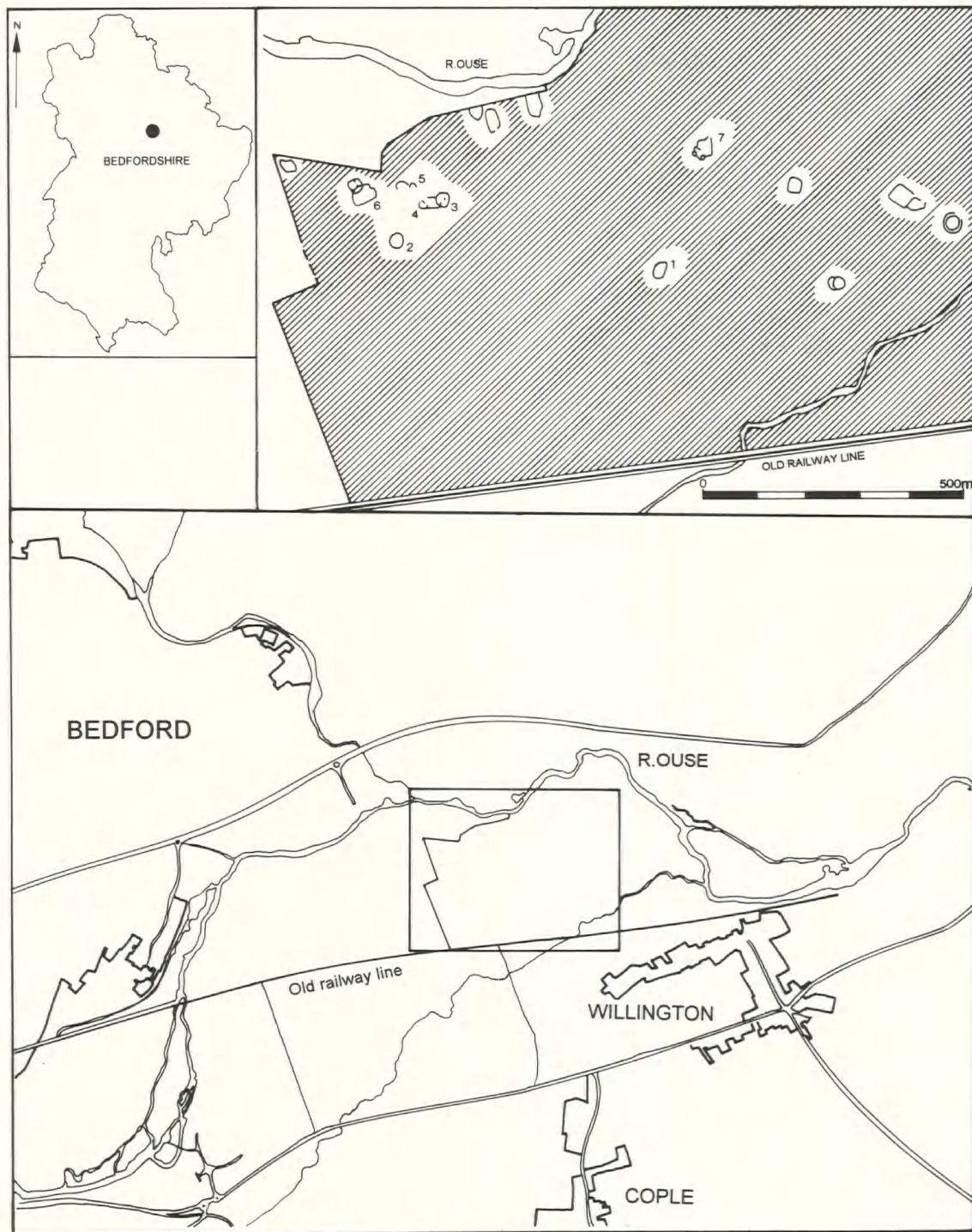


Fig 1 Location map showing the sites at Plantation Quarry

ARCHAEOLOGICAL BACKGROUND

THE NEOLITHIC AND BRONZE AGE

The area around Plantation Quarry is significant for the scale and density of its cropmarks. These include a large number from the Neolithic and Bronze Age. Most noteworthy are those south of the river: a causeway camp and cursus at Cardington, a henge monument at Cardington and an area of extensive Neolithic monumental remains at Octagon Farm. North of the river a Neolithic henge and late Bronze Age burial site at Goldington was excavated in 1987 (Mustoe 1988).

In the past decade archaeological activity in the area has been intense due to the combined pressures of urban expansion, the construction of the Bedford Southern Bypass (BCAS 95/14) and continued quarrying at Willington. Archaeological excavation, focusing on the Neolithic and early Bronze Age, prior to the Plantation Quarry sites include a probable Neolithic enclosure (Pinder 1986a Fig 4b), a ring ditch excavated to the east of the recent excavations (Pinder 1986a) and those at Goldington. More recent evaluation ahead of further quarrying has characterised several monuments as Neolithic/early Bronze Age at Dog Farm (Clark 1991a) and Octagon Farm. At Octagon Farm and Eastcotts archaeological evaluation ahead of the Bedford Southern Bypass (BCAS 1989, Clark 1990, BCAS 1993/11), and excavation during construction have extended the range of features known from the Neolithic landscape. In 1993 assessment at Riverside Meadows confirmed the location of a ring ditch and enclosure of possible 3rd millennium date (BCAS 1994/6). Most recently evaluation in advance of quarrying at Octagon Farm by BCAS and Tempus Reparatum (BCAS 95/39) has identified the possible remains of Neolithic/Beaker domestic and ritual activity.

THE IRON AGE AND ROMANO-BRITISH PERIODS

As with the Neolithic and Bronze Age monuments Plantation Quarry has been the focus of archaeological investigation into the Iron Age and Romano-British periods. However, by contrast, one site, Willington, was extensively excavated in 1984 (Pinder 1986b) and a second late Iron Age and Romano-British site on the Bedford Bypass at Eastcotts was excavated in 1994. Geophysical survey of a dense complex of Iron Age and Romano-British date was conducted at Riverside Meadows (BCAS 1994/6), and trial trench

evaluation carried out at another complex at Octagon Farm (BCAS 1989 B14). North of the river at Newnham Marina the remains of a late Iron Age settlement and Romano-British villa were excavated in the 1970s (BCAS in prep).

1 THE NEOLITHIC ENCLOSURE

The square enclosure was located on aerial photographs taken on 22 June 1959 (YT 19) approximately 400m south of the river Great Ouse at TL 101504 on gravels beyond the limits of the modern flood plain (Pl 1). A section above the centre of the enclosure indicated the site had been overlain by a shallow alluvial horizon which was laid down by slowly moving water. This horizon, which contained few stones, was probably reworked during later ploughing. The enclosure itself comprised a single uninterrupted ditch which described a rectangle slightly elongated towards its north east corner. In the centre was a pit in which a human burial had been placed.

METHOD STATEMENT

The area of investigation in the 1988 season comprised a total of approximately 1800m², including the square enclosure.

The area was first deforested: standing timber was felled and roots grubbed up by JCB, and the



Plate 1 Aerial photograph of site 1
(YT 19 22/6/1959 Cambridge University
Collection of Air Photographs: copyright reserved)

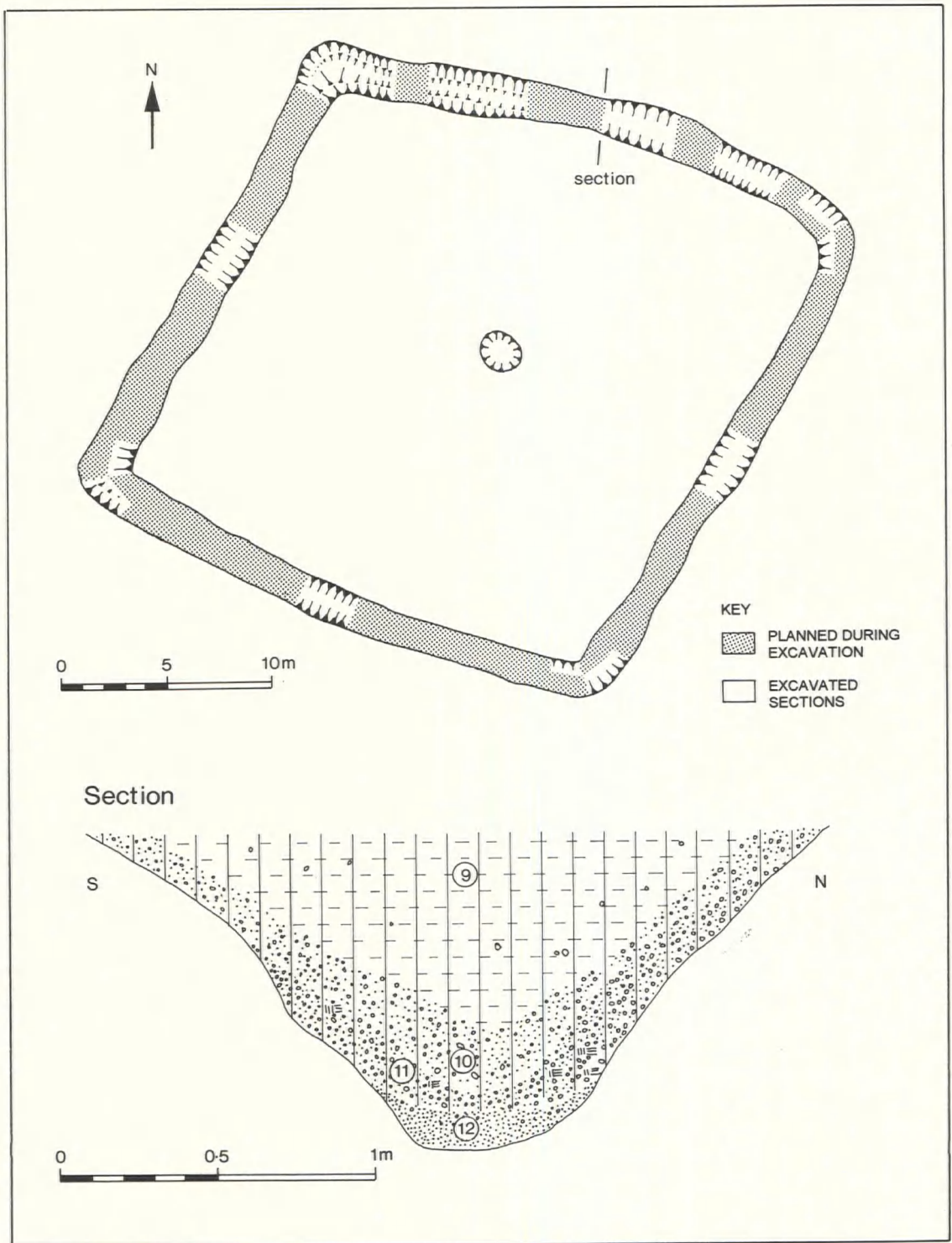


Fig 2 Site 1 (Upper) Plan of the neolithic square enclosure; (lower) ditch section

ground then stripped of topsoil by box scraper prior to archaeological excavation. The latter was carried out under archaeological supervision and a single section from topsoil was retained across part of the centre of the enclosure. In the remaining area of the quarry extension a watching brief was maintained but no further archaeological features were noted. The objectives of the excavation were to characterise and date the enclosure within the funding available. Sample excavation was undertaken of the enclosure ditches comprising 25% of the ditches by length, whilst the central burial was fully excavated. Soil samples for environmental evidence were collected. Several anomalous features were investigated but were found to be periglacial in origin.

During excavation the site was designated WB 108 and the site code was WGP 88; the archive of records and finds will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE

The enclosure ditch

The sides of the enclosure were 25m and 27m in length, internally 23.5m from north west to south

east and 25.5 m from north east to south west. The width of the ditch (8) at the top of the excavated sections was fairly consistent varying only between 1.8m and 2.2m. The depth however was less consistent with the ditch generally 1m deep on the southern side and 2.2m on the north.

The profile of the ditch varied depending on the location and the materials through which it had been excavated. On the north west side where the natural background was gravel, it had sloping sides and a flat bottom (Fig 2) whilst in other sections it had sloping sides as far as a band of natural clay where the sides became vertical down to a flat bottom. On the south east side the profiles of sections, where cut into gravel, were shallower with sloping sides and a rounded bottom (Pl 2).

The uppermost ditch fills (9) comprised dark brown silty loam with no inclusions. These lay above an intermediate horizon (10) of dark brown sandy loam with some pebbles. The dark brown sandy loam fill and slope of 10 suggests this horizon was the consolidation level at which primary erosion slowed. The primary silts (11) were characterised as generally dark brown clay loams with



Plate 2 Site 1, section no 3, the enclosure ditch showing the silting pattern with no evidence for mounding or adjacent banks (Bedfordshire County Council Photographic Unit PU 178/4)

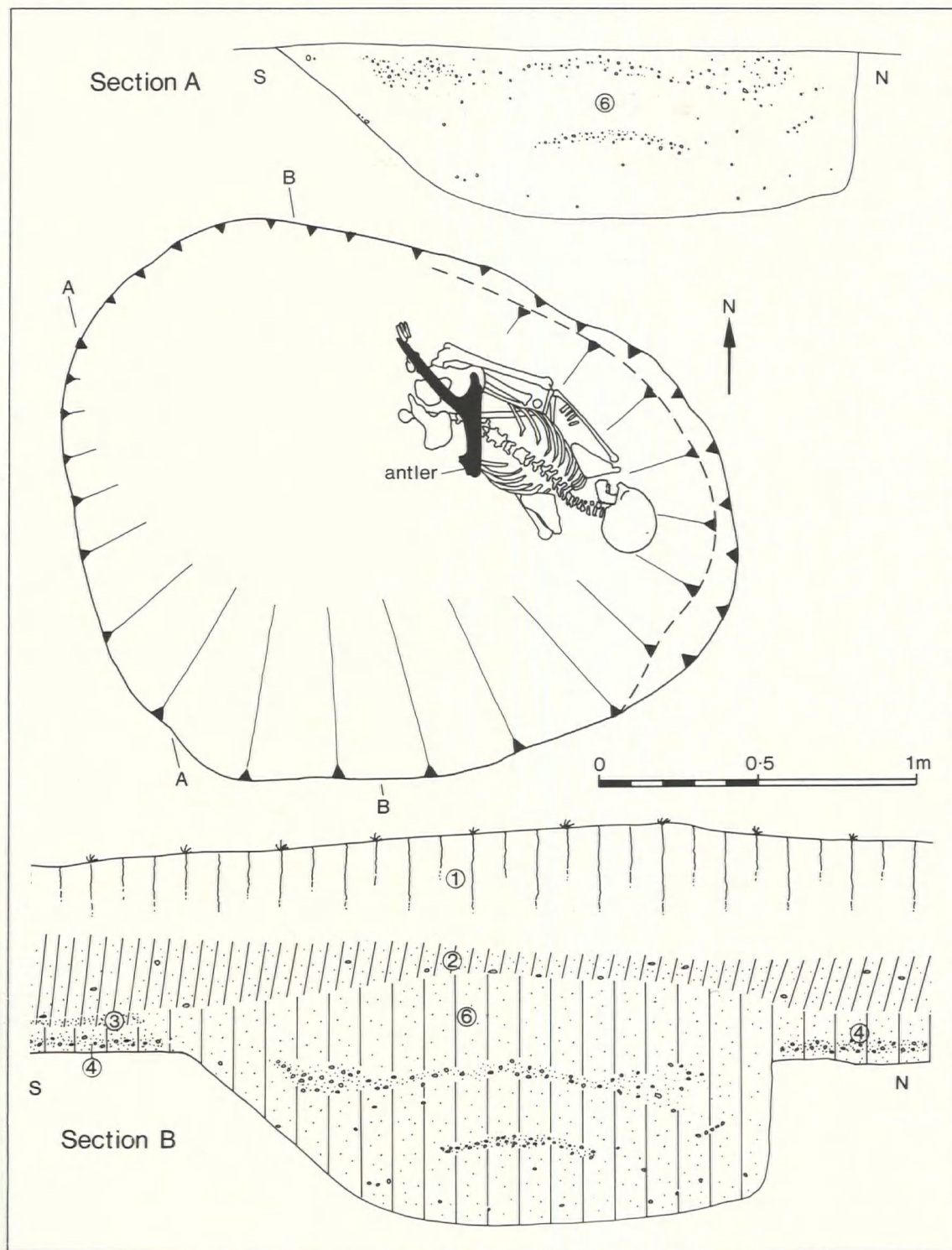


Fig 3 The central burial



Plate 3 Site 1: Crouched inhumation, the central burial at site 1
(Bedfordshire County Council Photographic Unit PU 178)

80% pebbles and gravel, and in sections 8 and 13 lay over a lens of coarse sand and gravel mixed with clay loam (12). In section 13 (Fig 2), (11) was above a lens of dark brown sand with pea grit (12); both lenses were edge-derived silts.

The central burial (Fig 3)

In the centre of the enclosure sealed beneath a reddish brown sandy silt alluvium was a central burial pit (2). The pit had been cut through a reddish-brown slightly clay sand (3) and a sandy loam gravel (4) horizon into the natural gravels.

The central pit (7) was pear-shaped with the narrower end towards the east. It had sloping sides around the southern limit but was steeper on the northern edge. The base of the pit was flat. Several small sherds of pottery were found in the pit fill (6) which comprised a dark reddish-brown sandy loam with pebbles.

HUMAN BONE (T A Jackman)

A crouched inhumation was excavated from the central pit (7). It had been placed against the north east side of the pit with its head to the east. The skeleton was prone in a crouching position with knees and arms under the ribs, ankles under the pelvis and feet below. The pit was substantially larger than the area required for the body alone. The complete skeleton was excavated, but root infiltration had led to some *post-mortem* breakages occurring in most of the bones.

Pathology

Sexing was undertaken using morphological (pelvis, cranium), and metrical (relative size of femoral head), criteria (Krogman 1962). Ageing was based on tooth wear (Brothwell 1981) and

epiphyseal fusion of the vertebrae, sacrum, iliac crest and femoral head.

The upper right molar is erupting and there is supernumerary tooth lateral to this. The upper left molar is impacted and there is overcrowding of both jaws. The degree of periodontal disease present is moderate.

Two non-metric traits, whose significance is yet to be fully understood, are present on the vertebrae of this skeleton. The eleventh thoracic vertebra has a cleft neural arch and the axis (second cervical) has a transverse foramen bipartite on the right side.

There is cribra orbitalia in the right orbit which could be indicative of iron deficiency anaemia. The third and fourth right ribs have a plaque-like deposit (a periosteal reaction) present on the area which would normally be covered by the pleura.

Young adult, female; 17-25 years.
Stature 1.53m (5'1" $\pm$ 1.4")

Skeleton almost complete apart from the manubrium, sternum, one right carpal and some phalanges. Skeleton is very gracile.

SCIENTIFIC DATING (R A Houseley)

A carbon 14 date was sought to establish the age of the monument. The only material available for use was the human skeleton. All of the skeleton, which had not undergone any pre-treatment on site, was forwarded to the Oxford Accelerator Unit to allow the broadest choice of sample. The date generated was:

OxA-4553 Willington Gravel Pit, human right femur, $\delta^{13}\text{C} = 22.3$ mil 4530 ± 130 BP

The date is uncalibrated in radiocarbon years BP (Before Present – AD 1950) using the half life of 5568 years. Isotopic fractionation has been corrected for using the measured $\delta^{13}\text{C}$ value quoted (to $\pm 0.5 - 1.0$ per mil relative to PDB) for the Willington sample. For details of the chemical pretreatment, target preparation and AMS measurement see *Archaeometry* 31 (2), 99-113 and *Radiocarbon* 34 (3), 306-311. The calibrated age ranges are: 3526 – 2917 cal BC (Pearson *et al* 1986).

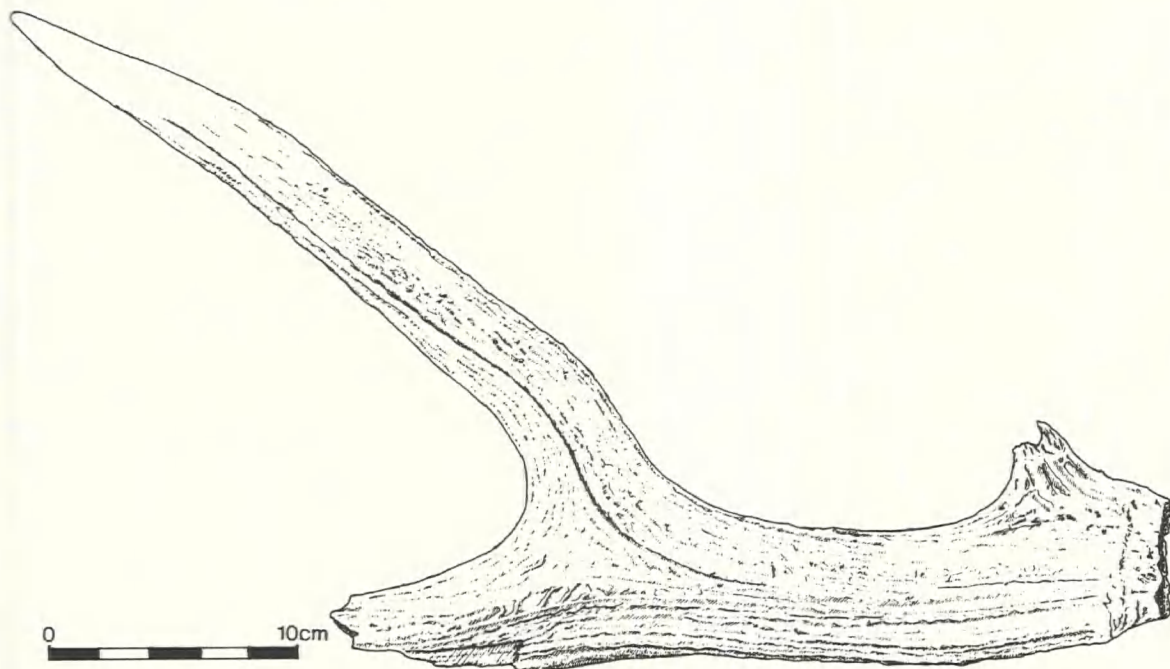


Fig 4 The antler used as a grave deposit at site 1

GRAVE GOODS

(A F Roberts)

A single antler (*Cervus Elaphas Scoticus*) had been placed in the grave fill above the inhumation (Fig 4). The antler has been chopped off above the coronet, and the brow tine is broken off. There appears to be no bez tine, the trez tine is present but shows no sign of wear. The beam is broken above the trez. In the absence of the coronet, it cannot be determined whether the antler was shed or removed from the skull.

The chopping on the lower end of the antler is the only indication of use. It may be that the chopping is a preparatory stage for the utilisation of the antler as a source of material for small objects, rather than as a tool itself.

Measurements: (Whitebread 1964)
Greatest length (incomplete): 337mm
Circumference of lower beam: 175mm
Length of trez tine: 380mm

ENVIRONMENTAL EVIDENCE

Environmental evidence was sought from the enclosure at Plantation Quarry. Six samples were taken from the ditch and dry sieved over a 2mm mesh; both portions were sorted for evidence of archaeological or environmental significance, but all samples were barren.

CERAMIC ASSEMBLAGE

(E McSloy)

Fabric	Grave 6	Ditch 9
Early prehistoric	2:5	2:3
Misc. sandy	1:1	
	3:6	2:3

Table 1 Quantification by sherd count and weight

Pottery from the square enclosure and grave pit comprised five small sherds, weighing 9g. Pottery of two fabric types was present, and these are described below.

Prehistoric

Prehistoric coarse flint/quartz

Fairly hard, generally smooth surfaces, but roughened where inclusions protrude. Dark brown to black reduced fabric, oxidised to orange on outside surface. Fairly abundant angular fire crazed flint inclusions, 0.3-4mm.

Less frequent rounded or sub-angular white and clear quartzite, approximately 0.3mm.

Forms: None recoverable

Ills: Not illustrated

Miscellaneous sandy

Hard, sandy fabric with orange surfaces and greyish core. Some iron ore present. All inclusions less than 0.2mm.

Forms: none recoverable

Ills: not illustrated

Discussion

Four small body-sherds of undecorated coarse flint-tempered pottery were found within the grave fill and from the associated square enclosure. Flint-gritted pottery in the late Neolithic Peterborough type tradition is known from the locality, for example from Octagon Farm and Dog Farm, Willington (BCAS 95/39). Although the sherds from Willington are undiagnostic they are likely to be of late Neolithic date on fabric alone.

A single small and abraded sherd of sandy pottery was recovered from grave fill (6). It probably represents an intrusive Roman element.

FLINT ASSEMBLAGE

(D Enright)

Three flint flakes were recovered from the excavation of the enclosure at Plantation Quarry, two from the ditch fill (9) and one from the grave fill (6). None of the flakes showed evidence of retouch and are therefore waste flakes.

- (6) blue-grey and white chert waste flake, snapped, bulb of percussion not surviving. Triangular in cross section.
- (9) brownish grey flint waste flake, irregular in plan and section. Bulb of percussion surviving.
- (9) beige flint waste flake, irregular in plan and section, concoidal fracture but bulb of percussion has been snapped off.

DISCUSSION

Initial appraisal of the square enclosure at Plantation Quarry on aerial photographs indicate it was located on a small gravel ridge, probably a remnant of gravel terracing laid down by the River Ouse. The absence of tree throw holes around the monument suggests the area may have been relatively open when the monument was constructed, whilst the clarity of cropmarks on

aerial photographs and the absence of encroaching sites indicates the monument remained somewhat isolated in the landscape.

Interpretation of the form of the monument is entirely dependent upon the silting pattern in the enclosure ditches. The even deposition of silts around the enclosure and the absence of stony material above the central burial together suggest the enclosure was not mounded, or that mounding was low or comprised banks, either internal or external, some distance away from grave or ditches.

A similar monument (HER (Historic Environment Record) 1480.16) 25 x 27m long had been constructed in the Willington area. Here the ditches varied in width from 2.70m to 0.75m. These ditches also had symmetrical silting with no evidence of either external mounding or internal bank or mound. However, detailed excavation of the east ditch suggested the enclosure consisted of a series of interrupted ditch segments, one possibly providing the entrance way evident on aerial photographs. A single post hole was located inside the enclosure but no burial evidence (BCAS 1989 B9).

A second square enclosure, but enclosing only

5m x 5m was evaluated in 1995 (BCAS 95/39). This monument comprises a single square palisade dug into the remains of a small ring ditch approximately 5m in diameter. Close by, and possibly associated, was a pit containing beaker pottery.

The central location of the burial in the Willington enclosure strongly suggests it was the focus of the enclosure monument and confirms its function as a mortuary/burial enclosure. The C14 date, however, places it earlier in the Neolithic than many comparable single burials (Kinnes 1979).

2 NEOLITHIC/BRONZE AGE RING DITCH

A single ring ditch was located south of the River Great Ouse at TL 096 505. It was 450m west of the square enclosure (site 1), but within 200m of another ring ditch (site 3). The site was located on gravels within the floodplain of the River Ouse.

METHOD STATEMENT

The ring ditch was excavated between 13th and 22nd August 1990. The area of excavation comprising 75% of the area of the ring ditch. First noted on aerial photographs (YT 17 & 18) taken in the June 1959, the ring had been truncated by a modern ditched field boundary. Despite early



Plate 4 Aerial photograph of sites 2, 3, 4, 5, 6 (YT 18, 22/6/59
Cambridge University Collection of Air Photographs: copyright reserved)

recognition of the ring it was partly quarried away during 1990 prior to salvage work at the site.

The archaeological evidence was treated similarly to the square enclosure. However, no central section was retained and therefore there is little information regarding alluvial deposition on the site. Archaeological objectives were restricted to characterising the monument and dating the construction. Of the ring ditch 20% was sampled. Environmental sampling was undertaken.

The site code used during excavation was WQ 90 area C. The archive of records and finds will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE

The archaeological evidence comprised a single ring ditch, a secondary cremation and several post holes sealed below a subsoil horizon (400) of reddish-brown clayey silt. The latter may represent alluvial deposition. Beneath (400), within the ring ditch, was a deposit of organic material (411) which may have been a remnant of mound material or old ground surface.

The ring ditch (Fig 5)

The ring ditch [403] was constructed in a single episode and has no evidence of recutting or episodic excavation. Inside and towards the east were 4 post holes and a cremation was found cut into the ditch fill on the south-east side. The internal diameter of the ring was 22.5m from north to south and the width of the ditch varied from 1.4m on the north side to 1.9m on the south. It was generally between 0.37m and 0.57m deep with sloping sides and a flat bottom. On the south the ditch bottom was more rounded.

The primary fill of the ditch comprised dark brown silty sand with some stone, mostly flint (434, 405), and a yellow brown clay silt (406). Edge-derived deposits, the results of slippage from the sides, were orange brown silty sand and gravel (408, 422) and these were sealed below (407) red brown clay silt. This consolidation layer was sealed below the upper fill of the ditch which was a red brown clay silt (400).

The post holes (Fig 6)

Within the ring were four post holes (412, 423, 425, 427) positioned close together. All were sub-circular in plan with sloping sides and flat base. All four were similar in size up to c 0.5m across and 0.55m deep, and filled with dark brown silty sand with some pebbles and gravel.

The cremation

A single cremation pit was discovered in the south-east quadrant of the ring cut into the upper fill of the ditch (404). The cremation pit [401] was circular with sloping sides, concave bottom, filled with a brown sandy silt (402) with a large amount of charcoal as well as the fragments of cremated bone. There was no evidence for a vessel or container.

PATHOLOGY

(T A Jackman)

The cremated remains from the cremation pit (402) were of a single mature adult and weighed 1114g compared with 2-3kg for a full skeleton (Evans 1963). The cremation consists of white, well-calcined bone with some blueness at the edges, particularly around some of the skull fragments; cracking is mostly transverse. The bone was wet sieved over 10mm, 5mm and 2mm sieves with each category weighed when dry: 2mm:425g; 5mm:287g; 10mm:402g. Identified bones were from the skull, long bones, ribs, phalanges, vertebrae, pelvis and roots of teeth including a premolar. The maximum length of bone was 74.3mm from a fragment of femur.

Pathology was restricted to some lipping around the superior articular process of an unspecified vertebra. Mixed with the cremated bone was a quantity of charcoal.

SCIENTIFIC DATING

(Beta Analytic Inc)

A carbon 14 date was sought to establish the age of the monument from charcoal found with the cremation. The date generated was:

Beta 87190, WQ 90 (402), charcoal sample 6
3410 ± 60 BP

The date is reported as RCYBP (radiocarbon years before present=1950 AD) at 95% confidence. The C13/C12 value was estimated, based on values typical of the material type. When calibrated the age ranges are: 1884 – 1601 cal BC (Pearson and Stuiver 1986)

THE CERAMICS

(A M Slowikowski)

One tiny rim fragment of a fine vessel in a shelly fabric was found in the primary fill of ring ditch

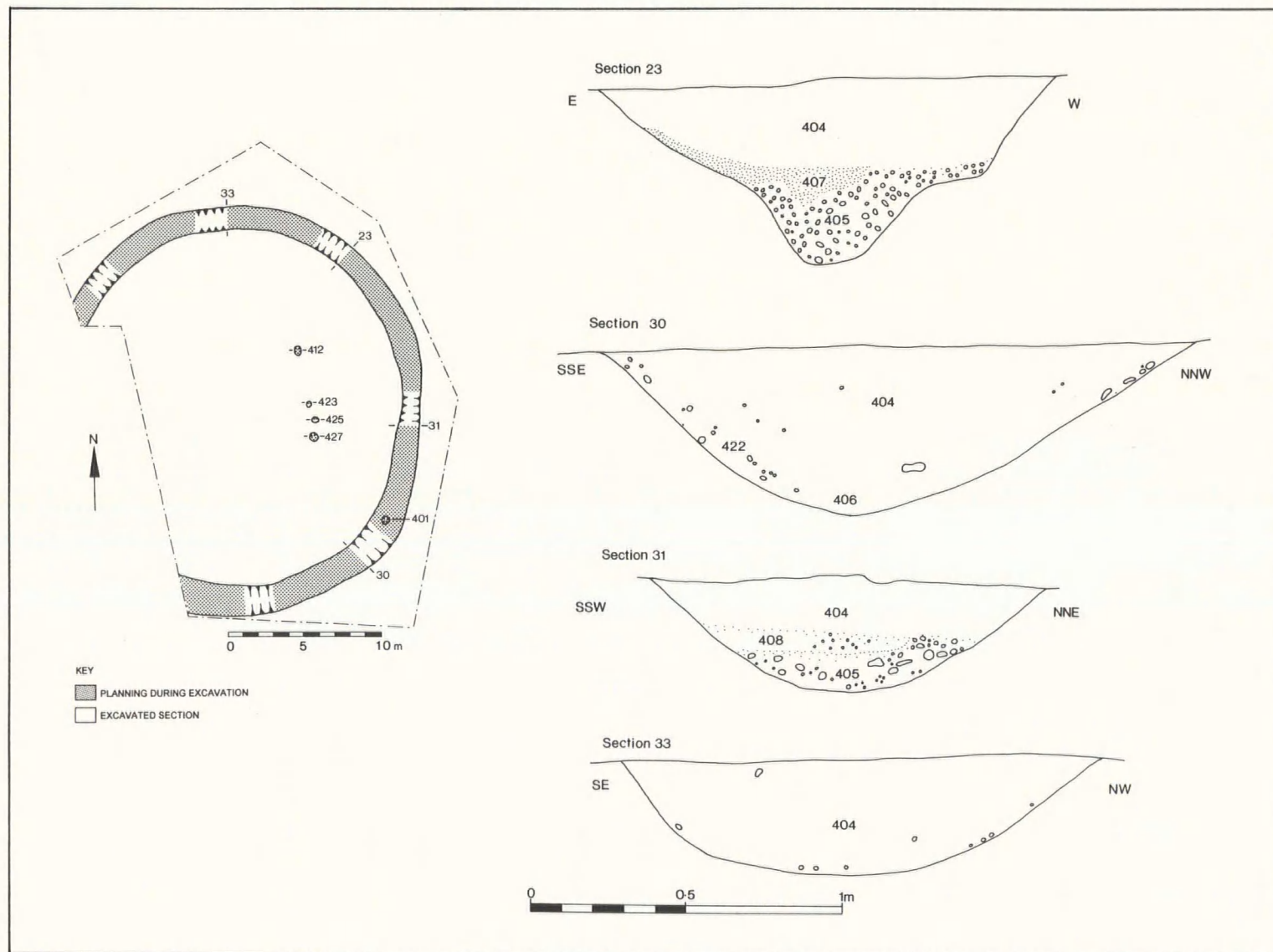


Fig 5 Site 2 Plan of the ring ditch and sections

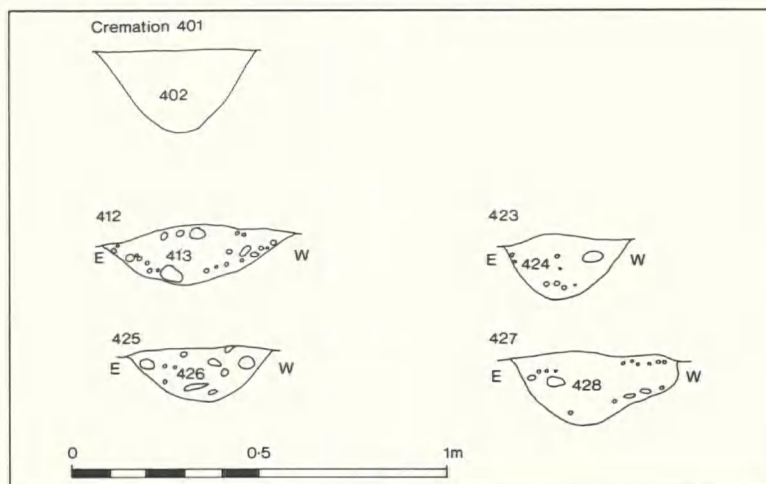


Fig 6 Site 2 The post holes

(405) (Fig 5, Sec 23). It appeared to be slightly everted although not enough survived to distinguish any form. The fabric is further described on page 33.

THE ENVIRONMENTAL EVIDENCE

(B Biddle, E Hutchins)

Soil samples were taken from the organic layer (411), ditch sections and the cremation (402). The most productive sample was that from the cremation fill (402).

Context 411: The organic context was sampled in order to investigate whether the material from the centre of the ring ditch was a buried soil. Only one grain impression was recovered and was not identifiable to species.

Context 402:

Context Number	(402)
Carex cf otrubae	2
Chenopodium (seed head)	1
GRAMINAE sp	2
cf Rumex conglomeratus—	
Triticum dicoccum	2
Cereal, prob barley ?	
einkorn spikelets	3
Brome grass seeds	2
sp indet	9 frags

Table 2 Charred Seeds

Most of the seeds recovered are typical of disturbed or cultivated ground, although *Carex otrubae* prefers damp ditches or the edges of streams. The seeds from the cremation were almost certainly incorporated into the pyre material from the immediate surroundings, rather than having been deliberately added, unlike certain Roman cremations where grain and other offerings are burnt along with the body.

DISCUSSION

The evidence from the ring ditch at Willington suggests the ring may have remained open for long period, during which some cleaning (Fig 5, sections 30, 31, 33) and recutting took place. Significant weathering is also visible but only in a single section (Fig 5, no 23). The consistency of the latest silting horizons around the circumference of the ring and their high sand content reflects the underlying gravels and suggests that the monument was allowed to decay gradually rather than deliberately backfilled. That the site remained significant even after considerable silting is implicit in the deposition of the cremation in the ditch in the middle Bronze Age.

The presence of four post holes (412, 423, 425, 427) suggests a structural component to the monument which may have been renewed periodically. However, whilst the similarity of ditch and post hole fills suggests they may have been broadly contemporary, no stratigraphic evidence survived to confirm this. Nor is there evidence to suggest that these structural features relate to earlier settlement on the site (Woodward 1978).

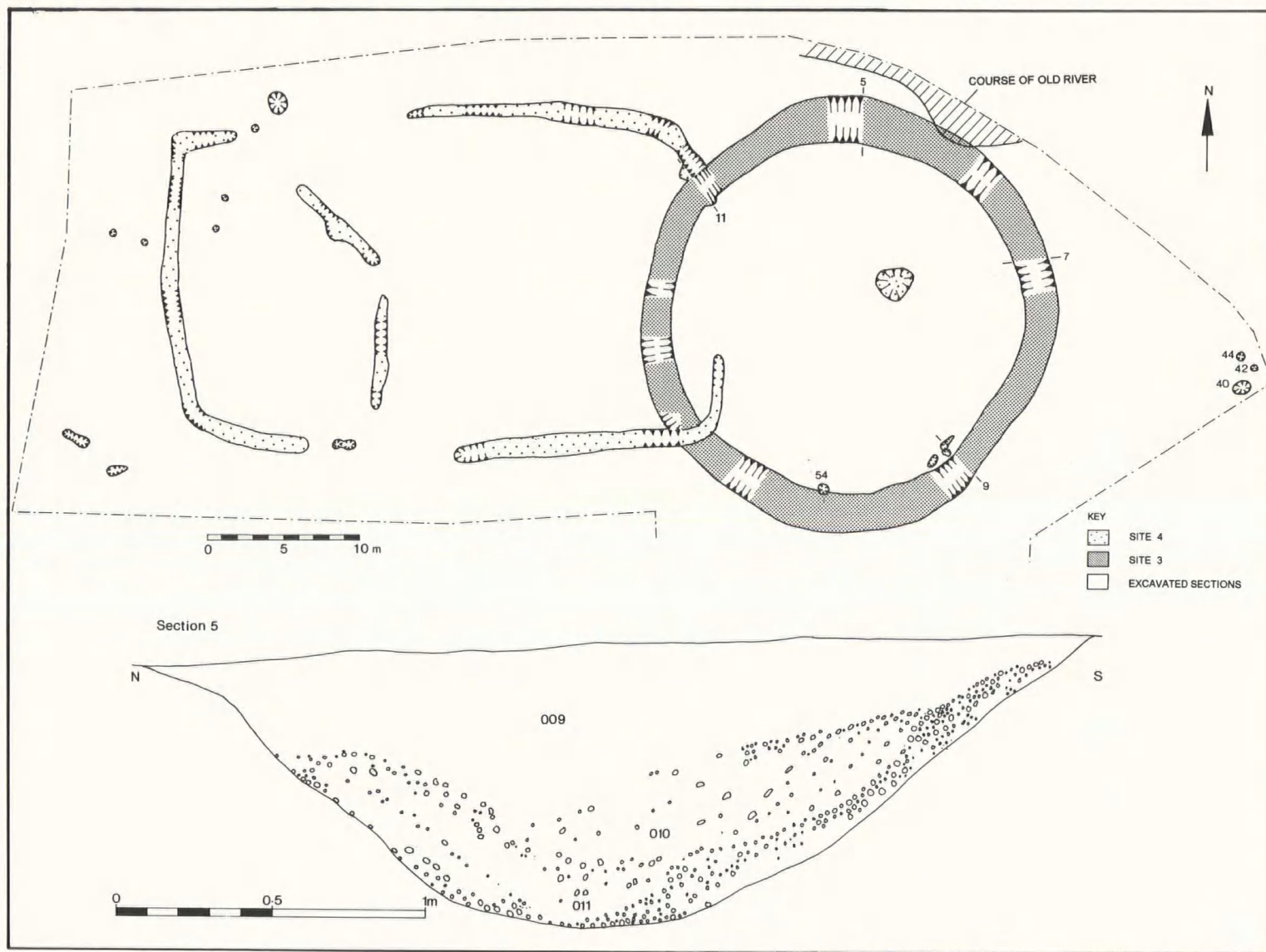


Fig 7 Site 3 Plan of the Bronze Age ring ditch and ditch section

3 BRONZE AGE RING DITCH

A second ring ditch site was excavated in 1990 at the same location as a rectangular, Iron Age enclosure (site 4). Initially identified from aerial photographs, pottery recovered during excavation confirmed an Iron Age date for the enclosure. Despite a superficial similarity between this site and round houses with attached enclosures at Hartigans (Williams 1993, Fig 76) and Salford (BCAS 94/7.2, Fig 5), in analysis the primary silts of the ring ditch were shown to have contained no ceramics. Together with the stratigraphic evidence for dating the enclosure to a later period the ring ditch is interpreted as probably of Bronze Age date. The enclosure, site 4, is discussed below with the remaining Iron Age sites 5, 6 and 7.

The ring ditch was situated at TL 098 506 and was located on aerial photographs YT 17 & 18. It was north east of ring ditch 2 and in common with other sites in the Willington area it was located on gravels probably above the contemporary flood plain.

METHOD STATEMENT

The method adopted by the quarry for topsoil removal at site 3 was similar to that at sites 1 and 2. However, although the aims of the excavation were also similar, greater emphasis was placed on examining the surviving stratigraphic sequence as the basis for a chronological framework of the site's development. Sections were excavated around the circumference of the ring and at the intersections of the ring ditch and the later enclosure (Fig 7).

The site code used during excavation was WQ 90 area A. The site archives of records and finds will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE

The ring ditch

The ring comprised a single ditch (2), with an internal diameter 23.5m east to west and 21m north to south. The ditch was 1.8m wide on the west and east sides and up to 3m wide on the north and south sides. There was very little variation in depth: from 0.7m to 0.9m.

Similarly there was little variance in the ditch profile; it either sloped gently to a curved bottom (Fig 7 section 5, Fig 8 section 9), or had a "V" shaped profile (Fig 8 section 7). Only in section 11 were the sides steeper with an irregular bottom (Fig 8). Characterised by three silt horizons, the upper (10) (14) comprised mid-dark brown sandy silts with occasional small stones and flints, the lower

(11, 15, 51) mid-dark brown silty sands with gravel. Evenly deposited throughout the ditches the lower silts sealed primary silts of dark brown silty sands interspersed with layers of gravel slippage from the ditch sides. In two sections (Fig 8 sections 7 & 9), however, there was very slight evidence for gravel deposits to one side of the profile suggesting the possibility of either mounding or adjacent activity such as a trackway or ploughing which might have dislodged material (52, 15) into the ditch. There was no evidence of recutting.

NATURAL FEATURES

The silted up remains of a river course which partially obscured some of the northern part of the ring (Fig 7 and 22) was sampled. The river was found to contain Iron Age pottery (table 4.1) and flint (table 7) and probably silted up during the Iron Age. Both are discussed under site 4.

ENVIRONMENTAL

(B Biddle)

Three soil samples were taken from 37 (141G), 67 (200G) AND 68 (2320G), from which only fragmentary charcoal was recovered.

THE FLINT

(E McSloy)

Flint	Ring ditch 3
flakes/chips	1:2
Total	1:2

Table 3 Flint from site 3 by quantity and weight in grammes.

A single hard hammer struck flake of unpatinated grey flint was recovered from ring ditch fill (3).

DISCUSSION

The second ring ditch at Willington exhibited similar characteristics to the first except that there was no evidence for the secondary deposition of cremated material. Of possible significance were several post holes. Three (25, 27, 54) were cut into the upper ditch silts and may be related to the Iron Age phase, whilst three pits to the west cannot be assigned a date (44, 42, 40). As with site 2 there is no evidence to suggest they relate to an earlier settlement.

Near the centre of the ring was a large pit [7], its location indicating the possibility of a central burial; however, ceramic evidence suggests that this pit is

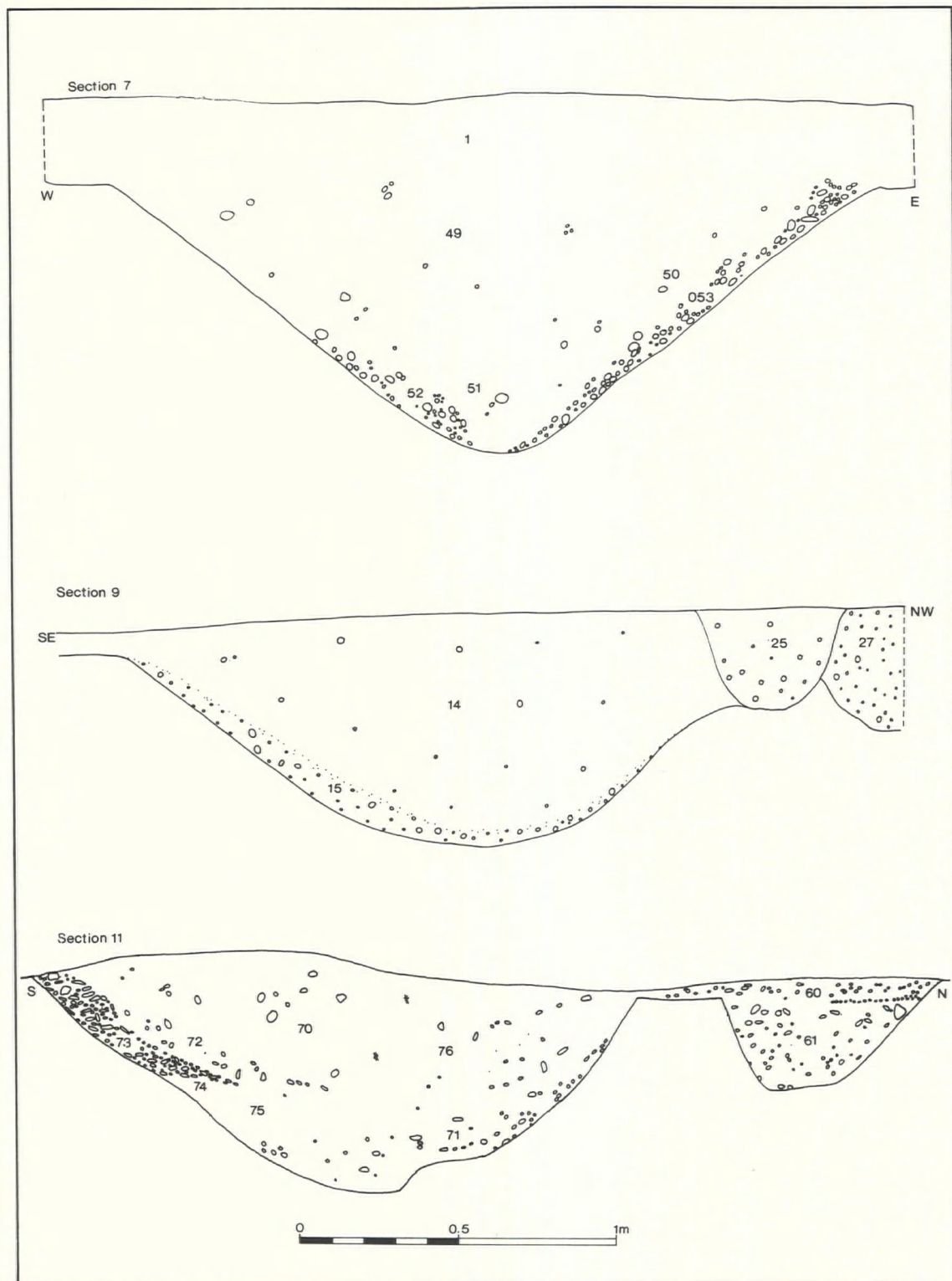


Fig 8 Site 3 Ring ditch sections

Iron Age (it is discussed under site 4). Thus apart from the size of the ring, which at 23m diameter conforms to the Bronze age pattern first identified by Woodward (1986), the ring ditch cannot be dated with any precision.

4 THE IRON AGE ENCLOSURE

The rectilinear enclosure which cut the ring ditch at TL 098 506 measured 40m east to west and 26m north to south. It was subdivided into sections corresponding with possible entrances on the north and south sides. Within the enclosure at the west end were slots or gullies and several small post holes. One series of post holes in particular suggests a structure. Several post holes beyond the structure to the east end cutting the upper fills of the ring ditch may be associated with the Iron Age but lack dating evidence.

METHOD STATEMENT

The enclosure, site 4, was excavated with the ring ditch, site 3, above and under the same conditions.

The site code used during excavation was WQ 90 area A. The archive of finds and records will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE (Fig 9)

The enclosure ditch

A single ditch comprising three segments formed the main enclosure (56), encompassing a rectangle 40m x 26m. On the south side the ditch was steep sided (section 14) with a flat bottom and on the north, although slightly more abraded, it retained near vertical sides and a flat bottom. There were two breaks in the circuit of the enclosure 11m on the south side, 9.3m on the north, slightly offset from one another, whilst at the east the enclosure was open ended. The profile of the enclosure ditch suggests they were structural and intended as foundation trenches for timber uprights. No further evidence survives for the nature of these posts.

On the south side of the enclosure the 'entranceway' was flanked by a post hole and recut, (113/115) and there was a similar post hole (94) in the northern opening, close to the ditch terminal. Both post holes were similar with sloping sides and flat bottoms filled with dark grey brown loamy clay, and both may have functioned as sockets for gateposts or some non-functional embellishment.

Subdividing the enclosure at the west end were two slots. Oriented north to south one [96] was 7m long, 0.70m wide and 0.49m deep; the other [12] was similarly 7m long with steep, near vertical sides

and a flat bottom but with a post hole situated in the centre of it. The primary fill of both gullies comprised gravel (13), (98) and (97), (11), (112) probably edge-derived during construction or dismantling, below (111, 103) a dark brown silty sand with charcoal flecks.

Both gullies appear to have cut post holes; the northernmost cutting (105), the southern not excavated.

Post hole [105] was 1.5m in diameter and 0.47m deep and represents a substantial structural feature. It had steeply sloping sides and a flat bottom and was filled with a light brown silty sandy loam (106).

Evidence for later activity was present in the northern gully which was cut by a small pit or post hole (101): 360mm diameter, 370mm deep, it contained a grey brown silty loam (84) with charcoal flecks and lumps of burned clay possibly dumped from a hearth.

A further four post holes (134, 130, 137, 140) were positioned at the north-west corner of the subdivided enclosure; three were internal, aligned north to south, with the two external post holes aligned east to west. Two were external; all were shallow (Fig 9, 11).

Pits (Fig 12 Sec 19)

On the north side of the enclosure was a pit (90), 1.2m in diameter and 0.25m deep, a shallow steep sided feature with three fills. The primary fill (91) was a brown silty loam with charcoal flecks and stones, clay, bone and flints that all show signs of being burned. It may be the remains of a hearth deposit. Above this were two layers: a brown silty loam with charcoal (110) and (109) a grey brown silty loam with gravel and charcoal. Both include edge-derived material suggesting the pit had remained open for some time.

Towards the centre of the ring ditch (site 3) was a large sub circular pit 2.4m wide [7]. The sides were irregular. The upper fill of the pit (8) was a black brown slightly silty loam with charcoal flecks and pockets of gravel, above (36) a mid to light brown silty sand with charcoal flecks and a narrow band of gravel. This in turn was above a mid brown slightly clay silt loam (38) and (37), a light orange brown sandy gravel. The pit was 0.95m deep.

Post holes (Fig 11)

East of the ring ditch approximately 12m away from the enclosure were two post holes. The first (40), was 0.6m across and 0.34m deep filled with (39), a mid red brown sandy silt and a darker fill probable

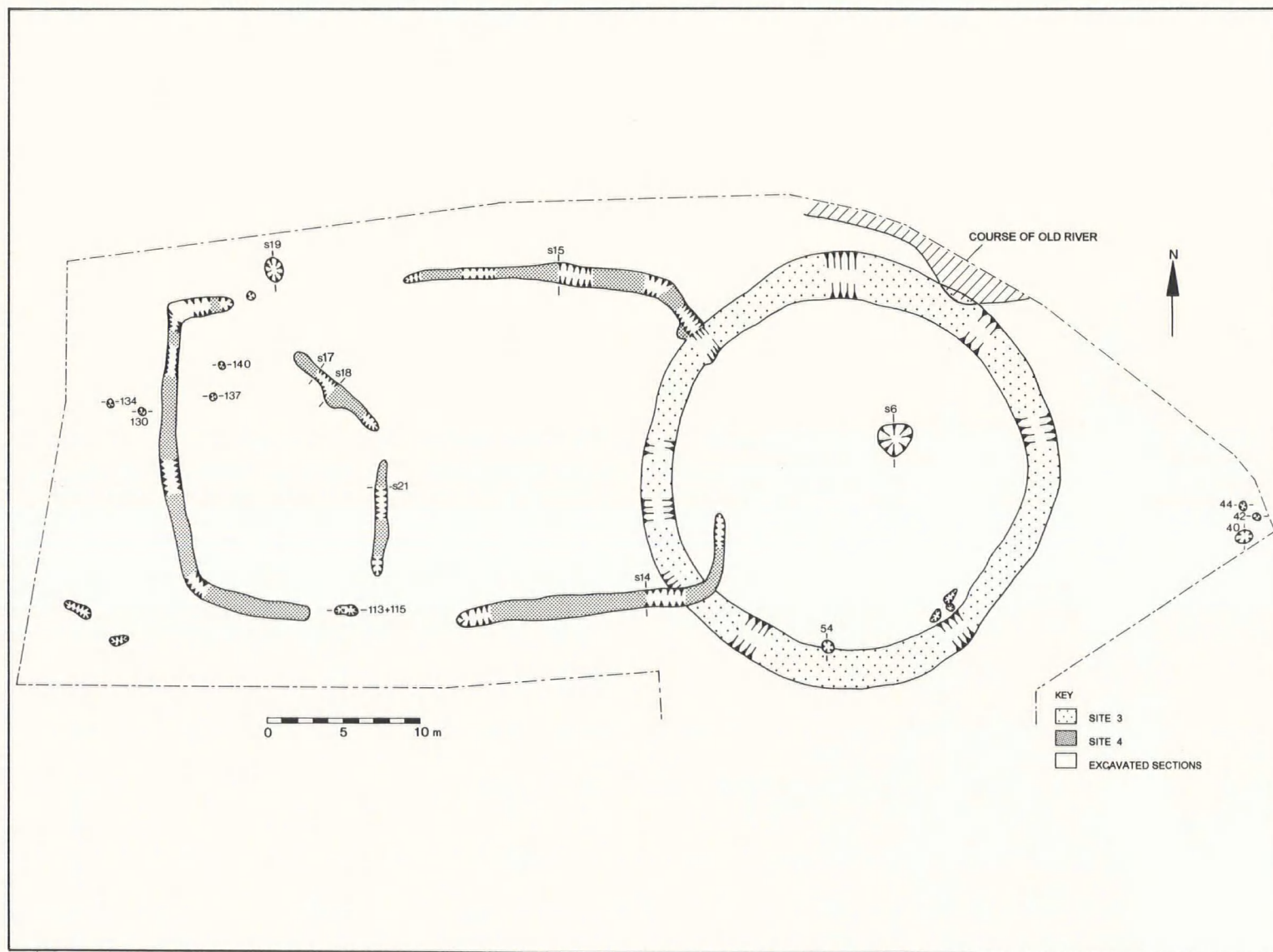


Fig 9 Site 4 The Iron Age enclosure

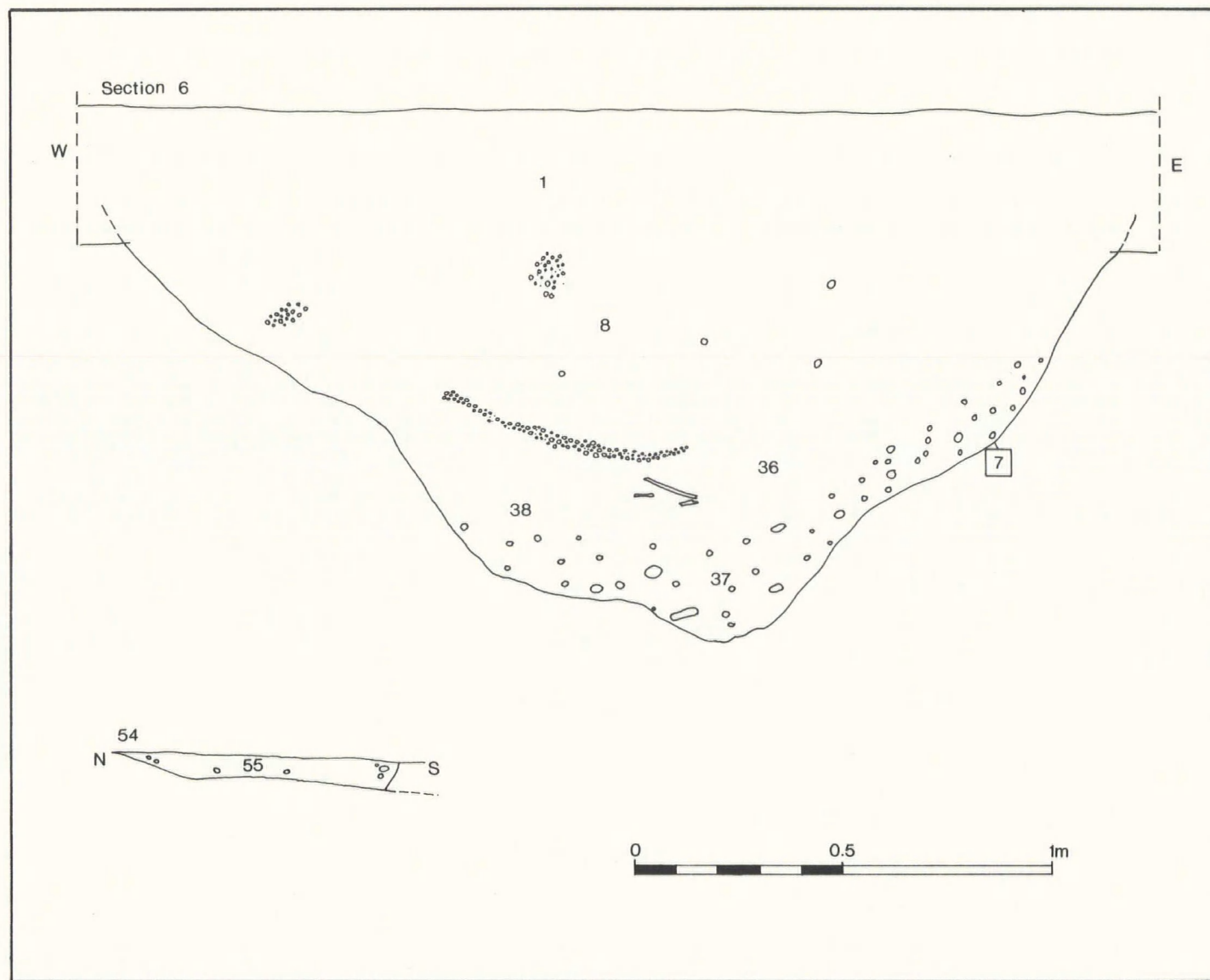


Fig 10 Site 4 Section of pit [7]

evidence of a post pipe. The second (42) was a shallow feature with sloping sides and base, 0.6m across and 0.06m deep filled with (41) a mid red brown loam mottled with grey sandy silt.

Tree throw holes

South west of the enclosure, were two irregular-shaped features, possibly tree throw holes. One (119) was 0.9m long and 0.1m deep with gently sloping sides and an uneven base. It was filled with (120), a mid grey brown sandy silty clay with charcoal flecks; the second (129) was 1.4m long and shallow, filled with (128) a mid grey brown sandy silt. To the north of the ring ditch was (44) another shallow feature with sloping sides and base measuring 0.45m across and 0.07m deep. This was filled with (43) a mid brown sandy silt.

THE CERAMICS ASSEMBLAGE

(E McSloy)

Fabric	Pit [7]		Post holes		'Ring ditch'	
Contexts	36	37	23	27	6	14
F02	1:2					
F03	26:73				1:2	1:2
F17	9:18					
R01			1:1	3:2		
Total	27:75	9:18	1:1	3:2	1:2	1:2

Table 4 Ceramics from ring ditch area by sherd count and weight in grams

River bed (Fig 9)

A palaeochannel, an old course probably of a more abraded River Ouse, flowed eastwards past the ring ditch (site 3) but by the Iron Age was silting. The bed was sampled and Iron Age pottery found within it (46). Its position may suggest a reason for the location of site 4.

Quantification

Pottery from the ring ditch area and the rectilinear enclosure amounted to 694 sherds, weighing 2417g. Twelve fabric types were identified. The fabrics are described below using common names and type series codes in accordance with the Bedfordshire Ceramic Type Series, held by BCAS.

Type Descriptions

Iron Age

F02 *grog/flint*

Fabric is fairly soft, smooth surfaces. Some voids where flint has fallen out. Interior surface reduced to black, exterior oxidised to orange. Abundant, fairly well sorted, buff-grey or black medium to coarse grog, 0.4-2.4mm; sparse, poorly sorted fine to medium angular flint grits, 0.3-2.1mm.

Forms: represented by one body sherd, of indeterminate form.

Illustrations: not illustrated

F03 *grog/sand*

Fabric is fairly hard, harsh, with grits rubbing off readily when handled. Core and interior surface generally dark grey; exterior surface colour is more variable, often on same vessel, ranging between orange-brown and dark

Fabric	Enclosure ditches				Pits associated with enclosure		Slots sub-dividing enclosure			River course
Contexts	57	64	67	86	84	91	13	97	98	46
F03	1:3		3:2		65:294	88:162	100:83	21:45	6:10	21:34
F04					8:39				3:91	
F16					6:24	3:19	3:15		7:60	
F17					156:748					2:4
F19					31:259		7:55			
F20			14:25				39:68	5:42	6:10	
F22							19:33			
F27						11:70	4:12			
F28	1:3									
F30			2:7		1:38	1:11			18:61	
Total	1:3	1:3	3:2	16:32	267:1402	103:262	172:256	26:87	40:232	23:38

Table 4.1 Pottery from rectilinear enclosure by sherd count and weight in grams

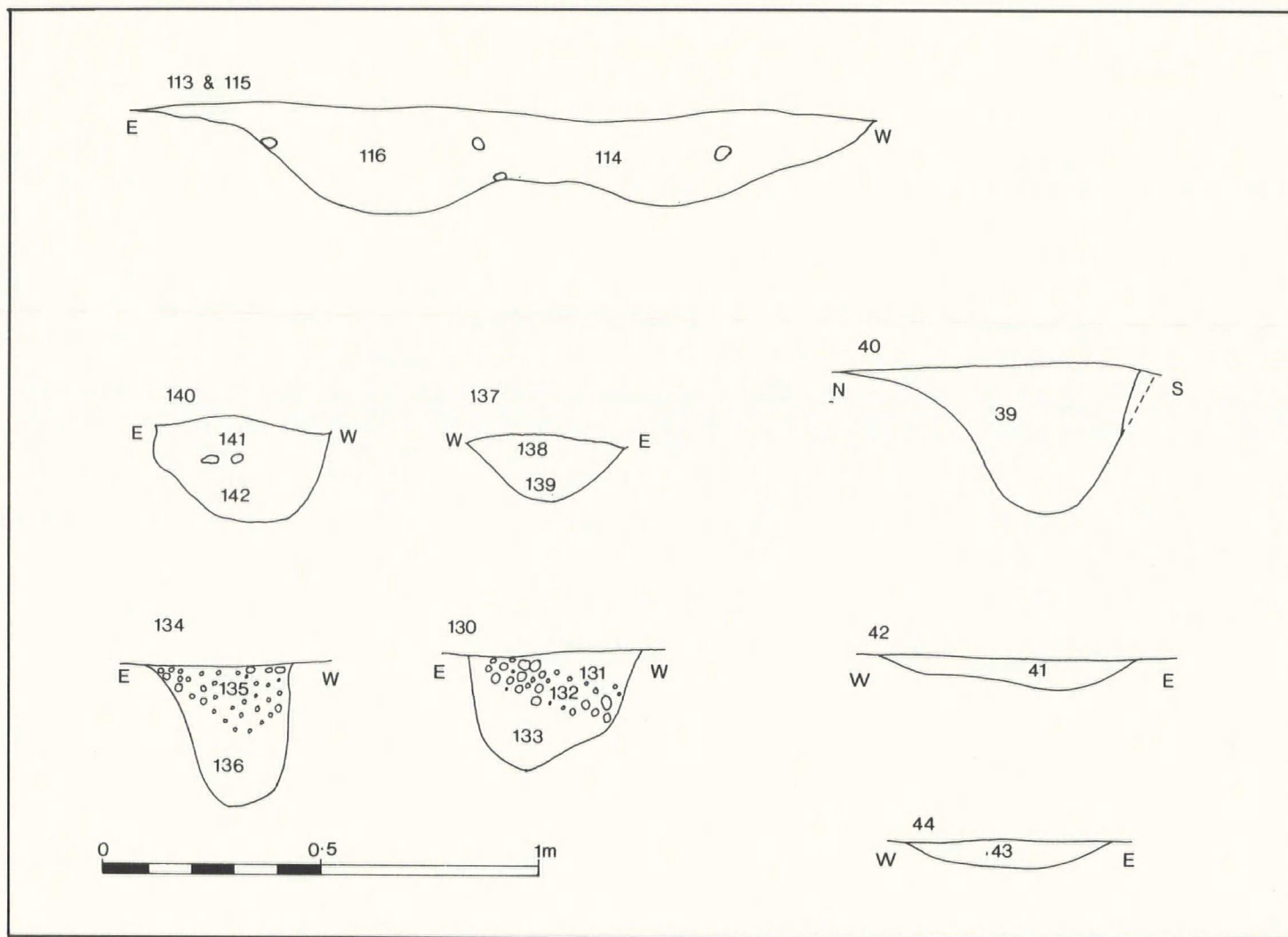


Fig 11 Site 4 Post holes

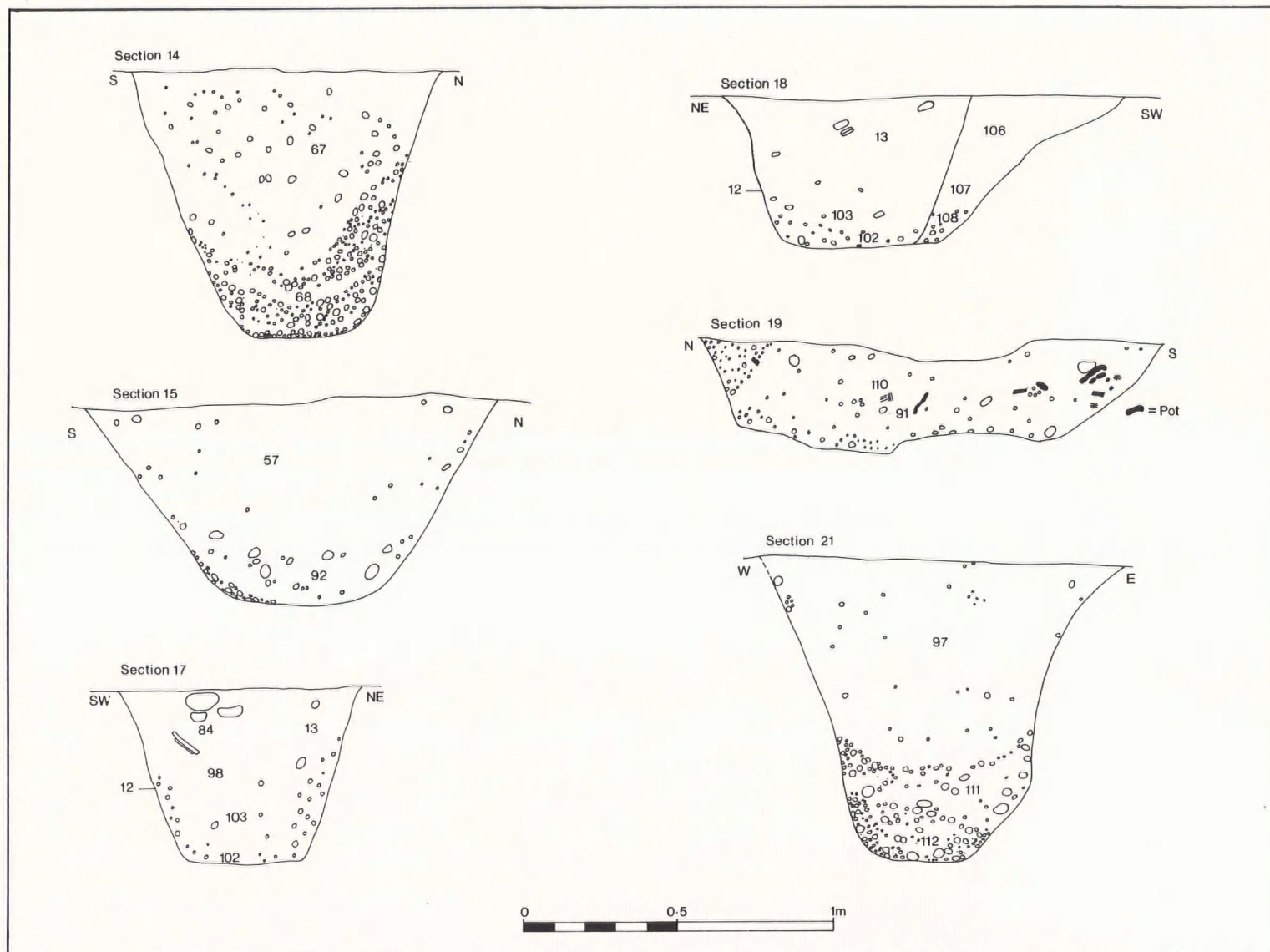


Fig 12 Site 4 Sections through the structure of the enclosure and post holes

grey. Abundant, fine-medium black or red-brown grog, 0.4-1.2mm, rounded or sub-angular and fairly well sorted; frequent fine sub-angular white quartzite and iron ore generally less than 0.2mm. Rare calcareous inclusions, 0.2-0.4mm.

Forms: ovoid jars with slightly everted neck and plain, rounded rims. Bases are flat and slightly pinched out around the edge.

Illustrations: Fig 13, Nos 2, 3, 4, 5, 11, Fig 14, No 17

F04 organic

Fabric is fairly soft, smooth and soapy to touch. Core and interior, medium grey, outer surface oxidised to buff or orange-brown. Core has flaky layered appearance and both surfaces and core display frequent elongated voids where organic matter has burnt out. Occasionally carbonised vegetable matter, probably chopped grass or chaff, survives within the clay matrix. Rare rounded or sub-angular clear quartz inclusions, less than 0.2mm.

Forms: vessels of indeterminate type.

Illustrations: not illustrated

F16 coarse shell

Fabric is fairly soft, crumbly. Generally oxidised, dark reddish brown surfaces, occasionally with dark grey core. Plate-like shell inclusion varies in coarseness and sorting, typically between 0.4mm and 5.24mm in size. Extent of leaching varies between vessels; some well leached groups of sherds with corky surfaces may be residual Bronze Age pieces. Rare rounded or sub-angular clear quartz inclusions, less than 0.2mm.

Forms: ovoid jars with everted necks, in one case with pinched rim.

Illustrations: Fig 13, Nos. 6, 10

F17 grog

Fabric is soft, soapy and smooth. Mid grey fabric with buff-orange surfaces or, rarely, with grey interior. Abundant sub-angular or rounded medium grog, 0.4mm-1.77mm, predominantly black, but buff or orange close to oxidised surfaces. Rare rounded or sub-angular, clear quartz or black iron ore, all less than 0.2mm.

Forms: ovoid jars with upright neck and flattened, thumbled rims.

Illustrations: Figs 13-14, Nos. 1, 14

F19 sand/organic

Fabric is fairly hard, harsh, with grits rubbing off readily when handled. Dark grey to black fabric with surfaces oxidised to patchy dark brown or orange. Frequent fine, sub-angular or rounded quartz, less than 0.3mm. Surface

shows fairly frequent elongated voids where organic matter has burnt out. Occasionally carbonised vegetable matter, probably chopped grass or chaff, is visible within the core.

Forms: ovoid jar with slightly everted neck and indented, rounded rim.

Bases are flat and slightly pinched out around edge.

Illustrations: Fig 13, No. 8

F20 calcareous inclusions

Fabric is fairly hard smooth and well made. Reduced to dark grey or black throughout. The fairly frequent inclusions are rounded or sub angular and most closely resemble finely crushed chalk or clunch fragments. They are predominantly fine, 0.2mm-0.9mm, but in one instance over 6mm. Rare rounded or sub-angular clear quartz inclusions, less than 0.2mm. In some cases the calcareous inclusions have completely leached out leaving white edged voids.

Forms: ovoid jars with upright necks and squared rims or everted necks and plain rims; Single carinated jar with slightly everted rim. Bases are flat and slightly pinched out around edge.

Illustrations: Figs 13-14, Nos. 9, 12, 13, 15

F22 grog/organic

Fabric is soft, smooth and soapy. Dark grey fabric with buff or buff-orange surfaces. Fairly abundant, sub angular or rounded, medium grog, 0.4mm-1.8mm, predominantly black, but buff or orange close to oxidised surfaces. Core has flaky layered appearance and both surfaces and core display frequent elongated voids where organic matter has burnt out.

Forms: vessels of indeterminate type.

Illustrations: Fig 13, No. 7

F27 shell/grog

Fabric is fairly soft, crumbly with pitted, corky surface. Oxidised reddish brown exterior, with grey core and interior. Plate-like shell, well sorted and fine, between 0.5mm and 4mm. Fairly sparse, sub-angular or rounded, medium grog, 0.4mm-1.77mm, predominantly buff or orange-brown. Shell is completely leached from surfaces and visible only in breaks.

Forms: body sherds only, of indeterminate form.

Illustrations: not illustrated

F28 fine sand

Fabric is hard, fairly smooth and well made. Generally reduced to dark grey throughout, although one sherd has reddish-brown exterior surface. Abundant fine rounded, or sub-angular quartz and iron ore, all less than 0.5mm. Rare calcareous inclusions, 0.24-0.88mm.

Forms: ovoid jars with short upright necks and plain, rounded rims; carinated jars with slightly everted, plain rounded rims.

Illustrations: Fig 14, Nos. 18, 20, 21

F30 sand/calcareous inclusions

Fabric is hard, fairly smooth and well made. Can be either reduced to dark grey throughout, or oxidised to buff throughout. Abundant, fine, angular or sub-angular quartz and iron ore, all less than 0.5mm. Fairly frequent calcareous inclusions, rounded or sub angular and 0.24mm-0.88mm in size.

Forms: ovoid jars with flaring neck and plain, rounded rim; single handled jar.

Illustrations: Fig 14, Nos. 13, 19, 22

Roman

R01 samian

Hard fired, smooth orange core and glossy red-orange slip. Fabric contains fairly abundant mica.

Forms: bowl, see below.

Illustrations: not illustrated.

The Iron Age Pottery

Fabrics

The range of fabrics is largely consistent with that known for the early to middle Iron Age in the county. The variety of fabric types is perhaps unusual from a comparatively small site. It has been suggested that a basic clay matrix in use on the site may have acquired organic or other inclusions accidentally at source, so accounting for variations (Pinder 1986b).

The limited range of forms listed in 5 reflects largely the conservatism which characterises the early-middle Iron Age in the Ouse Valley (Pinder 1986b). The recognisable forms comprise almost entirely simple ovoid jars, cooking or storage

vessels with poorly defined shoulders. The finely-made carinated and strap-handled vessel forms are notably small in number.

Slightly greater variation of form occurs above the shoulder, both in terms of the neck height and profile (Figs 13-14 Nos. 2-19). The vessel neck may be of simple, upright form or more commonly is everted to varying degrees. Rims are rounded, flattened or flattened with an internal lip (Fig 14, No. 14).

The bases from fourteen separate vessels are identifiable. All are flat, but differences occur at the junction between the vessel wall and the base, with eight of these being pinched out (Figs. 13-14, Nos. 8, 17). Such a device, whilst improving a vessel's stability, may also have been added for aesthetic effect.

Decoration

Three major classes of decoration survive on sherds representing nine vessels.

Twig brushing

This, the crudest form of 'decoration', is applied in vertical or diagonal strokes down the body of the vessel, possibly with handfuls of twigs or stiff grass. Twig brushing is widely attested on Iron Age pottery from the East Midlands and beyond and is likely to serve as much as a functional device as it is decorative, probably designed to roughen the pot's surface and so facilitate handling. Three vessels treated in this fashion were identified from the rectangular enclosure.

'Restricted' finger decoration

(As defined by Knight 1984, 18).

Six vessels conform to this class of decoration, in which finger-tip or finger-nail impressions are

Forms:

Forms	Fabrics								Total
	F03	F16	F17	F19	F20	F22	F28	F30	
ovoid, everted neck	2	2		1	1			1	7
ovoid, upright neck			1		1		1		3
carinated (jars?)					1				3
strap handle jar								1	1
miscellaneous rims	3					2	3		8

Table 5 Vessel form by fabric

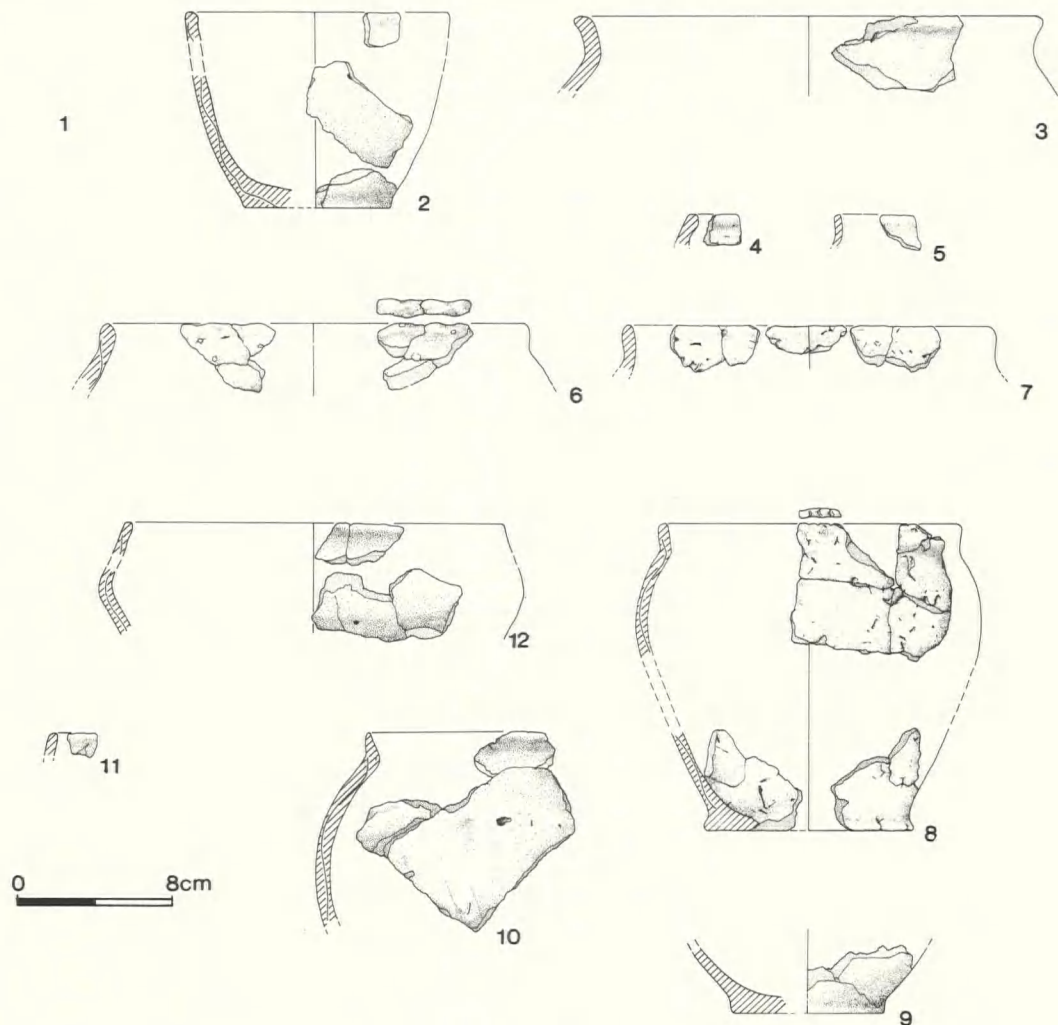


Fig 13 Pottery Site 4

confined to the rim or lip of the vessel (Figs. 13-14 Nos. 6, 8, 13, 14). In two cases this form of decoration is combined with twig brushing. A variation of this decorative technique, which involves the pinching of the rim in piecrust fashion, was noted on one shelly fabric vessel (Fig 13, No. 6).

Rouletting

A single vessel of uncertain form preserves traces of four shallow vertical lines made with a square-toothed roulette wheel (Fig 13, No. 1).

Surface treatment

No clear instances of burnishing were recorded on the pottery from the rectilinear enclosure. A large proportion of sherds, however, have abraded

surfaces. This damage is especially acute on the softer, grog-based fabrics and any trace of burnishing would not survive in such cases.

Manufacture

All the Iron Age pottery was hand-made, either pinch-built from a solid lump of clay or coil-built. In certain cases it is possible to make out in section the successively added clay coils or rings. All the bases recovered are flat, suggesting that each vessel was built upwards from a flat surface. Impressions of organic material (in one case a carbonised cereal grain) suggests the proximity of this material at, or near, the time of manufacture. Organic 'packing' may have been used when the pots are left out to dry

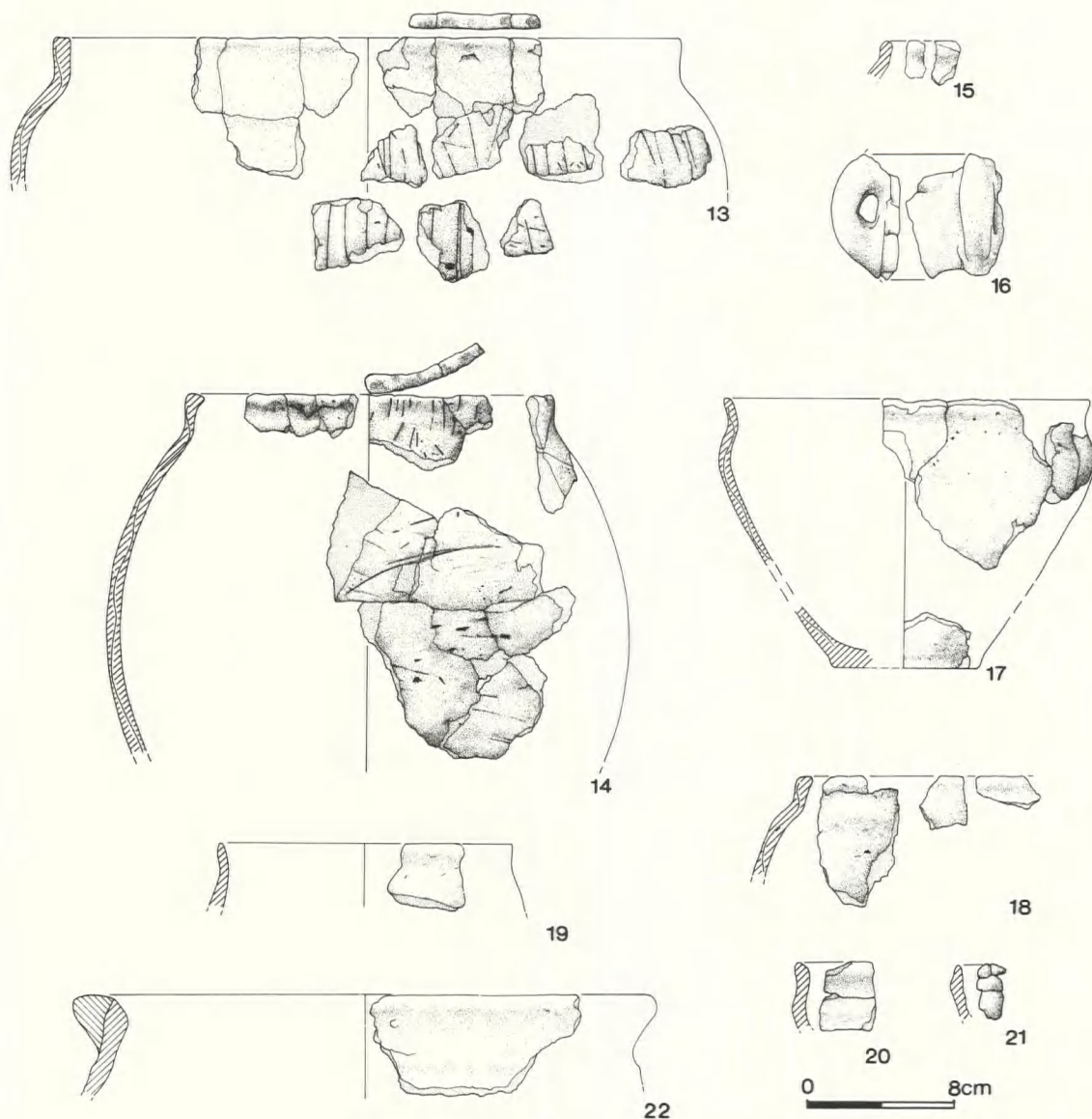


Fig 14 Pottery Sites 4, 5, 7

out, prior to firing. That this drying process was not always successful is inferred from the spalling visible on one vessel, of groggy fabric F17.

Colour variations on the surfaces of some vessels are the result of firing in a bonfire. In some cases, however, vessels display even colouring; for example, groggy fabrics predominantly have buff surfaces and calcareous based fabrics are reduced to grey or black. This may suggest a degree of control over firing in certain instances.

Roman Pottery

General Discussion

Four small, abraded sherds of samian were recovered from isolated features in site 4. The largest sherd bears traces of en barbatine decoration and probably comes from rim of a Drag. 35 or Drag. 36 bowl. This form of decoration is common on samian from the Flavian period to the demise of samian importation in the 3rd century AD. The remaining sherds are undiagnostic. The presence of

abundant mica, however, suggests their origin is Lezoux, central Gaul. This region is thought to be producing approximately 90% of the samian reaching Britain from the 120's onwards. (Pengelly, 1989 147).

Fired Clay objects

Fabric	Enclosure ditches	Associated pits	
Contexts	67	84	91
Triangular loomweights	170:1115		260:785
Misc. fired clay/daub		30:641	107:412
Total	115:1115	30:641	367:1197

Table 7 Ceramics from rectilinear enclosure by sherd count and weight in grams.

Fabric

All the recovered fired clay is of a similar type, probably untempered but containing some natural organic, quartz and calcareous inclusions. The exterior surfaces are oxidised to a dull orange,

whilst the core, which in some cases is only partially fired, can be reddish brown or grey.

Two groups of fired clay, comprising 430 fragments, weighing 1900g represent a number of triangular-form loomweights. The larger pieces from these groups preserve flat or angled surfaces, including corner and 'apex' pieces (Fig 15, Nos. 1-2), and in one case a suspension hole (Fig 15, No 1). Feature sherds such as these comprise fragments. Triangular loomweights, where each angle is pierced length-ways, are widely known from Iron Age sites.

Daub/Fired Clay

A further 137 badly fragmented, abraded and largely amorphous sherds, weighing 1053g and otherwise similar in fabric to that described above, were recovered. A proportion of this material represents structural daub, indicated by the presence of rounded wattle impressions on two pieces.

BONE OBJECT

A single worked bone object was recovered from gully fill (98). This object consists of a fragmentary sheep or goat metapodial which has been perforated

Illus. no	Fabric code	Fabric description	Context	Comments
Fig 13				Site 4
1	F17	grog	37	lower fill pit [7] body sherd with rouletting/comb impressions
2	F03	grog/sand	36	middle fill pit 7
3	F03	grog/sand	57	Iron Age enclosure ditch
4	F03	grog/sand	67	Iron Age enclosure ditch
5	F03	grog/sand	13	slot subdividing Iron Age enclosure [98]
6	F16	coarse shell	13	slot subdividing Iron Age enclosure [98]
7	F22	grog/organic	13	slot subdividing Iron Age enclosure [98]
8	F19	sand/organic	13	slot subdividing Iron Age enclosure [98]
9	F20	calcareous incl.	98	slot subdividing Iron Age enclosure [13]
10	F16	coarse shell	98	slot subdividing Iron Age enclosure [13]
11	F03	grog/sand	97	slot subdividing Iron Age enclosure
12	F20	calcareous incl.	97	slot subdividing Iron Age enclosure
Fig 14				
13	F19	sand/organic	84	post hole/pit assoc. with Iron Age enclosure
14	F17	grog	84	post hole/pit assoc. with Iron Age enclosure
15	F20	calcareous incl.	84	post hole/pit assoc. with Iron Age enclosure
16	F30	sand/calcareous incl.	84	post hole/pit assoc. with Iron Age enclosure
17	F03	grog/sand	84	post hole/pit assoc. with Iron Age enclosure
18	F28	fine sand	91	primary fill pit [90]
19	F30	sand/calcareous incl.	91	primary fill pit [90]

Table 6 Pottery illustrated in Figs 13 & 14

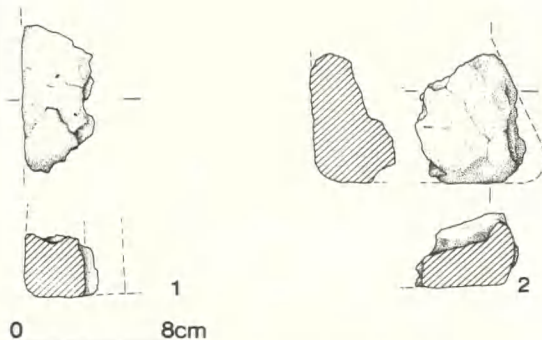


Fig 15 Ceramic loom weights

close to one (indefinable) end (Fig 16). The function of such a fragmentary object remains largely obscure. Possible uses might include as a toggle or fastener, or perhaps part of a flute or whistle.

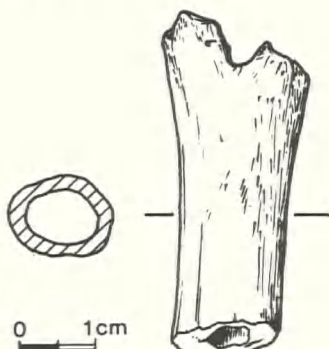


Fig 16 Bone object from Site 4

FLINT (E McSloy)

Form	Central pit			Enclosure		Post hole	River bed	Total
Contexts	8	36	37	13	57	91	46	
Cores		1:91						1:91
Flakes/chips	1:4	46:108	6:41	8:95	1:2	3:25	1:5	67:282
Total	1:4	47:199	6:41	8:95	1:2	3:25	1:5	68:373

Table 8 Flint by quantity and weight

Raw Material

Cortex survived on a majority of pieces and this indicated that the bulk of the raw material was small cobble or pebble sized flint derived from the local river gravels. A substantial grey chert flake from context (13) suggests limited use of this resource

which similarly could have derived from gravel deposits (Pitts 1983, 79). The raw material was probably procured mainly from natural surface exposures, including tree-falls and the river bank. From the Neolithic onwards, fresh gravel deposits would be exposed, and no doubt exploited, during the construction of monuments and the excavation of pits and ditches for domestic purposes (Holgate 1988, 64).

Method of Production

With a single possible exception, the flint assemblage displays the characteristics of manufacture using a hard hammer. These characteristics are wholly apparent on the group recovered from pit [7]; the more obvious include a thick butt or striking platform, a clear point of percussion and an often exaggerated bulb of percussion. A flake from the NW arm of the rectangular enclosure ditch (56), which was patinated to an off white colour was almost certainly soft hammer struck; it has no clear point of percussion, an 'understated' bulb and a thin butt.

Condition

The condition of the flint assemblage varies to a fairly marked degree, both in terms of patination and post-depositional damage. Two groups of material, from pit [7], situated within the ring-ditch, and from gully (12) are mainly of 'fresh' appearance with minimal edge damage. Both groups contain lightly patinated pieces. Conversely, a number of pieces, for example from pit (90), were unpatinated and of 'rolled' appearance, with damage sustained to the edges

Chronology

In the absence of characteristic tool types, the dating of the flint assemblage, other than in its broadest terms, is not possible. Mesolithic activity is evidenced close by at Dog Farm, Willington (Shotliff, forthcoming) and the single instance of a soft hammer-struck flake might imply some background Mesolithic activity.

The flint assemblage from the rectangular enclosure is clearly dominated by flakes, struck with a hard hammer. This method of production is a feature of worked flint dating to the late Neolithic and later periods (Holgate 1988, 60). The single, multi-platform core also fits this broad chronology.

Discussion

The flint group from pit [7] is exceptional in regard to its size; it comprises over 80% of the flint from

site 4 and, because of its 'fresh' appearance and the presence of re-fitting pieces, suggests it is an 'in situ' deposit. With the exception of a single small sherd of flint gritted pottery, the ceramics found in association are clearly of the same early/middle Iron Age tradition as those from within the rectangular enclosure. The most likely interpretation is that the flint represents a Bronze Age deposit, associated with the construction of the ring ditch, disturbed by the excavation of the Iron Age pit. The remainder of the flint, recovered from the rectangular enclosure is considered to be residual.

BURNT STONE

A single fragment of burnt sandstone, weighing 29g, was recovered. The fragment, from gully (90) is a river worn cobble, and could represent either a 'pot boiler' or it may derive from a hearth.

ENVIRONMENTAL EVIDENCE

(B Biddle)

Context	Pit [7]
Indet seed	1
Indet cereal	1

ANIMAL BONE

(R Clark with E Hutchins)

Context	Contents	Total Weight
13	Fragments + Shattered Bovine and Pig Teeth Horse Mandible fragments 8 x Horse teeth 1 x Right horse metatarsus, proximal 1 x Right bovine radius + ulna, proximal, fused together 1 x Sheep acetabulum (pelvis)	651.2g
14	Shaft fragments: longbones	23.2g
15	Amphibian + Rodent bones (mixed)	16.1g
23	Amphibian + Rodent bones (mixed) and other fragments	16.5g
36 (Pit [7])	Skull fragments/maxilla + some smashed pig teeth; long bone frags exfoliated	81.5g
37	Fragments + ribs	108.4g
57	Left cattle or horse radius + ulna (proximal only) Pelvis fragment acetabulum cattle	223.1g
58	Fragments + Scapula : Horse ?	20.7g
64	Pelvis ?cattle + fragments	65.8g
84	4 x Skull fragments 1 x Shaft fragment: Humerus? 1 small animal femur? Distal end missing Fragments + 1 Bovine tooth 1 x 'ball' of bovine femur 4 x dog metatarsals (distal) 1 x dog phalange I 3 x bovine teeth 1 x pig mandible (Grant wear stage d (young)) 1 x burnt pig humerus (Distal) 3 x cattle ribs 1 x cattle tibia	202.8g
87	Fragments 1 x left Bovine radius + ulna, proximal + scapula	46.1g
91	Fragments 1 x Femur 'ball' 1 x Sheep/goat right mandible: <2 months old 1 x v.young, burnt metacarpal shaft...Sheep/goat? 1 x rib (sheep)	26.1g
97	Fragments	10.5g

98	Fragments 2 x right dog metacarpals, proximal 1 x dog metapodial shaft + phalange 1 x bovine tooth 1 x bovine metapodial shaft 1 x burnt pig phalange II 1 x sheep/goat metapodial shaft, with drilled hole.... 1 x red deer metatarsal	80.0g
212	Thoracic vertebra + rib fragments Humerus ? shaft fragment, cattle Distal humerus articulation fragment	178.1g
216	Fragments	19.7g
219	Vertebra fragments Right bovine scapula (distal)	83.8g

Table 9 Animal bone recovered from site 4

Summary totals

Identifiable species

7 dog
8 pig fragments and skull/mandible material
2 red deer
1 horse
10 sheep
44 cattle

Fragments

22 long bone
4 small ribs
23 cattle sized ribs
1 large skull
109 indeterminants

The faunal remains related to Iron Age deposits and consist mainly of cattle, together with sheep/goat, pig, horse and dog. Two red deer bones were also recorded. The quantity of bones was low, and generally they were in poor condition. As a result no metrical or butchery analysis was undertaken. The bulk of the material came from the main rectangular ditches and from the inner slots of the enclosure. Most anatomical elements were present from cattle and sheep/goat. Pig and dog bones were less well represented. For example the dog bones were limited to metapodials and phalanges. One pig humerus had been chopped and was extensively burnt.

Pit [7]

Potentially the most significant group of animal bones consisted of material from context (36), fill of pit [7]. The animal bones were entirely of pig and included large quantities of small fragments of skull

and mandible. During excavation it was evident that the remains comprised a pig head. Possible pig long bone fragments were also recovered, but were also in very poor condition.

DISCUSSION

The Iron Age enclosure at Plantation Quarry is unique in Iron Age studies. It is a sub-rectangular and sub-divided structure of large proportions 40m x 26m. Open ended at the east end the enclosure appears to focus on a large pit which may have been deliberately sited within the partially silted remains of an earlier Bronze Age barrow. The discovery of Iron Age sherds in the upper fills (30), (6), (14) of the ditch indicate the extent to which the ring had silted, a similar situation to that at the double ring to the east excavated in 1984 (Pinder 1986a). The ceramic evidence suggests the enclosure may have been used over an extensive period from the early Iron Age extending well into the Roman period.

Evidence for the character of the site is varied – the triangular loom weights and worked bone suggest domestic activity. The animal bone assemblage is dominated by cattle and in this respect it is similar to both the adjacent site at Willington (Pinder 1986b) and other sites in the Ouse valley: Pennylands, Hartigans and Furzton. The animal bone, together with the layout of the site, however focuses attention on the pit [7]. The deposition of a pig's head and possibly legs together with the flint assemblage and ceramics F02, F03 (36) suggests ritual deposition.

Together the five elements of site 4, the pit, the unusual structure, the location of the site and its relationship to the ring ditch together with the pit assemblage and length of occupation raise the possibility that here are the remains of an Iron Age

shrine. Shrines are known from the Iron Age at Danebury (Cunliffe 1991, Fig 19.11), Hayling Island (King and Soffe 1991, Fig 15.1) and South Cadbury (Alcock 1972, 84, Fig 10). The Willington rectangle, though, is unlike the square enclosures at Danebury and Hayling Island, but the South Cadbury example is both rectangular and open ended; and near the approach to the shrine were the burials of young domestic animals.

5 TWO IRON AGE PENANNULAR ENCLOSURES AND A POST HOLE ALIGNMENT

The two penannular enclosures and an alignment of post holes were located at TL 096506 on gravels close to the northern edge of the modern flood plain; they were excavated in 1990 in a restricted area, approximately 15m x 30m. The site was first identified on aerial photographs in 1959 (YT 17 & 18) which showed the post hole alignment extending across the landscape from ring ditch (site 2) towards the western enclosure of this complex before continuing on at least to the edge of the flood plain where it disappears with the change in landuse from arable to pasture (Pl 5).

METHOD STATEMENT

The area of excavation comprised 600m²; it was stripped of trees and the topsoil removed by box scraper. The excavation strategy was intended to date and characterise both elements of the site, although funding and time restricted the extent of sampling.

The site reference is HER 337 and the site code used during excavation was WQ 90 area B. The archive of finds and records will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE

The penannular enclosures

The two penannular enclosures lay side by side, open to the south. Each had a single small terminal on their inner ditch (Fig 17).

The east enclosure (211) comprised a curving ditch with steeply sloping sides and a flat bottom. The internal diameter of the enclosure from east to west was 10.6m, whilst the ditch was 0.9m -1.05m wide, between 530mm and 640mm deep. The primary fill (213, 279, 219) was brown silty loam flecked with charcoal, with occasional stones and pockets of gravel below a brown silty loam gravel



Plate 5 Aerial photograph of sites 2, 5, 6 (YT 17, 22/6/59 Cambridge University Collection of Air Photographs: copyright reserved)

(278) sealed by a medium brown silty loam with some stone and charcoal flecks (212).

The west terminal of the enclosure ditch had been cut by a pit (280). The pit had been cut through the ditch silts and was therefore not contemporary with their initial construction. The pit was flat bottomed with sloping sides and was filled with, a medium brown silty loam with some stone and charcoal (281); it was 0.85m diameter and 0.5m deep.

The west enclosure (215), was the larger but its ditch was narrower and it had a hooked east terminal. The internal diameter was 18.4m. The width of the ditch varied from 550mm and 800mm and the depth from 560mm to 700mm, it was generally deeper and narrower along the north side. The profile was characterised by steep sloping sides and a flat bottom. The primary fills of the ditches were medium brown silty sands and gravels (252, 254) sealed below medium red brown silty sand and

gravel (253) and medium brown silty loam with flint and some stone (220). Some eroded material from the edges indicates a period when the ditches were open (251) (section 47) whilst an horizon of medium dark brown silty loam with some stone and charcoal flecks may indicate consolidation (216).

The post hole alignment

A line of post holes ran north to south through the west enclosure. The alignment continued in a slightly wavy line considerably beyond the limits of the site. Aerial photographs indicate that they curve to the south west and run to the west of and alongside the ring ditch to the south west of these enclosures (YT 17). During excavation 22 were uncovered over a distance of 56m, with an average distance between each post hole of 1.13m.

Each post hole was typically 500mm deep and c 700mm, 1350mm dia and filled with brown sandy silt:

THE CERAMICS ASSEMBLAGE (E McSloy)

Fabric	West enclosure		East enclosure	Post hole alignment
Contexts	216	220	212	245
Early prehistoric shell			12:20	
F03	103:288		7:29	
F04			3:22	
F27		4:4		
F28	2:2	10:46		
F30				3:2
Total	105:290	14:50	22:71	3:2

Table 10 Pottery from penannular ditch and post hole alignment by sherd count and weight

Quantification

Pottery from the penannular enclosures and post hole alignment comprised 144 sherds, weighing 413g. Six fabric types were identified, of which five compare to Iron Age fabrics from the rectilinear enclosure. Fabrics not previously encountered are described below using common names and type series codes in accordance with the Bedfordshire Ceramic Type Series, held by BCAS.

Type Series

Pre Iron Age

Pre Iron Age shell

Soft, crumbly surfaces, generally smooth and soapy where they survive. Mid-dark grey fabric with interior surface black and exterior oxidised to orange brown.

Shell inclusions have almost completely leached out, leaving plate-like voids. Other inclusions comprise coarse flint, 3mm-6.5mm, and quartz 0.2mm-0.4mm, these may be part of the natural clay matrix.

Forms: none recoverable

Illustration: not illustrated

Iron Age

Descriptions of Iron Age fabric types F03, F04, F27, F28 and F30 are given in the section describing the rectilinear enclosure.

Discussion

Pre Iron Age

Positive identification of this residual pottery proved to be difficult on all sites due to the

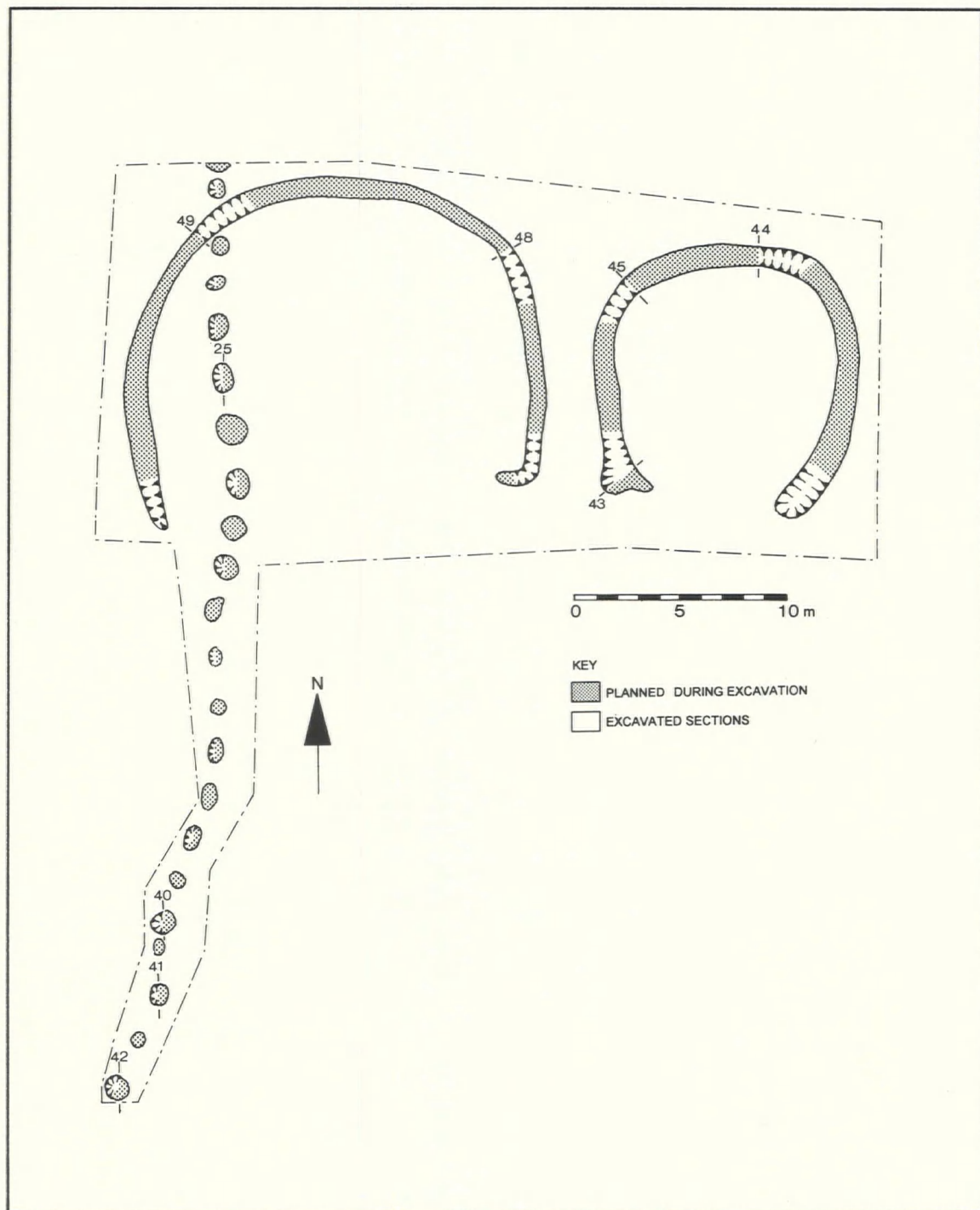


Fig 17 Site 5 The penannular ditches and post hole alignment

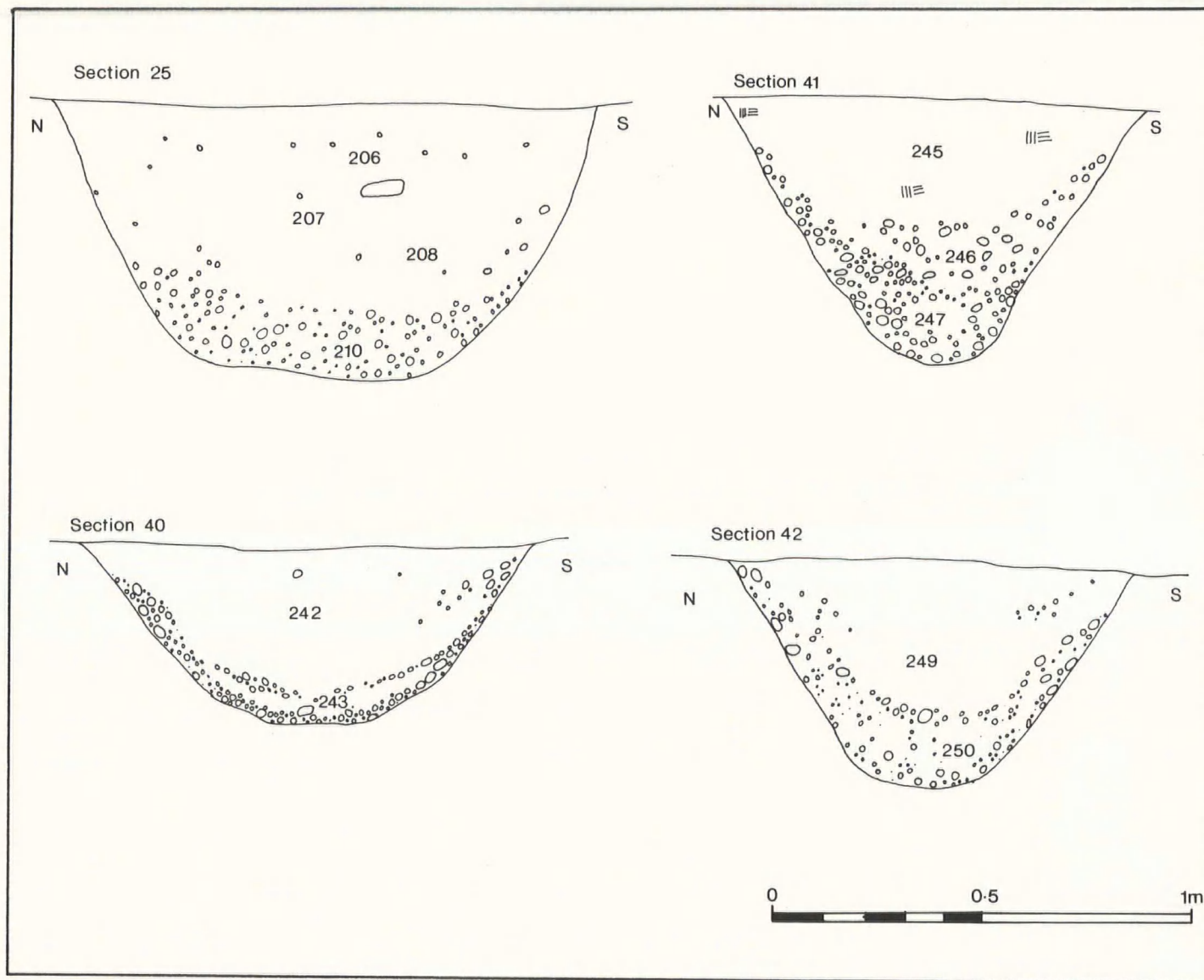


Fig 18 Site 5 Sections through the penannular ditches

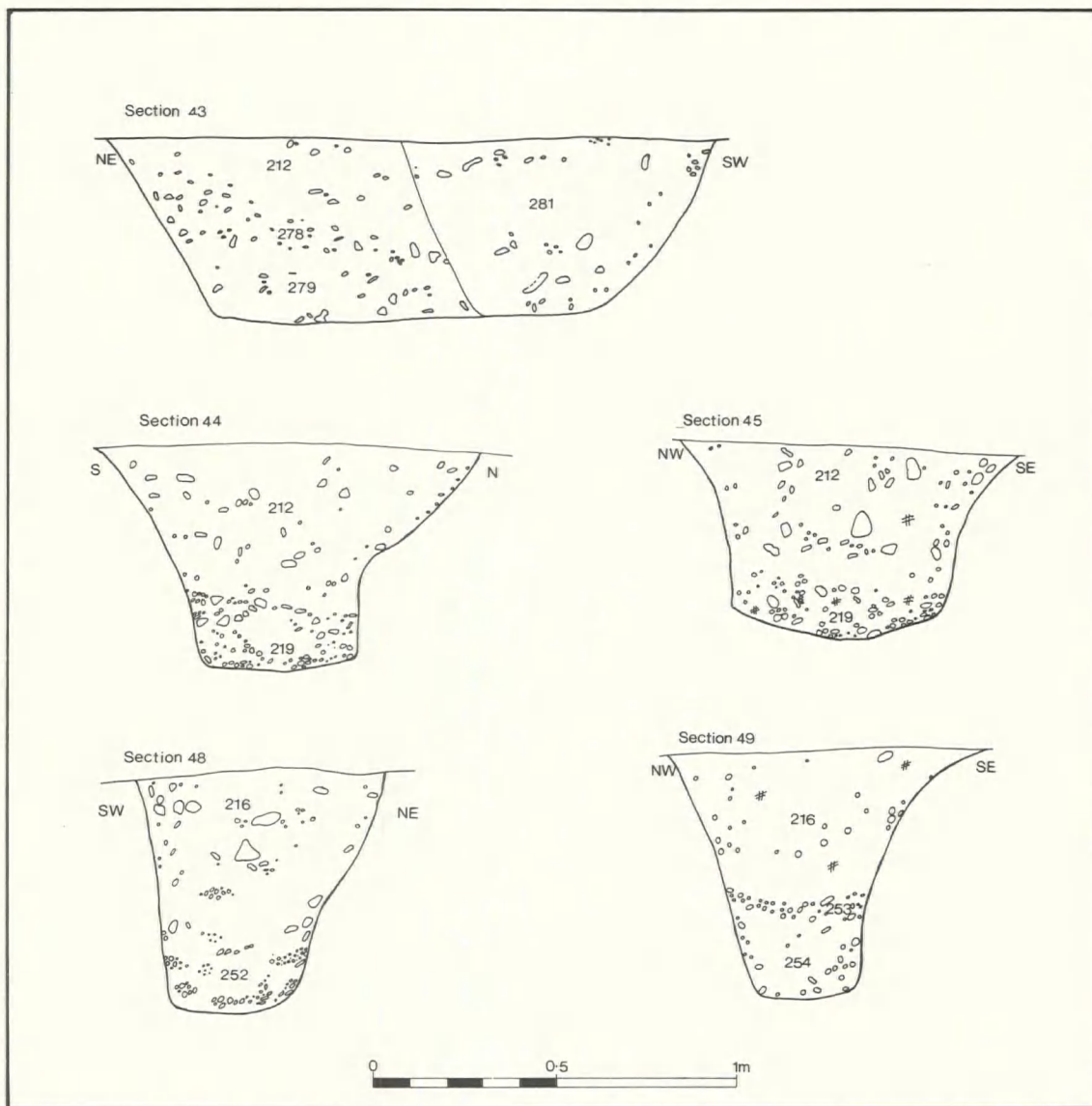


Fig 19 Site 5 Sections through the post holes of the post alignment

condition and small, undiagnostic nature of the majority of sherds. This small number of shelly type body sherds differs from the Iron Age shelly types in their bipartite colouring and the greater thickness and are likely to be of pre-Iron Age date. No forms could be reconstructed from this material and more precise date cannot be applied.

Iron Age

Although it represents a far smaller assemblage, the Iron Age pottery from the two penannular enclosures

appears to be very much in the same tradition as that from the rectilinear enclosure (site 4). This is illustrated both by similarities in the range of fabrics, (Table 8) and by comparable form elements.

Surviving form elements from the penannular enclosures which find parallels in the rectilinear enclosure comprise a single example of a pinched out base and two carinated vessels (Fig 14, No. 20). No thumbled or scored decoration was present on the pottery, although one of the carinated vessels preserved traces of burnishing.

A small rim sherd of sandy fabric from context (245) represents the sole find from the post hole alignment (Fig 14, No. 21). In terms of fabric, this piece is comparable to sherds from the penannular enclosures. However, lateral ridges which can be made out might be a result of manufacture on a wheel, a technique introduced to Britain in the late Iron Age.

A comparatively small quantity of miscellaneous daub or fired clay was recovered from fills associated with the penannular enclosures. The fabric is very similar in appearance to that from the rectangular enclosure.

Illus. no.	Fabric code	Fabric description	Context	Comments Site 5
20	F28	fine sand	220	upper fill w penannular enclosure
21	F28	fine sand	245	post hole alignment

Table 11 Pottery illustrated in Fig 14

Fired Clay

Fabric	West enclosure	East enclosure
Contexts	251	212 219
Miscellaneous daub/fired clay	4:25	7:78 11:30

Table 12 Daub/fired clay from penannular enclosures by fragment and weight

THE FLINT

(E McSloy)

Form	East enclosure		Total
Contexts	212	219	
flakes/chips	3:34	1:2	4:36

Table 13 Flint/burnt stone by quantity and weight

The three flakes recovered from (212) fill of (211) are of unpatinated dark grey flint with areas of fairly thick brown cortex surviving. The cortex suggests the source for this flint is the local river gravels. Each flake displays the characteristics of hard hammer striking, a feature common to late Neolithic and all later flint assemblages. All three pieces are

in fairly poor condition with damage sustained to the edges. This is perhaps indicative of residuality. One piece displays secondary working, in the form of large and abrupt removals to both the transverse edges and the distal end. Damage to the edges of this piece may have removed any finer retouch although it seems likely it is a fairly crude scraper.

A single grey flint 'chip' from the primary fill of (211) is too fragmentary to be characterised or dated.

BURNT STONE

(E McSloy)

A single fragment of heavily burnt sandstone, weighing 31g was recovered from context (216). It is unlikely to have been a pot-boiler, the surviving surface being rough and porous.

ENVIRONMENTAL EVIDENCE

(B Biddle)

Context 207 (post hole)

Brome grass	1
Carex seeds	2

DISCUSSION

The penannular enclosures and post hole alignment at site 5 both date to the Iron Age. Their relative positions, however, indicate they probably developed at different times, although no stratigraphic relationship survived between them. The ceramic evidence, in particular sherds of F28 and F27 from the west enclosure and F04 from the east, can only be dated to the early-middle Iron Age. This means the ceramics in the western enclosure (FO3) are chronologically indistinguishable from those in post hole (245).

Post hole or pit alignments have been found locally at Village Farm (BCAS 95/14 Fig 9) and they are a well known feature of the Ouse and Nene Valleys (Jackson 1974; Knight 1984, 259-65); all, including the Willington example, are dated to the early Iron Age.

As for the penannular enclosures their character is difficult to define. They may be the surviving drip gullies of round houses but the western example is rather large and the eastern somewhat small – accepting an average of 12-13m diameter for such structures. Both penannulars have terminals but the

lack of animal bone and any hearth material does not help a domestic interpretation. It must remain, therefore, uncertain as to whether the enclosures are the remains of round houses, or had an alternative function (Evans 1992, 23).

6 "D" SHAPED ENCLOSURE

In mid June 1959 two large enclosures were noted on aerial photographs (YT 17). They were located on the edge of the flood plain of the River Great Ouse at TL 096 507. The southern enclosure was D-shaped and appeared to lie partly over the cropmark of a second sub-rectangular enclosure to the north (Fig 20). Between the two enclosures the cropmark evidence suggests the presence of a smaller enclosure possibly in the northern corner of the 'D'.

METHOD STATEMENT

The two Iron Age enclosures represented by cropmarks were examined in desperate conditions in a situation where the quarry operators had removed extensive areas of topsoil and subsoil before archaeological recording could take place. Despite excellent aerial photograph evidence only fragments of the large D-shaped enclosure remained to be excavated following start of works. Objectives were therefore limited to dating broadly the enclosure.

The site is HER 337 and the site code was WB 151. The archive of records and finds will be deposited with Bedford Museum (Acc 1995/43).

THE ARCHAEOLOGICAL EVIDENCE

The enclosure ditch

The large D-shaped enclosure survived only as an 11.5m length of ditch (1), aligned north to south. It was 'V' shaped in profile and sealed by topsoil. The depth of the ditch seen in section at the edge of the quarry was 0.8m and the width at the top was 1.2m. The primary silts comprised dark brown clay silt (7), below a light brown sandy gravel (6) and a dark brown grey silty clay with some stones and charcoal flecks (5). Upper fills included a light brown sandy gravel (4), probably erosion of the edge on the eastern side of the ditch and (3), a mid brown sandy silt with some small stones was a layer of slippage on the western side. The latest fill (2) consisted fine silt and may have been water-borne.

ENVIRONMENTAL EVIDENCE

Soil samples were taken from the ditch silts but these proved to be barren.

DISCUSSION

The conditions of excavation and the quantity of information gathered during salvage of this monument do not lend themselves to clear interpretation. Site 6 must be interpreted almost entirely from the evidence of aerial photography.

The aerial photograph evidence from Plantation Quarry, where excavation has been undertaken, has been consistent in indicating the major components of sites. This has been demonstrated at sites 1-5, and at Pinder's enclosure excavation. This situation may be attributable to two factors: thin soil cover over the area and summertime fluctuations of the watertable. It can be assumed therefore that the reconstructed outline (Fig 20) represents the main features of the site and it therefore comprises two superimposed enclosures for which we have, unfortunately, no evidence of sequence.

In a recent assessment of enclosures in Essex (Priddy and Buckley 1987) similar sub-rectangular or D-shaped forms have been noted: at Danbury, Thurrock and Orsett. Nearby at Norse Road, Bedford a more complex cropmark site was evaluated in 1993 (Dawson and Gaffney 1995): a D-shaped enclosure was occupied into the late Iron Age. Thus the morphology of site 6 suggests it was probably a later Iron Age settlement of two phases.

7 DOUBLE ENCLOSURE

The double enclosure was first noted on aerial photograph (YK 30) taken on June 18 1959 (Pl 6). It comprised two sub-rectangular enclosures sharing a common boundary ditch. The eastern enclosure appeared to be intersected by a post hole/ pit alignment of earlier date. Excavation in 1989 was limited to the briefest salvage.

METHOD STATEMENT

Lack of notice resulted in the destruction of the majority of the two enclosures in the summer of 1989 during topsoil removal prior to quarrying. Archaeological investigation was limited to salvage, the objectives of which were to date the enclosures noted on aerial photographs thirty years earlier.

The site reference is HER 1478 and the site code used during excavation was WB 142. The archive of records and finds will be deposited with Bedford Museum (Acc No 1995/43).

THE ARCHAEOLOGICAL EVIDENCE (Fig 21)

The enclosure ditches

The archaeological evidence comprised a curving

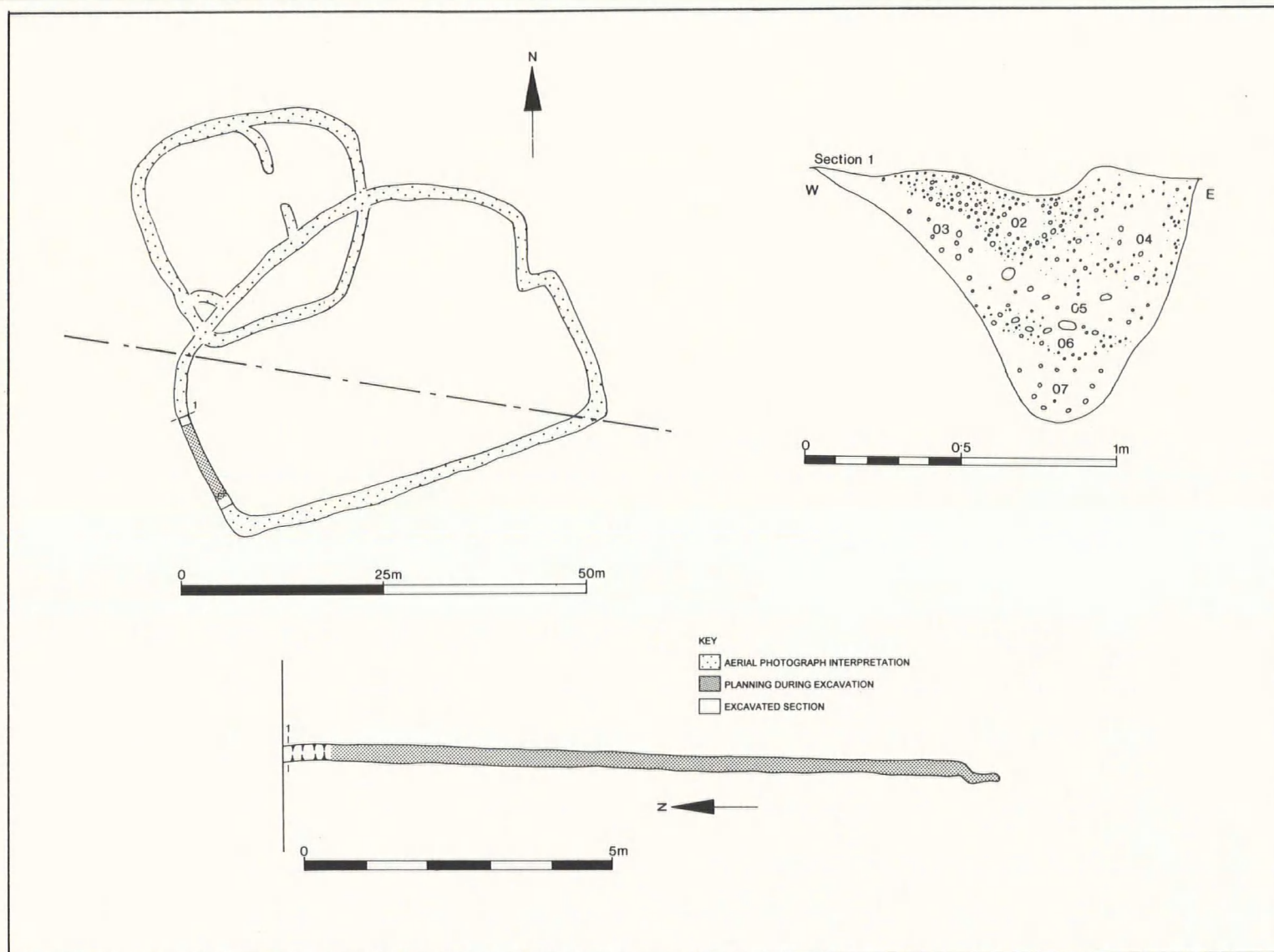


Fig 20 Site 6 Interpretation of cropmark with area of excavation (left); ditch section (upper right); plan of excavated ditch (lower)

ditch, part of the eastern enclosure (2) joined by a second ditch (5), probably the remnants of the western enclosure. A third ditch (12) ran east to west but stops 3m short of ditch (5). There was a hearth (10) north of this ditch.

The larger enclosure ditch (2) was sealed by ploughsoil and between 2.5 and 4m wide; with a 'V' shaped profile, 1.2m deep, its primary fill was a mid brown silty loam with some stones, pebbles and flints (4). A second fill represents a consolidation layer comprising, a dark brown silty loam with stones and charcoal flecks (3). This ditch ran for 5.5m north to south before turning to the east for 8.7m.

Ditch (7) started at the corner of (2) and ran north for 24m. It was 0.8m deep and had steep sides with a rounded bottom. It was filled with a light to mid yellow brown silty loam with small stones and gravel (9) below a dark brown silty loam (8) with similar inclusions. This was recut on the eastern side by (5) a ditch 1.5 to 2.2m wide with steep sides and a rounded bottom. It was 0.8m deep and filled with (6), a brown silty loam with small stones and gravel.

At the south end of (7) was a third ditch (12) which ran for 23m east to west. It was 1m to 2.2m wide and 1m deep with steep sloping sides and a rounded bottom. It was filled with (14), a very silty mid brown yellow loam with some stones and pebbles below (13), a mid brown silty loam with sand and pebbles.

Situated just to the north of ditch (12) was a hearth (10) approximately 1m in diameter consisting of small and medium sized burnt sandstone and pebbles in a matrix of brown silty loam.

THE CERAMIC ASSEMBLAGE (E McSloy)

Quantification

Pottery from the double enclosures amounted to 16 sherds, weighing 244g. Four fabric types were identified, three of which are comparable to Iron Age fabrics from the rectilinear enclosure. Fabrics not previously encountered are described below using common names and type series codes in accordance with the Bedfordshire Ceramic Type Series, held by BCAS.

Fabric	Enclosure ditches		
	3	6	9
Context			
F03			1:4
F16		1:6	
F18		1:9	
F30	7:186	6:39	
Total	7:186	8:54	1:4

Table 14 Pottery from enclosure ditches by fabric sherd count and weight in grammes

Type series

(Descriptions for fabrics F03, F16 and F30 are as for those given for the rectilinear enclosure).

F18 *fine sand/shell*

Hard fired, fairly smooth and well made. Abundant, fine, rounded or sub-angular quartz and iron ore, between 0.08mm and 0.4mm. Dark grey to black fabric with surfaces oxidised to orange-buff. Sparse shell platelets, 1mm-3mm.

Forms: Single body sherd, of indeterminate form.

Illustrations: not illustrated

Discussion

Although a comparatively small assemblage, the pottery from the double enclosure differs in a number of ways to that from the rectangular and penannular enclosures. The dominance of sand/calcareous fabric F30 is notable and also the generally fine, well-made appearance of all the pottery. The single form recovered, a jar, bears two features which set it apart from the jar forms from the other sites. Firstly in the use of a slightly raised cordon below the rim, and secondly in the manufacture of the rim itself, which appears to have been constructed from a single coil, grafted on to the body (Fig 14 No 22).

Illus. no	Fabric code	Fabric description	Context
22	F30	sand/calcareous incl.	3

Table 15 Site 7 Pottery illustrated in Fig 14



Plate 6 Aerial photograph of site 7 (YK 30, 18/6/59 © Crown copyright/MOD)

THE FLINT (E McSloy)

Form	Enclosure ditch			Total
Contexts	1	6	13	
Flakes		1:2	1:0.4	2:2.4
Blades	1:4	2:7		3.11
Total	1:4	3:9		5:13.4

Table 16 Flint/burnt stone by quantity and weight

A snapped, soft hammer struck 'cutting blade' of good quality grey flint from context (1) is probably of Mesolithic or early Neolithic date. Minute serrations on one edge only of this piece are unlikely to be post-depositional damage. Two crude grey flint blades and a flake, from ditch fill (6), and a flake from ditch fill (13) are hard hammer-struck and more likely to have been produced in the late Neolithic or Bronze Age.

Burnt Flint

A fragment of burnt sandstone, weighing 55g, was

recovered from ditch fill (13). The fragment, is a river smoothed cobble, and is highly reminiscent of a 'pot boiler', used for heating liquids without recourse to direct heat.

Context Number	(3)	(4)	(13)
cf <u>Aegopinella nitidula</u> Waxy Glass Snail	—	2	—
<u>Cochlicopa lubrica</u> (Muller) Slippery Moss Snail	1	—	—
<u>Helicella itala</u> (L) Heath Snail	21		—
<u>Pupilla muscorum</u> Moss Snail	—	4	—
<u>Trichia hispida</u> (Linne) Hairy Snail	1	1	2
<u>Vallonia costata</u> (M) Whorl Snail	4	1	—
<u>Vallonia pulchella</u> (M)	5	2	—

Table 17 Mollusc Remains

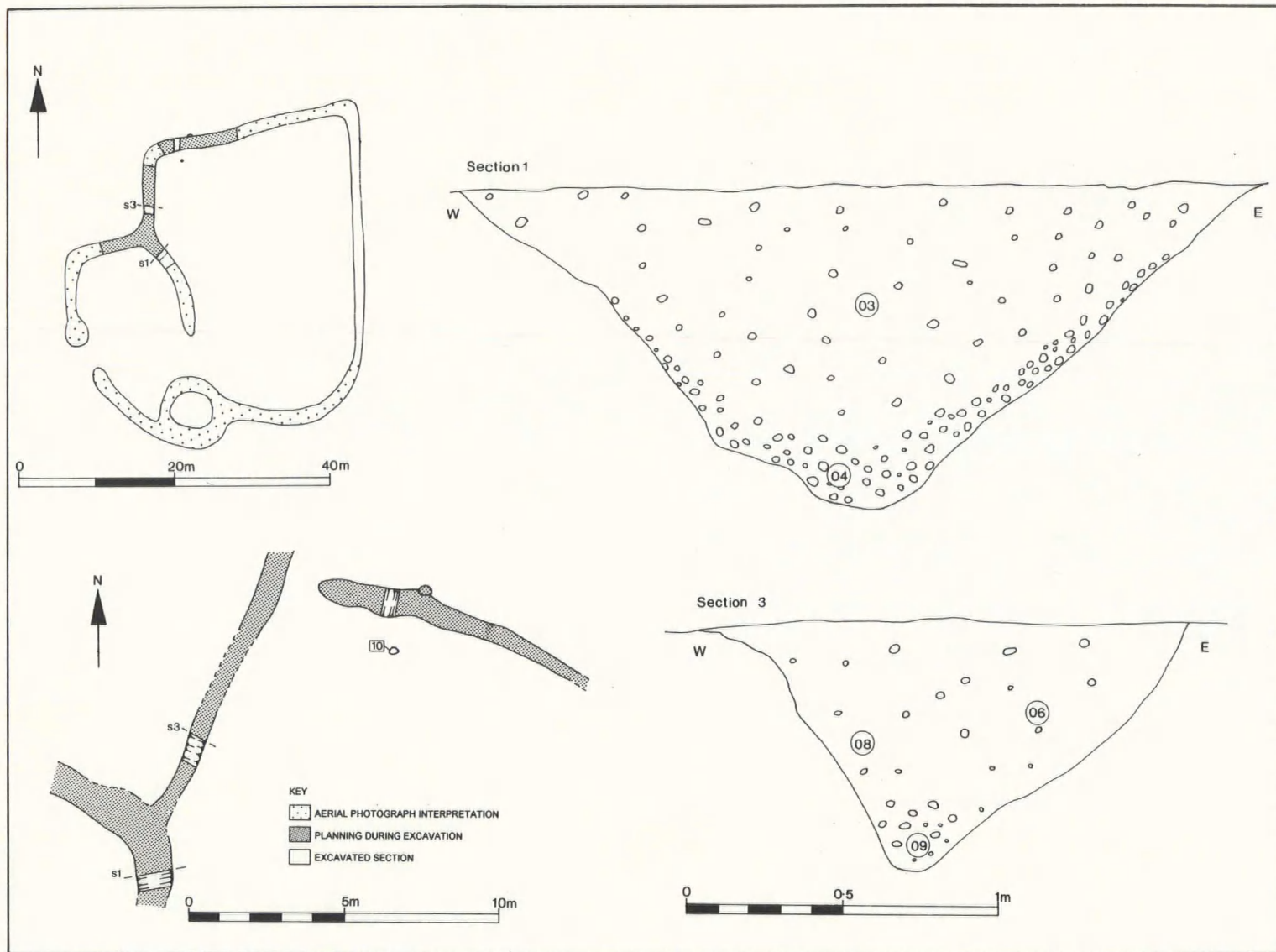


Fig 21 Site 7 Interpretation of cropmark showing area of excavation (upper left); ditch sections (right); plan of excavated area (bottom left)

ENVIRONMENTAL EVIDENCE (B Biddle)

Ten bulk samples were taken during the excavation from a total of seven contexts. One sample from each context was processed using the Siraf tank and standard meshes. The duplicate samples were not processed, but remain as part of the archive. When dry the flots were sorted under a microscope for seeds and mollusc remains; the residues were sorted by eye.

With the exception of *Helicella itala*, the species of snails recovered live in damp leaf litter, moss or under loose stones. *Helicella itala* prefers dry grassland. This suggests that the lower fill of ditch [2] may have been deposited into the ditch by a slow, natural build up of debris washed in from the sides of the cut. The upper fill probably represents deliberate backfilling at a time when the area is possibly being used as grazing. The sample from context (13) produced too few individuals to make any interpretation of the habitat from it.

Context Number	(6)	(9)	(13)
<i>Triticum dicoccum</i> (glume base)	—	1	—
Cereal sp indet	2 frags	2 frags	1 frag

Table 18 Charred Seeds

All of the seed remains were of crop plants, *T.dicoccum* suggesting a pre-Roman date.

Context	Contents	Total weight
3	3 x tiny fragments	~0.1g
8	2 x tiny fragments	~0.1g
9	1 x tiny fragment	~0.1g
14	1 x tiny fragment	~0.1g

Table 19 Animal bone

The animal bone recovered was too small for identification.

DISCUSSION

As with site 6 interpretation of this site rests firmly on the aerial photograph evidence but with the advantage of a ceramics assemblage possibly dating to the early 'Belgic' period. This double enclosure is similar to the earlier Willington enclosure (Pinder 1986b) nearby. It is almost certainly a settlement

although it is unusual amongst early Roman sites in remaining enclosed.

THE DEVELOPING LANDSCAPE OF PLANTATION QUARRY

The topographic development of the river valley in the Willington area, from abraded river channel to more stable landscape, is evident from aerial photographs which show the silted up courses of several palaeochannels (Fig 22). The silting up of palaeochannels probably occurred from the Mesolithic onwards, a period often assumed to be at the beginning of land clearance although little evidence to date this activity has been established. At Cardington Cross (BCAS 95/13) clearance may have occurred from the Mesolithic until as late as the beginning of the 1st millennium AD. At Salford on gravels north of the Greensand Ridge, several tree throws holes may date to the Neolithic. At Barton le Clay tree clearance was taking place from the beginning of the 2nd millennium, which Allen (Clark 1991b, 21) suggests is late in comparison with other areas in southern Britain.

Environmental evidence for the Neolithic landscape at Willington is sparse. Oak (*quercus*) charcoal was recovered from possibly Neolithic tree throw holes at Octagon Farm and Clark has suggested trees may have been part of the design of one of the rectangular enclosures (HER 1480.02) (Clark 1990, Fig 9 8m).

The C14 date derived from the central burial of the square enclosure at Willington places the burial at the end of the 4th/beginning of the 3rd millennium BC (3583-2908BC at 95.4% confidence). The limited range of grave goods, and burial within a rectangular enclosure, suggests it falls into the pre-Beaker Neolithic tradition of individual burial. The date, however, is comparatively early in the Neolithic making the enclosure a regional contemporary of the long mound (Thomas 1991, 109) and the megalithic tomb tradition within the timespan occupied by plain bowl pottery. Further strengthening the cultural association is the possibility that the enclosure forms part of a larger monument complex which comprises a causeway enclosure, cursus and several enclosure monuments at Octagon Farm (Clark 1991a). Monument complexes such as this have been widely recognised in southern England (Loveday 1989) and recently discussed in their Ouse Valley context (Malim 1996, forthcoming). Commonly referred to as the Barford type, after the type site in Warwickshire, these are characteristically found on the edge of the lower

river terraces and are associated with pits and other evidence of probably ceremonial activity (Holgate 1988, 116).

Demonstrating a close association between the square enclosure and components of the Octagon Farm complex is not straightforward. The causeway enclosure remains undated, identified only from cropmarks, and similarly the *cursus*, too, is undated. Where excavation has taken place dating evidence has been sparse. In 1986 an oval enclosure, probably a long barrow, was salvaged but no dating evidence recovered (Pinder 1986a Fig 4b). A similar monument, described as an oval barrow was excavated at Fengate; but it too produced no artefactual evidence, although a near central, crouched burial was recovered (Pryor and French 1985, 62-63). At Octagon Farm intense evaluation has produced only a small quantity of flint and the complex remains are dated by site morphology rather than association of chronologically diagnostic artefacts. Possibly of considerable significance is the dating of the henge at Bury Farm, Goldington (Mustoe 1988) where Mildenhall pottery was found in the primary silts of the ditch. This suggests a broad contemporaneity with the square enclosure, despite establishing a very early date; the henge would normally be thought to be part of a trend originating in the late 2nd millennium. Some evidence of sequence was gained from trenching at Octagon Farm, and in two instances ring ditches were found to succeed square (Clark 1991a, 12) or rectangular (BCAS B3 1989) enclosures. This pattern may be assumed at the *cursus* where a ring ditch lies at the eastern end of the monument. No less difficult to define is the framework of this landscape. The core may, from the juxtaposition of enclosures, be the river channel and tributary streams, focussing on Octagon Farm. However, the limits of the complex probably extend beyond those suggested by the present cropmarks. At Eastcotts a single burial was found associated with a deposit of worked flint, over a kilometre to the west of Octagon Farm, which suggests further unrecognised constituents (BCAS 95/14).

The shift in the landscape from one dominated by extensive monuments to one characterised by ring-ditched features has been noted in the stratigraphic sequence at Octagon Farm. The C14 date from site 2 of 1884-1601 cal BC is broadly consistent with the construction date of c1700 bc for the primary group of barrows, B & C, at Roxton cemetery (Taylor & Woodward 1985) except that the site 2 date was generated by a secondary burial. Neverthe-

less the lack of evidence for extensive cleaning or recutting probably indicates the site 2 barrow was allowed to silt immediately after primary construction. The dates from Roxton and Willington suggest there may be a delay between the use of Neolithic monuments and the development of ring ditches in the Ouse valley. Elsewhere, however, the evidence suggests continuing transition. At Barton le Clay the earliest phase comprised the construction of a roughly square enclosure of approximately 15m in the late Neolithic followed by construction of the later ring ditch (Clark 1991b, Fig 3).

In the Ouse Valley many barrows may have been built on pre-existing settlement sites (Woodward 1978) but there is no evidence of a such a pattern either at sites 2 and 3 or at the double ring at Willington (Pinder 1986a). Assuming a mixed landscape of woodland and open grassland in the Neolithic, the sparse evidence from ring ditch (site 2) suggests the onset of cereal cultivation in the mid 2nd millennium. Nevertheless the landscape remained varied. Nearby at the double ring excavated in 1984 (Pinder 1986a) Robinson (*ex litt* 1985) noted that the high silt content and absence of stones in soils filling the inner ditch indicates at best only shallow ploughing. Molluscs from the upper silts of this ditch showed no evidence of wet or shaded ground species and it is likely that dry, open conditions prevailed. Conditions at the double ring contrast those at site 2 where *carex otrubae*, which prefers a damper environment, was found in the primary ditch silts.

Significant changes occurred at Willington in the early to mid first millennium BC. At the double ring (Pinder 1986a), the uppermost fill of the inner ditch was a ploughsoil from which middle Iron Age pottery was recovered. Similarly at site 3 the upper silts of the ring ditch yielded Iron Age ceramics and the ring was almost fully silted before the construction of the Iron Age enclosure (Fig 10). At site 5 the sequence of penannular enclosures possibly succeeded by the post hole alignment is unprecedented and suggests the increasingly formal subdivision of the landscape. There is no evidence so far of any continuity of function or orientation with earlier ditched boundaries such as those investigated at Bury Farm, Goldington. A second post hole alignment visible on aerial photographs ran westwards from site 7, whilst further afield a triple ditch at Eastcotts and a post alignment at Village Farm, Elstow indicate the extent to which land subdivision may have been taking place.

With excavation of the double enclosure at

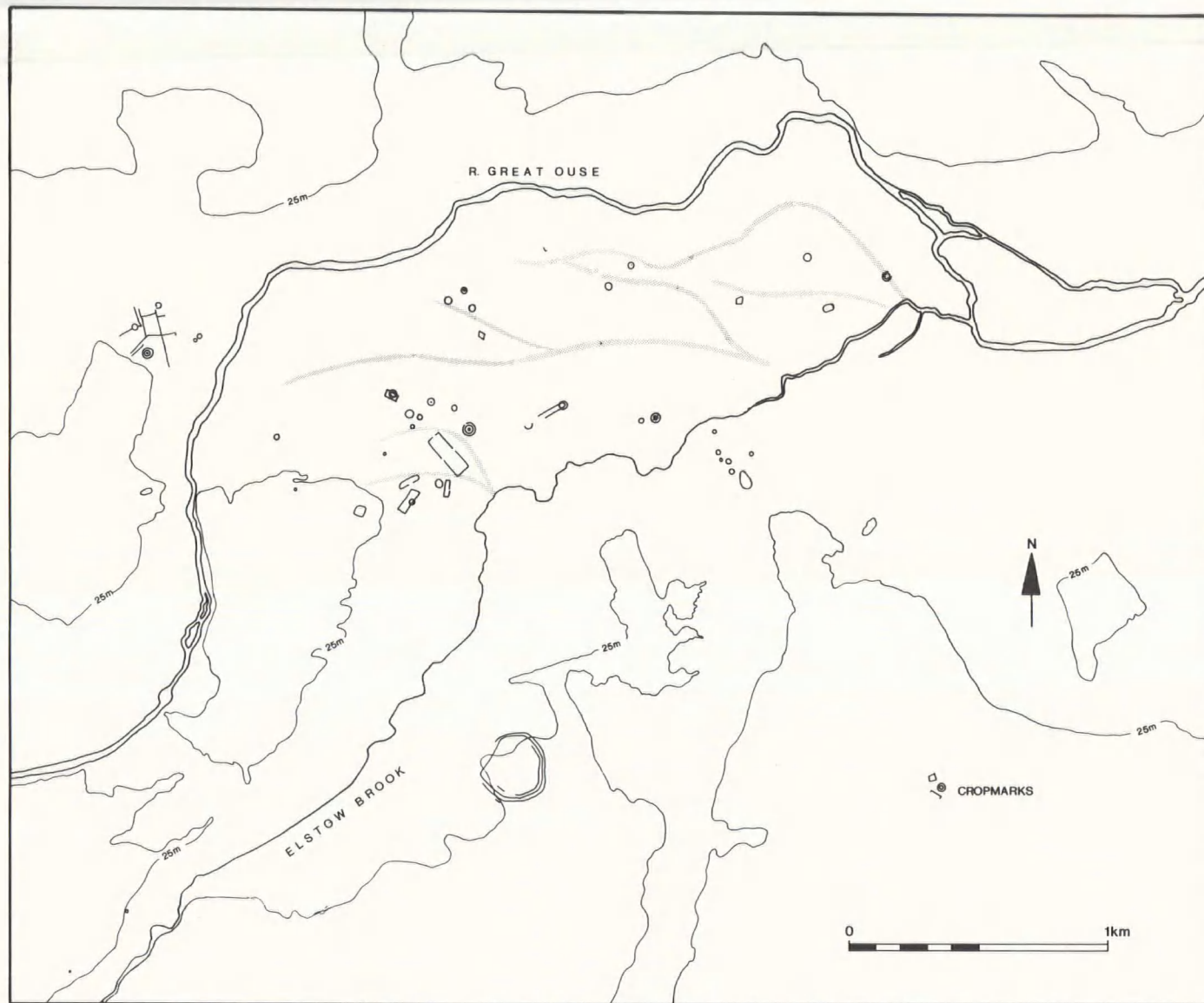


Fig 22 The Neolithic and Bronze Age landscape of Willington. The sites illustrated are taken from the Bedfordshire HER and show the distribution of Neolithic and Bronze Age monuments in the landscape of Willington. The toned lines indicate the course of palaeochannels which were probably open in the Neolithic and Bronze Age

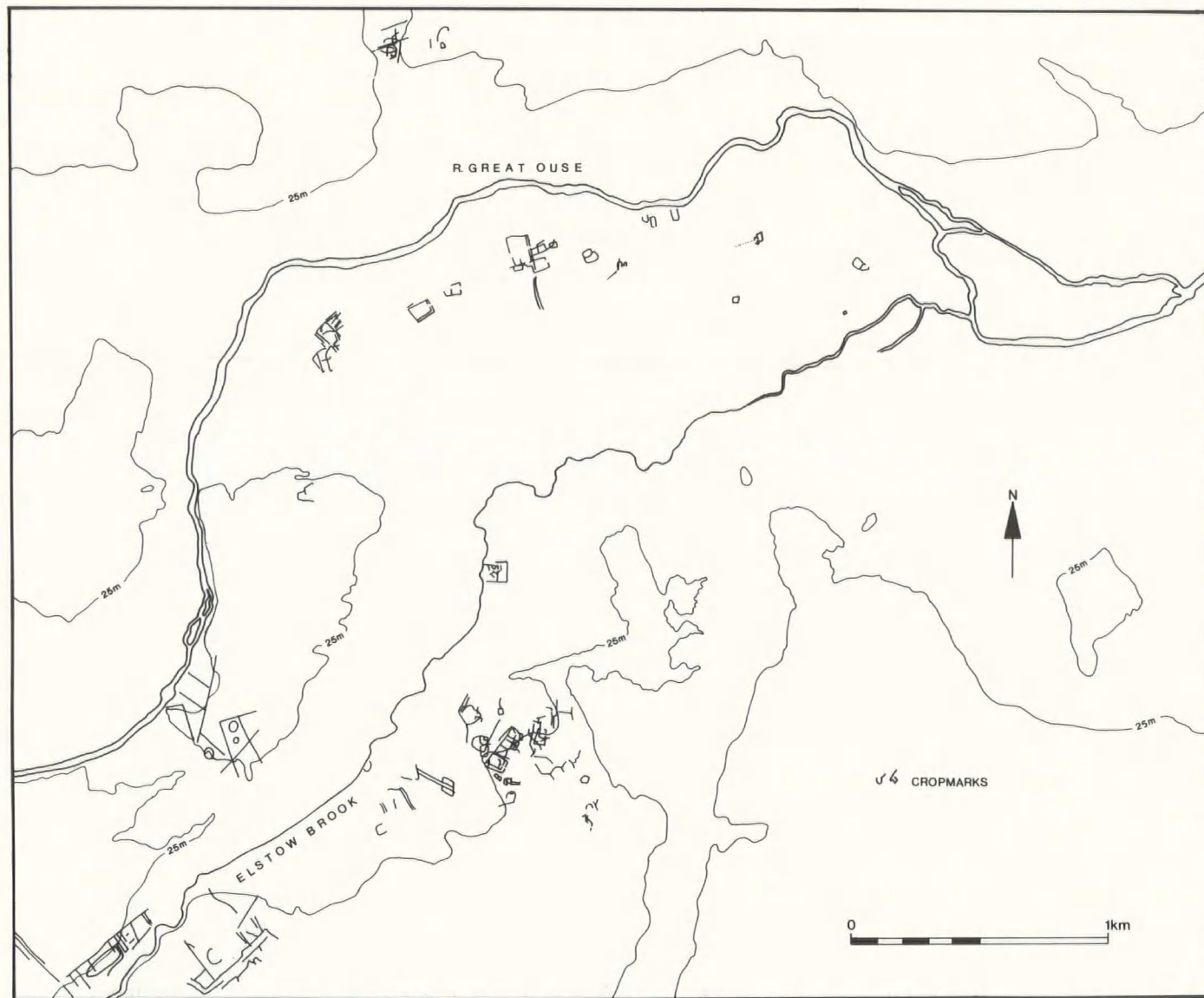


Fig 23 The Iron Age and Romano-British landscape of Willington. The sites illustrated are taken from the Bedfordshire Historic Environment Record, and indicate the changes in the landscape which had occurred by the Iron Age and Romano-British periods

Willington (Pinder 1986b) and the collation of aerial photograph evidence (Fig 23) it is clear that sedentary occupation began to encroach on the Willington area where once emphasis had been placed on ritual monuments. Nevertheless the probable shrine at site 4 suggests the area retained some significance probably into the Roman period.

The character of the Iron Age settlements at Willington conforms to the pattern suggested by Knight (1984) with a variety of sites occupying the edge of the gravel terrace just above the flood plain. This phenomenon has been most extensively investigated at two sites: at Eastcotts west of Willington, where an extended settlement was found to have been first occupied in the later Iron Age, and at Warren Villas (Dawson & Maull this volume) where a similar site may not have been occupied until the Roman period. Despite the lack of evidence for the character of the settlements in this report, it is probably significant that the sites were set back from the edge of the gravel terrace and were within ditched enclosures.

Dating the growth of Iron Age settlement in the Willington area remains difficult. Few comparable ceramics assemblages from the county have been published and the framework of ceramic chronology remains that determined by Knight (1984). Analysis of the fabric types from Willington reveals that their range and variety is comparable to that from the early-middle Iron Age phases at Salford (BCAS in prep), and Ursula Taylor School, Clapham (Dawson 1990). Variation in fabric types can, however, result from the availability of tempering materials in the locality as much as it is a

reflection of chronologically distinct trends.

The current Iron Age ceramic chronology in the Nene and Ouse valleys (Knight 1984), suggests that broad divisions are definable between assemblages dating to the late Bronze Age/early Iron Age (*circa* late 9th-5th centuries BC) and those from the pre-Belgic La Tene period (5th/4th-1st centuries BC). The material from the rectilinear and penannular enclosures, sites 4 and 5, lack the attributes common to the earlier period which include extensive fingernail ornament, rectilinear grooved/incised decoration and linear stamped ornament (Knight 1984, 39-41). Also absent are the finely made, thin walled vessels with pronounced carination which are common in the early Iron Age, at sites such as Salford. The combination of fabric, form and decorative motif indicates that the Iron Age material is pre-'Belgic'. This is further suggested by the absence of wheel-made pottery.

The Iron Age ceramic assemblage from the double enclosure, site 7, is different in character from the other sites and may be later in date. Fabrics with sand/calcareous inclusions dominate and the one jar form represented, although hand made, features a cordon, (Fig 14 No 22), a device normally associated with wheel thrown Belgic material. In comparison to the ceramics from the rectilinear and penannular enclosures, this material is both bulkier and better-made. The combination of Belgic style cordon and pre-Belgic manufacturing technique is unusual and possibly reflects a transitional tradition.

Despite the disparate character of Iron Age sites and the difficulty in satisfactorily establishing a developmental sequence for the Iron Age landscape the animal bone assemblage at site 4 is sufficient to

Fabric Frequency

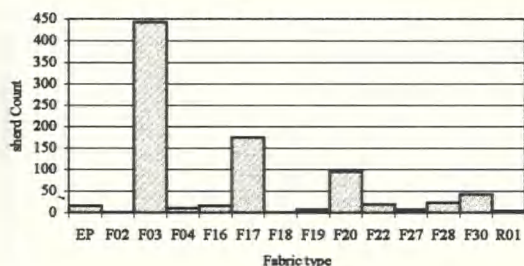


Table 20 Fabric frequency, all sites by sherd count

Fabric Frequency (weight)

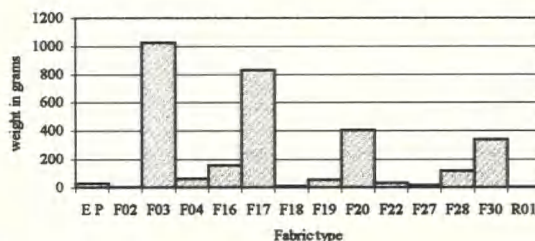


Table 21 Fabric frequency, all sites by sherd weight

suggest that Willington falls in with a group of sites, including Hartigans, Pennylands and Furzton, where cattle predominate. Although age/sex profiles were impossible to determine the range of bones from site 4, loom weights recovered both from site 4 and Pinder's enclosure, mollusc evidence and the remains of cereals, *T. dicocum*, from site 7 all illustrate further agricultural diversity.

Roman period imported ceramics were recovered from post holes on site 4 and this has been used to suggest some continued presence at the site into the Roman period. The presence of Roman period ceramics at this site and at others in Cambridgeshire (Evans & Sergeantson 1988) and Northampton (Elsdon 1993, 3) suggests that the middle Iron Age ceramic traditions of the region may have continued into the Roman period. Whether this indicates a conservative trend in the areas ceramic tradition or a more complex sub-division of ceramic usage between groups using 'Belgic' type wares and earlier designs must remain uncertain.

The end of the sequence of settlement evidence at Willington is far from clear. The presence at site 4 of Roman pottery near, but not from, the same contexts as the earlier Iron Age ceramics hints at conservatism, as does the hand made cordoned vessel from site 7. Nor is there further evidence amongst the current sites to illuminate the transition from the enclosed settlement pattern of the Willington area to the open form which appears to characterise Roman period occupation further west at Eastcotts or eastwards at Warren Villas. Only further research and in better circumstances than those experienced in the early 1990s at Willington will help address some of the issues raised in the salvage excavations reported on here.

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Fieldwalking at Kensworth Quarry, near Dunstable

EDWARD MCSLOY AND DREW SHOTLIFF

With illustrations by Cecily Marshall

SUMMARY

Extension of the existing chalk quarry at Kensworth was preceded by the implementation of an agreed programme of archaeological investigation. Previous archaeological fieldwork in the Chilterns region had suggested that the area of the quarry extension might have been a preferred settlement location in the Neolithic and Bronze Age periods. It was also believed that the Clay-with-flints overlying the Chalk might be a source of Palaeolithic artefacts. Bedfordshire County Archaeology Service was commissioned by Rugby Cement to carry out an archaeological field evaluation in accordance with a specification, drawn up by the County Heritage Officer. A fieldwalking survey recovered a considerable quantity of later prehistoric worked flint. However, the assemblage did not appear to represent a distinct or discrete phase of domestic activity or settlement. The results of the survey are complementary to work carried out elsewhere on the Chiltern ridge in S Bedfordshire.

INTRODUCTION

As part of a programmed extension to Kensworth Quarry, Rugby Cement agreed to undertake an archaeological field evaluation of 31ha of land, centred at TL 5025 2195. The work, consisting of trial trenching and fieldwalking, was carried out by Bedfordshire County Archaeology Service (BCAS) between June and October 1994, in accordance with a specification issued by the County Heritage Officer. The aims of the evaluation were to determine the extent, character, condition and date of any surviving archaeological deposits and to assess the impact of future quarrying on those deposits. The results of the trial trenching were negative; this report describes the results of the fieldwalking only.

SITE LOCATION AND DESCRIPTION

The study area lies approximately 1km to the S of the southern fringes of Dunstable, immediately to the W of Kensworth Church End and to the E of the working face of the quarry (Fig 1). Its main topographical feature is a broad NW-SE running ridge, flanked by dry valleys. The spine of the ridge slopes

down gently to the SE from a high point of c220m OD.

The soils can be broadly characterised as moderately well drained, gleyed brown earths of the Batcombe association, derived from Clay-with-flints parent material.

ARCHAEOLOGICAL BACKGROUND

Towards the end of the 19th century survey work by the antiquarian collector, W G Smith, produced a number of flint artefacts from the Mount Pleasant area, on the site of what was later to become Kensworth Quarry. These included Neolithic implements and flakes (Historic Environment Record (HER) 13570, 13576, 13577) and surface finds of a Palaeolithic axe, core and flakes (HER 633). The latter were recorded as being in an almost unabraded condition (Smith 1894, 65, 101-2). A Neolithic stone axe was also recovered from the actual study area itself (HER 2009) (Smith 1904).

In more general terms field survey and excavation in the wider surrounding area have suggested that Neolithic and Bronze Age settlement sites may be expected in this sort of elevated downland location on the Chilterns dip slope (Hudspeth 1995, Holgate 1995a). In addition, the upper levels of the Clay-with-flints, which covers much of the Chilterns plateau, has produced Palaeolithic artefacts (Wymer 1996, 12, 17). This deposit is, in part, of interglacial origin and represents the non-calcareous residue from the Chalk, produced by weathering over long periods of time (Evans 1975, 64). Its importance lies in the fact that it has been neither directly re-deposited by ice sheets nor buried by glacial drift deposits and may, therefore, preserve Palaeolithic artefacts in a near primary context (Roe 1996, 4-5).

METHOD STATEMENT

The fieldwalking covered an area of approximately 18ha and was targeted on the spine of the ridge. The steeper slopes of the dry valleys were not surveyed.

The survey method followed that developed by Essex County Council Archaeology Section (Medlycott and Germany 1994), which aims to ensure a standardised approach (based on the

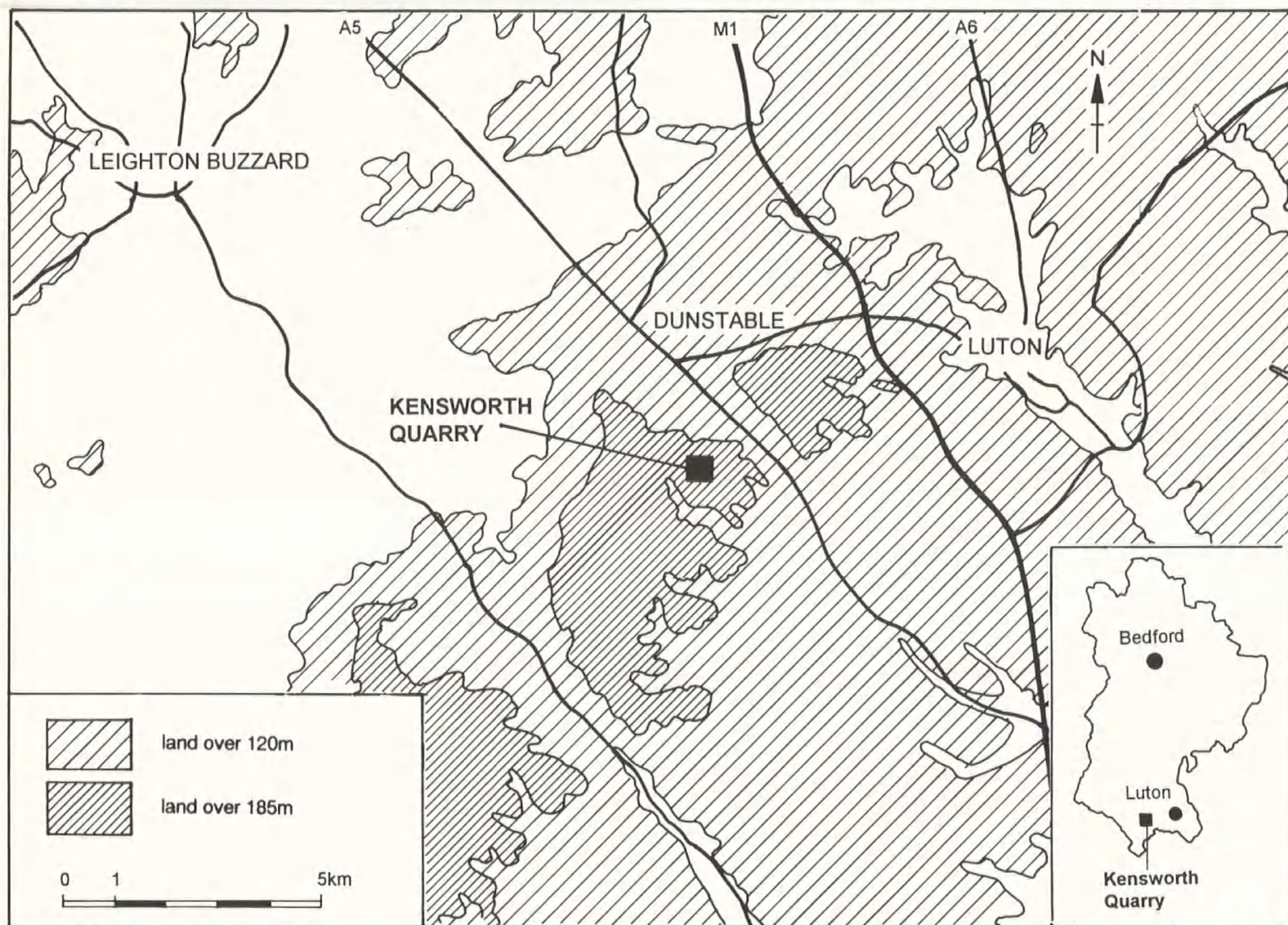


Fig 1 Site location plan

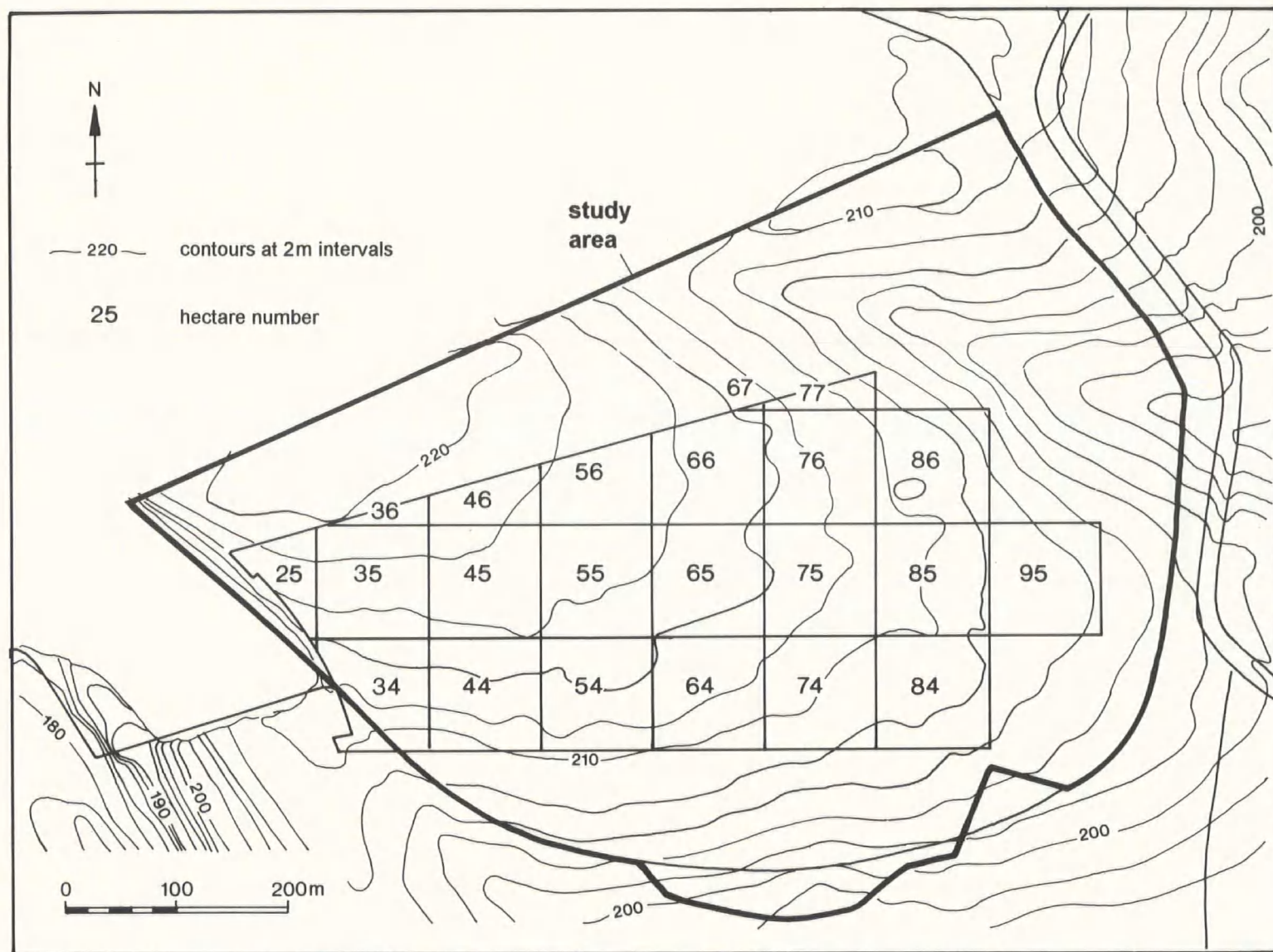


Fig 2 Fieldwalking study area

National Grid) to fieldwalking throughout that county. The study area at Kensworth fell within a single National Grid kilometre square. This was sub-divided into one hundred hectares (numbered 1-100, starting at the SW corner). The hectare numbers are indicated on Fig 2. Each hectare was then further sub-divided into twenty-five 20m x 20m collection units (labelled A-Z (excluding O), starting at the SW corner).

The hectares were surveyed in and the collection units marked with ranging rods and flagged bamboo canes. All artefacts within a 2m wide strip across each collection unit were retrieved and placed in a bag labelled with the relevant, unique identification code. Thus, KEN94 A/34/L stands for Kensworth Quarry, 1994 season, kilometre A, hectare 34, collection unit L. A survey of this intensity represents a 10% sample of the area covered.

The collected artefacts were washed and sorted by type and date. The following broad categories were identified: worked flint, post-medieval pottery, medieval/post-medieval roof tile, glass, clay pipe and slag. Once quantified the main finds categories were plotted according to their standard deviation from the mean (based on either count or weight) for the study area. (Only the worked flint is discussed further in this report; details on the remaining finds categories are held in the site archive). Plotting of standard deviations is designed to highlight the significance of materials such as early prehistoric or Saxon pottery which, because of their fragility, have a much reduced chance of surviving in the ploughsoil. Additionally, by observing deviations from the norm for the survey area and finds type, sites of archaeological interest may be more

accurately located than by simple distribution by quantity. The relative density required to define a "site" varies according to finds type and survey area (Medlycott and Germany 1994, 16).

THE WORKED FLINT

A total of 332 pieces of worked flint were recovered from the study area (Table 1).

The flint was in poor condition, with all pieces having sustained variable degrees of damage and abrasion, as a result of modern ploughing. Patina was present on the majority of pieces in the form of a mottled bluish grey discoloration. Where such patination was present it was possible to distinguish between modern edge damage, revealing the underlying colour of the flint, and secondary working. It is, however, possible that modern edge damage may have obliterated genuine retouch on some pieces.

The largest part of the flint assemblage, 314 pieces (94.5% of the total), comprises debitage and cores (Table 1). The remaining 18 pieces (5.5% of the total), bear secondary working and are classed as tools. The tools, and to a lesser extent the cores, are the most reliably datable and diagnostic artefacts in the assemblage. The debitage can be dated more broadly by analysis of a combination of distinctive manufacturing characteristics (including soft v hard hammer, flake v blade and thickness of butt) and an assessment of flint quality.

Mesolithic/early Neolithic

Five parallel edged blades and a single blade core (Fig 3, no 12) datable to the Mesolithic or early Neolithic periods, were recovered.

Description	Hectare																							Total
	25	34	35	36	44	45	46	54	55	56	64	65	66	67	74	75	76	77	84	85	86	95		
flake	8	26	3		17	5	2	9	7	10	5	17	13		28	41	26	2	22	15	13	15	284	
blade		1										1				1			1	1			5	
core		1						1	2	1		1			4		3		2	4	1	5	25	
scraper	2	1	1		2							1					1	3		1	1		13	
misc. retouched				1																			1	
arrowhead																	1						1	
fabricator					1																		1	
backed knife			1																				1	
axe													1										1	
Total	10	29	6	0	20	5	2	10	9	11	5	20	14	0	32	44	32	2	26	21	14	20	332	

Table 1 The worked flint assemblage (by count)

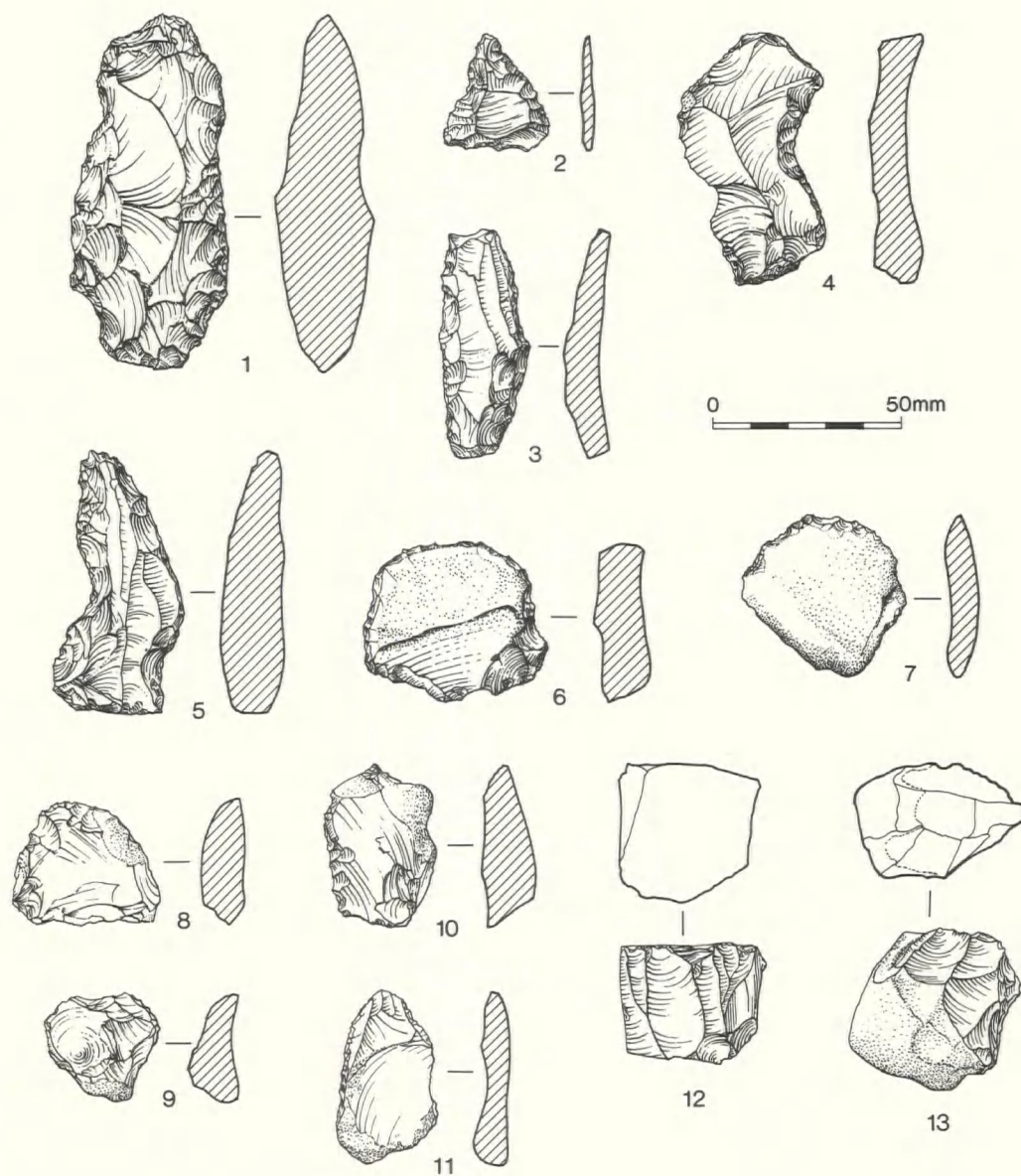


Fig 3 Selected flint artefacts

Late Neolithic/Bronze Age

The majority of the debitage shows characteristics appropriate for the late Neolithic or Bronze Age periods. Flakes, struck with a hard hammer from flint of variable quality, predominate. Around 50% of the flakes display remains of a thick, chalky cortex. The cores also appear to belong, in the main, to the same flint working tradition; they are characterised by cobble sized nodules with removals from numerous platforms. The identifiable tool types likewise show a bias towards this later period. The arrowhead (Fig 3, no 2) is certainly of late Neolithic date as is (less certainly) the small axe (Fig 3, no 1). The scrapers, although not of a diagnostic form, are of a crudeness which is appropriate for this period.

DISCUSSION

Despite Smith's 19th century discovery of Palaeolithic artefacts, which (given their good condition) presumably derived from the Clay-with-flints, no

worked flint of this date was found within the study area. Nonetheless, the likelihood of finding such surface material, virtually *in situ*, on the S Bedfordshire Chilterns plateau must remain high.

Mesolithic or early Neolithic material was only present in very small quantities. The bulk of the flint assemblage was characteristic of the late Neolithic to Bronze Age periods. There were apparent concentrations of this material both along the axis of the ridge and on the W margins of the study area (Fig 4). However, the overall volume and type of worked flint suggest that these concentrations are not significant in terms of early prehistoric settlement location. Holgate (1988, 50) has argued that farming settlements of this period are characterised by flint assemblages which contain both a high ratio of implements to debitage and a variety of implements, reflecting the wide range of activities that took place on these sites. In particular, a number of specific types of implement recur, with at least five (scrapers, piercers, cutting tools,

Catalogue of illustrated flint

1. Axe: small flaked axe/roughout of roughly diamond shaped cross section, almost parallel sided but much damaged. Black flint. ?Neolithic. (A/66/F)
2. Arrowhead: triangular transverse type. Bifacially worked with invasive retouch on two edges. Black flint with mottled blue-grey patina. Late Neolithic. (A/75/C)
3. Backed Knife: hard hammer struck blade. Blunted on one edge with abrupt retouch and bifacially retouched on opposing edge. Dark grey flint. Neolithic. (A/35/V)
4. Concave Scraper: hard hammer struck flake. Abruptly retouched on one edge to create inwardly curving scraping surface. Black flint. Neolithic/Bronze Age. (A/65/T)
5. Fabricator/Rod: crude, hard hammer struck blade. Roughly worked on both edges with abrupt retouch. Black flint. Neolithic/Bronze Age. (A/44/W)
6. Scraper: hard hammer struck end/side scraper made on a wide, rounded cortical flake. End and sides worked with abrupt retouch. Black flint, buff coloured cortex. Late Neolithic/Bronze Age. (A/34/S)
7. Scraper: hard hammer struck extended end scraper made on a broad cortical flake. Distal end worked with semi-abrupt retouch. Dark grey flint, buff coloured cortex. Late Neolithic/Bronze Age. (A/76/H)
8. Scraper: hard hammer struck end scraper made on a crude flake. Distal end worked with abrupt retouch. Poor quality grey flint. Late Neolithic/Bronze Age. (A/25/T)
9. Scraper: hard hammer struck end scraper made on a small squat flake. Distal end worked with abrupt retouch. Poor quality grey flint. Late Neolithic/Bronze Age. (A/75/G)
10. Scraper: hard hammer struck cortical flake, retouched with abrupt retouch along one edge. Grey flint. Late Neolithic/Bronze Age. (A/76/F)
11. Scraper: hard hammer struck flake, retouched with semi-abrupt retouch along one edge. Grey flint. Late Neolithic/Bronze Age. (A/84/Y)
12. Core: fragment of ?cylindrical core with blade removals from one platform. Black flint with blue-grey patina. Mesolithic/early Neolithic. (A/56/S)
13. Core: crude flake core with removals from one end of cortical cobble. Grey flint, buff coloured cortex. Late Neolithic/Bronze Age. (A/86/I)



Fig 4 Distribution of worked flint

arrowheads and axe flakes or fragments) being present in domestic flint assemblages. The presence of burnt worked material has also been considered indicative of domestic activity. Although four of the five prerequisite tool types occur, the extremely low ratio of implements to debitage and the absence of burnt material suggest that the flint assemblage recovered during the fieldwork at Kensworth Quarry does not represent the remains of a domestic settlement. The predominance of debitage and cores, together with the high percentage of cortical flakes, suggest that the assemblage may derive from the initial stages of core reduction, presumably exploiting a surface source of raw material on the Clay-with-flints.

On similar Clay-with-flints capped ridges within the Chilterns region as a whole, recent surface collection surveys have recorded dense concentrations of late Neolithic to Bronze Age flintwork (e.g. Pollard and Hamilton 1994, Hudspeth 1995, Miles 1995, Stainton 1995). These appear to represent considerable past human activity. However, the precise nature of that activity is less clearly understood.

It is possible that some of these concentrations do represent the remains of settlement sites; others may be indicative of domestic activity, if not actual settled habitation. However, the analysis of assemblages and the interpretation of apparent clusters must take place within a model of the movement of lithic resources across the landscape. For example, Richards (1990, 18-19) has identified three stages in this process: procurement of raw materials and initial reduction (industrial), further reduction (manufacture) and use/discard (domestic). Each of these stages has its own characteristics in terms of assemblage composition and spatial patterning and each is related, to a lesser or greater extent, to environmental factors, such as the availability of raw materials, local topography and soil variation.

The scale of work required for valid interpretations to be made is also important. The need for regionally based field survey work (ideally covering more than one landscape zone), which is designed to address specific problems from an explicit theoretical base, has been recognised. The importance of employing appropriate field

collection techniques and the value of far greater collaboration between universities and local and national archaeological groups have also been stressed (Mills 1985, 43-46). The difficulties of establishing or developing such a framework (for any period of the prehistoric past) within a region like the Chilterns, which straddles several counties, may appear almost insuperable. However, if the efforts of all fieldworkers in the region are to be maximised, this should be attempted.

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Warren Villas Quarry, Upper Caldecote: Interim report on excavations from 1989-1994

MICHAEL DAWSON AND ANTHONY MAULL

SUMMARY

During the course of a routine archaeological watching brief at the site of Warren Villas Quarry in spring 1989, pits, ditches and wooden structural timbers were uncovered. Dendrochronological analysis of the major timbers dated a sequence of pits containing hurdles to the late Saxo-Norman period. The pits, probably representing flax retting/fishing activity, utilised an old channel of the River Ivel.

Expansion of the quarry into surrounding areas led to large scale excavations between 1990-1994, revealing both riverside activity and settlement dating from the prehistoric to post-medieval period.

INTRODUCTION

A routine visit to Hall Aggregates Quarry at Warren Villas, Sandy in 1987 led to the discovery of a late Roman boxwood comb in the silts of a ditch (Duncan 1989). Further visits resulted in the identification of archaeological deposits in an area adjacent to a small coppice (Fig 1) on the west bank of the River Ivel. By 1989 linear ditches and several medium to large sized pits, some containing extensive remains of preserved wooden timbers and hurdles, had been recognised.

The discovery of waterlogged material led to a programme of evaluation and survey using ground penetrating radar in areas of proposed quarrying. The survey sought to determine the depth and extent of any further archaeological deposits and initial results indicated areas of potential survival. A mitigation strategy was put in place which excluded the most sensitive areas from the extraction programme; areas considered of less potential were then excavated prior to quarrying.

Initial salvage began in spring 1989 and continued until January 1991 in an area of approximately 1.8 hectares. Subsequent expansion of the quarry westwards led to four further seasons of excavation between 1992 and 1994 leading, ultimately, to the recovery of a sequence of deposits from the late post glacial to the post medieval period.

Funding during the period 1989-1993 was

provided by Hall Aggregates (Eastern Counties) Ltd., a subsidiary of Ready Mixed Concrete (RMC), with English Heritage contributing during the period 1989-1991. In 1994 RMC was re-organised and the quarry taken over by St Albans Sand and Gravel Plc., who to the present day alone have funded the costs of excavation and post excavation analysis.

TOPOGRAPHY

Warren Villas Quarry is situated at TL 1827 4698 in the valley of the River Ivel between the modern towns of Sandy and Biggleswade. The site is located where the Greensand Ridge has been breached by the River Ivel as it flows north towards its confluence with the River Great Ouse at Tempsford. To the south the drainage catchment includes the Hiz and Flit tributaries in an area extending towards the Chiltern foothills. The valley floor at Warren Villas consists of variable bands of interleaved gravel and silt beds laid down during prolonged periods of alluvial activity: these seal a thick deposit of glacial drift clay and gravel.

The archaeological site occupies a position straddling the flood plain and the first gravel terrace west of the River Ivel at 24.50m OD in an area presently subject to periods of flooding.

Aerial photographs reveal the evolution of the river course from several abraded channels to the stable meandering course established by the 18th century. In the later 18th century the river channel was substantially altered with the creation of the Ivel Navigation (Cook 1990).

THE ARCHAEOLOGICAL BACKGROUND

The archaeological history of the landscape of the Warren Villas area is varied, with evidence of occupation from the early post glacial period to the present day. Palaeolithic activity is evident from both stray surface finds and from discoveries made during gravel extraction (Reynolds 1996 forthcoming). Similarly the Mesolithic is still generally confined to stray finds, but the proliferation of fieldwalking evaluation in the region, especially in the Ouse (Clark & Boismier 1991), is

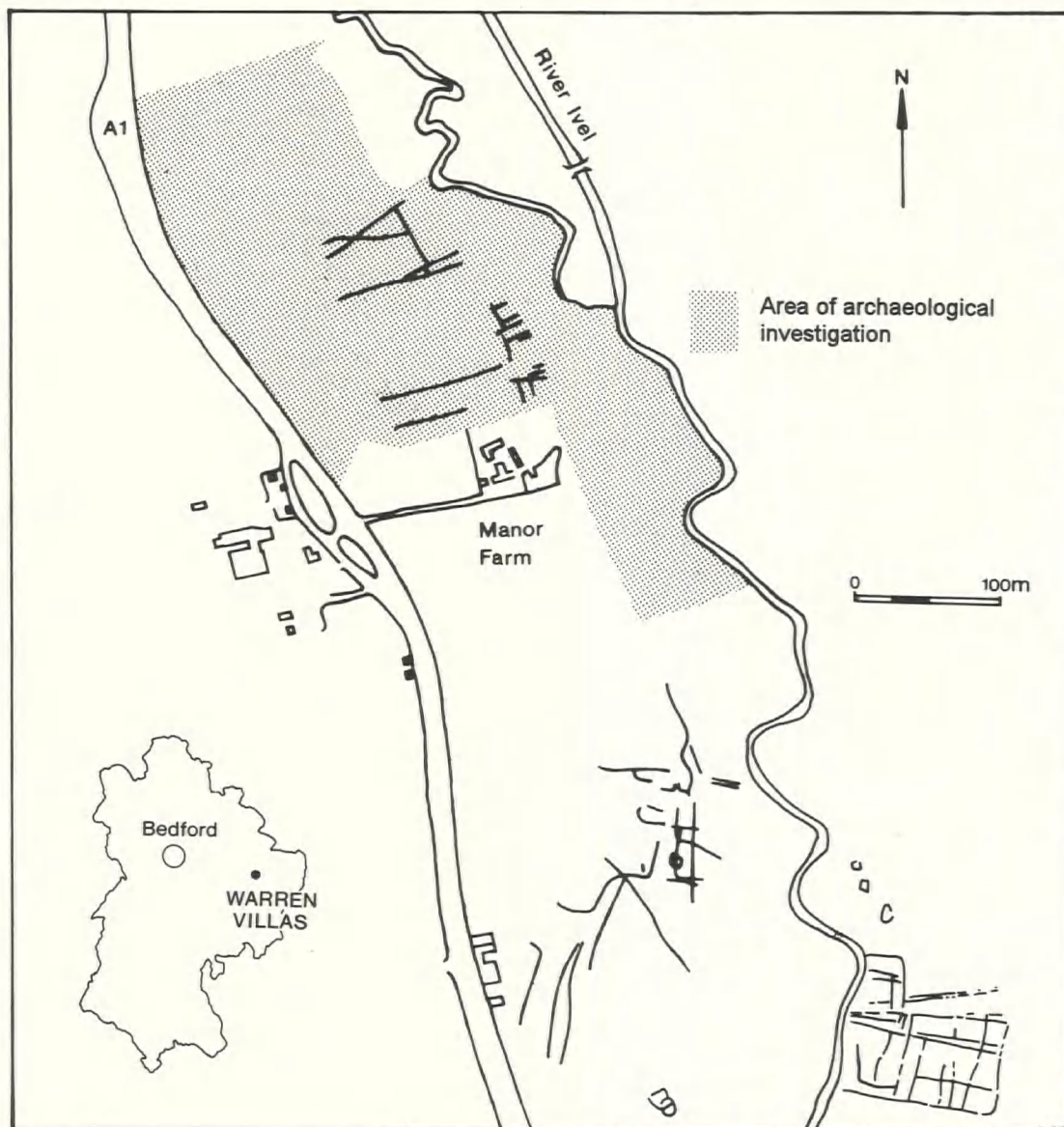


Fig 1 Location of Warren Villas Quarry

increasing the quantity of data available for research.

The Neolithic landscape, close to Warren Villas, has not been the subject of extensive investigation, although as with the Mesolithic period evidence from fieldwalking programmes is providing an increasing database for future study. Evaluation of an area around Broom recovered flint of Neolithic date (French 1990), whilst to the north at Brampton (Malim 1990, Malim and Mitchell 1992, Welsh

1993) and Godmanchester (MacAvoy 1996 forthcoming) and westwards at Octagon Farm (Clark 1992) and Willington (Clark 1991; Dawson 1996 (this volume); BCAS 95/14) excavations have revealed extensive monument complexes as well as evidence of settlement/domestic activity.

Bronze Age evidence in the Warren Villas area is dominated by ring ditches. Several at Roxton have been excavated (Taylor & Woodward 1985), five have been subject to evaluation at Broom (French

1990) whilst others are known from aerial photographs (Woodward 1978). Aerial photographs of the Ivel valley north of Warren Villas have revealed a complex of ring ditches and linear features probably of Bronze Age date suggesting the potential for a small cemetery similar to those known from the Ouse Valley. Recent excavations at Roxton (BCAS 1995/39) have revealed evidence of Bronze Age activity sealed beneath alluvial material.

By the early to middle part of the first millennium BC evidence of settlement increases significantly. Predominantly small scale rural settlement, during a brief period in the middle Iron Age defended sites were constructed nearby at Sandy Lodge (Dyer 1971) and Galley Hill. A third unfinished univallate hillfort was begun at Caesar's Camp, Sandy possibly in the 1st century AD. Several early excavations at Sandy (Johnston 1974) and Wyboston (Tebbutt 1957) and more recently at Little Barford (Price forthcoming) seem to confirm Knight's (1984) suggestion that settlement density was generally increasing towards the end of the Iron Age.

The Roman period saw major changes in the landscape with the construction of the Ermine Street between Baldock (Burleigh 1995), Sandy and Godmanchester in the 1st century AD (Burnham & Wacher 1990 125) and the subsequent development of a small Roman town at Sandy.

At Warren Villas the development of Sandy may have been especially influential. Located immediately northeast of Warren Villas, near a fordable crossing of the Ivel, Sandy has seen a limited amount of investigation (Dawson 1995a). Its full extent is presently unknown but it may have stretched over 10 hectares and affected activity in its hinterland, including the foundation of a villa at Furzenhall Farm, some 1.5 km south of Warren Villas.

The Saxon and medieval period is characterised by the foundation of numerous small villages/hamlets, and the establishment of the larger towns at Sandy and Biggleswade (Dawson 1994), with their attendant field systems. Extensive excavations at Stratton have characterised the development and decline of one village in the area (Shotliff 1992, 1993) whilst a recent research project *English Settlements and Landscapes in the Middle Ages* by the Leverhulme Trust has set the agenda for extensive research into the development of the medieval landscape (Lewis, Fox and Dyer 1992).

THE ARCHAEOLOGICAL EXCAVATIONS AT WARREN VILLAS 1989-94

Dating, characterising and understanding the function of deposits at Warren Villas were established as objectives soon after the discovery of waterlogged material in 1989 but were adapted following the radar survey and once again after re-appraisal of aerial photograph evidence in the light of excavations in 1989-90. Ultimately the project broadened into one which sought to investigate local environmental factors and their interaction with human activity. Such broad objectives were limited by the scope of evidence from various periods; in particular the area of Saxo-Norman settlement on the gravel terrace yielded very little environmental data. Attempts were made to compensate in such situations and the excavation strategy during the five years of the project varied in accordance with the changing conditions on site.

In 1989 to 1991 excavation covered two extended areas west of the present course of the River Ivel as well as the route of a quarry haul road. In 1992-1994 excavations were in the area west of the 1989-91 seasons, north of Manor Farm.

THE PREHISTORIC PERIOD

Limited excavation was undertaken to investigate the post glacial landscape. Initially comprising meandering channels of an abraded river, the Ivel flowed through a landscape of solution hollows and pools, originally water filled but quickly replaced by peat. Leaving behind extensive gravel and silt beds the river seems to have followed a similar sedimentary pattern to that of the Ouse where gravel islands remained prominent as areas between them gradually filled with early alluvial silts. Indications of past tree cover, identified by crescent shaped tree throw holes were found scattered across the site, especially along the banks of earlier river channels. In several instances the stumps of trees still survived in fossilised form.

The earliest specific evidence of human activity at Warren Villas dated from the Mesolithic but comprised only dispersed spreads of lithic material. Environmental evidence of human activity was not recovered until excavation through one of the river channels revealed an environmental sequence dating, possibly, from the late Neolithic. The channel which was over 25m wide was situated in the southern part of the site and was examined over a distance of approximately 120 metres. Preliminary pollen analysis suggests alder carr dominated the river banks whilst further away oak

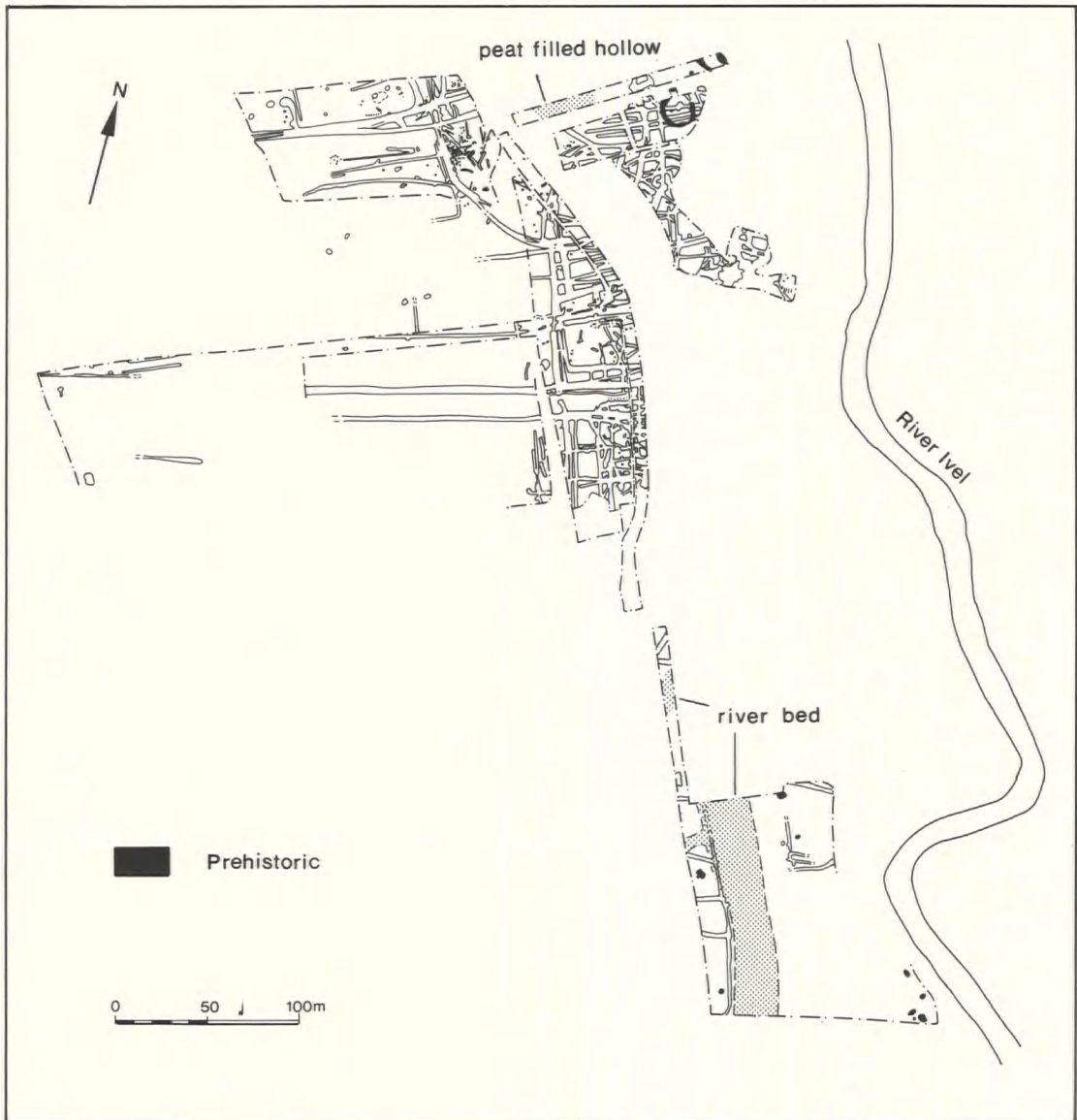


Fig 2 Location of prehistoric activity

and elm were amongst the remnants of drier woodland. Also present were cereal and herb pollens suggesting human activity nearby (Greig 1993). Lithic material comprising tools, including blades and arrowheads, and a stone axe, as well as a single sherd of cord-impressed Neolithic pottery found in the fill of a severely truncated pit suggest only limited activity at the site. Possibly limited by the propensity of the river to flooding, Holgate (pers comm) has suggested the presence of some chisel

shaped arrowheads may indicate a ritual deposit with other artefacts, such as the axe, deliberately deposited as ritual offerings.

In the early Bronze Age a single ditched penannular enclosure, possibly a funerary monument, was constructed in an area between one of the palaeochannels and a large pool. These post glacial features, possibly still waterlogged in the Bronze Age may have influenced the location of the enclosure. Measuring 19m in diameter, a 2m wide

entrance had been left on its eastern side, suggesting it falls outside the pattern of early Bronze Age barrow types common in the Ouse Valley (Woodward 1978), although a recently excavated Beaker burial at Bedford was enclosed within a similar penannular ditch. The Warren Villas ditch which varied between 1.7-2.2m wide had steep sides with U-V shaped profiles, indicating that probably little cleaning out or recutting had taken place. No central burial or later secondary cremations were recovered.

Possibly associated with the penannular enclosure were three small circular postholes near the entrance and a single pit located near the centre. The irregular shape of the central feature, however, and the sterile homogeneous fills which produced no environmental or artefactual evidence suggests that it may have been the remnants of a large tree bowl, cleared prior to excavation of the ring ditch.

LATER PREHISTORY

Later prehistoric activity was most intense on the northern side of the site where archaeological features include a large enclosure, drainage ditches, postholes, pits, and a post built timber structure.

The large enclosure is sub-circular and was discovered near to the northern limit of the investigated area, so its full extent is as yet unknown. The ditches varied between 1.1m-1.3m wide and 0.5-0.7m deep and evidence from the western side of the enclosure suggests that the boundary ditch was recut on three successive occasions.

Within the enclosure were several, mainly circular, medium sized pits. Initially constructed for storage they were later used for domestic rubbish. Elsewhere in the enclosure a number of postholes, slots and gullies were found suggesting the survival of structural components which may have been the remnants of dwellings or stock pens. Some of the more isolated postholes may have been tethering posts.

A small post built structure, probably dating to the late Iron Age, was uncovered in the western part of the site beyond the limits of the enclosure. This structure consisted of seven large, circular, postholes with diameters c.0.37m-0.60m forming a rectangle 3.9m x 2.8m-3.4m wide. Two further postholes were found within the structure, possibly the remains of partitioning.

South and east of the enclosure on the present floodplain were several small rectilinear or square fields. Scores in the subsoil indicate ploughing was occurring within these fields and excavation

revealed the scores to have the characteristics of a mould board plough. Significantly the environmental data from the plough scores suggests ploughing was taking place in increasingly waterlogged conditions and rising watertables may have been a factor in abandonment of the site in the late Iron Age (Robinson 1992).

THE ROMAN PERIOD

In the Roman period extensive areas of the site were occupied by a farmstead and the flood plain was subdivided into small field enclosures. In the southern part of the site the river channel that was flowing in the earlier prehistoric period had begun to silt up. Roman period ditches, whilst respecting the orientation of the course, cut into silts at the edge of the river and the pollen evidence from the river itself seems to show a shift from open grassland to cereal production.

The settlement was located on the edge of the gravel terrace parallel to the river. It included a large number of ditches forming a regular pattern of enclosures. Structural features were limited but suggest buildings within the enclosures whilst numerous small and medium sized pits locate areas used to dispose of domestic rubbish.

On the northern edge of the settlement a single kiln was recovered. Dating to the 2nd century AD the kiln was a single chambered, semi-sunken type. Large quantities of pottery were recovered from the kiln, although probably not from its last firing (Slowikowski & Dawson 1993).

Evidence of burial, both cremation and inhumation, was recovered from a variety of locations. Close to the settlement inhumations were restricted to a small cemetery area on the northern margins of the site. Elsewhere a single prone burial was found close to the river. Several cremations were found in apparently isolated positions near field boundaries on the edge of the gravel terrace and flood plain approximately 300 m south of the settlement.

On the flood plain a large number of ditches indicate a complex and continuous sequence of recutting and re-shaping from the 1st-4th centuries AD. As in the Iron Age, many of the ditches were dug for drainage. In two examples at either end of the site, short lengths, probably of willow, were recovered from the primary silts. These may have been laid in bundles to help drainage prior to backfilling in an early form of fagotting similar to examples at Flag Fen (Taylor 1981).

Cultivation of fields on the floodplain varied



Fig 3 Location of Iron Age and Romano-British activity

throughout the period. The area was re-occupied probably in the 1st century AD following abandonment in the late Iron Age, but waterlogging returned during the 4th century. In the intervening period a series of uni-directional, asymmetrical ploughmarks attest arable agriculture in areas very close to the river.

THE EARLY MEDIEVAL PERIOD

At the end of the Roman period occupation of the

site ceased and evidence for renewed activity at Warren Villas indicates, possibly, two centuries passed before reoccupation. Even then the evidence is slight and restricted to the occasional medium to large sized pit and a number of small postholes. Despite some of the pits containing domestic refuse, this probably indicates no more than short term occupation.

It is not until the Saxo-Norman period that more extensive activity at the site becomes visible in the

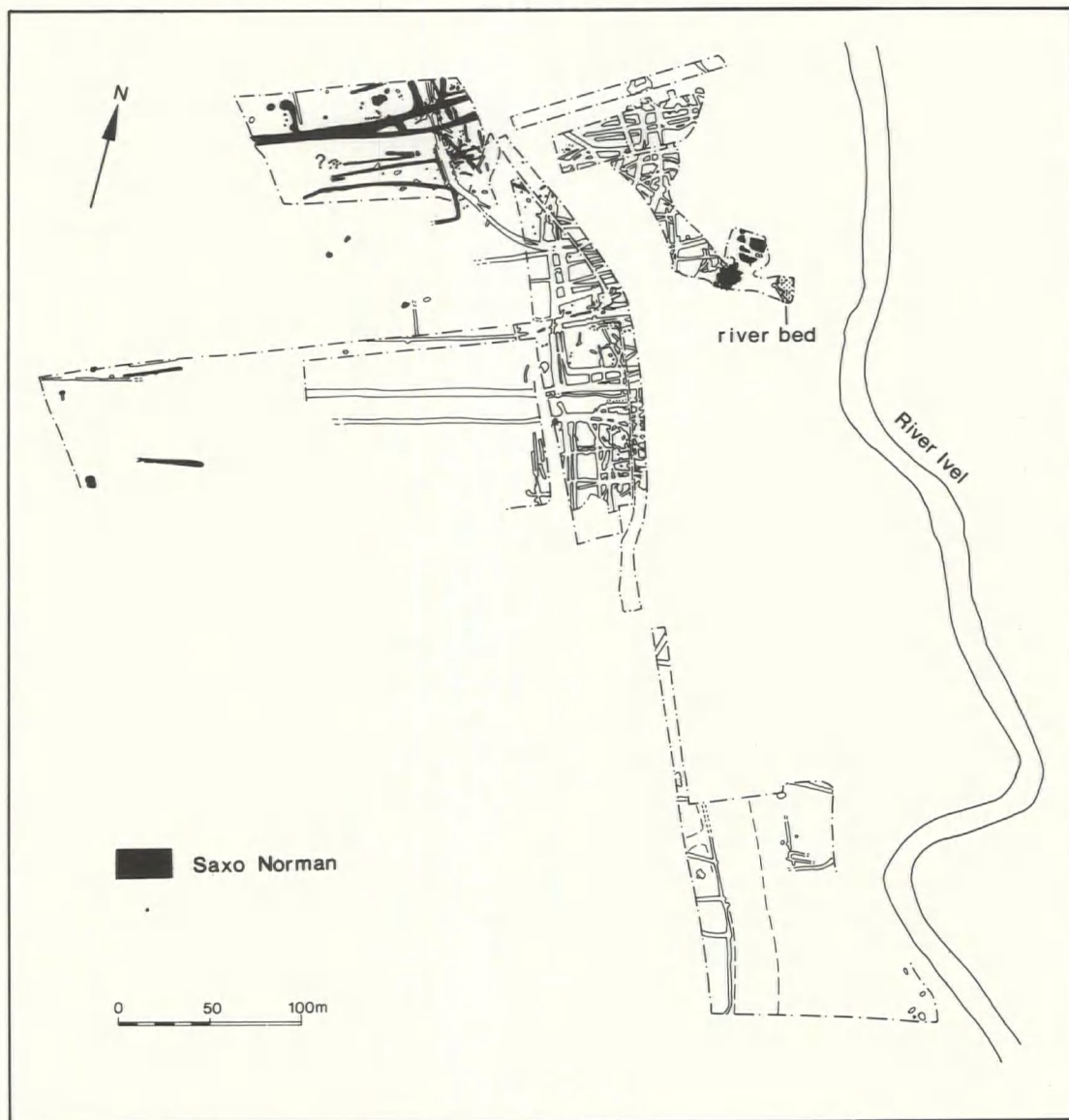


Fig 4 Location of Saxo-Norman activity

archaeological record. Settlement occurred once again on the gravel terrace overlooking the floodplain, but this time north of the Roman farmstead. The main structural elements comprised post built buildings and associated features such as fence lines and refuse pits, together indicating the foundation of a small farm.

The farm was restricted in size. A single post built structure, comprising two evenly spaced rows of small to medium sized postholes, with evidence

for sub-divisions was probably the main dwelling. The building was approximately 15m long and 5m wide corresponding to 3 bays. Inside were three hearths and a small number of stake/post holes which probably indicate the remnants of internal partitions. Close to the buildings a large number of pits were found which contained domestic refuse, including daub, ceramics and animal bone.

Two further buildings were identified from short lengths of regular spaced postholes: these may

represent barns or cattle sheds. Several lengths of shallow sided ditches with U-shaped profiles were also uncovered, these possibly defining the limits of small paddocks.

On the eastern side of the site beside the earlier river channel, a series of intercutting pits had been dug containing, within their upper fills, a large quantity of collapsed timber hurdles. Lining the sides of the pits, these timber hurdles have been studied in some detail. A large variety of weave types have been identified with evidence of patching. Several of the hurdles also contained re-used structural timbers, possibly from demolished buildings. The major timbers were submitted for dendrochronological dating and generated felling dates between AD1084 to 1125. Environmental sampling recovered seed and capsules of flax *Linum usitatissimum* from the pit fills suggesting flax retting may have been the main reason for their construction. However the discovery of fish or eel traps, and sandstone and lead weights, possibly net weights, indicate the scope for identifying further river front activities.

Later in the medieval period activity moved away from the river bank and archaeological deposits relating to this period are few. Generally confined to the western part of the site and away from the present course of the River Ivel they seem to focus on the current site of Manor Farm. These deposits include a small number of field boundary ditches, the occasional small posthole and a group of pits, probably the result of gravel and clay quarrying.

In the post medieval period extensive landscaping took place, including work on the Ivel Navigation (Cook 1990) when the construction of locks and wharves as well as re-cutting and straightening of several river channels took place. Evidence for this work was seen in the area containing the flax retting pits which had been truncated as a result.

CONCLUSION

The archaeological and environmental sequence at Warren Villas indicates the variety of landscape changes that influenced the occupation of river margin sites.

Significant changes to the water table possibly brought about by human activities like tree clearance and the intensification of agricultural activity will be considered during full analysis alongside wider environmental factors such as climate or sea level rises. Preliminary results show that the Ivel became increasingly stable within a

major channel but that by the early medieval period significant changes were taking place in the drainage pattern.

Evidence of human activity suggests an orthodox development from activities evident from flint scatters to sedentary settlement in the middle Iron Age. The foundation of a settlement enclosure on the slightly higher ground of the gravel terrace (fig 3) and evidence from within the enclosure suggests that despite its location, this site may have been similar to other enclosed middle Iron Age habitation sites, such as those in the Ouse Valley at Willington and Wyboston, or on higher ground at Gold Lane, Biddenham, and Norse Road (Dawson and Gaffney 1995b). The span of occupation and the activities undertaken during this period may have been influential when, towards the end of the Iron Age, waterlogged plant remains of damp loving species were found in the bottom of plough marks. Possibly as early as the 2nd century BC, a rise in the water table was occurring and this broadly correlates with the abandonment of river valley sites, including Wyboston and Clapham.

The rise in the water table resulted in a distinct break in archaeological evidence between the late Iron Age and early Roman period. In contrast to the re-occupation of the Iron Age site at Wyboston, the foundation of the Roman period farmstead at Warren Villas marked a permanent shift of settlement away from the river bank. Mixed farming continued to characterise the settlement at Warren Villas whilst the impact of the growth of the Roman small town at Sandy and the villa at Furzenhall have yet to be assessed.

Towards the end of the Roman period flooding once again became a problem, extending onto the gravel terrace and resulting in the desertion of the Roman period settlement. Evidence of over bank inundation further south indicates severe flooding and deposits of alluvium at Warren Villas may have occurred at the same time as flooding which led to the loss of the Roman road line between Sandy and Biggleswade.

Renewed settlement in the Saxo-Norman period occurred concurrently with the growth of Biggleswade and the development of the river crossing, but in a landscape which may have been more wooded than in the preceding period. During this period much greater use was made of the river bank in the production of textiles and the structural remains of this process have provided a rich source of environmental remains with which to characterise the settlement.

The results of the excavations funded by English Heritage at Warren Villas are currently undergoing assessment in accordance with the precepts of English Heritage's Management of Archaeological Projects (2nd ed) whilst analysis of the areas funded by St Albans Sand and Gravel has already begun. It is expected that publication of the fully integrated report will take place within the next three years and will be published as part of the Bedfordshire Archaeology Monograph Series.

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Archaeological Excavations at Kempston Manor, 1994

JACKIE CRICK AND MICHAEL DAWSON

With contributions by J Wells, E McSloy, A M Slowikowski, and E Hutchins

Illustrations by C M Marshall

SUMMARY

Archaeological evaluation and subsequent excavation as part of a mitigation strategy under PPG 16 revealed the remains of buildings dating to the medieval period adjacent to the site of Kempston Manor. Although not the main manorial structures, the buildings excavated indicate the presence of the manor in the 10th century and give some indication as to how this might have shifted to the north in the 13th century.

INTRODUCTION

Archaeological excavations between January and October 1994 were carried out on a site adjacent to the present Kempston Manor (TL 0264 4769) in advance of office construction for the Institute of Legal Executives. The work was undertaken in two stages, the first, comprising an initial evaluation in January 1994 (BCAS 1994/4), was followed in October by full excavation along the footings of the proposed development.

All archaeological recording was funded by the Institute of Legal Executives and programmed to integrate with the project timetable of their sub-contractors Willmott Dixon. The archaeological evaluation and subsequent excavation were designed to conform with the requirements of the brief and specification issued by the County Heritage Officer following the imposition of a PPG 16 condition attached to the planning consent by Bedford Borough Council.

THE REPORT

This report comprises evidence gathered from both trial trench evaluation (BCAS 94/3) and from further excavation. In the report these conventions have been used: context numbers where referring to fills are expressed (**) and where cuts as [**].

GEOLOGY AND TOPOGRAPHY

Kempston is situated on the south bank of a prominent bend in the River Great Ouse which flows north towards the county town of Bedford.

The site under discussion lies on the western side of Kempston, 150m south of the present river course, on the first gravel terrace at 30m OD.

The river valley is characterised by gravels which originated as glacial outwash. South of the channel these gravels are sealed by loamy drift on which argillic brown earth soils have formed. The soil profile encountered at the site included two episodes of alluvial deposition separating the loamy drift soils from the brown earths. The alluvium was present in prehistoric features and as patches of silts up to 150mm thick across the site. The episodes of flooding, and later mixing by worm activity, had removed any remains of buried soil horizons beneath the alluvium. Elsewhere in the Ouse Valley identifiable rises in the water table occurred in the early to mid Holocene (Robinson 1992), in the late Iron Age at Bromham (Tilson 1973) and Warren Villas (Dawson forthcoming) and in the late Roman period (Dawson 1994).

In the uppermost levels of the Kempston site brown earth had accumulated to a thickness of 750mm from the early-mid Saxon period until the 17th century, and this sealed a large proportion of features on site. A lower horizon of brown earth did not display the normal clear wavy or tongued boundary expected between soil horizons but was mixed, probably by worm action. This characteristic may indicate an early spade cultivated horizon associated with infield cultivation around the manor (R McPhail *ex lit*).

Truncation of the upper levels of the brown earth indicates the site was levelled, probably during the construction of a council depot in the 20th century. It was subsequently sealed beneath several layers of rubble material up to 540mm deep.

HISTORICAL BACKGROUND

Modern Kempston is part of the urban fringe south west of Bedford. The town saw considerable expansion in the 19th century becoming an urban district in 1895 (Godber 1984, 495).

Before the Norman Conquest Kempston and

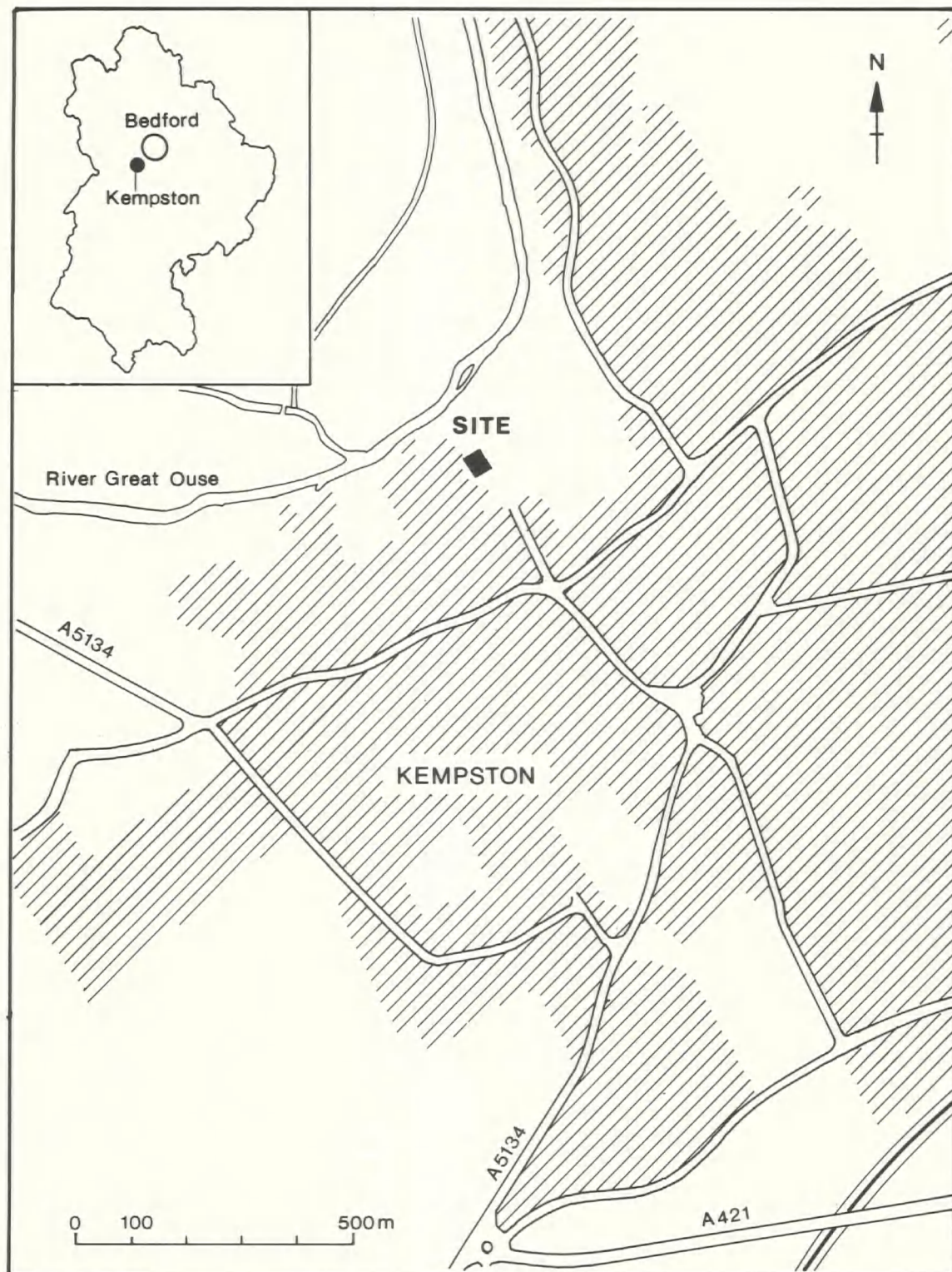


Fig 1 The location of excavations at Kempston Manor

Potton were noted estate centres of the earldom of Tostig. Tostig had been banished by Edward the Confessor in 1065 and the Kempston estate passed to Tostig's brother Gyrth. The estate at Potton went to Earl Waltheof who later married Countess Judith, William the Conqueror's niece. In 1086 Countess Judith held manors at both Kempston and Potton, and although Potton is referred to as Judith's 'sproprio' or main manor, Domesday records nevertheless indicate Kempston to have been a valuable holding.

In 1237 the lord of the manor, John Le Scot, died childless. To resolve the problem of succession the manor was divided between his three sisters; the site of the present manor is considered the main one, having gone to the eldest sister. Later known as Kempston Daubeney, Kempston Brucebury and Kempston Greys, the seniority of Kempston Daubeney suggests this site was formerly that of Countess Judith's manor house.

During the medieval period the manor site was probably continuously occupied, but the eighteenth century saw a decline in the status of Kempston Daubeney. In 1815 the medieval buildings were demolished and replaced by the present house (Wood 1984).

The area excavated lies to the west of the present manor house and is classified on a Rating Survey map of 1848 as an area of gardens and yards (CRO). Today a substantial 17/18th century brick garden wall still surrounds the site.

THE EXCAVATIONS

The scope of excavations at Kempston Manor was determined by the PPG 16 condition on the planning consent which required that 'before development take place an agreed programme of works was to be undertaken to mitigate the effects of development on the archaeological resource'. The first step in the mitigation process was the completion of an assessment to evaluate the quantity and quality of survival at the site. The recent use of the site as a works depot precluded the use of either field artefact collection or geophysical survey. Trial trench evaluation led to the discovery of medieval remains including structural evidence suggesting the remains of the Saxo-Norman manor. The potential importance of the evidence thus recognised led to the design of an excavation strategy to investigate those remains likely to be affected by the construction of the proposed offices.

The layout of the excavation trenches (Fig 2)

reflects the nature of the development and includes three areas of evaluation.

THE STRUCTURAL EVIDENCE

Archaeological investigation identified six periods of activity at the site from the Mesolithic to post medieval.

Period 1 – Mesolithic (Fig 4)

The earliest evidence of human activity is represented by an irregular pit [580] on the NW side of the site. It had been dug into the natural subsoil and lay sealed beneath a layer of alluvium. The fill of this pit produced an assemblage of mesolithic worked flint including debitage and tools. Similar pits have been recorded during excavations at the Ursula Taylor School, Clapham and interpreted as mesolithic working areas indicative of short stay, task-specific activities (Dawson 1988). Several further concentrations of worked flints were recorded from the site as surface finds from the interface between the brickearth and alluvium, from within the alluvium, and as residual material in later features.

Period 2 – Later prehistoric (Fig 4)

This period is first represented by a ditch [545], [562], [746] located on the SW side of the excavation sealed beneath alluvial silts. Oriented NW – SE the ditch curved gently eastwards as it progressed SE and was visible for a length of 9m. The profile varied from a V-shape in the NW (510mm deep) to a shallower U-shape in the SE (250mm deep). This ditch line was re-established, probably after flooding, by a shallower U-shape ditch [513], [517], [560]. Generally 600-610mm wide, this widened in common with the earlier ditch for a short stretch half way along its length.

The ditch fills comprised both alluvial material and edge-derived deposits. Flints of late Neolithic/early Bronze Age origin from ditch [545] and two Mesolithic/early Neolithic blades from ditch [517] suggest the erosion of surrounding plough soils, perhaps during periods of flooding. These ditches may have served as drainage channels and boundaries.

Period 3 – Early-Mid Saxon (Fig 5)

Two gullies located in the SE corner of the site and oriented NNW-SSE were between 360mm – 510mm wide with shallow U-shape profiles, 80mm – 120mm deep. The northern-most gully [410] had a curved terminus to the south and was at an oblique

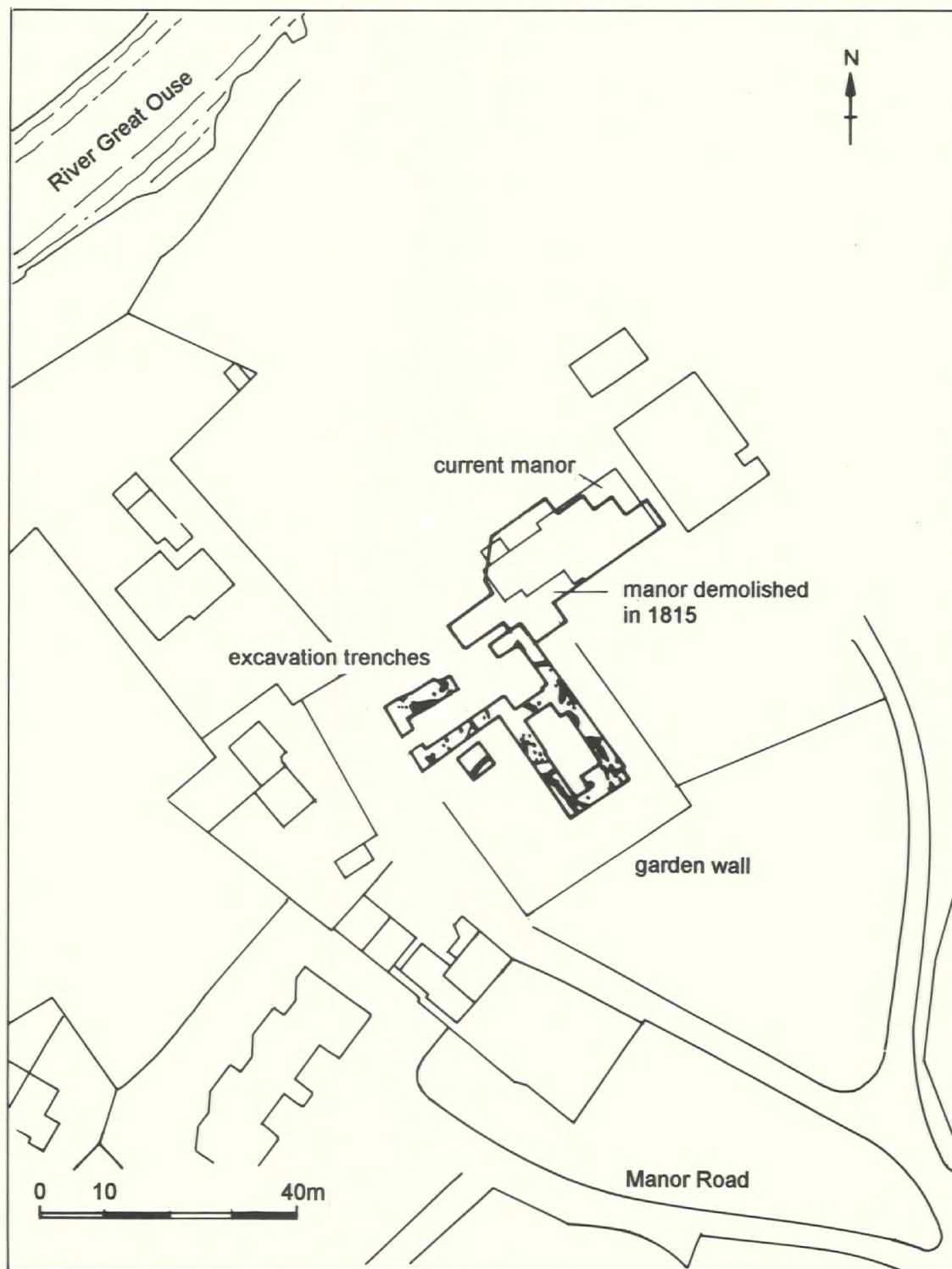


Fig 2 The layout of excavations at Kempston Manor showing the relative positions of the manor, demolished in 1815, and the present early 19th century building



Fig 3 The full extent of excavations at Kempston Manor including evaluation trenches

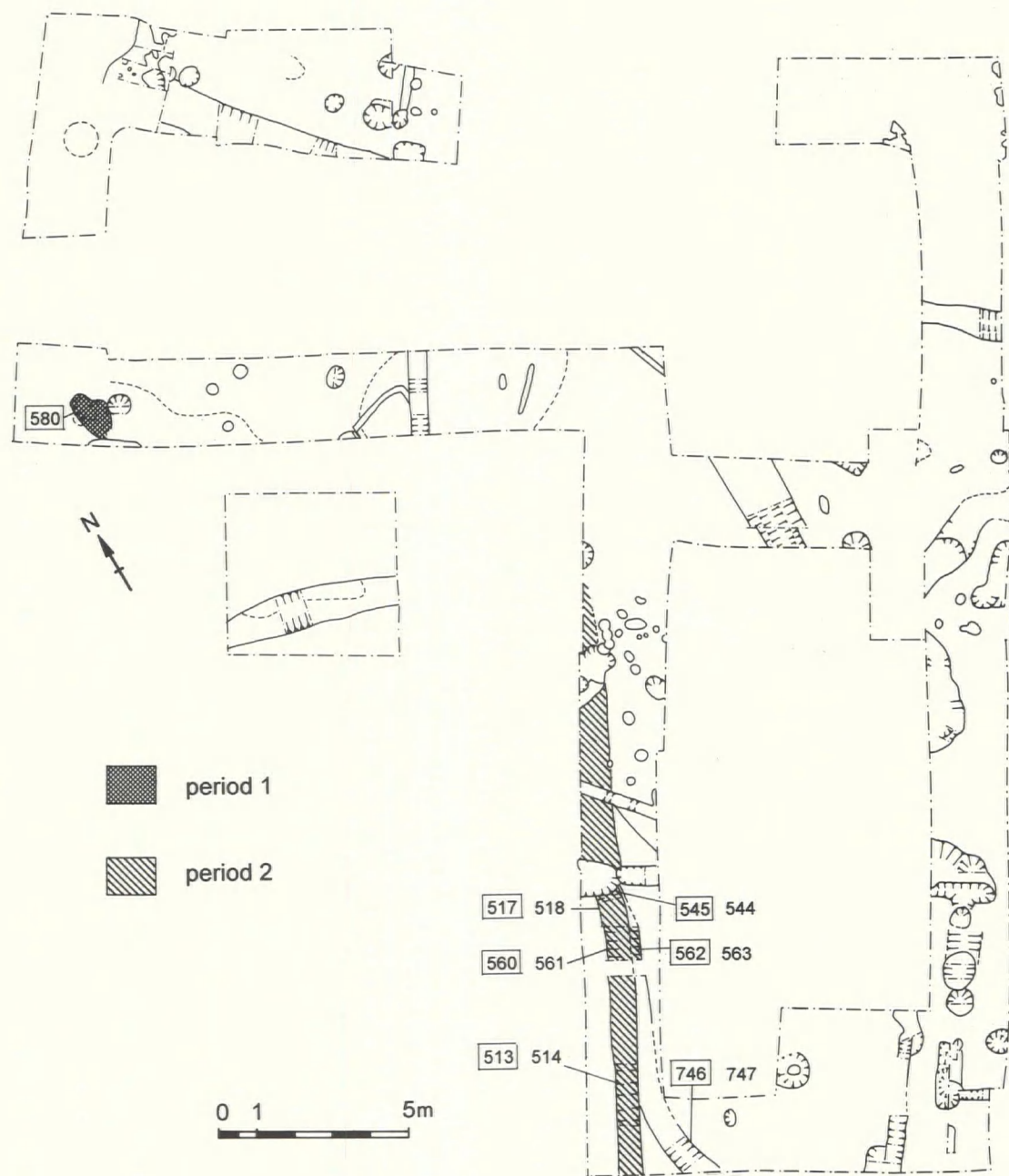


Fig 4 The early period 1 and 2 features at Kempston Manor

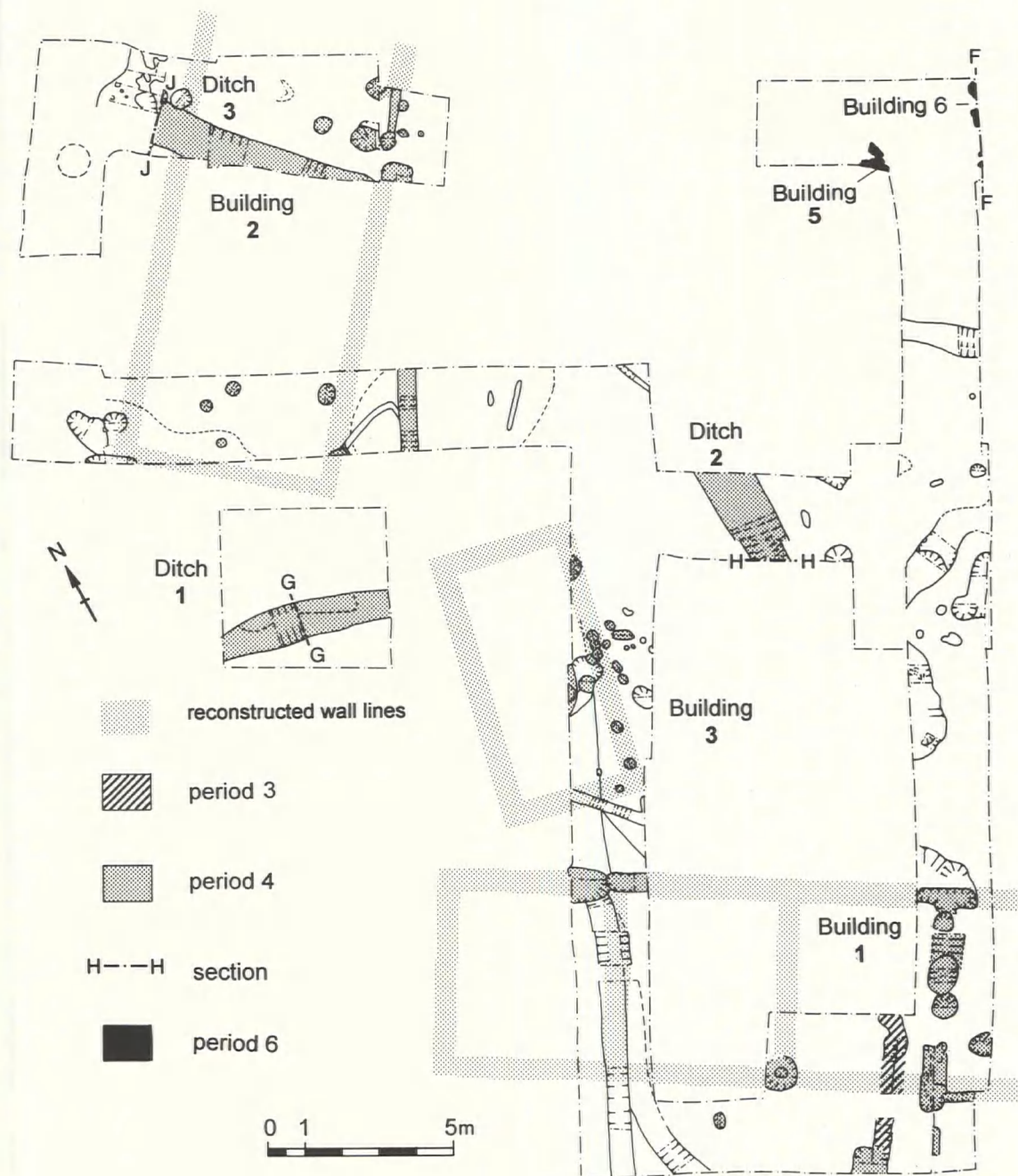


Fig 5 The location of all features in periods 3 and 4

angle to the second. They both contained orange grey silty soils and may have been eaves-drip gullies for buildings truncated by later activity. Residual domestic assemblages of pottery from areas in the west and south east of the site suggest activity nearby.

Period 4 – Saxo-Norman (Figs 5 & 6)

The Saxo-Norman period is characterised by evidence of post built structures and several ditches.

The Boundaries

Four ditches date to this period, two ditches 2 and 3, form a curving boundary running from the NW corner of the site.

Ditch 1, [106], located in an evaluation trench on the west side of the site had been cut into a layer of brown earth. It was 1.2m wide x 610mm deep with steep sides and a flat base. The ditch contained two fills, a lower silt and an upper horizon of brown earth with frequent charcoal inclusions, probably derived from the surrounding ground surface. The ditch either turned or terminated to the NE as no continuation of the feature was found in the main area of excavation.

Ditch 2 lay towards the centre of site. Its original form [642] was steep sided with a flat base. It was later recut, [568] into a U-shape profile, 1350mm wide and 420mm deep.

Ditch 3 cut across the NW corner of the excavation and was aligned NW – SE. It had a steep sided profile [213] with an uneven, slightly concave base, 1.10m wide x 710mm deep. The NE edge of this ditch had eroded forming a mid orange lower fill in the ditch. This was sealed by an upper fill of mid greyish brown, silty sand. The latter resembled the fill of the recut in Ditch 2 and produced a comparable finds assemblage. Similarities in the profiles of [213] and recut [568] suggests these two ditches may be contiguous, creating a curving ditch which enclosed an area of land to the SW.

Ditch 4, [584] [624] [785], formed a less substantial boundary oriented NW – SE, south of Ditch 3. It had a steep sided profile with a tapered concave base, 420mm wide and 230mm deep. This was recut with a shallower concave profile and was filled with similar material to the overlying brown earth.

The Structures

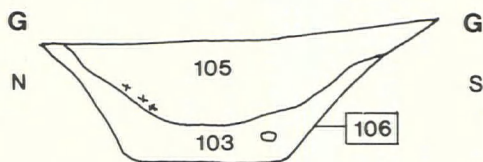
The remains of three timber structures were identified. These comprised the north east corner of a substantial post-built timber building (Building 1)

in the SE of the site and two further post-built structures (Buildings 2 & 3). In addition there were several concentrations of post holes and slots. The absence of associated finds such as nails, tiles and stone suggests the structures were wholly timber in construction.

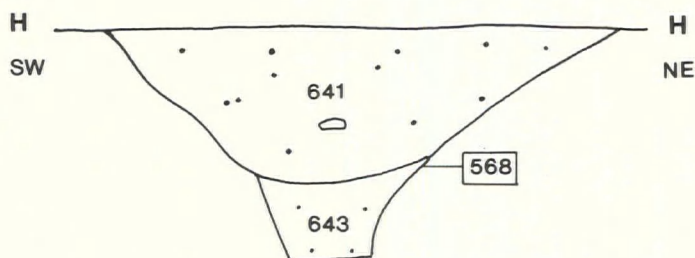
Building 1 (Figs 5 & 7)

Building 1 was oriented NE-SW and lay in the SE corner of the excavation. It comprised the partial remains of three wall lines. The northern side wall comprised, from the east, a 300mm deep, T-shape trench [672], with an uneven base. This aligned with a shallow beam slot [501] and a substantial post pit [505], forming a wall line >10.1m in length. Post pit [505] was 420mm deep with near vertical sides and contained three fills. These comprised a silty primary fill (520), sealed by clay packing material (519) and an upper fill (506) derived from the brown earth. Only a short stretch of the corresponding southern side wall survived. This was represented by a narrow slot, [671] continuing beyond the limit of excavation to the east. This slot had steep sides and a flat base and appears to have located a sill beam. To the west of this feature Building 1 was divided into two cells by a perpendicular wall. This wall comprised a row of six post holes, [632, 591, 622, 667, 417/665]. These held closely-spaced, uprights, generally between 200 – 340mm deep. Remnants of re-deposited clay were present in all of the post holes. To the north post hole [733] has replaced an earlier, perhaps rotted post, [632]. The southernmost of these features was a substantial, 420mm deep post pit, [417]/[665]. This contained the decayed remains of a 300mm wide post, tapered towards its base. Clay material similar to that seen in the other post holes along this wall line served as packing around the post. This appears to be the corner post to the eastern bay and gives Building 1 a span of 5.03m. This measurement corresponds to one of the standard Anglo Saxon units of measure or 'rods' identified by Huggins (1991). A 1.10m gap (measured centre to centre) between [417]/[665] and a smaller post hole [667] to the north marks a doorway in this wall. Post hole [416] marks the location of a second division. On the west side of the building a narrow slot for a sill beam, [710] may be associated with post hole, [509], 5.03m to the south and a second, larger post hole [413], 1.67m to the west. The function of these structural features is unknown and cannot be reconstructed within the limitations of the excavated area.

DITCH 1



DITCH 2



DITCH 3

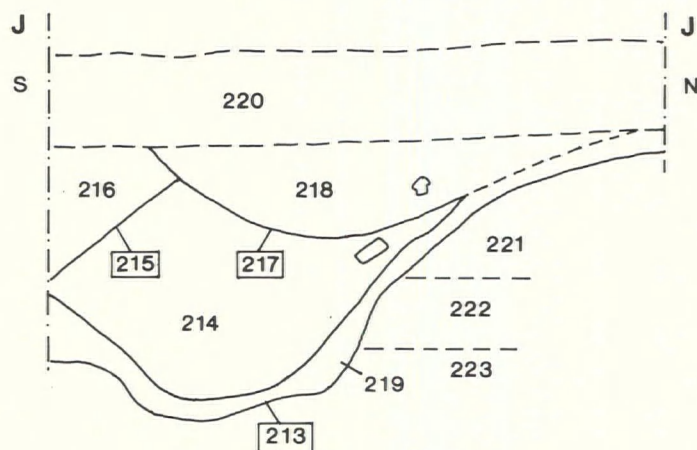


Fig 6 Ditch sections from period 4

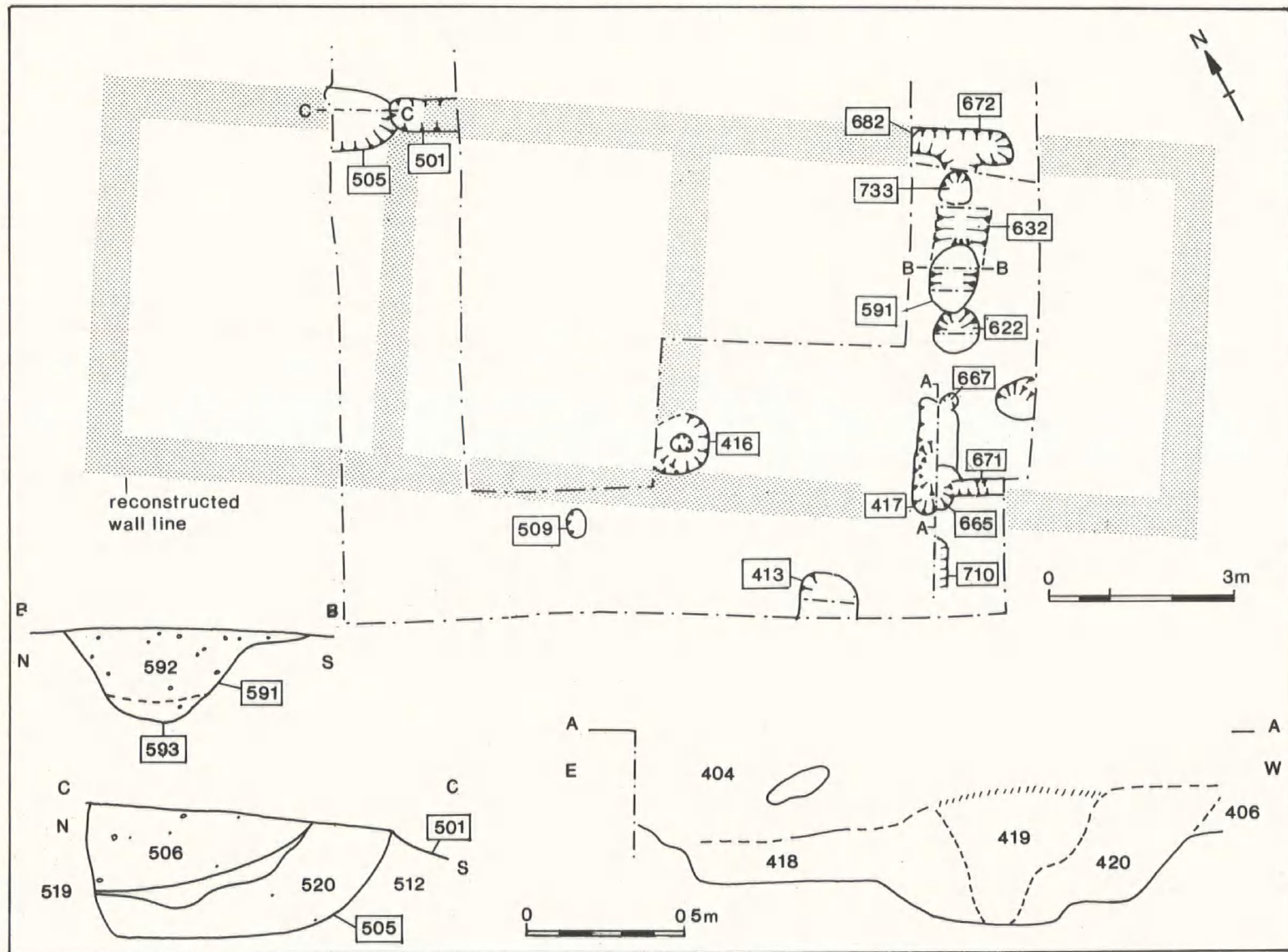


Fig 7 The excavated evidence and conjectured outline of Building 1, period 4

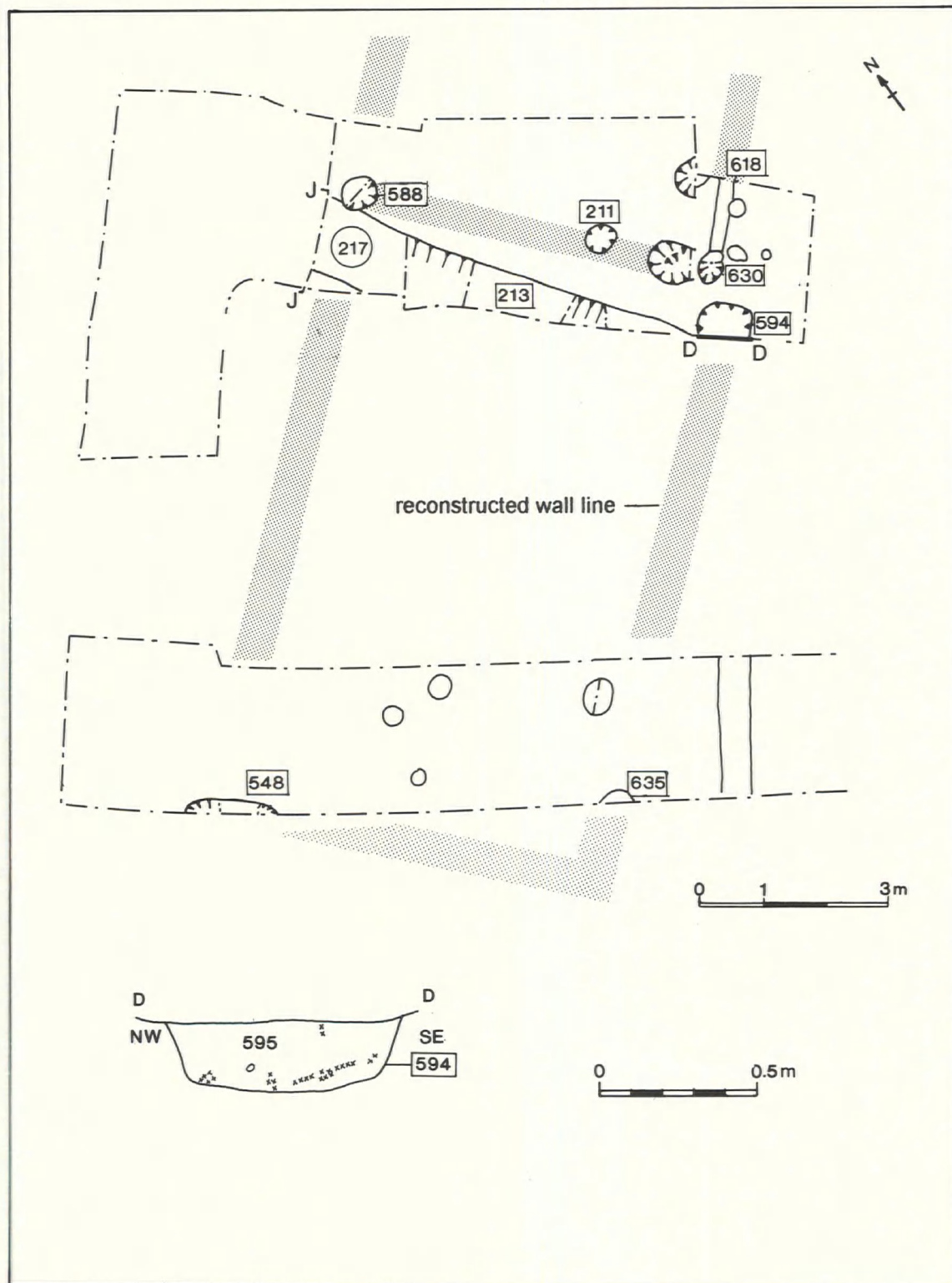


Fig 8 The excavated evidence and conjectured outline of Building 2, period 4

Building 2 (Figs 5 & 8)

Located in the NW corner of the site this structural group comprised 15 post holes and 2 slots. The structure was not fully investigated as it extended both NW and the SE beyond the area of excavation. There appear to be probably two components to this building: A northern bay comprising a line of post holes [630] [211] [588] forms a corner with slot [618] whilst a southern element comprises a large post hole [594] with a second [635] on the east side whilst slot [548] represents the remains of a wall line parallel to [630]/[588]. The cross wall [548] lies 10.06m to the south of [630]/[588], suggesting, in common with Building 1, the use of a 5.03m rod measurement during construction (Huggins 1991).

All these post holes were backfilled with a material derived from the overlying brown earth, after the removal of their posts.

Building 3 (Figs 5 & 9)

Building 3 comprises 20 post and stakeholes cut into the alluvium in the west of the site. The main axis probably ran NW – SE, at an oblique angle to the orientation of Building 1 and comprises an irregularly spaced row of six post holes [523] – [541]. These were generally less than 100mm deep but towards the centre of this row two more substantial post holes, [608] & [537], were respectively 180mm and 280mm deep. Central and perpendicular to the main axis were several smaller

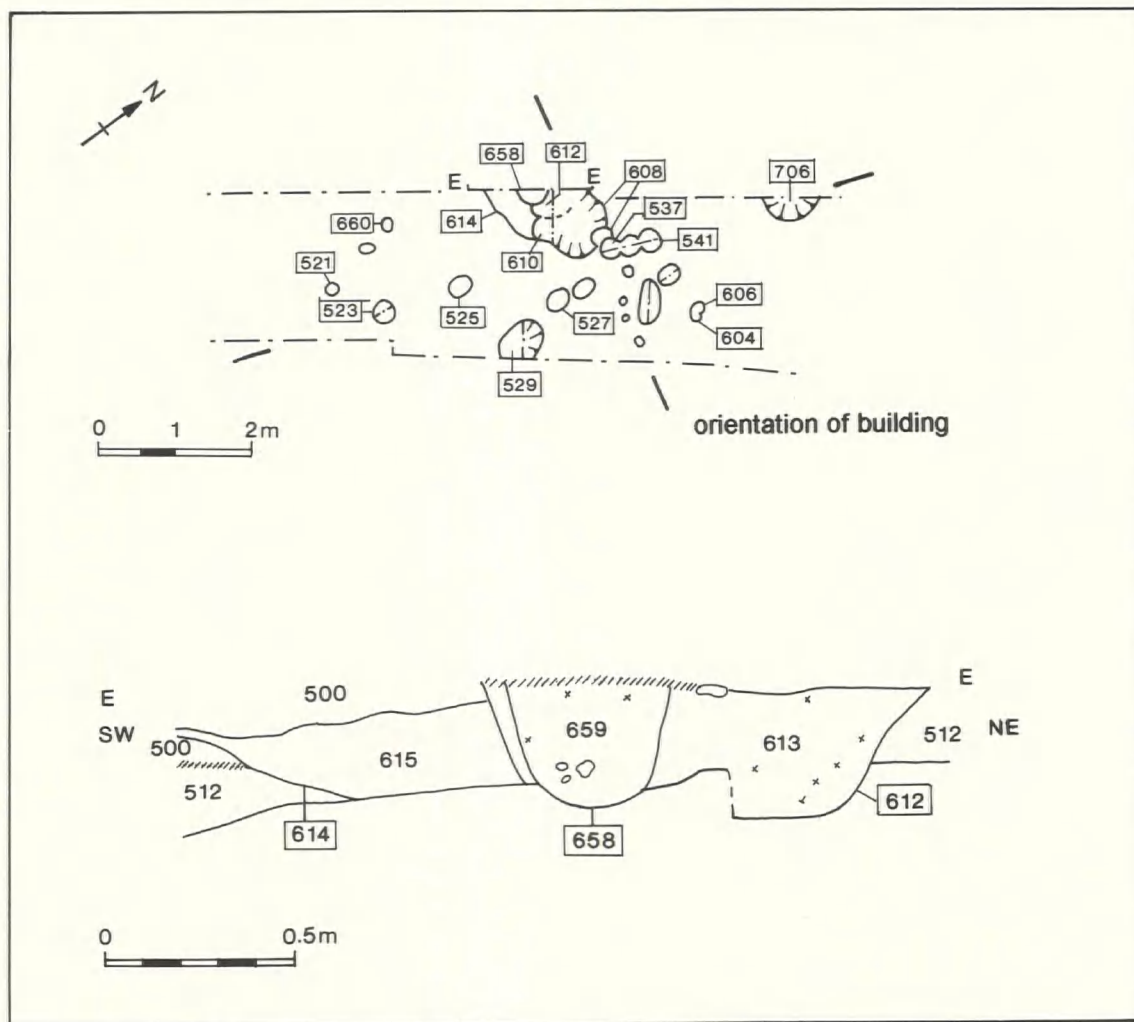


Fig 9 The excavated evidence of Building 3 indicating the orientation of this structure

post and stakeholes. Their insubstantial nature suggests a construction technique for timber-laced clay walls. A continuation of the main axis to the NW is inferred from post hole [706]. In common with post holes [612] and [610] to the south, [706] was greater in depth and contained an organic fill. The evidence for building 3 may represent the remains of a single structure (Figs 9 & 10) or parts of several structures.

Discussion

The shallow nature of the remains of Building 1 suggest timber frame construction which was largely self-supporting, precluding the need for internal supports (Chapelot and Fossier 1980). The construction technique comprises a mix of shallow trenches and post pits for the side walls, with closely spaced posts forming an internal partition. The slots and trenches may have held interrupted sill beams into which staves for walling material were clasped or slotted, between the principal posts. The use of interrupted sill beams is well-known in NW Europe from c.AD900 and gradually replaced earlier techniques where the staves were earth-fast (Hauglid 1972). The T-shape appearance of the east end of trench [672] suggests the sills of the N-S and E-W walls were halved together. This construction technique reflects that proposed for the construction of the 10th century buildings at North Elmham, Norfolk (Wade-Martins 1980). Locally similar structures have been excavated at Stratton DMV, Biggleswade, and for a 13th/14th century building (78002) at Westbury DMV, Milton Keynes (Ivens, Busby and Shepherd 1995, Fig 78). Whilst the excavated evidence for Building 2 lacks the evidence of sill beam trenches seen in Building 1, their orientation might suggest contemporaneity. It is possible that Building 2 comprised sill beams placed directly on the ground surface, which would have left little trace beyond a single slot in the east facing wall. Building 1 was the only structure to produce any ceramic artefacts. These give a date of occupation between the 10th and 11th centuries AD, but the lack of debris restricts interpretation. Building 1 may be domestic and, with possibly up to four bays, it may be of high status. Building 3 is oriented NW – SE and is in close proximity to Building 1, which might suggest they belong to a separate phases of construction. The alignment of the boundary ditches associated with Period four indicate at least two sub phases of activity with ditch 2 & 3 possibly the earliest. Buildings 1, 2 and 3 may be contemporary and a possible layout is

prepared in Fig 10.

Period 5 – Medieval (not ills)

During the 12th – 14th centuries the area of Saxo-Norman activity was abandoned and the focus of settlement shifted. A boundary ditch [742] dug in the NE corner of site, with a steep-sided profile and a flat base, was filled with material that closely resembled the overlying brown earth. In the NW corner of the site below several post medieval features were two intercutting post holes which were dug from the upper level of the brown earth. The earlier of the two [590] had a flat base 600mm deep and its slightly concave NW edge suggests the post was removed and the cut backfilled. Remnants of limestone packing material were incorporated into the fill. A smaller concave post hole [724] truncates the upper part of this fill. A third structural element dated to this period, was an isolated semi-circular post setting in the far east of the site. South west of this a large pit [416], 900mm in diameter and 700mm deep, had truncated the remains of a smaller posthole [422].

It was during this period that the manor of Kempston was divided between the three sisters of John Le Scot. The location of the manor of Kempston Daubeney, which is said to have stood on the site of the present manor (Wood 1984) NE of the excavation, suggests the build up of brown earth associated with spade cultivation indicates the excavation area was now used for agricultural purposes.

Period 6 – Post medieval

The evidence of three stone structures clustered close to the present manor in the north of the site were observed in section. Only Building 6 is illustrated (Fig 10) as the recording of all three was compromised by the presence of live services during excavation.

Building 4 (not ills)

Building 4 comprised two phases of wall construction with associated floor surfaces and was seen in the NW corner of the site.

The first phase of activity was the construction of a coursed limestone and tile wall [715] within a shallow foundation trench. Aligned NW – SE and substantially robbed this remained intact to a height of 150mm. Dismantling of the wall had destroyed its relationship to a surface of red tiles (575)/(578) seen adjacent to the base of both faces, although their position suggests contemporaneity.

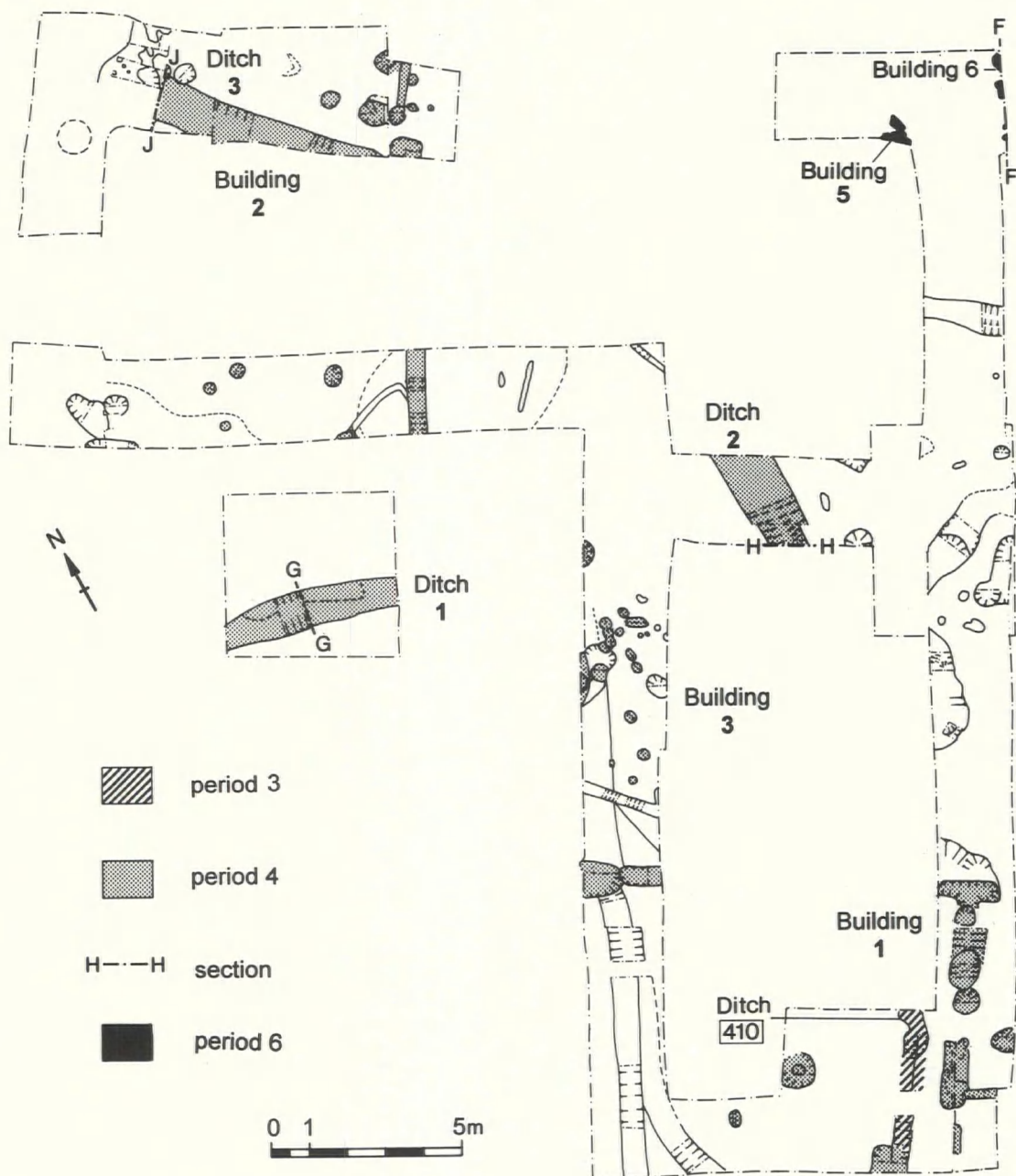


Fig 10 Composite plan of buildings in period 4

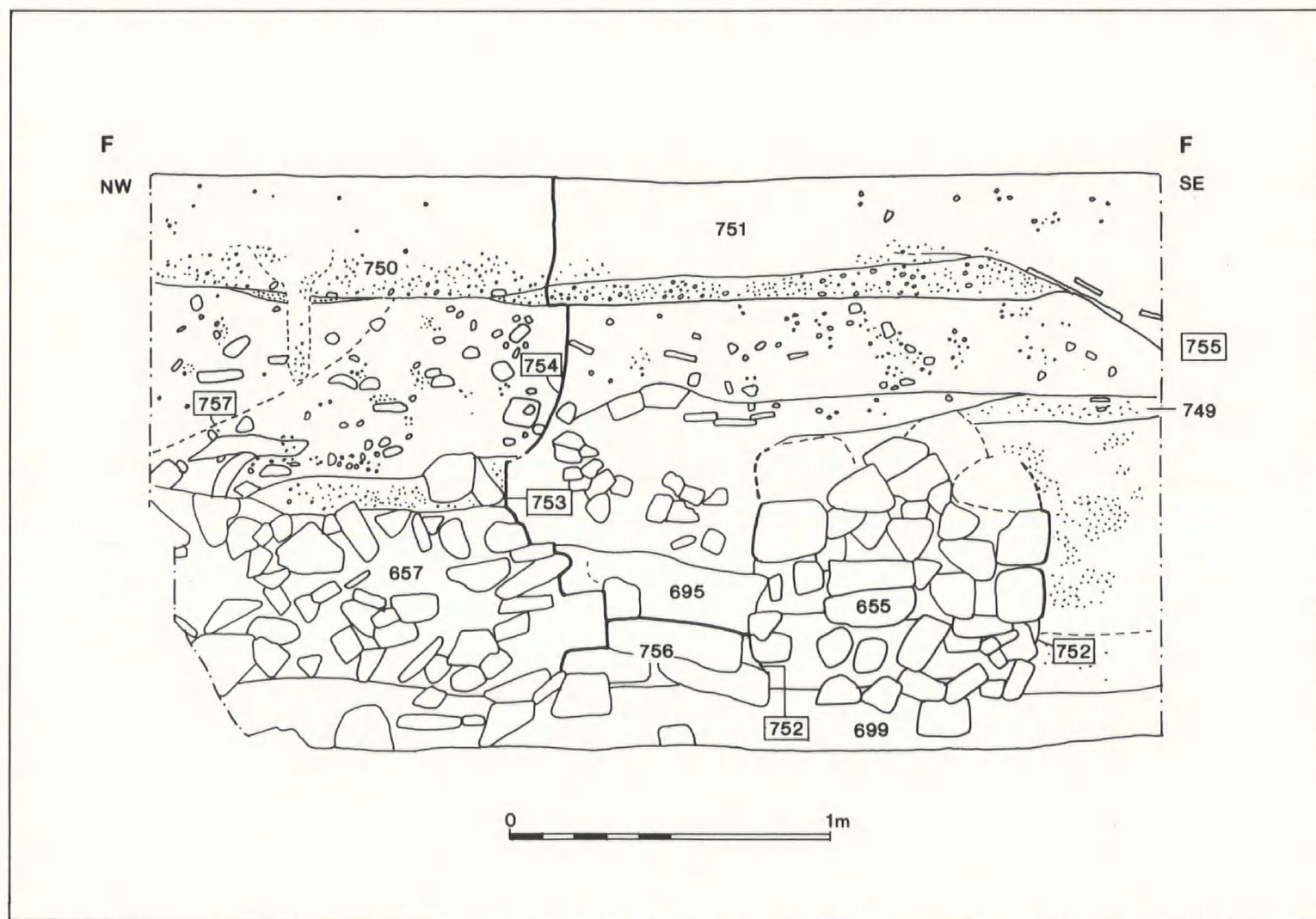


Fig 11 Section through the masonry of Building 6, period 6

Demolition of the wall resulted in these remains being sealed beneath 130mm of rubble and soil. The second phase of construction comprised the building of a second wall [576]. This was set within a shallow foundation trench that cut into the demolition layers directly above the first wall. Limestone rubble served as the foundation for a faced limestone wall. This had a rubble, sand and mortar core and three courses survived in section. In common with its predecessor the wall had an associated floor surface of red tiles (508) that butted against the NW face of the wall. During the construction of the former depot on this site this area was levelled and up to 500mm of imported rubble dumped across the site.

Building 5 (not ill)

This was only apparent in one section in the NE corner of the excavation and comprised a foundation trench [737] that held two layers of large rectangular limestone blocks (738) and (727). The stones (738) were laid horizontally as footings for a wall. This had been largely demolished and all that remained was a 300mm deep rubble core (727) of sub angular stones in a sandy clay matrix. An accumulation of sandy clay soil (744) with frequent charcoal inclusions lay against the western face of the wall. This layer was truncated during the demolition of the wall by robber cut [759] whose

fills produced frequent inclusions of stone, tile, mortar and charcoal.

Building 6 (Fig 10)

The third structure was seen in a west facing section in the NE corner of the site. This structure lay to the east of Building 5 and proved difficult to interpret. A 900mm wide foundation trench [752], 500mm deep was cut into alluvial silts to the south of the section and contained angular and sub-angular limestone. These acted as the foundation for a faced limestone wall [655] with a rubble core which survived intact to a height of 560mm. On the north side of the wall were two floor surfaces. The first of these comprised two courses of limestone slabs (756). Perhaps serving as a floor in their own right they provided a level surface for the second, mortar, floor (695) constructed directly above. An accumulation of mixed soil with frequent inclusions was visible to the south of the wall, similar to (744) seen butting building 5. A gap of 2.5m separates these two walls and the total absence of masonry or structural remains between them suggests there may have been a narrow gate into the garden at this point (Fig 5).

Debris resulting from the demolition of wall [655] formed a spread of material 500mm thick above the structure and floors. At a similar period a large area to the north of the wall was cut away

Period	3		4		4		4		4	4					4				
	Gly	Spd	Ditch 1		Ditch 2		Ditch 3		D4	Lower Brown Earth					Building 3				
Fabric	412	550	107	105	643	641	214	741	585	500	586	404	516	104	663	611	613	592	67
F01B																			
F02															1:1				1:
R06		1:1								1:1								1:1	
R13											1:1								
A16	1:1			4:4			2:3				1:1			2:2		1:1			
A18					2:2	2:2					1:1								
A22											1:1								
A23																			2:
C12				1:28										0:1					
C82																			
B01			1:1	2:2	1:1	2:3	3:3		1:1		2:2	2:5	1:1	2:2		1:1	1:1	2:2	8:
B01B																			
B01C																			
B04																			
B07								1:1			2:2								1:
C53																			
Total	1:1	1:1	1:1	7:34	3:3	4:5	5:6	1:1	1:1	1:1	8:8	2:5	1:1	4:5	1:1	2:2	1:1	3:3	12:1

Table 1 Pottery by period, vessel and sherd count

down to the level of the underlying clay, and the resulting void was packed with sub angular and angular limestone nodules, (657). The purpose of this remains unclear. Mixed deposits of charcoal, brick and gravel were used to level this area prior to the deposition of a layer of topsoil.

Subsequent to the dismantling of these walls several pathways were laid across the garden. That seen in the NE corner of site (739) was constructed from chalky material and flint gravel. A second gravel path (640) ran E-W across the centre of site above the brown earth. Other post-medieval features include an isolated post hole close to Building 1 in the SE of the site, a brick-lined well in the NW corner of the excavation, and close by, two Victorian bottle dumps. The whole site was later levelled and sealed beneath a layer of rubble prior to use as a depot.

The configuration of buildings illustrated by W H Payne (Wood 1984, Pl 2) suggests that the walls visible in the west corner of the site are the remains of the manor house demolished in 1815.

THE CERAMICS ASSEMBLAGE

(J Wells, A M Slowikowski)

Introduction

A total of 90 vessels, represented by 130 sherds weighing 831g, was recovered. Of the vessels

identified 80 were hand-collected during excavation, the remainder were sieved from soil samples. The pottery was examined by context and sorted into sixteen fabric types, based on the Bedfordshire Pottery Type Series (Baker et al. 1979). Sherds from the same vessel within a single context were brought together as were sherds from different contexts belonging to the same vessel. Quantification was carried out using minimum vessel, sherd count, and weight. Examination of attributes, including extent of abrasion, presence of residues or sooting, was undertaken to provide an indication of the function of the pottery.

Standard drawing conventions have been used, with vessels shown at one quarter and one half size, external view on the right and a section and internal view on the left. Wheel-thrown vessels are shown with solid sections, and hand-made vessels with hatched sections. The pie diagram at the base of each illustration indicates the proportion of the vessel recovered.

The majority of the assemblage comprised small and abraded sherds. The pottery from ditch 1 (105), Period 4, was, however, in good condition with 28 sizeable sherds belonging to the same vessel.

Excavation at Kempston has produced an assemblage of domestic pottery ranging in date from the early Iron Age to the medieval period. The fabric types within each context have been tabulated

4													5				6	
Building 1										Building 2			Isolated Features				Bdg 4	
414	420	502	506	510	623	639	633	683	734	595	631	587	567	659	415	645	515	Total
						1:1												1:1
																		2:2
																		4:4
																		1:1
										1:1								12:13
																		5:5
																		1:1
																		2:2
																		1:29
																	1:1	1:1
1:1	1:1		1:1	4:9	1:1		1:1	1:1	4:4	3:3	1:1	1:1	1:3	1:1	1:1		1:1	52:63
						1:1												1:1
																		1:1
																		1:1
			1:1															4:4
																		1:1
1:1	1:1	1:1	1:1	4:9	1:1	3:3	1:1	2:2	4:4	4:4	1:1	1:1	1:3	1:1	1:1	1:1	2:2	90:130

by sherd and vessel count (Table 1). This information provides the framework for the following discussion.

Bedfordshire Pottery Type Series

Fabrics are arranged chronologically, using common names and type codes in accordance with the Bedfordshire Pottery Type Series which is held by BCAS. Seventeen types have been previously recognised from excavations within Bedfordshire and have been fully described elsewhere. One Saxo-Norman fabric (Torksey type, C82), represents a new addition to the Bedfordshire type series, although it is well known throughout the north-east midlands; kilns have been excavated in Torksey, Lincs (Barley 1964).

Early Iron Age

Type F01B Fine Flint

Hard fired, fairly harsh fabric with mid-grey cores and red-brown surfaces. Contains ill-sorted fine white flint and sub-rounded clear quartz.

Forms: Hand-made, undiagnostic body sherds.

Suggested source: likely to be of local origin and manufacture. Ceramics tempered with flint (type F01B) and flint/grog (type F02) have been recovered from early Iron Age features at Ursula Taylor School, Clapham, Beds (Dawson 1988) and from the early-mid Iron Age settlement site at Salford Quarry (BCAS in prep).

Type F02 Grog and flint

Fairly hard, smooth black/grey fabric, tempered with variable proportions of grog and angular flint.

Forms: Hand-made, undiagnostic body sherds.

Suggested source: As type F01B.

Roman

Type R06 Greyware

Variable harsh, hard-fired fabric ranging from light-dark grey throughout. Contains frequent, well-sorted quartz and occasional black iron ore.

Forms: Wheel-thrown bowl with upright rim, and undiagnostic body sherds, one with incised lattice decoration.

Suggested source: various.

Type R13 Roman Shelly

Variable buff-orange-brown fabric with blue-grey-black core. Contains abundant, evenly distributed shell and rare sub-rounded quartz.

Forms: wheel-thrown, undiagnostic body sherd.

Suggested source: produced at kilns in Harrold, north Beds (Brown 1994).

Saxon

Type A16 Mixed coarse quartz

Coarse, hard dark grey-black fabric with abundant quartz, sparse flint inclusions and often with organic impressions on the surfaces. At Kempston, this type can be subdivided into fabrics with quartz inclusions of less than 1.61mm and a grittier type with inclusions in excess of 1.61mm.

Forms: hand-made jars with plain rims, some sherds with burnished exteriors.

Date: early-mid Saxon.

Suggested source: likely to be of local origin and manufacture; quartz inclusions found in sandy fabrics A16 and A18 are thought to be derived from the Greensand

ridge, which runs SW-NE through the county from Leighton Buzzard to Sandy and on into Cambridgeshire.

Type A18 Fine quartz

Fairly smooth, dark grey-black fabric containing densely packed, abundant sub-rounded to sub-angular quartz.

Forms: hand-made, undiagnostic body sherds.

Date: early-mid Saxon.

Suggested source: as type A16.

Type A22 Flint tempered

Hard, harsh grey-brown fabric, characterised by frequent, angular white flint inclusions. Also contains sparse quartz and organic material. Similar in surface appearance to flint tempered pottery of Iron Age date.

Forms: hand-made, undiagnostic body sherd.

Date: suggested early-mid Saxon.

Source: unknown.

Type A23 Sandstone

Fine, hard dark grey-brown fabric, similar to type A16, but characterised by large clusters of quartz crystals of greater than 0.8mm in size.

Forms: hand-made, undiagnostic body sherds.

Date: early-mid Saxon

Source: unknown. This type occurs both at Grove Priory, south Beds, and Stratton medieval village, mid Beds (both BCAS in prep).

Saxo-Norman (10th-early 12th centuries)

Type C12 Stamford ware

A hard-fired, glazed, smooth fabric varying in colour from off-white to buff and light grey, often with a pinkish tinge.

Forms: wheel-thrown spouted pitcher; fabric B/G, with a thin light yellow-green type 1 glaze (Kilmurry 1980, 8 & 11).

Date: 10th-11th century.

Source: produced at kilns in Stamford, Lincs, this fine ware is distributed throughout the country, as far north as Scotland (Kilmurry 1980, 161).

Type B01 St Neots-type

Rough, fairly soft and occasionally friable fabric, containing abundant fossil shell, distributed evenly throughout the matrix. Reduced grey-black core and variable brown-black surfaces.

Forms: wheel-thrown bowls with everted and upright rims and everted rimmed jars.

Date: 10th-11th century.

Suggested source: although no kiln sites are known, St Neots type vessels are widely distributed throughout a core area in the south and east Midlands and have been recovered from numerous settlement sites in the Ouse and Ivel valleys. Described by Hurst (1956) and discussed more recently by Hunter (1979).

Type B01B St Neots-type

As St Neots type, but with finer shell inclusions, smooth, soapy surface finish and buff-mauve surface colour. Similar to fabric T1(1) recognised from excavations in Northampton (Denham 1985, 54).

Forms: wheel-thrown, undiagnostic body sherd.

Date: 10th-11th century

Suggested source: as type B01.

Type B01C St Neots-type

Fairly smooth, patchy buff-grey-brown fabric with inclusions of sparse quartz and red and black iron ore in addition to abundant shell.

Forms: bowl with everted rim.

Date: 10th-11th century, possibly continuing into the 12th century.

Suggested source: As type B01.

Type B04 St Neots-type

Rough, often brittle fabric with a grey core and variable pink-orange-brown-grey surfaces. Tempered with coarsely mixed shell and shelly limestone, with sparse grog and quartz inclusions. Similar to fabric T1(3) found at Northampton (Denham 1985, 54), this type has also been found in Bedford (Baker & Hassall 1979, 167) and is probably a local fabric.

Forms: wheel-made, undiagnostic body sherd.

Date: 10th-12th century

Suggested source: as type B01.

Type C82 Torksey-type ware.

Hard, dark grey/black fabric containing well-sorted, round to sub-round quartz

Forms: wheel-made, undiagnostic body sherd

Date: 10th-12th century

Source: produced at kilns in Torksey, Lincs. Fully classified by Barley (1964) and more recently discussed by Gilmour (1988).

Medieval (12th-14th centuries)**Type B07 Medieval shelly**

A developed form of St Neots-type ware; hard, fairly smooth fabric with orange surfaces and distinctive blue-grey core. Predominantly shell tempered, with sparse quartz and iron ore.

Forms: wheel-made, undiagnostic body sherds.

Date: 12th-13th century

Source: kilns at Harrold (Beds) and Olney (Bucks) producing this type have been discussed by Hall (1971) and Mynard (1984).

Type C53 Medieval sandy

Variable smooth to fairly rough fabric, with mid-dark grey surfaces, light grey margins and mid grey core. Characterised by the pimply appearance of its surfaces, due to inclusions of abundant sub-rounded quartz.

Forms: wheel-made jug with thumbing around the base.

Date: 12th-14th century

Source: unknown. This type occurs at Bedford (Baker and Hassall 1979, 177).

Period 2 Later Prehistoric

A small amount (3 vessels) of abraded Iron Age pottery was recovered from the fills of features [632], [672] building 1, Period 4 and (663) Building 3, Period 4. Predominantly grog and flint tempered (FO2) no ceramic forms were identified. The pottery was residual found in features associated with Period 4 Saxo-Norman.

No structural features dating to the Roman period were identified; residual sherds from five Roman vessels were recovered from (550), Period 3, lower brown earth layer (586) and the fills of post holes [591] and [632] in Building 1, Period Four. The fabrics are exclusively coarseware, consisting of both shell-tempered and sandy wares (types R13 and R06). A single shell-tempered vessel, abraded and leached, probably derives from kilns at Harrold (Beds) where a major shelly ware industry is known from the Roman period (Brown 1994). The sand-tempered greyware vessels are of unknown source.

Period 3 Early-mid Saxon

The site produced sherds from nineteen Saxon vessels, the majority of which were mixed in contexts with pottery of a later date. An unabraded, plain rimmed jar in fabric type A16 Fig 12, no1) was found in gully fill [413](412), dating the disuse of the gully to Period 3. External sooting suggests its use as a cooking vessel.

Residual vessels were recovered predominantly from layers (104) (Fig 12, no.2) and (586) within the lower brown earth, from Ditches 1, 2 and 3 and from pits/post-holes [595] and [611] in Building 1. Vessels of coarse mixed quartz (A16) predominated. Other sand tempered Saxon fabrics represented were types A18 (2 vessels) and A23 (2 vessels). A single sherd of flint tempered fabric (A22) derived from lower brown earth layer (586).

All the sherds are hand-made and undecorated, two have burnished exterior surfaces and seem likely to represent coarse domestic vessels. Traces of an internal black residue on a sand-tempered vessel (A23) from fill (673) in trench [672] in Building 1, indicates that it may have been used either as a storage vessel or perhaps as a receptacle for contents which were deliberately burnt.

Saxon sand tempered fabrics are thought to span the early to mid Saxon period; they have been found in contexts of this date in Bedford (Baker and Hassall 1979, 152) and at Pennyland/Hartigans, Milton Keynes (Blinkhorn 1993, 246). The Saxon fabrics found with Saxo-Norman pottery types, weighing only 3g, are probably residual in those contexts. An early Anglo-Saxon cemetery was excavated at Kempston in the 1860s; the finds were deposited at the British and Bedford Museums (Kennett 1972). Domestic Anglo-Saxon pottery has only been found sporadically in the area, but the few finds of this date from Kempston Manor add to their distribution.

Period 4 Saxo-Norman

Shell tempered wares of characteristic St Neots type of the 10th and 11th centuries, (B01) and sub-types (B01B, B01C), constituted 60% of the ceramic assemblage from the Kempston Manor excavation. In total, fifty-four vessels were represented, with recognisable forms including plain, straight-sided bowls and both bowls and jars with everted rims. Sooting on several sherds suggests the presence of utilitarian types, probably kitchen wares. Vessels with sooted exteriors may have been used as cooking pots, while the majority, which are unsooted, were probably used for storage and food consumption.

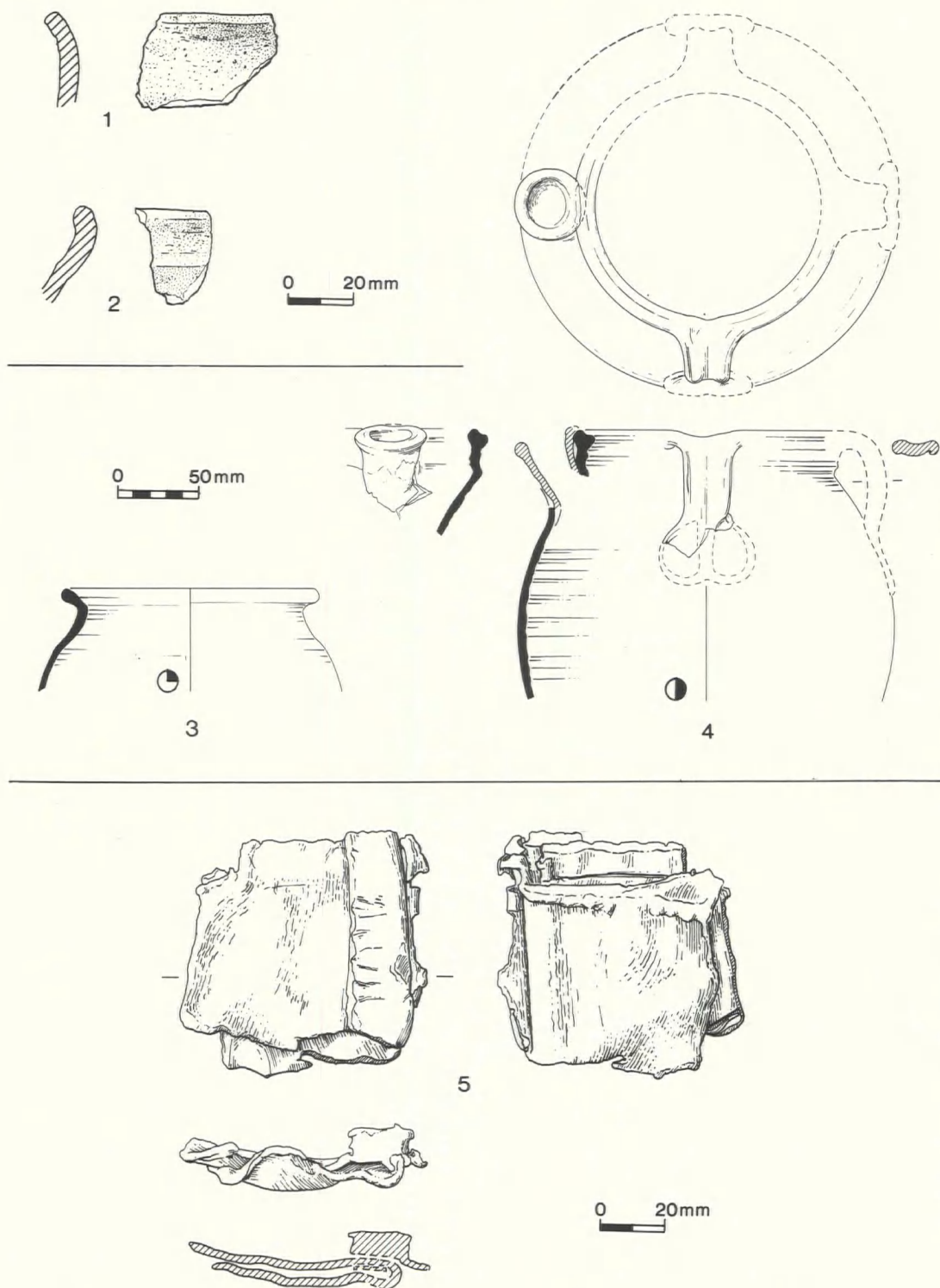


Fig 12 Nos 1-2, Anglo-Saxon pottery (scale 1:2); nos 3-4, Saxo-Norman pottery (scale 1:4); see table 1.
No 5 roofing/building fixture (scale 1:2)

Ditch 1

A large proportion of a Stamford ware (C12) spouted pitcher (Fig 12, no 4) was recovered from the upper fill (105) of Ditch 1 and from the lower brown earth layer (104). This might be an indicator of rapid in-filling of the ditch within a short space of time. The distinctive character of the fabric and glaze suggests a date in the mid-late eleventh century.

The spouted pitcher was the major article of Stamford ware to be traded (Kilmurry 1980, 166). Glazed pitchers were used for tableware and contrast with the utilitarian kitchenwares of St Neots type, with which the former is often associated.

Building 1

The majority of the Saxo-Norman ceramics (27 vessels) derived from Building 1. Sherds recovered from fills of post pit [417] and trench [632] date the occupation of this building to a period within the 10th-11th centuries.

Period 5 Medieval

Five vessels of early medieval date were found, largely mixed in contexts with ceramics of Saxo-Norman date. Medieval Shelly ware (B07) was represented by four vessels recovered from lower brown earth layer (586) and from fill of trench [672] within Building 1.

The construction and subsequent infilling of ditch [742] during this period is evidenced by the presence of a Medieval Shelly ware (B07) vessel in fill (741). This distinctive shell-tempered ware is thought to have derived from production sites at Olney (Bucks) and Harrold (Beds), which produced a range of domestic vessels throughout the twelfth and thirteenth centuries (Hall 1971; Mynard 1984).

A single sherd of a jug in a sandy fabric (C53) was recovered from the fill (645) of isolated post hole [644]. This type has been found on excavations in Bedford (Baker and Hassall 1979,

178) and at the deserted medieval village of Stratton (BCAS in prep). It may have been manufactured locally, although no production sites are known.

Tile and brick

Ninety-one fragments of flat, unglazed roof tile, one ridge tile and one brick, weighing 5348g, were recovered. Fragments of floor tile were recorded on site but not retained. The assemblage was examined by context and quantified by sherd count and weight. Quantification is shown in table 3, where totals refer to the number of sherds.

Other features recorded included the presence, shape and dimensions of peg-holes and of sooting and/or mortar. Where possible, the thickness of each tile was noted, although the assemblage proved too fragmentary for calculation of the number or probable size of complete tiles.

Three fabric types were defined, primarily by main inclusion and fabric colour. These are further discussed by Baker and Hassall (1979, 254).

Type A Shelly: Orange-buff-brown fabric with variable buff-grey core. Characterised by inclusions of abundant, well-sorted shell. Constitutes 2% of the total assemblage. (Period 4: Saxo-Norman).

Type B Sand and calcareous inclusions: Hard-fired light-dark buff/orange fabric tempered with abundant calcareous inclusions and sparse sub-angular/angular quartz. Some tiles in this fabric are characterised by a distinctive blue-grey core and many examples have deliberately smoothed upper surfaces. Leached calcareous inclusions result in a vesicular appearance. Constitutes 71% of the total assemblage. (Period 6: post-medieval).

Type O Orange sandy: Coarse, harsh, hard-fired orange/orange-brown fabric containing abundant sub-angular/angular quartz and sparse red and black iron ore. Constitutes 27% of the total assemblage. (Period 6: Post-medieval).

Although fragmentary, the building material is in good condition. The majority (66%) of the assemblage was concentrated in the northern area of the site and derived from masonry structures of

Illust no	Fabric code	Common name	Form	Context	Date
1	A16	coarse quartz	plain rimmed jar	412 gully	early-mid Saxon
2	A16	coarse quartz	upright rimmed jar	104 lower brown earth	early-mid Saxon
3	B01	St Neots-type	jar	613 post-hole Building 3	10th-11th century
4	C12	Stamford ware	spouted pitcher	105 ditch 1	mid-late 11th century

Table 2 Pottery illustrated in Fig 12

post-medieval date (Period 6). The remainder derived from scattered features in the Saxo-Norman period (Period 4), where most are likely to be intrusive.

Period 4 Saxo-Norman

Post hole [217] in Building 2 produced tile fragments exclusively in fabric O, while layers within the lower brown earth produced tile in both types O and B, mixed with St Neots-type ware (B01) of Saxo-Norman date. These tiles are likely to be intrusive.

A single fragment of shelly tile (Type A) was recovered from the upper horizon of the lower brown earth (404), in association with Saxo-Norman pottery of tenth-twelfth century date. This find is similar to that from Walton, Bucks, which has been dated to the twelfth century (Farley 1976, 252). Tiled roofs were not common until the 13th century, and this suggests a building which required a tiled roof, such as a kitchen or bake house (Moorhouse 1988, 41). Its presence may suggest a high status building lay near-by.

Period 6 Post-medieval

The majority (80%) of the assemblage within Period 6 was associated with Building 4 where there is evidence for a series of tile floors (508) within the structure in addition to tiles used as roofing material. Sixty-seven percent of the tiles recovered from this structure were in fabric type B, as were all tile fragments from Buildings 5 and 6. There was no distinction between fabric types in tiles used for surfaces and those used for the roofs. The floor tiles were all in fabric B. Tiles became a common roofing material in the 13th century, providing a durable alternative to thatch. In Bedfordshire, the first documented use of tiles is a description of a moated manor house at Park Farm, Eaton Bray in

1273 (Baker and Hassall 1979, 253).

The method of attachment to the roof supports might give an indication of date, with iron nails generally regarded as later than wooden pegs, the use of which was well established by the 13th century (Drury 1981, 127). The latter were used with round holes, while the former were used with square holes (Baker and Hassall 1979, 255). Traces of an iron roofing nail shank appeared to have corroded onto a tile fragment recovered from fill (700) of feature [701].

Thirty-nine fragments, mainly from Building 4, bore traces of mortar on surfaces and/or edges, with no evidence of mortar along broken edges. This suggests that few repairs were carried out and that broken tiles were more likely to have been completely replaced. The absence of repairs may indicate supplies of new tiles were readily available, and a measure of the prosperity of this site. Tiles in sandy fabrics O and B were probably manufactured nearby, utilising local boulder clay although no production centres are known.

A single fragment of brick in fabric type B was recovered from a floor surface (508) in Building 4. Not enough survived to measure dimensions. Too much emphasis should not be put on just one brick, but it does suggest that at least part of the building might have been built of brick. A further discussion of brick manufacture in Bedfordshire may be found in Cox (1979).

THE FLINT ASSEMBLAGE

(E McSloy)

Introduction

A total of forty six worked or burnt flint pieces were recovered from the excavation, weighing a total of 228.5g. Of this material, four pieces displayed secondary working in the form of continuous or

	Period 4			Period 6									
Fabric	I F	Brown earth		Building 4			Build- ing 5	Building 6		Isolated features			Total
	218	404	516	507	508	515	728	656	702	700	740	739	
Type A		1	1										2
Type B			19	3	24	6	1	4	1	2	2	2	64
Type O	1	1	8		11	5							26
Total	1	2	28	3	35	11	1	4	1	2	2	2	92

Table 3 Distribution of tile, quantified by sherd count. MS – Masonry Structure; IF – Isolated Feature

partial retouch and are here referred to as tools. Two were 'cores', one piece was fire crazed but otherwise unworked and the remainder were struck flakes or blades without secondary working.

Condition

Much of the flint from Kempston Manor was broken or showed edge damage. The residuality of the assemblage accounts in part for this, as does the delicate nature of the blade pieces. Fifteen pieces, dating to the Mesolithic or earlier Neolithic, displayed patination in the form of mottled patches of a greenish or bluish hue. This patination is a factor of post-depositional chemical discolouration of the surface of the flint. It reflects its depositional environment and with these examples seems to be an indicator of their antiquity.

Residuality and dating

The majority of the flint material from Kempston Manor is residual, recovered from contexts with ceramics and other artefacts dating to beyond the period of flint use. The assemblage is dated wholly in isolation from the associated artefacts, on the basis of distinctive tool types, an assessment of flint quality, and characteristic techniques of manufacture, including flake versus blade, hard versus soft hammer and thickness of butt (Holgate 1988).

The flint assemblage ranges in date from the Mesolithic to the later Neolithic or Bronze Age.

Mesolithic/early Neolithic

Twenty-nine pieces, including three tools and one core tool date to this period. A single feature, pit [578], contained exclusively mesolithic material, including small debitage.

Debitage

Struck flint waste of this period is dominated by blades (where the length is at least 1.5 times greater than the width). It is generally struck from good quality flint,

predominantly by using a soft hammer or possibly a punch.

Cores

From (404) rejuvenation flake, struck from blade core. Utilised as convex end-scraper by use of semi-abrupt and invasive retouch. Good quality, dark grey flint with mottled grey-green patina (Fig 13.2).

Tools

Rf 5 Blade fragment, parallel sided with three removal scars on dorsal. One edge has semi-circular notch worked into it, executed by abrupt retouch. Good quality black flint.

Context (555)

Rf 7 Microlith or bladelet, with opposing edges retouched to form point. Distal end is damaged and it is unclear in what manner bulb was removed. Good quality, grey flint (Fig 13.7).

Context (579)

Rf 8 Narrow, pyramidal sectioned blade. Proximal end of one face displays abrupt and invasive retouch along approximately half its length. Probably utilised as drill or piercer. Good quality honey coloured flint (Fig 13.8).

Context (675)

Later Neolithic/Bronze Age

Eleven flakes and one core displayed characteristics typical of later neolithic or Bronze Age date.

Debitage

Later Neolithic and Bronze Age debitage is characterised by a predominance of flakes, more often than not struck with a hard hammer from flint of variable quality.

Cores

Rf 4 Crude flake core. Multi platform, with flakes removed in a seemingly undisciplined manner. Moderate quality black flint with thick buff coloured cortex, indicating parent nodule was of small cobble size.

Context (530).

Period	Context No.	Context type	Quantity and date	Date
1	579	pit	1 x microlith point? 4 x blades/bladelets 1 x misc. fragment	Mesolithic Mesolithic/early neolithic
2	545	ditch	2 x flakes	Later neolithic/BA
2	512	alluvium	2 x bladelets	Mesolithic
2	530	scoop	1 x core	Later neolithic/BA
2	518	ditch	2 x blades	Mesolithic/early neolithic
4-5	303, 404, 500	lower brown earth	1 x bladelet core; 3 x blades; 2 x frags debitage	Mesolithic Mesolithic Later neolithic/BA
4	105	Ditch 1	1 x flake 1 x fragment	Later neolithic/BA Undated
4	538	post hole (Building 1)	1 x bladelet	Mesolithic
4	611	post hole (Building 1)	1 x flake	Later neolithic/ba
4	623, 506	post holes (Building 1)	4 x blades/bladelets 2 x flakes	Mesolithic Later neolithic/BA
4	633	slot (Building 1)	1 x blade	Mesolithic/early neolithic
4	714	post hole (Isolated)	1 x blade fragment	Mesolithic/early neolithic
6	700	post hole	1 x flake	Later neolithic/BA
6	507	demolition layer	1 x flake	Later neolithic/BA
—	511	natural brickearth	1 x blade fragment; 1 x flake	Mesolithic/early neolithic Later neolithic/BA
—	555	compacted clay layer layer	3 x blades 1 x blade/tool	Mesolithic/early neolithic Mesolithic/early neolithic
—	556, 586	lower brown earth	1 x blade 1 x rejuvenation flake 1 x blade/tool 2 x flakes 1 x fragment	Mesolithic/early neolithic Mesolithic Mesolithic Later neolithic/BA Undated
—	675	tree bowl	1 x blade tool	Mesolithic

Table 4 Flint by period and context

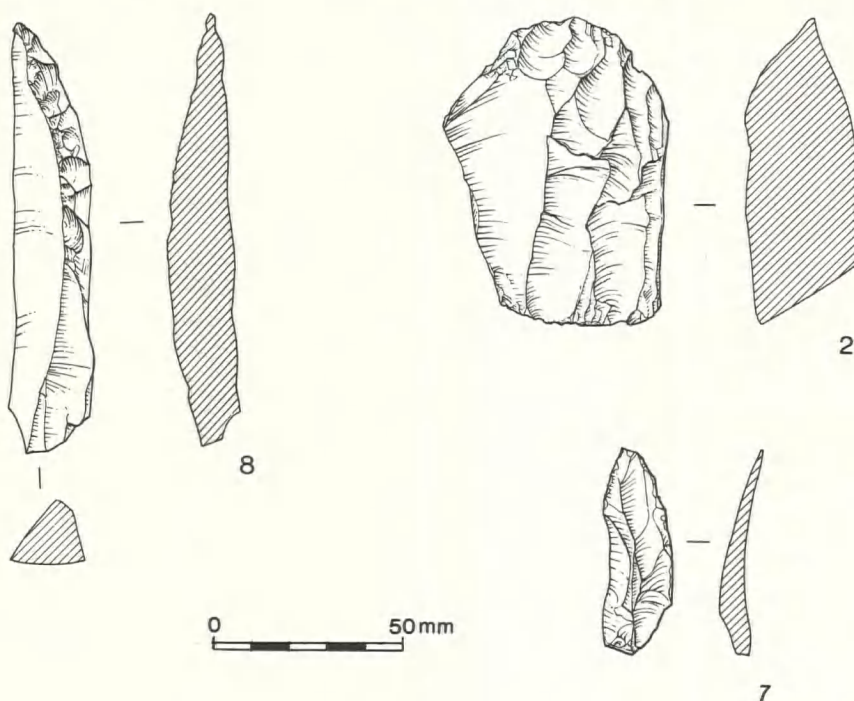


Fig 13 Flint material from period 1

Ironwork

RF 3 Decorative stud with square-sectioned stem and domed head; incomplete. Medieval L21.9mm. Ditch 1: (105), Period Four.

RF 6 Complete iron 'fiddle key' shoeing nail. The head is a flat semi-circle in profile, no thicker than the shank, which tapers to a point to form a flat chisel edge. As the nail is straight and not double-clenched, it is probably unused. This form of nail was used on horseshoes of 'Norman' type, characterised by their lobate edge and large countersunk nailholes, which first appear in the mid-late 11th

century continuing in use until the mid 12th century (Clark 1986, 2, Beresford 1987, 184). L 41.4mm. Building 1: (506), Period 4.

Lead

RF 1 (Fig 12) Cast lead object, comprising two symmetrical square lead sheets (maximum thickness 3.5mm) surmounted by a raised central ridge of rectangular section (maximum thickness 7mm). The object appears to have been flattened from its original form. Identification remains tentative. The object is a building fixture, probably from guttering or roofing. The central raised ridge

THE METALWORK ASSEMBLAGE (J Wells)

Period	Context	Context type	Material	Object	Suggested date
4	105	Ditch [104] Ditch 1	Lead	?Roofing fixture RF 1	10-11th century
4	105	As above	Iron	Stud RF 3	medieval
4	506	Pit [505] Building 1	Iron	Shoeing nail RF 6	11-12th century

Table 5 Metal artefacts by period and context

suggests roofing, as does the thickness of the attached sheets. Roofing lead is known to have been cast into sheets c.4mm thick and joined at the sides by being rolled around the edge of the adjoining sheet (Homer 1991, 64).

Documentary evidence for leadworking and leadworkers exists from the early 11th century, when the essential use of lead in permanent high status buildings resulted in the recognition of lead working as a separate trade (Homer 1991, 64). L69 x 67mm; wt 282g
Ditch 1: (105), Period 4.

THE GLASS ASSEMBLAGE (J Wells)

Window Glass

Late medieval or post-medieval glass fragment measuring 30 x 9 x 1.5mm, surfaces covered with an opaque matt brown corrosion product, beneath which are the remains of a green tinged translucent core. The fragment retains a portion of one grozed edge, which would have been enclosed in the came. Ceramic evidence from the fills of features within Building 1 date its construction to the 10th-11th centuries. The window glass fragment must therefore be regarded as intrusive. It may have originated from post-medieval feature [701] which lies in the vicinity, or have been disturbed during post-medieval site clearance or spade cultivation. Building 1: Context (414), Period 4.

Two glass fragments (joining), total measurement 41 x 19 x 10mm, of translucent yellow/green colour. Associated with clay pipe fragments, flat roof tile and vessel glass fragments (see below) of a late or post medieval date. The thickness of the window glass suggests a similar date. During the late and post-medieval periods window glass was made less

than 2mm in thickness to improve the translucency of coloured potash glass. This type of glass became more widely available for domestic windows in the late 16th and 17th centuries with the expansion of the English glass industry (Oakley 1979, 296).
Slot [701]: Context (700), Period 6.

Vessel Glass

Two fragments (joining) of wine bottle neck and rim, translucent olive green in colour, largely obscured by an opaque matt brown corrosion product. Maximum thickness 4.0mm. Identified as forming part of the rim and lip of a 17th century wine bottle. The vessel is of 'onion' type, with a stubby neck and dumpy body, and dates to the 1680s. Vessels of this type are extremely common and are similar to examples from excavations in Bedford (Baker and Hassall 1979, Fig 169: 1156).
Slot [701]: Context (700), Period 6.

Fragment of wine bottle, dark green in colour, heavily encrusted with a brown corrosion product and a hard white residue (probably mortar). Maximum thickness 8.0mm. Context (739), Period 6.

Clear, colourless fragment of indeterminate form, slightly curving. The composition of the glass (soda glass as opposed to pot-ash) indicates the fragment may be of late post-medieval date. Maximum thickness 0.9mm.
Context (673), Period 4.

THE FAUNAL EVIDENCE (E Hutchins)

The bone from the Kempston site is highly fragmented, and the number of identifiable fragments small. Table 7 shows the identified fragments, period and context type. The fusion data is after Silver (1969), and the mandibular ageing is after Grant (1982). Most of the bones are from

Period	Context	Context type	Material	Description	Date
4	414	Post hole [413] Building 1	Glass	Window frag	16-17th century
4	673	Trench [672] Building 1	Glass	Vess frag	Indeterminate
6	700	Slot [701]	Glass	Window frag	16-17th century
6	700	As above	Glass	Wine bottle	16-17th century
6	739	Trackway	Glass	Wine bottle	late 17th century

Table 6 Glass artefacts by period and context

Period Four 10/11th century period contexts, an under-represented period for faunal studies (Davis 1987). Sheep, horse, pig, dog and cow are all present. The bone is most probably refuse, some of which has suffered fragmentation and heavy gnawing.

Table 7 shows all the identifiable fragments, in context order. Note that where the element has the comment 'butchered', this indicates the presence of disarticulation or defleshing cut-marks. The comment 'gnawed' indicates a substantial amount of dog gnaw-marks.

Species Representation and Exploitation

Pigs (Sus Sp.)

Although pigs are important all through the Saxon period, their bones often only form a tiny component of the faunal remains from a site. The laws of Ine demonstrate the importance of pigs by levying a fine of 60 shillings for the cutting down of a tree that could provide shelter for 30 swine. Clutton-Brock (1976) asserts that free-range pigs may have outnumbered all other livestock at the time.

Period	Context No.	Context type	Species	Element
4-5	104	brown earth	Cow	Right proximal radius, butchered
			Sheep	Radius shaft
			Pig	Tusk
			Pig	Mandible
			Cow??	2 x teeth, damaged
4	105	upper fill (Ditch 1)	Cow	Left humerus shaft, gnawed
			Dog	Left humerus shaft
			Dog	Right humerus shaft
4-5	206	brown earth	Sheep	Right astralagus
			Pig	Left calcaneus
4	214	upper fill (Ditch 3)	Pig	3 x teeth
			Horse	tooth
			Pig	Mandible
			Cow	Phalanx 1, butchered
			Cow?	2 x Vertebrae
5	415	isolated post-hole	Horse?	Smashed tooth
4	506	Building 1	Sheep	Mandibular fragment
			Sheep	1st/2nd Molar
			Pig?	Right radius shaft fragment; gnawed and butchered
			Cow	Vertebra fragment
4-5	516	brown earth	Sheep	Right proximal metatarsal; gnawed
4-5	586	layer, lower brown earth	Horse	Left metacarpal II
			Horse	Left metacarpal
			Horse	Left scapula
			Horse	Left scapula fragment
			Cow	Right pelvis fragment; gnawed, butchered
4	593	Building 1	Sheep	Left distal humerus, butchered
4	595	Building 2	?	Wishbone (prob. chicken or goose)
			Cow	Mandible (adult; over 36 months)
4	611	fill of post-hole (Structure 1)	?	Vertebra fragment
			Cow	Right proximal femur, fusing ($\pm$ 42 months)
4	613	Structure 1	Horse	Scapula fragment
4	659	isolated post-hole	Sheep	Vertebra
4	664	post-pipe Building 4	Sheep	Right proximal ulna, butchered
4	673	Building 1	Sheep	Left distal humerus
4	714	isolated post-hole	Cow	Proximal radius shaft fragment, gnawed.

Table 7 Identified Faunal Evidence

Cattle (Bos sp.)

The age of the mandible in context (595) and the fusion data from the femur in context (611) indicate two individuals, both over 36 months old. Each smallholding or tun would have had a small number of cattle, providing milk whilst being fattened and may also have been employed to provide traction for a plough.

Horses (Equus sp.)

Horses are rare on Saxon sites (1.3% of remains from West Stow; 2% of remains from Wicken Bonhunt, Crabtree 1990), probably because of the greater fodder and care required, and less practicality when compared to cattle. Most estates during the Saxo-Norman period had some obligation to maintain horses for military purposes (Campbell, 1982).

Sheep/Goats (Ovis/Caprea sp.)

The sheep/goat remains are probably those of sheep; goats are very uncommon, especially in East Anglia at this time. Of the sheep/goat bones recovered from West Stow, approximately 1% were identified as goat (Crabtree 1990). Sheep are probably the most common domesticated of the early Saxon period; they then decline in numbers until they gain great importance during medieval times (Harman 1985). Sheep may have been more popular in less wooded areas with plenty of pasture. As human populations rose towards the end of the Saxon period, so more and more land was put to arable, with a subsequent decline in sheep and pig numbers.

DISCUSSION

The archaeological evidence at Kempston Manor focuses attention on two periods. In the earliest mesolithic flint at Kempston indicates exploitation of the flood plain of the River Ouse at a time when elsewhere in the valley activity was on the increase (Ward 1987). The location of similar assemblages at Clapham (Dawson 1988), at Kempston Church End and Eastcotts all suggest seasonal occupation. Despite the discovery of flint material in the alluvial horizon there is nothing to suggest that alluvial deposition was occurring at this time and its presence may be the result of later prehistoric re-working, probably ploughing.

In Period 4 the proximity of the excavations to the pre-1815 Manor House has concentrated attention on the recovery of evidence for earlier manorial buildings. Documentary evidence has established the history of the Kempston area from the 11th century and the possibility that the current

site is a manor, part of William the Conqueror's niece, Countess Judith's, holding (Wood 1984 33ff).

The archaeological evidence for the character of occupation at the site is at best ambiguous. In the early to middle Saxon period the proximity of settlement activity is attested by the ceramics assemblage, but it is not until the Saxo-Norman period that there is structural evidence of settlement. At least three timber structures (Fig 5) comprising two buildings, 1 & 2, nearly perpendicular to each other, with a third, at an angle, between them may be part of the manorial complex. However the presence of ditches 2 and 3 indicates that changes to the settlement were occurring during this period, although the extent of excavation and lack of detailed dating evidence precludes any firm conclusions. In a recent discussion concerning the development of manorial structures from c1000 to 1250, a model comprising an open hall and separate chamber established on a common axis has been proposed (Blair 1993, 2-16) for high status sites. Documentary evidence suggests this model may be valid from as early as AD 900, although the layout of structures in the 10th century in more rural locations may be more fluid than Blair's model suggests.

The structures at Kempston could be interpreted as enclosing a sub-rectangular area. The absence of external surfaces associated with the buildings in Period 4 though is problematic. Evidence locally at Yarlswood and Blackburn Hall indicate cobbled surfaces in proximity to manorial buildings, but at Stratton cobbling survived only on the edges of the later moated site and any larger areas were probably ploughed away following abandonment of the site. At Grove Priory, the Royal Manor of Leighton, there are only slight gravel spreads close to buildings considered to be of high status (BCAS forthcoming).

At Kempston the near absence of finds presents problems of dating and characterisation, although their paucity may indicate structures of high, possibly manorial, status. This impression is reinforced by the recovery of a fragment of a lead roofing fixture from ditch 1, considered an indication of higher status. Thus the Period 4 buildings at Kempston could represent structures which were part of the manorial complex either barns or storehouses but possibly part of a domestic range.

In the later Period 6 the location of the manor to the northeast was established by the survival of the medieval building which was demolished in 1815. It is likely that the construction of this house indicates only a slight shift of the manorial focus as there is

no evidence that the Period 4 buildings were ploughed or that the area returned to agriculture.

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A moated site in Tempsford Park, Tempsford

DREW SHOTLIFF

With contributions by Stephen Coleman, Andy Thomas, Jackie Wells, Mark Robinson,
Tony Roberts, Richard Macphail, Gill Cruise and with illustrations
by Cecily Marshall

SUMMARY

An archaeological field evaluation in advance of a proposed road scheme has elucidated the history of a moated site in Tempsford Park. The moat was constructed in the 13th century on the site of a pre-existing settlement. It was not occupied beyond the end of the 15th century. In addition to structural and artefactual evidence, the study of charred plant remains and soil micromorphology has provided data on the essentially domestic and agricultural activity taking place on the site. Limited documentary evidence suggests the moated site may be identified with the capital messuage of Brayes Manor. Both the earlier occupation and the moated site itself are considered as elements of the predominantly non-nucleated pattern of settlement in the Great Ouse valley during the pre-Conquest and medieval periods.

INTRODUCTION

Tempsford Park lies within the village of Tempsford in NE Bedfordshire, immediately to the E of the confluence of the rivers Great Ouse and Ivel (Fig 1). The modern settlement consists principally of two ends, Tempsford Church End to the SW of the park and Langford End to the N. The park was created in the late 18th century and is currently owned by Kier Group Ltd. The A1(T) runs alongside the W edge of the park.

The Department of Transport's Tempsford Overbridge Scheme proposed the construction of a grade separated junction for the village, designed to allow the closure of a number of central gaps on the A1(T) by providing a system of link roads and a bridge for local traffic. Following a Public Inquiry in 1989 the route of the link road between Station Road and Everton Road was re-sited along the W fringes of Tempsford Park.

The re-sited link road affected a group of medieval earthworks, recorded in the County Historic Environment Record (HER 9726). Early edition, large scale OS maps had described the earthworks as fishponds but their true nature was

only fully appreciated following a site visit in 1986 by staff of the County Council Planning Department's Conservation and Archaeology Section. They were recognised as a moated site, associated with a spread of medieval occupation debris extending c70m into the park from the S side of Station Road. The moated site appeared to form an integral part of this small, linear medieval settlement and it was suggested that it represented an important, possibly manorial, homestead. The absence of substantial, clearly recognisable settlement earthworks to the E of the moat suggested that deliberate demolition and levelling might have taken place once occupation of the area had ceased.

In accordance with the guidelines contained in the Department of the Environment's *Planning Policy Guidance Note 16: Archaeology and Planning* (HMSO 1990) the Department of Transport commissioned an archaeological field evaluation of the moated site and its immediate environs for inclusion in its Environmental Impact Statement. A programme of works was agreed between the Department of Transport, their agents (the County Council Department of Transport & Engineering) and Bedfordshire County Council Archaeology Service, who carried out the fieldwork between May and June 1993. The aims of the evaluation were to determine the extent, character, condition and date of any surviving archaeological deposits and to assess the impact of the overbridge scheme on those deposits.

The programme of archaeological works comprised earthwork survey, geophysical survey, trial trenching and boreholes. The fieldwork was supplemented by documentary research. A report was prepared for the Department of Transport on the basis of the analysis of the results of the field evaluation (BCCAS 1993). In March 1994 the overbridge scheme was withdrawn by the Department of Transport following a review of its national roads programme. No further archaeological work has since taken place and at the time of writing none is envisaged.

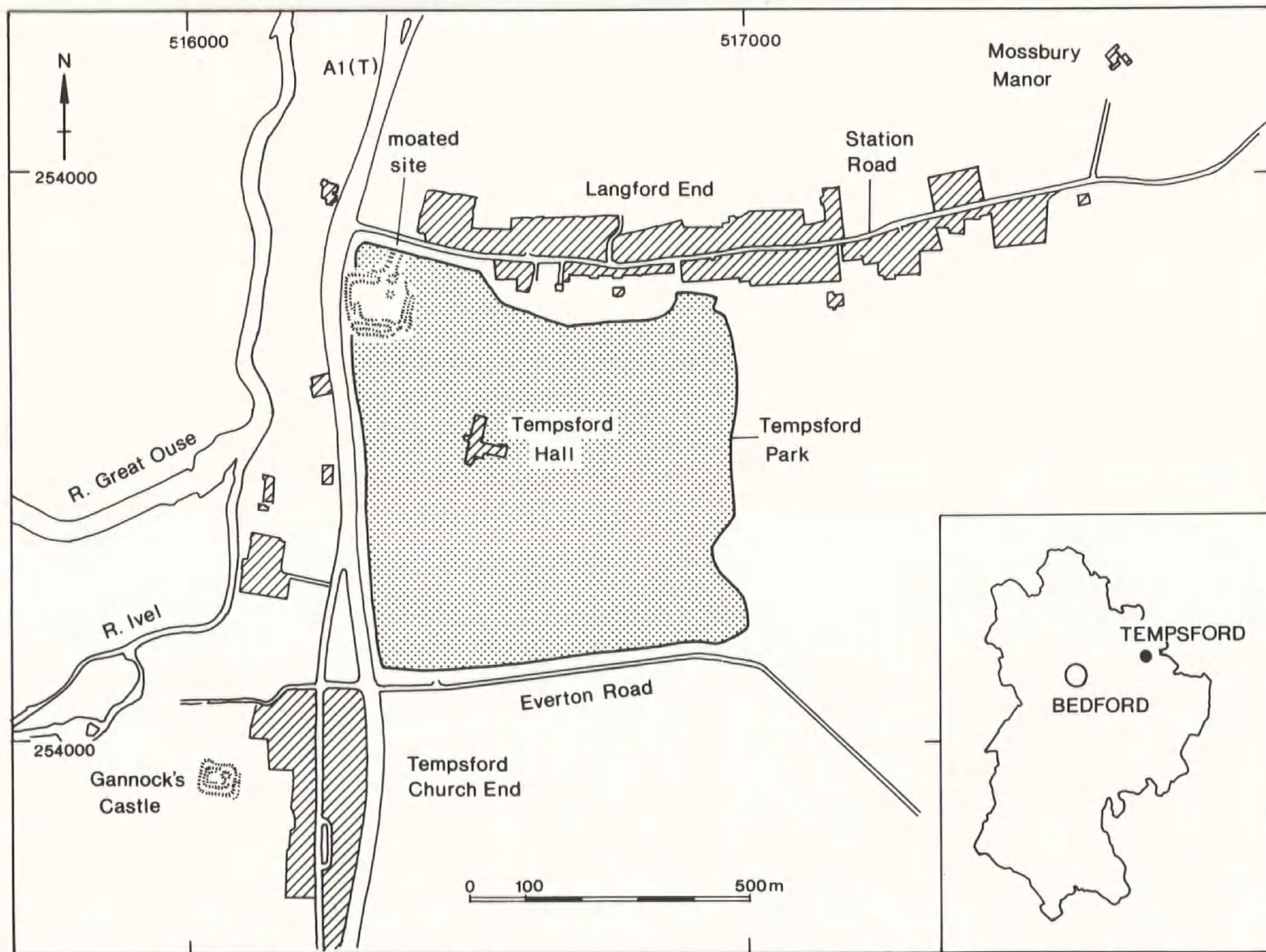


Fig 1 Location of the moated site in Tempsford Park

The field evaluation, together with the subsequent analysis of the fieldwork records, were designed to address a specific set of questions about the site, arising out of a PPG 16 planning condition. Only around 3% of the moated site was investigated. It is, therefore, difficult to draw the same firm conclusions that would be possible in the case of a large scale excavation. Nonetheless, the interest and importance of the results are sufficient to merit wider publication, particularly in view of the dearth of excavated evidence from moated sites in Bedfordshire. A summary report on the site has previously appeared in the *Medieval Settlement Research Group Annual Report* 8 1993, 56-57.

SITE LOCATION AND DESCRIPTION

The study area, determined by the footprint of the proposed link road, lay in the NW corner of Tempsford Park at the junction of the A1(T) and Station Road. Two hundred metres to the W is the river Great Ouse. Seven hundred metres to the S is Tempsford parish church, sited at the junction of the former course of the A1 and the Everton to Potton road.

Topographically the study area is situated at the N end of a low N-S running ridge, formed by a localised deposit of boulder clay. The ground surface slopes down gently from S to N from approximately 19.20m OD to 17.40m OD. In the vicinity of the moated site itself the boulder clay is overlain by river valley gravels and alluvium. The soils are imperfectly drained, gleyed brown earths of the Milton Association (King 1969). The agricultural classification of the land is grade 3; it was under permanent pasture at the time of the fieldwork.

HISTORICAL BACKGROUND

Stephen Coleman

There are no direct documentary references to the moated site itself in the County Record Office. However, a number of maps and documents exist which do throw some light on its history.

The earliest known large scale map of the area is an estate map possibly dating to 1829 (CRO: X 1/41). This shows the N and W arms of the moat as water-filled, in addition to the pond at the SE corner, which is the only present-day, permanent water feature. The OS six inch 1st Edition (surveyed in 1882) shows the same features but additionally indicates that the S arm of the moat was water-filled. A clear gap between the S and W arms is

shown on this map. The water-filled features are annotated as "Stew Ponds". On the 1901 OS 25 inch 2nd Edition only the present-day pond is shown as a "Stew Pond". The N and W arms are shown as marshy, linear features, suggesting that they were only water-filled during the wetter, winter months (a situation which still holds today).

The history of Tempsford Park is briefly as follows. In 1769 Sir Gillies Payne bought a considerable quantity of property in the area, including the Manors of Tempsford, Brayes and Draytons. Amongst his purchases were the Tempsford manor house, which formerly stood near Tempsford Lock at the confluence of the Great Ouse and the Ivel and "... all that Close and Homestall called Brayes Manor Pasture the Meadow Ground in the Common Meadows and several pieces and parcels of Arable Land in the common fields which said last mentioned premises contains together by estimation one hundred and five Acres and one Rood little more or less ..." (CRO: WY102-3). The early history of the Manors of Brayes and Draytons is contrasting (VCH 1912, 251). Brayes Manor has been traced back to a two hide estate recorded in Domesday Book. At that time the land was held of the king by Richard Poynant and in the pre-Conquest period had been held by three freemen. Draytons Manor only came into existence in 1297 when the Manor of Tempsford divided into two due to co-heiresses. It is possible that the new manor did not have a capital messuage; it may have been managed as an economic unit from elsewhere. Draytons Manor was subsequently re-united with the main manor in 1565-6 under the ownership of George Keynsham; the latter also purchased Brayes Manor in 1565.

Tempsford was enclosed in 1778 and, partly on the former common field land allotted to him, Sir Gillies, at some time before his death in 1801, laid out Tempsford Park and built a mansion house to replace the old manor house next to the river.

No maps, pre-dating the creation of Tempsford Park, not even the enclosure map, survive to give an impression of the pre-enclosure landscape. It is thus difficult to ascertain how much of the park was former common field land, allotted to Sir Gillies at the enclosure, and how much was former medieval closes already in his ownership. However, despite its limitations, the historic map evidence does appear to suggest that a number of former closes were incorporated into the park. Outside the limits of the park, the OS six inch 1st Edition shows long, narrow, partially tree-lined properties fronting on to both sides of Station Road for almost its entire

length. (This part of the settlement was known as Lambcourt or Lampitt End in the medieval period). Within the N part of the park itself rows of trees, forming a broken rectilinear pattern, appear to indicate the position of further medieval closes. Amongst these would have been the close in which the moated site stood. It seems likely that the S part of the park was laid out on former common field land.

Unfortunately no pre-enclosure field names, which might have indicated to which property the moated site belonged, are known from the area taken into the park. It is at least possible, however, that the moated site lay within "... *that Close ... called Brayes Manor Pasture...*", purchased by Sir Gillies in 1769. Neither this field name nor any other name incorporating Brayes Manor is known from elsewhere in the parish. By contrast, the other definite moated site in the historic parish of Tempsford, Gannock's Castle, gave rise to the field name, Gannock's Close. A possible moated site at the E extremity of Langford End is associated with Mossbury Manor. At the enclosure in 1778, Sir Gillies' allotments of common field land would probably have been consolidated around closes that he already owned in Langford End, allowing him ultimately to establish the park. If it is assumed that these included "... *that Close ... called Brayes Manor Pasture...*", then it may be inferred that the moated site represents the one time capital messuage of Brayes Manor.

THE ARCHAEOLOGICAL FIELD EVALUATION

Method statement

The field evaluation was structured around a sequence of investigative techniques, each of which informed and partly determined the next stage of the fieldwork.

An earthwork survey of the moated site itself and its immediate surroundings was carried out by Stephen Coleman. This not only provided a detailed record of the site in advance of any excavation but also helped to identify areas of disturbance resulting from modern service runs. Geophysical Surveys of Bradford carried out both a gradiometer and a resistance survey. Following the completion of these non-intrusive surveys, nine trial trenches and three boreholes were positioned within the proposed road corridor. These were designed to examine both the moated site itself and the surrounding land to the N and S.

During the fieldwork and analysis, expert advice and assistance were sought from a number of external archaeological specialists. Their technical reports form part of the site archive. Extracts have been incorporated into this report as appropriate.

Earthwork survey (Figs 2 and 3)

The moat itself and all adjoining earthworks were surveyed. To the NE along the Station Road frontage lay a c70m wide band of very irregular, possible earthworks, defined to the south by a possible boundary bank. None of these features was surveyed. No earthworks were visible in the parkland to the S of the moated site.

The N, S and W arms of the moat were clearly defined, with the base of the ditch up to 1.28m lower than the surrounding ground surface. The S arm appeared to have been partially infilled during the laying of a water main across the site. Initially it was believed that the E arm, which (assuming the moat was originally square in shape) might have been expected to run northwards from the NE corner of the existing pond, had been similarly infilled during the construction of an oil pipeline. However, the historic map evidence suggests that from at least the early 19th century the E arm was no longer visible. Two sub-circular hollows, 0.27m and 0.54m deep, appeared to be all that remained of the E arm of the moat. There was no evidence for any streams feeding into the moat. It was presumably filled by seepage of groundwater at the interface of the river gravel terrace and the underlying boulder clay.

The internal platform was relatively featureless and level. Only to the N was it noticeably higher (up to 0.60m) than the ground surface beyond the moat. The enclosed area measured 70m N-S and c65m E-W, defining an area of approximately 0.45ha (1.1 acres). A narrow gap (3m wide) in the SW corner separated the W and S arms of the moat. This may be the result of relatively modern infilling; the central stretch of the W arm was 1.49m deeper than the central stretch of the S arm. However, the OS six inch 1st Edition map also shows a break in this part of the moat's circuit.

The S arm of the moat was defined by an external bank, 0.42m high. A low external bank also abutted the E half of the N arm. To the E this bank merged into a rectangular, terraced area, 15m wide, which led away from the NE corner of the moat, site of a probable entrance causeway. The S half of the W arm and the whole of the S arm were defined by a continuous internal bank, up to 0.53m high. This

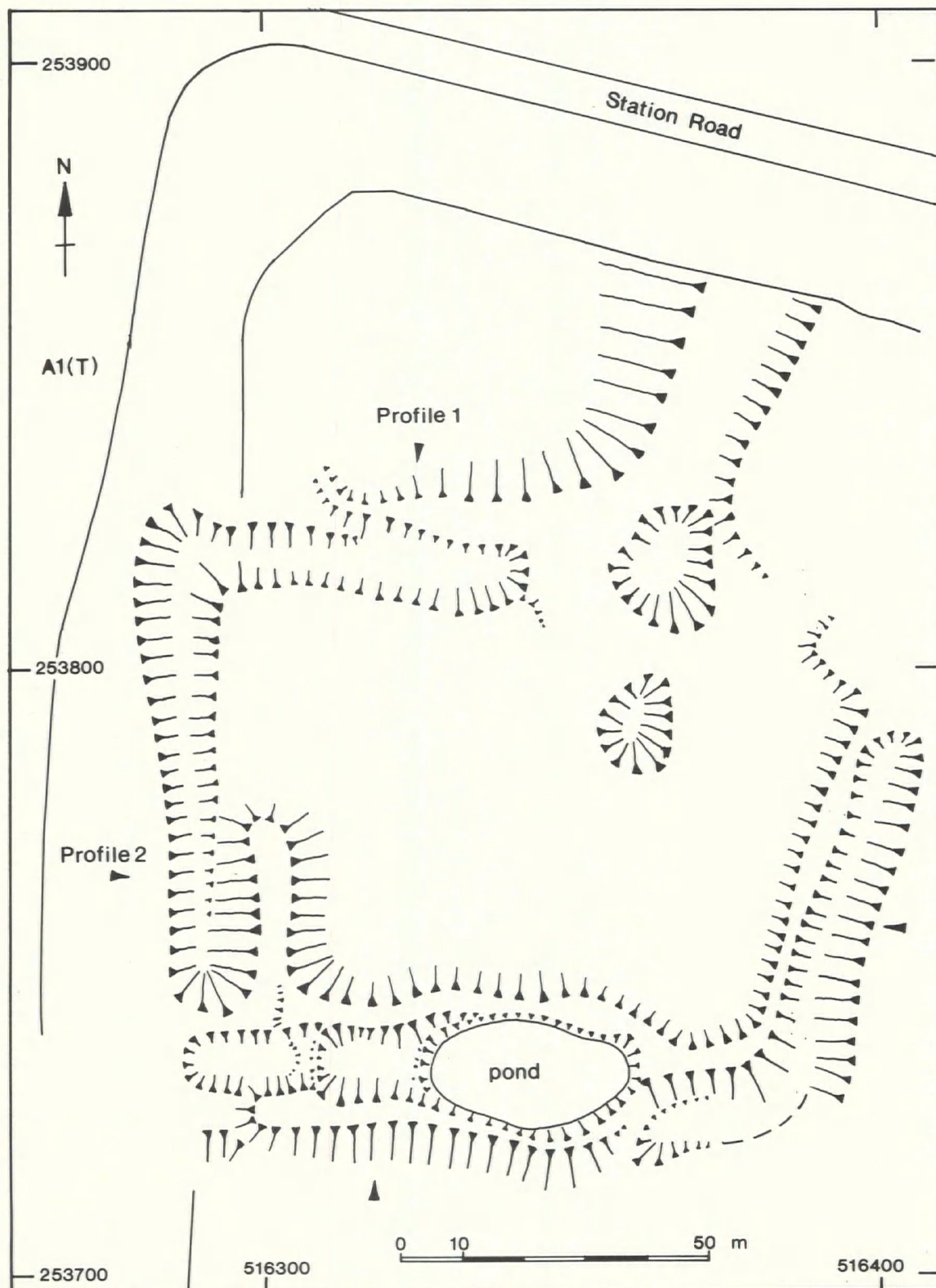


Fig 2 Earthwork survey

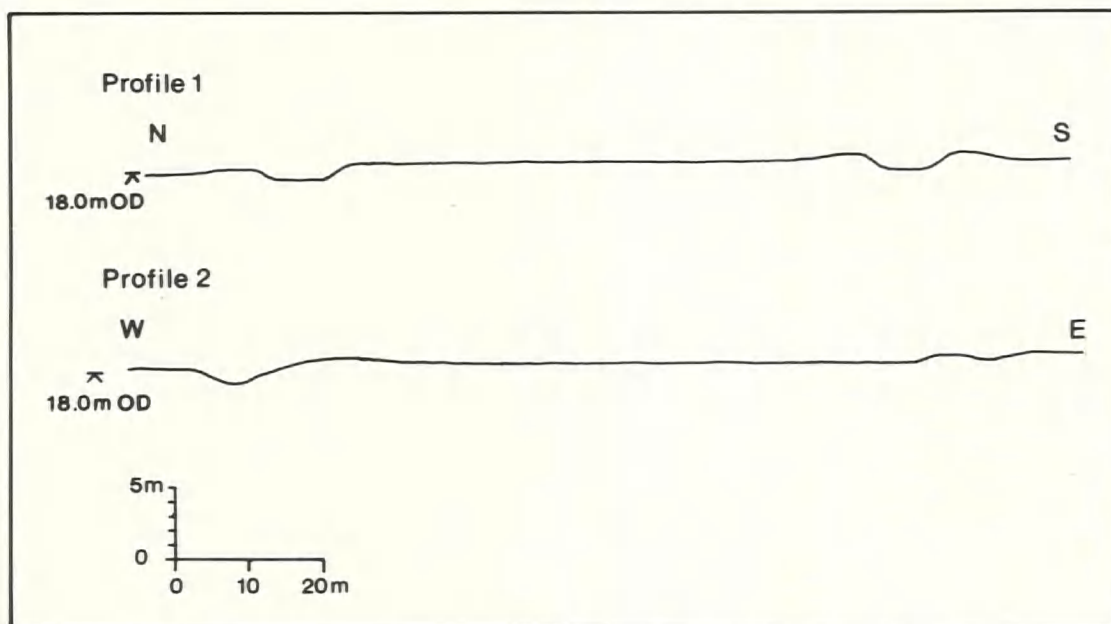


Fig 3 Profiles across the moated site

crossed the putative E arm of the moat and extended a further 20m before turning N. Outside of the moat this bank was defined on its S and E sides by a shallow ditch up to 0.36m deep.

Geophysical survey (Figs 4 and 5)

A combination of magnetic and earth resistance survey was undertaken by Geophysical Surveys of Bradford. The areas to be surveyed were laid out in a mesh of 20m x 20m grids. A Geoscan FM36 fluxgate gradiometer was used to log magnetic readings at 0.5m intervals along one axis in 1m traverses, giving 800 readings per grid. A Geoscan RM15 resistance meter was used to log resistance readings at 1m intervals, giving 400 readings per grid.

The gradiometer survey included the moated site, adjacent areas to the N and S and a small part of the earthwork complex to the E of the moat, 1.38ha in total. The resistance survey was restricted to the moat platform and part of the adjacent area to the N, 0.6ha in total.

The oil pipe to the E of the moat produced a strong ferrous response on the gradiometer survey. Strong magnetic disturbance, indicative of infilling with modern debris, was encountered over the N and S arms of the moat. On the moat platform a number of pit and ditch-like magnetic anomalies were recorded; some of the latter appeared to

represent gullies surrounding former buildings. The resistance survey detected a band of high resistance, up to 30m wide, along the E side of the platform. This increased in intensity towards the NE corner of the moat and was interpreted as a buried rubble spread or cobbled surface. To the E it was bounded by a contrasting low resistance anomaly, apparently the infilled E arm of the moat. A similar band of low resistance was detected over the N arm of the moat.

The area to the S of the moat was magnetically quiet, with the exception of two weak linear trends, which may be the result of modern cultivation or possibly sheep tracks.

The gradiometer survey of the small area to the E of the moat was suggestive of possible domestic activity. Several pit-like magnetic anomalies, one of which may represent a hearth or area of burning, were recorded.

The trial trenches and boreholes (Fig 6) Drew Shotliff and Andy Thomas

Introduction

The nature of the data recovered during an archaeological field evaluation of the type undertaken at Tempsford Park presents a number of difficulties in terms of establishing the overall structural sequence for a site. It is necessary to correlate the results

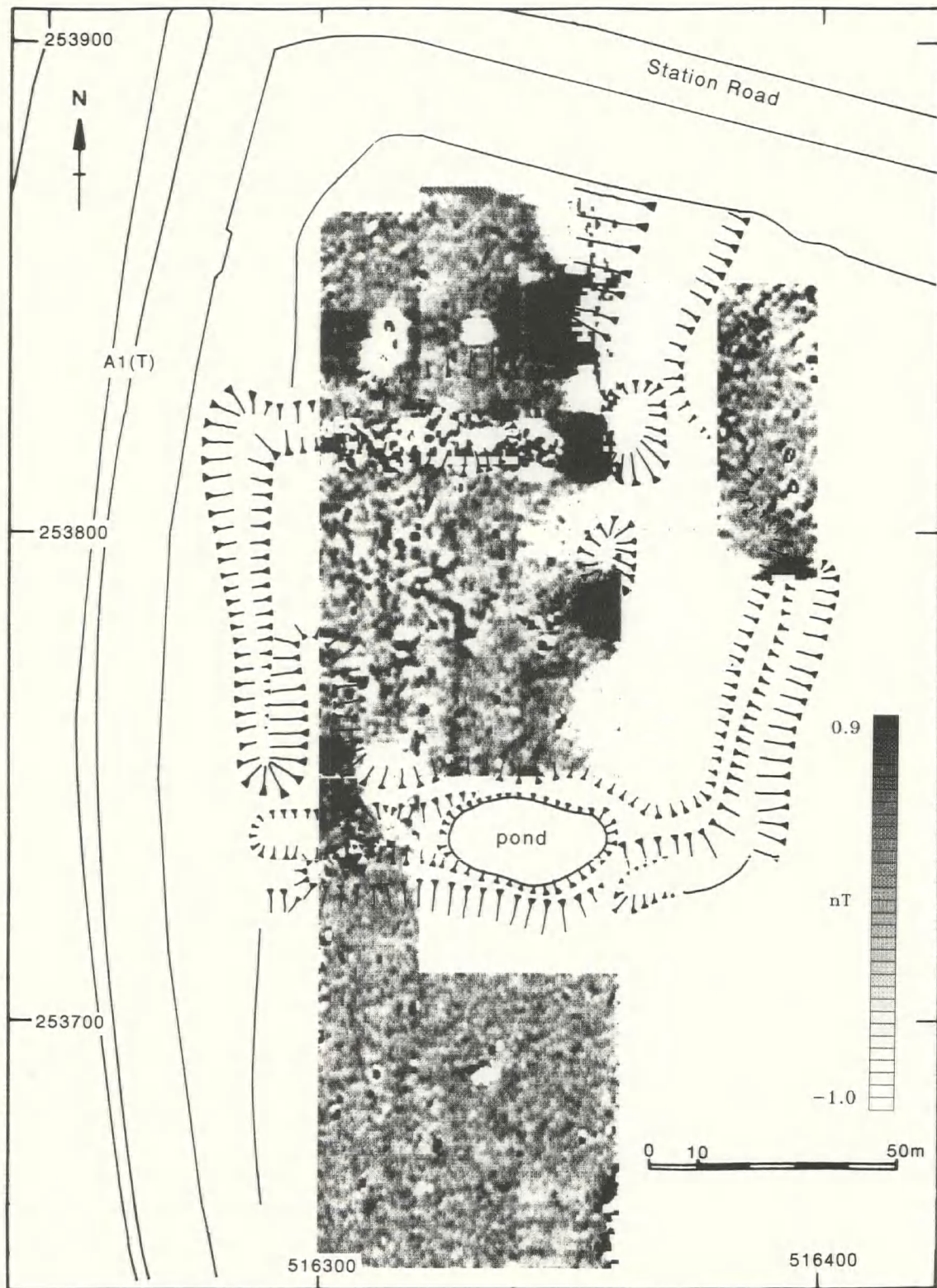


Fig 4 Magnetometer survey

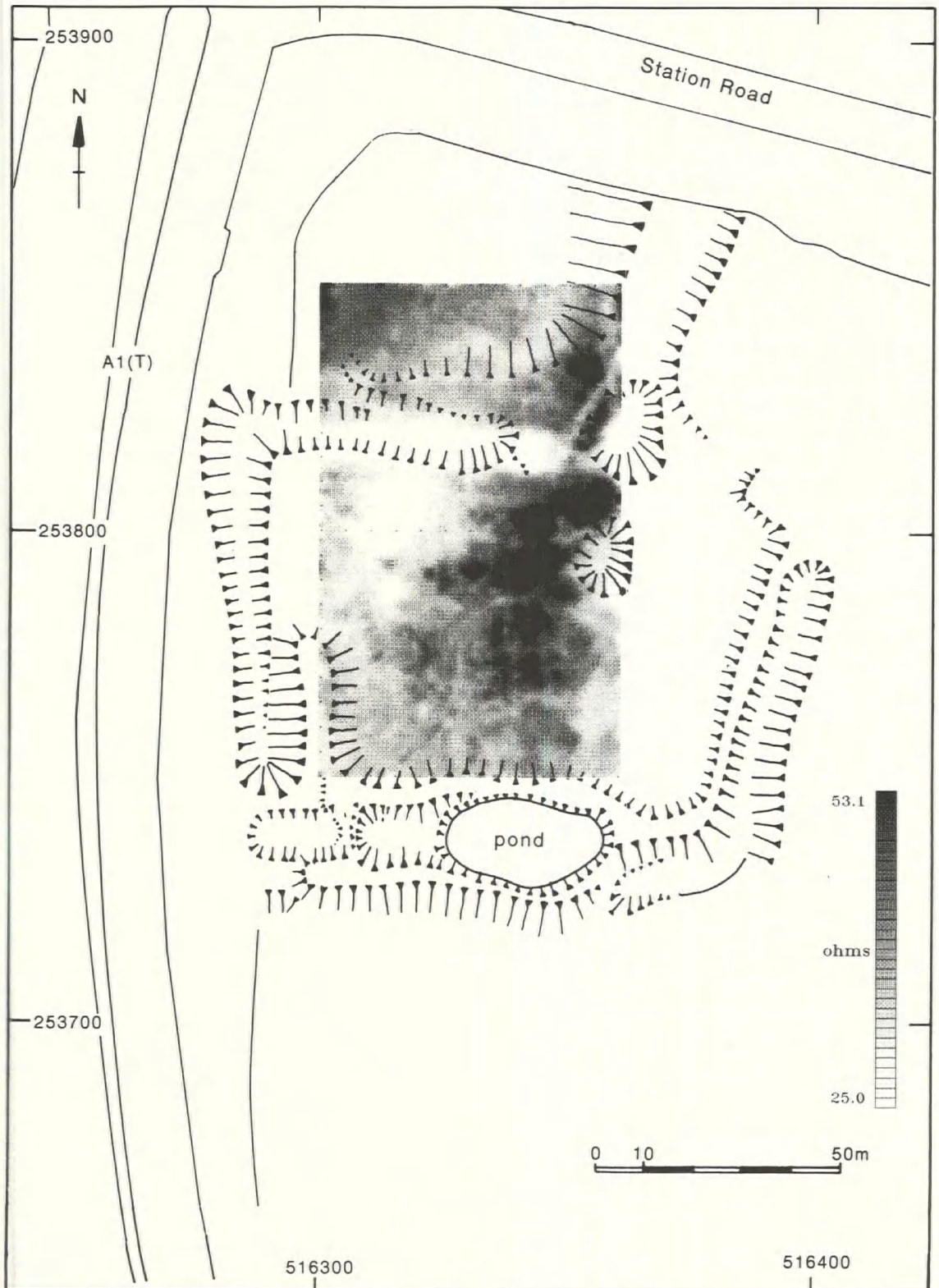


Fig 5 Earth resistance survey

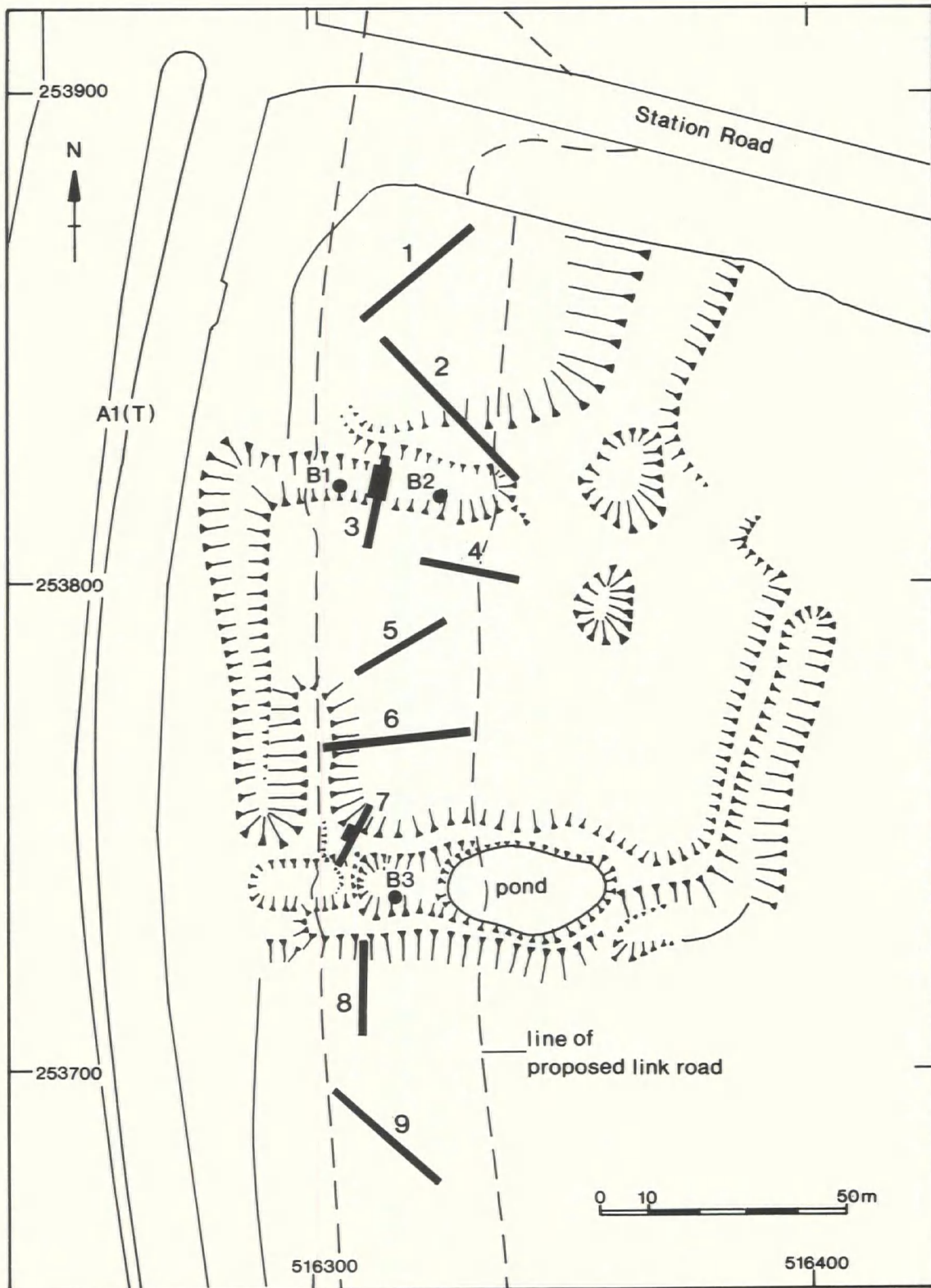


Fig 6 Trial trench and borehole locations

from a number of physically separated trenches. The non-intrusive survey data need to be integrated with the excavated data; this is especially problematic on a multi-period, stratified site. Particular difficulties exist with the identification of discrete buildings when the primary purpose of the excavated trenches is to give an indication of the depth and type of archaeological deposit.

Notwithstanding the above, it was possible to construct a satisfactory site-wide stratigraphic matrix of the excavated contexts. Calibrated principally by a pottery seriation table (Table 1), this has provided the framework for the broad periodisation set out below.

Period 1 glacial drift and river valley deposits

Chalky boulder clay (mixed with sandy gravel) was recorded at 17.95m OD in trench 7 and in the base of the N arm of the moat at 15.18m OD. The top of the river gravel terrace was exposed in all the trenches. The surviving terrace sloped down S to N from 18.20m OD (trench 9) to 16.65m OD (trench 1). Alluvial deposits, up to 0.35m thick, were recorded across the study area, sealing the gravel terrace. Excavation produced two fragments of animal bone, but no datable artefacts. Nor was there any evidence for archaeological features sealed by the alluvium. This may suggest the latter is at least early prehistoric in date, although alluviation elsewhere in the Great Ouse and its tributaries has been dated to the later Iron Age, Roman and early medieval periods (Dawson 1994).

Period 2 indeterminate prehistoric activity

Some evidence for the establishment of a post-alluviation ground surface was recorded in trenches 2, 8 and 9. Three small ditches or gullies in trench 9 are tentatively assigned to this period on the presence of a single early Iron Age sherd in fill (407). A stratigraphically early pit-like feature [329] in trench 7 may also be representative of indeterminate prehistoric activity.

Period 3 possible Roman activity

A gravel surface (153), the stratigraphically earliest deposit in trench 4, is tentatively assigned to this period solely on the presence of a copper alloy brooch (RF 2). No other structural evidence for Roman activity was found on site.

Period 4 possible Saxon occupation

Trench 8 contained a series of intercutting linear features, possibly ditches. The function of these

features is uncertain; they are only assigned to this period on the basis of a sherd of Maxey-type ware in fill (356). A small pit or posthole in trench 8 may be indicative of structural activity.

Period 5 the pre-moat settlement

(mid-9th/10th-12th century)

This represents the first period for which evidence for intensive use of the site was recovered. It is typified by layers and fills with the characteristics of a dark, "occupation" soil. Few definite buildings or structures were identified. However, the large quantity of residual Saxo-Norman pottery in later deposits clearly indicates that the construction and occupation of the moated site had a very damaging effect on the remains of the earlier settlement.

The SE section of trench 2 contained a number of pit-like features, sealed by a layer of dark grey brown silty clay (60). Cut [62] was 2.75m on its longest visible axis, at least 0.80m wide and 0.35m deep, with gradually sloping sides and a flat base. Its dark brown silty clay fill (63) contained St Neots-type ware. Sampling for macroscopic plant remains produced a large assemblage of charred grains (sample 4). Micromorphological analysis (sample 1) of the fill indicated that it was rich in ash residues, fine charcoal and phytoliths. There were also frequent inclusions of coarse-sized charcoal, plaster, pottery fragments, human coprolites as well as possible charred peat and alluvial clay soil. Vertical variation within the sample suggested the feature might represent the remains of a collapsed sunken featured, possibly turf-roofed building, which had subsequently been used as a dumping ground for domestic waste.

Two further small pits or postholes [64] and [70] were recorded in trench 2. Their dark fills (65) and (71) contained both charcoal and fragments of burnt clay, possibly derived from demolition debris.

Trenches 4, 5 and 6 also contained a small number of cut features, including ditches [186], [282] and pits [212], [254], [269]. Finds were relatively scarce; fills (283) and (213) and (255) produced sherds of St Neots-type ware. A N-S running linear anomaly noted on the magnetometry survey may equate with ditch [282].

The remains of a possible post-built structure were recorded in trench 7. A deposit of made ground (314) (340) formed a platform for a compacted earth surface (308). Three shallow postholes [302], [304] and [306] were associated with the surface. Context (314) produced a possible lead fishing weight (RF 15), St Neots-type ware and

a single sherd of early medieval calcareous ware.

In trench 9, to the S of the above structure, were a series of generally ill-defined features. These were filled with a sterile, sandy silt, with the exception of gully [414], the fill (415) of which contained quantities of charcoal and a single sherd of St Neots-type ware. These features appear to lie on the southern periphery of the main area of occupation during this period.

A shallow (0.30m) E-W running ditch [7], parallel to and 33m to the S of Station Road, may be tentatively assigned to this period on the presence of a single sherd of St Neots-type ware in its fill (8).

Period 6 construction and initial occupation of the moated site

(13th-14th century)

Construction The N arm of the moat was investigated by a single trench (3) and two boreholes (1 and 2). In trench 3 modern backfill was removed by machine to a depth of 1.80m. Thereafter, hand excavation continued to the base of the moat at 15.05m OD. Its original profile had been much altered by erosion and re-cutting; only 0.15m of the primary, basal fills remained *in situ*. The levels of the base of the moat, as recorded in the boreholes, suggest that the N arm was shelving upwards W to E towards the probable entrance causeway. Samples (nos 1 and 2) taken from the primary deposits (127) and (455) contained abundant aquatic molluscs and well-preserved seeds of aquatic plants. The small ceramic assemblage from (127) is indicative of a 12th-13th century date.

The S arm of the moat was investigated by borehole 3. The base was located at a height of 16.91m OD, 1.30m higher than the base of the N arm. A sample (no 3) from the basal fill (465) contained seeds of terrestrial weeds but no remains of aquatic plants or molluscs.

Upcast deposits from the excavation of the moat, comprising relatively sterile alluvium mixed with occasional occupation debris, were recorded in trenches 3, 4 and 7. This material was confined to the N and S edges of the platform and was not present towards the centre. It was thickest to the S (≤ 0.80 m) where its upper surface was approximately 1.25m higher than the equivalent deposit to the N. Few artefacts were present. Residual St Neots-type ware was found in (163) and (319), together with a fragment of lava quern and a whetstone respectively. Trench 8 indicated that the linear earthwork, surveyed to the S of the S arm of the moat, originally comprised two separate earthen banks.

Approximately 50m to the N of the moated site a substantial (2.00m wide and 0.60m deep) E-W running ditch [5] may be interpreted as a boundary element within the close occupied by the moat. Its fill (6) produced sherds from three vessels in 11th-13th century fabric types, together with earlier residual material.

Buildings and occupation evidence The best preserved structural evidence for initial occupation of the moated site was found to the SE in trench 7. A clay floor surface (317), recorded over a 4m x 2m area, lay directly over the upcast from the digging of the moat. A 0.50m x 0.30m rectangular setting of unmortared stones on the limit of excavation appeared to represent part of a wall foundation. Associated with the floor were two sub-circular hearths, approximately 0.70m and 1.00m in diameter. These were set in shallow (≤ 150 mm) cuts and were clay lined. The larger hearth had been re-lined after an initial phase of use. Fills comprised a mixture of burnt and unburnt silts with relatively little charcoal and do not appear to be directly related to use of the structures. A soil sample (no 9) from the lowest fill (328) of hearth [323] produced a few poorly preserved charred grains and residual, fragmentary sherds of St Neots-type ware; a carbonised fish bone was also recovered from this context. The upper fill (325) also contained St Neots-type ware, together with a single sherd in a 12th-13th century fabric type. Ferrous slag from this context may be indicative of smithing activity.

Elsewhere on the platform there was considerable non-structural evidence for the initial occupation of the moated site. In trench 3 a series of dark, predominantly silty clay layers were interpreted as a mixture of domestic waste and possible demolition debris. Similarly in trench 4 a dark, silty occupation deposit (162), 0.35m thick, sealed the upcast from the digging of the moat. Sampling for macroscopic plant remains (sample 6) produced a large assemblage of carbonised cereal grains together with charcoal fragments. Micromorphological analysis of this deposit (sample 2) characterised it as rapidly buried dumping, with the burned materials deriving from domestic floor sweepings (ie hearth debris) or cereal processing residues. Butchered cattle bone, together with pig, sheep and chicken bone and sherds from four vessels in 12th-13th century fabric types were also present. Deposit (211) in trench 5 was similar in character to (162). In addition to its datable ceramic assemblage it also

produced an iron door key (RF 5), typical of the 13th century. Similar layered deposits (262) and (279) were also present in trench 6.

Trench 6 was also characterised by a series of large cut features, principally quarry pits and possible ditches. The uppermost fills (261), (273), (264), (279) of many of these contained occupation debris, indicating that they were used for rubbish disposal, irrespective of their original function. In one particularly large feature [260] this material had been dumped in from the W.

Further direct structural evidence for buildings, associated with this initial occupation of the moated site, was limited. Trench 3 contained a possible *in situ* clay wall footing (144). The upper part of deposit (211) contained several large ($\leq 400\text{mm}$) blocks of limestone, possibly part of a demolished structural element. Smaller limestone blocks ($\leq 250\text{mm}$), together with clay, formed packing within a substantial posthole [157], one of two such features, cut into the occupation deposit (162) in trench 4. The packing (185) of posthole [157] contained a single, large sherd of 12th-14th century date. A further single posthole [208] was cut into deposit (211) in trench 5.

It is significant that all the structural remains described above are stratigraphically later than the dark occupation soil itself. Only the building elements in the SW corner of the platform directly overlay upcast from the digging of the moat. Prolonged use of the site is clearly indicated by the extent and thickness of the occupation soil, which also contained material derived from the demolition of structures (fragments of mortar, decayed plaster and burnt clay). It may be assumed that the occupation debris was deposited on different parts of the platform at different times and that the remains of further buildings, directly overlying the upcast from the digging of the moat, still survive on parts of the platform not investigated during the field evaluation.

Period 7 final occupation of the moated site (14th-15th century)

Alterations to the moat This period was characterised by minor alterations to the form of the moated site. To the N an external bank or platform (56) (57) was constructed of compacted gravelly clay. This was $\leq 0.40\text{m}$ in height and was topped with a slightly cambered, metallised gravel surface (55). The latter (together with the surfaces in trenches 4, 5 and 6 described below) correlated closely with an area of high resistance defined by

the earth resistance survey.

In the SW corner of the platform the bank at the SW end of trench 7 was found to be $\leq 0.70\text{m}$ in height. It comprised a varied series of relatively sterile silty and gravelly layers. The presence of freshwater mollusc shells in (334) suggested that at least some of the material was derived from cleaning out of the moat. A single residual sherd of St Neots-type ware in (335) represented the only find. A build up of material (318) over the abandoned period 6 hearths may be associated with the creation of this bank. The earthwork survey suggested that this feature not only extended along the inside of the S arm of the moat but also appeared to cross the (presumably infilled) E arm. This conclusion should be treated with caution, however, as neither the trial trenching nor the earth resistance survey were able to investigate the SE corner of the moat platform.

Buildings and occupation evidence Once again it was not possible to recover even a partial building plan. However, a number of structural elements were located on the moat platform. Close to the edge of the moat in trench 3 a make-up layer (130) preserved parts of a possible stone flagged surface. An associated padstone, stone-lined post setting and an unmortared stone wall footing (possibly faced to the N, towards the moat) indicated that the surface was internal to a building. These remains were recorded (but not excavated) in an area of only $3.50\text{m} \times 1.45\text{m}$; no finds were recovered.

In trench 5 the SE corner of a wall footing, comprising closely packed, unmortared fragments of limestone and rounded pebbles, was recorded but not excavated. The footing was 0.50m wide and extended over a length of 3.50m ; it may have supported a sill beam for a timber framed superstructure. Flat limestone fragments within the area defined by the wall footing appeared to represent part of a disturbed internal floor. To the exterior of the building was an extensive metallised gravel surface. No dating evidence was recovered from the building itself. The external surface (206) produced sherds of both late medieval reduced ware and post-medieval Staffordshire slipware. The gravel surface lay immediately beneath the topsoil and is likely to have remained in use for several centuries after its construction.

In trench 4 the deliberate infilling of earlier postholes and a thin spread of demolition debris, containing areas of decayed plaster and mortar, were indicative of the dismantling of a period 6

structure. The backfill (156) of one of the postholes contained a single sherd in a 12th-14th century fabric type. A further 0.20m thick build-up (161) of material of uncertain origin was cut by a small pit [180]. This was finally sealed by a metalled gravel surface (152), covering the easternmost 16m of the trench.

In the E half of trench 6 an external, metalled gravel surface (253) was recorded. It extended over a distance of 7.50m and sloped down E to W. The recovered artefacts suggest a 13th-15th century date.

Period 8 post-abandonment use of the moated site and the creation of Tempsford Park (16th-18th century)

Beyond the late medieval period there is little evidence, either structural or artefactual, for activity at the moated site. On the platform itself building stone was salvaged from the structure in trench 3. In trench 4 a 9.00m long E-W alignment of shallow stakeholes appears to represent the remains of a fence line, possibly associated with the use of the unoccupied enclosure for livestock management.

In trench 3 a well preserved timber structure on the N side of the N arm of the moat was recorded. It consisted of a series of apparently deliberately placed roundwood logs, up to 0.20m in diameter, sealed by a 0.25m thick amorphous layer of brushwood (123) (126). The function of this structure remains uncertain. It may have served to stabilise the side of the moat. However, the variety of species (some durable in water, others not) used in its construction argues against it being a revetment, purposely built from selected trees. Furthermore, it dates to a period when the lack of activity on the platform would appear to make substantive repair work on the moat itself unnecessary.

In trenches 1 and 2 to the N of the moat and in trenches 8 and 9 to the S there was evidence for extensive importation of ploughsoil, up to 0.65m in depth. This appeared to be intended to smooth out the gradients of the moat's external banks. Similar material was present to a lesser depth across the S half of the platform in trenches 6 and 7. No dating evidence was recovered from this material but it is likely to represent landscaping, associated with the creation of Tempsford Park.

Period 9 modern (19th-20th century)

A deliberate effort to infill the N arm of the moat

appears to have got underway only from the 19th century onwards. A 0.75m thick dump of boulder clay (119) was sealed by a similar depth of more variegated fills. A topsoil horizon was then established across the partially infilled moat and the platform. There was no evidence to suggest that ploughing had ever taken place on the platform; in places the late medieval gravel surface survives at a depth of only 100mm below the present day ground surface.

CERAMIC ARTEFACTS

Jackie Wells

Introduction

The field evaluation produced 292 sherds of pottery, representing 245 individual vessels, of which 228 were hand-collected during excavation; the remainder were sieved from soil samples. The total weight of material recovered was 3,061gms.

The pottery was examined by context and sorted into 42 fabrics, according to the Bedfordshire Type Series (Baker & Hassall 1979), which is held by BCAS. The assemblage was quantified by minimum vessel and sherd count, estimated vessel equivalent (EVE) and weight. Sherds from the same vessel but from separate contexts (only one such cross-context was noted) were counted as a single vessel. The vessel count is presented in Table 1 by context (in stratigraphic order) and by fabric type (in the broad chronological groupings set out on pages 108-114). Examination of attributes including extent of abrasion, presence/absence of residues, sooting and wear marks was undertaken to provide an indication of the function of the pottery.

Standard drawing conventions have been used, with vessels shown at one quarter size, external view on the right and a section and internal view on the left (Fig 7). Wheel-thrown vessels are shown with solid sections, and hand-made vessels with hatched sections. The pie diagram at the base of each illustration indicates the proportion of the vessel recovered.

Pottery type series

Fabrics are listed below in approximate chronological order, using the type codes and common names in the Bedfordshire Type Series. As all types are previously recognised and fully described elsewhere, only brief fabric descriptions are given.

Iron Age

Type F19 Organic and sand tempered

Fabric: hard, dark grey, fairly smooth fabric with frequent

[illegible]

quartz inclusions and elongated voids left by burnt out organic matter. First recognised at Salford Quarry; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: early Iron Age

Type F23 Grog and sand tempered

Fabric: fairly smooth, grey-brown fabric with buff-orange surfaces. Frequent black grog, quartz and sparse calcareous inclusions. First recognised at Salford Quarry; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: early Iron Age

Type F26 Fine carinated and burnished vessels

Fully described in Knight (1984)

Forms: hand-made but otherwise indistinguishable

Date range: early Iron Age

Type F06C Coarse grog tempered

Forms are fully described in Thompson (1982) and fabric in Dawson *et al* (1988).

Forms: hand-made, a single undiagnostic body sherd was decorated with possible horizontal combing.

Date range: late Iron Age

These prehistoric vessels are likely to be of local origin and manufacture. Grog tempered wares have been recovered from the late Iron Age site at Ursula Taylor School, Clapham (Dawson *et al* 1988). Sand and organically tempered wares (F19), grog and sand (F23) and the fine carinated types (F26) have all been found at the prehistoric settlement site at Salford Quarry (BCAS in prep).

Roman

Type R01 Samian

Fabric: hard-fired, orange-red fine ware, originating in Gaul, commonly recovered from most Romano-British sites.

Forms: wheel-made but otherwise indistinguishable

Date range: 2nd-3rd century

Type R13 Roman shelly

Fully described in Brown (1994).

Forms: cooking pots and storage jars

Date range: late 4th century

The shell-tempered wares, which are abraded and display a high degree of leaching, are probably derived from kilns at Harrold (Beds.) where a major shelly ware industry flourished throughout the Roman period, exporting its products beyond the locality. Pottery in this tradition is extremely prolific, particularly in the 4th century, and is well attested from sites of varying status such as the small town at Sandy (BCAS in prep) and Bletsoe Roman cemetery (Slowikowski 1994).

Saxon

Type A01 Organic tempered

Bedfordshire examples are fully described by Baker and Hassall (1979, 152); dating and manufacturing techniques are discussed by Hamerow, Hollevoet and Vince (1994).

Forms: hand-made but otherwise indistinguishable

Date range: early-mid Saxon

Type A06 Sandy

Fully described by Baker and Hassall (1979, 152).

Forms: hand-made but otherwise indistinguishable

Date range: early-mid Saxon

Type A16 Mixed coarse quartz

Fabric: coarse, hard dark grey-black fabric with abundant quartz, occasional flint inclusions and often with organic impressions on the surfaces. First recognised at Grove Priory, near Leighton Buzzard; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: early-mid Saxon, probably 6th century

Type A23 Sandstone

Fabric: fine, hard dark grey-brown fabric, similar in surface appearance to type A16, but characterised by large clusters of quartz crystals of 1.0mm+ in size. First recognised at Grove Priory; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: early-mid Saxon, probably 6th century

Type A24 Oolitic

Fabric: fairly rough, dark grey-black fabric with light brown exterior surface. Characterised by the presence of oolites, or frequent round voids where oolites have leached out. First recognised at the Saxon and medieval settlement of Stratton, Biggleswade; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: early-mid Saxon

The predominantly quartz and organically tempered wares are likely to be of local origin and manufacture. Although no forms were distinguished, organic and sandy fabrics (A01 and A06 respectively) are closely paralleled by early-mid Saxon pottery from excavations in Bedford, where the results of petrological analysis indicated the use of boulder clay, deposits of which cover much of Bedford and the surrounding area (Baker and Hassall 1979, 152).

Quartz inclusions found in sandy fabric A16 are thought to derive from the Greensand ridge. This lies 3 miles to the SE of Tempsford. Oolites in fabric A24 are likely to have derived from outcrops of oolitic limestone found in the river valleys to the NW of Bedford.

Type A11 Maxey-type

Fully described by Addyman (1964).

Forms: hand-made; flat-rimmed jar, presumably for storage given the absence of sooting.

Date range: mid-7th-9th century

Maxey-type vessels are traditionally held to have had a core area of distribution in Northamptonshire (Williams *et al* 1979) and Lincolnshire (Addyman and Whitwell 1970), although at the time it was unclear whether Maxey-type wares recovered from these areas represented the products of a single production centre or could be divided into more localised groupings. However, thin-section analysis carried out on material from a number of sites within the East Midlands has indicated the latter to be the case (Vince and Young 1992). Petrological variations have demonstrated that it is possible to assign Maxey-type sherds to either a northern Lincoln-type group or a southern, Raunds-type group, into which examples from Bedfordshire can be placed. Within the latter grouping, petrological similarities have been noted between Maxey-type sherds and those of St Neots-type ware.

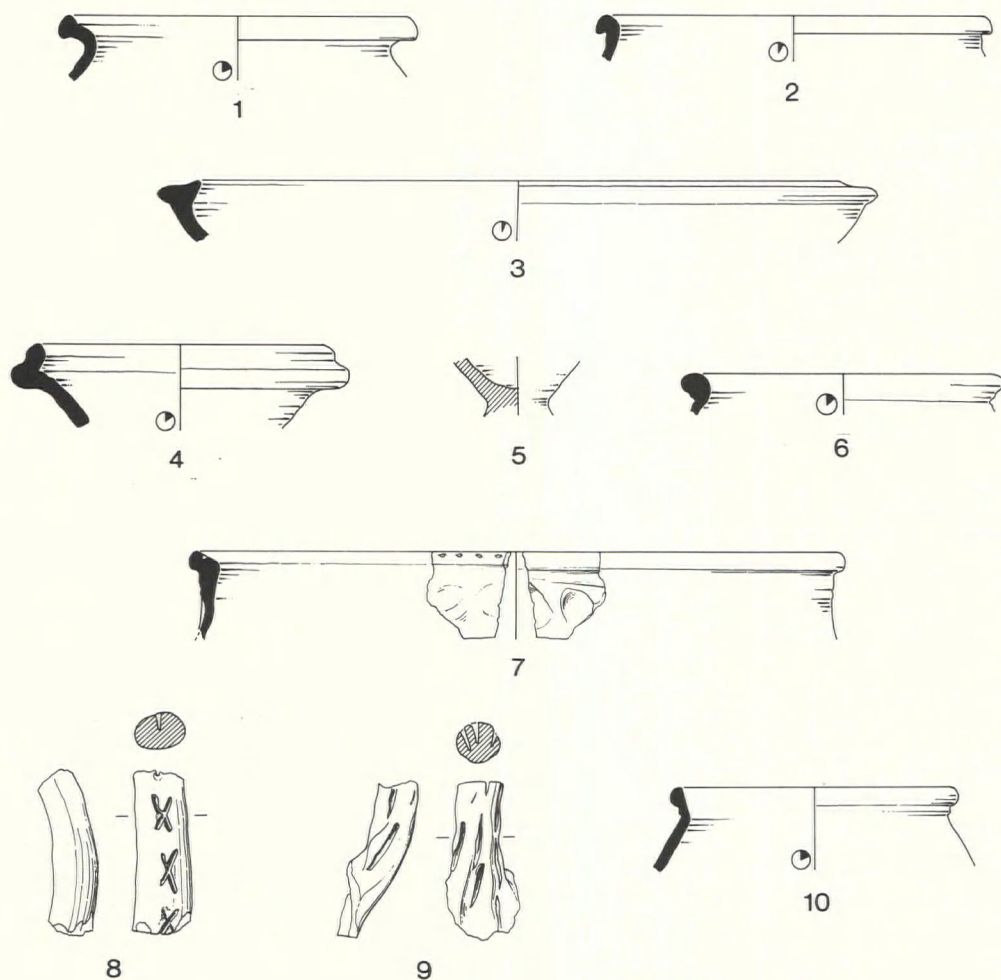


Fig 7 Selected pottery vessels 1:4

Illust. no	Fabric Code	Common Name	Form	Context	Period
1	B01	St Neots-type	Jar	213	5
2	B01	St Neots-type	Jar	262	6
3	B01	St Neots-type	Bowl	262	6
4	B04	St Neots-type	Bowl	63	5
5	B04	St Neots-type	Lamp	161	7
6	B07	Medieval shelly	Jar	161	7
7	C05	Medieval sandy	Storage jar	152	7
8	C71	Buff-grey cored	Jug handle	253	7
9	E01A	Late medieval reduced	Jug handle	206	7
10	E02	Late medieval oxidised	Jar	401	9

Key to pottery illustrations

Saxo-Norman**Type C12 Stamford ware**

Fully described in Kilmurry (1980).

Forms: wheel-thrown but otherwise indistinguishable, Fabric B (Kilmurry 1980, 8) with a thin light yellow-green glaze.

Date range: 10th-12th century

Produced at kilns in Stamford, Lincs., this high quality ware is distributed throughout the country, and is evidence of a regional import into the locality.

Type B01 St Neots-type ware

Fully classified by Hurst (1956) and discussed more recently by Hunter (1979) and Denham (1985). Examples from Bedford are described by Baker and Hassall (1979, 165).

Forms: wheel-thrown bowls with turned and hammer-headed rims, and everted-rimmed jars (nos 1, 2, 3).

Date range: (?mid-9th)10th-11th century

Type B01A St Neots-type ware

Fabric: similar to fabric B01. First recognised at Stratton; a full description will be published in that report (BCAS in prep).

Forms: wheel-thrown but otherwise indistinguishable

Date range: 10th-11th century

Type B01B St Neots-type ware

Fabric: similar to fabric T1(1) at Northampton (Denham 1985, 54).

Forms: wheel-thrown but otherwise indistinguishable

Date range: 10th-11th century

Type B01C St Neots-type ware

Fabric: fairly smooth, patchy buff-grey-brown fabric with inclusions of sparse quartz and red and black iron ore in addition to abundant shell. First recognised at Stratton; a full description will be published in that report (BCAS in prep).

Forms: wheel-thrown, everted-rimmed jar

Date range: 10th-11th century

Type B04 St Neots-type ware

Fully described by Baker and Hassall (1979, 167). Similar to fabric T1(3) at Northampton (Denham 1985, 54).

Forms: large wheel-thrown jars, shallow bowls (no 4) and lamps (no 5) in the St Neots tradition.

Date range: 10th-12th century

Although no kiln sites are known, St Neots-type vessels are widely distributed throughout a core area in the S and E Midlands and have been recovered from numerous excavations on settlement sites in the valley of the Great Ouse and its tributaries. A possible source close to Northampton has been suggested (Mellor 1994a, 56), since the type, with some modifications, continued in use there until the 12th century. The type site at St Neots, where this pottery was first recognised, is located approximately four miles to the N of Tempsford. A large collection of St Neots-type ware is known to have been dredged from the river Great Ouse in 1934, at the site of a former ford located approximately 300m NW of the moated site (Hurst 1956, 57).

Early Medieval**Type C61 Calcareous inclusions**

Fabric: fairly smooth, grey-brown fabric with buff-grey core. Characterised by the presence of frequent chalky inclusions, as

well as quartz and iron ore. First recognised at Stratton; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: ?11th-13th century

Type C67 Mixed inclusions

Fabric: fairly hard fabric with variable buff-grey-orange patchy surfaces. Badly sorted quartz, organic matter, calcareous inclusions, iron ore and abundant mica characterise the fabric and are found together or in a combination of any of the above. First recognised at Stratton; a full description will be published in that report (BCAS in prep).

Forms: hand-made but otherwise indistinguishable

Date range: ?11th-13th century

Detailed study of the ceramic assemblage from the medieval settlement at Stratton may help to determine sources and refine dating for these two fabrics. They have, to date, been broadly assigned, by association with other fabrics of more certain date, to the early medieval period.

Type C01 Light orange sandy

Fully described by Baker and Hassall (1979, 171).

Forms: wheel-thrown but otherwise indistinguishable

Date range: 11th-13th century

Type C02 Red quartz inclusions

Fully described by Baker and Hassall (1979, 171).

Forms: wheel-thrown but otherwise indistinguishable

Date range: 11th-13th century

Type C59B Early medieval sandy harsh

Fully described by Brine (1988, 43).

Forms: usually hand-made or part wheel-thrown. The examples from Tempsford appear to be fully wheel-thrown but are otherwise indistinguishable.

Date range: ?late 11th-13th century

Type C59A Early medieval hand-made

Fabric: hard, sandy fabric with grey-brown surfaces and a grey core. Contains frequent, well sorted quartz, sparse red iron ore and occasional mica. This type occurs at Chalgrave (Brine 1988, 43) and at Grove Priory (BCAS in prep) both near Leighton Buzzard, from which the dating is tentatively derived. Forms: hand-made but otherwise indistinguishable. Date range: 12th-13th century, but with a possible start in the 11th century.

Type C60 Hertfordshire-type greyware

Examples from Bedfordshire are described by Brine (1988, 43). This type is further discussed by Havercroft and Turner-Rugg (1987).

Forms: mainly wheel-thrown, although some may be hand-made, otherwise indistinguishable

Date range: 12th-13th century, although Brine suggests an earlier date at Chalgrave, starting in the 11th century (Brine 1988, 46).

Type B07 Medieval shelly ware (developed St Neots-type ware)

Discussed by Hall (1972), and fully described by Baker and Hassall (1979, 167).

Forms: wheel-made jar (no 6), derived from the St Neots tradition

Date range: 12th-13th century

This distinctive shell tempered ware is thought to have derived from production sites at Olney (Bucks.) and Harrold (Beds.), which produced a range of domestic wares throughout the early medieval period (Hall 1972).

Type C53 Medieval sandy
Fully described by Baker and Hassall (1979, 177).
Forms: wheel-made but otherwise indistinguishable
Date range: 13th century.

Type C05 Medieval sandy
Fully described by Baker and Hassall (1979, 172).
Forms: wheel-made storage jar with thumbing and stabbed decoration around the rim (no 7).
Date range: 12th-?14th century.

High Medieval

Type B09 Lyveden ware
Fully described by Webster (1975).
Forms: wheel-made, Webster's Fabric Type A, but otherwise indistinguishable
Date range: 13th-14th century

This ware is known to have been produced in Northamptonshire at kiln sites in Lyveden (Webster 1975).

Type C70 Gritty ware
Fabric: rough, lumpy fabric with orange surfaces where unglazed, a fairly thick external green glaze and a blue-grey core. Contains frequent, well-sorted quartz and sparse black iron ore. First recognised at Stratton; a full description will be published in that report (BCAS in prep).
Forms: wheel-made possibly from a jug but otherwise indistinguishable, green-glazed.
Date range: ?13th-14th century

Type C09 Brill-Boarstall ware
Discussed fully by Jope (1953) and Ivens (1982).
Forms: wheel-made but otherwise indistinguishable, with a thin, pale yellow glaze.
Date range: 13th-14th century

Produced at kiln sites at Brill and Boarstall (Bucks.), during the mid to late medieval period (Ivens 1982). This is one of the most common finewares to have been imported into the county.

Type C10 Potterspurty ware
Fully discussed by Mynard (1970).
Forms: wheel-made but otherwise indistinguishable
Date range: 13th-14th century.

Potterspurty (Northants.) had become an important centre of pottery manufacture by the middle of the 13th century, producing fine sand tempered utilitarian wares (Beresford 1977, 251).

Type C71 Buff-grey cored
Fabric: distinctive, rough fabric with buff-orange surfaces and a characteristic buff-grey core. Contains frequent, well sorted quartz and rare red inclusions (?iron ore). First recognised at Stratton. A full description will be published in that report (BCAS in prep).
Forms: wheel-made, jug handle decorated with a central band of X-shaped knife slashing (no 8).
Date range: ?13th-14th century.

As with fabrics C61 and C67, further study is required to ascertain a source and refine the date range.

Late Medieval

Type E01A Late medieval reduced ware (?Everton-type)
Fabric: first recognised by Hassall (1976, 69); the kiln and its products are described by Slowikowski (1992).
Forms: wheel-made, jug handle decorated with a central band of diagonal knife slashing (no 9).
Date range: 14th-15th century

Type E01C Late medieval reduced ware
Fabric: fairly smooth, light-mid grey fabric with an orange-red core and a vesicular appearance similar to fabric E01A. Inclusions are frequent quartz, fine mica and calcareous material, the latter leaving characteristic rounded voids in the surfaces where it has either fallen or leached out. First recognised at Stratton; a full description will be published in that report (BCAS in prep).
Forms: wheel-made but otherwise indistinguishable
Date range: 14th-15th century.

Type E01D Late medieval reduced ware
Fabric: hard fired fabric with black surfaces and a grey core. Characterised by distinctive brick-red margins. Contains frequent quartz and rare iron ore. First recognised at Stratton; a full description will be published in that report (BCAS in prep).
Forms: wheel-made, thin walled but otherwise indistinguishable.
Date range: 14th-15th century

Fabrics E01A, C and D are likely to be of local manufacture. They are of the East Midlands late medieval reduced ware tradition, first identified and discussed by Moorhouse (1974). Kilns are known in Bedfordshire at Flitwick, on the lower Greensand in the S of the county, and at Everton, also on the Greensand ridge in the E of the county. Types E01A and E01C are likely to derive from the latter, where Oxford clay and the Greensand ridge provided sources of clay and tempering. Kiln sites in neighbouring counties producing wares in the same tradition are known at Higham Ferrers, Northants., and Great Brickhill, Bucks. (Mynard *et al* 1983, 83).

Type E02 Late medieval oxidised ware
Fabric: smooth fabric with variable mid orange-red-brown surfaces and intermittent blue-grey core. Inclusions are frequent quartz and fine mica, together with rare red iron ore.
Forms: wheel-made jar with a single ridge directly below the rim (no 10).
Date range: 14th-15th century, possibly extending into the 16th century.

Type E03 Late medieval smooth type
Fabric: hard fabric, generally orange throughout. Similar to type E02, but much smoother. Contains frequent quartz and abundant fine mica, especially visible on the surfaces.
Forms: wheel-made, narrow-necked jar
Date range: provisionally 14th-15th century, possibly extending into the 16th century.

Pottery of comparable type and date to fabrics E02 and E03 has been recovered from excavations in Bedford (Baker and Hassall 1979, 212).

Post-Medieval**P01 Glazed earthenware**

Fully described by Baker and Hassall (1979, 220)

Forms: wheel-made bowl with a mid-dark brown internal glaze

Date range: 17th-18th century

Type P25 Frechen stoneware

Fully described by Hurst *et al* (1986)

Forms: wheel-made but otherwise indistinguishable

Date range: 16th-17th century

Type P30 Staffordshire slipware

Described by Jennings *et al* (1981)

Forms: wheel-made, press-moulded dish, displaying red slip trailed under a clear glaze to give a brown and yellow striped pattern

Date range: 17th-18th century

Discussion

The small size of the pottery assemblage precludes detailed statistical treatment. However, the proportions and types of fabrics within each period have been set out above in the form of a seriation table (Table 1). This provides the structure for the following discussion which considers the pottery, characteristic of each of the principal structural periods. Selected groups of the assemblage, particularly the residual elements, are then also discussed in their own right.

Period 5 the pre-moat settlement

(mid-9th/10th-12th century)

Shell-tempered wares of St Neots-type (fabric B01) and the broadly contemporary harsh shelly ware (fabric B04) dominate the small period 5 assemblage. Two bowls and a jar are the only recognisable vessel forms. Sooting marks confirm that these basic utilitarian types represent kitchen wares. The bulk of the material was recovered from the backfill of cut features, including the possible sunken featured building [62].

Period 6 construction and initial occupation of the moated site

(13th-14th century)

Period 6 is characterised by the appearance of local, sandy fabrics (C01, C02, C59B, C59A, C60, C53 and C05). No diagnostic forms were present. However, the types found at Tempsford are well attested from excavations in Bedford, where a range of utilitarian forms are known (Baker and Hassall 1979, 178). Period 6 saw the emergence of developed St Neots-type ware (fabric B07). Hand made vessels in fabrics C61 and C67, first recognised at the medieval settlement of Stratton,

Biggleswade, are present. The stratigraphically latest contexts in this period also produced Lyveden ware (fabric B09) and another newly described type (fabric C71) from Stratton. Again, there are no distinguishable vessel forms.

Exactly half of this assemblage (eleven vessels) came from occupation debris (162) and (211) on the N half of the moat platform. Material from these contexts was the least disturbed of the entire pottery assemblage and included vessels represented by 12 and 22 sherds. The primary fill (127) of the N arm of the moat and the fill (6) of the associated close boundary ditch [5] each produced three vessels. A single sherd of porcelain from the primary fill (455) of the moat is presumably intrusive from the drilling of borehole 1.

Period 7 final occupation of the moated site
(14th-15th century)

The small period 7 assemblage (eleven vessels) provides evidence for the continuing use of medieval sandy ware (fabric C05), Lyveden ware and fabric C71. Forms include a storage jar and a jug. New types are represented by a single undiagnostic vessel of Brill-Boarstall ware (fabric C09), attesting the use of regional imports at the site. Within this period the ceramic chronology is also extended by the appearance of late medieval reduced fabrics (E01A and E01C). A single jug was the only recognisable form.

The majority of this material was recovered from the extensive gravel surface (206), (253) and (152) on the E half of the moat platform. This surface also produced a single vessel of 18th century Staffordshire slipware (P30), suggesting it may have remained exposed for some time after occupation of the moated site had ceased.

Period 8 post-abandonment use of the moated site and the creation of Tempsford Park
(16th-18th century)

The paucity of ceramic evidence for this period is indicative of the abandonment of the moat as a dwelling site. A glazed earthenware bowl (fabric P01) and a vessel of imported German stoneware (fabric P25) were recovered from the layer of brushwood inserted into the N arm of the moat.

Iron Age and Roman pottery

The small assemblage of Iron Age and Roman material is almost entirely residual in later contexts. It is suggestive of sporadic activity at the site from an early date.

Saxon pottery

The field evaluation produced 16 Saxon vessels, almost entirely residual in later contexts. All are undecorated, although a few have burnished exterior surfaces. They represent coarse domestic vessels. None is sooted, although one has an internal black residue, suggesting it may have been used either as a storage vessel or perhaps as a receptacle for contents which were deliberately burnt. A middle Saxon Maxey-type (fabric A11) storage jar was recovered from topsoil. This assemblage, and in particular the unabraded Maxey-type vessel from ditch fill (355), suggests the site may be on the margins of an area of Saxon occupation.

Saxo-Norman pottery

Although the largest pottery group, represented by 151 vessels (62% of the total assemblage), the vast majority of this material (almost 90%) is residual in period 6 and later contexts. The almost identical vessel and sherd count (151:154) is further testament to the disturbed nature of the assemblage.

The various St Neots-type fabrics are present in a limited range of basic utilitarian forms, likely to be kitchen wares. Several have sooting marks, indicating use as cooking pots. A lamp in fabric B04, recovered from a period 7 context, represents a departure from the range of other domestic vessels. Such vessels are, however, not uncommon and are a recognised form produced in the coarse St Neots tradition. Examples are known from excavations in Bedford (Baker *et al* 1979, 167).

A single Stamford ware vessel was recovered from a period 6 context. It represents one of the very few glazed wares present on the site. This fabric type is used principally for tablewares (Beresford 1987, 166) and provides a marked contrast to the dominant utilitarian kitchen wares of the St Neots-type tradition.

The distribution of the Saxo-Norman pottery, both residual and non-residual, is centred on trenches 4-7 (on the moat platform) with a lesser concentration to the N between the moat and Station Road (Fig 8). This clearly suggests that the moat was constructed directly on the focus of earlier occupation.

Overview of the pottery evidence

At present, little is known about the ceramic sequence in this part of Bedfordshire (Mellor 1994b). Within the constraints imposed by the limited extent of the investigation (around 3% of the moated site) the assemblage, although small, is, therefore, of considerable interest. The pottery also

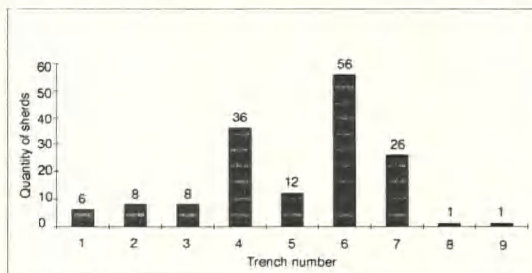


Fig 8 Distribution of Saxo-Norman fabric types by trench

serves as a useful indicator of the broad chronological development of the site and provides evidence for domestic occupation from at least the Saxon to the late medieval period.

Earlier sporadic activity gives way to intensive settlement from the late pre-Conquest period onwards, well attested by the abundance of St Neots-type fabrics. The range of vessel forms is indicative of domestic activity, concerning the preparation, storage and consumption of food. The dearth of glazed or decorated wares reinforces the highly functional nature of the group. Stamford ware represents the only regional import to the site during this period.

The small pottery assemblage is suggestive of a 13th century date for the construction of the moat. In the process the remains of the earlier settlement must have been heavily reworked, given the high incidence of residuality in the chronologically earlier fabric types. Despite the comparatively small size of the assemblage, the pottery attests a further period of domestic occupation lasting 200-300 years. The range of vessel forms mirrors that of the earlier settlement. Local fabric types continue to dominate, although a wider variety of regional imports is present, including Lyveden, Potterspury (Northants.) and Brill-Boarstall (Bucks.) wares.

Very few moated sites in Bedfordshire have been archaeologically investigated. Accordingly there is only limited scope for localised comparison of the pottery with assemblages from similar sites. Caution is also necessary, given that only a small sample of the moated site was investigated. Some comparative evidence is available from The Hermitage at Yarlwood, five miles N of Bedford (BCAS in prep). This assemblage is dated mainly to the late medieval and early post-medieval periods. It includes a large quantity of late medieval oxidised wares (fabrics E02 and E03). In contrast to the assemblage recovered from the moated site in

Tempsford Park, there are higher proportions of both glazed and decorated vessels and imported wares of regional and continental origin. More elaborate forms such as a chafing dish are present, together with a greater number of tablewares such as jugs and cups. This appears to indicate that the establishment at Yarlswood was of a higher status than the one at Tempsford, where the contemporary forms are of a highly utilitarian and functional nature. Indeed, during the medieval period the moated site at Yarlswood was a grange of Cauldwell Priory (Hutchings 1969, 71; CRO: CRT 130 Milton Ernest 1).

Outside the county, comparisons can also be drawn with the ceramic assemblage recovered from the investigation of a moated site at Wintringham (Cambs.) approximately five miles NE of Tempsford (Beresford 1977). The excavation centred on a sub-manorial homestead occupied for approximately 200 years, from the late 12th to the mid-14th century. A moat was constructed around the homestead in c1250. The pre-moat phases at Wintringham were characterised by developed St Neots-type ware, early Lyveden and local, sandy wares. The moated site was occupied for a relatively short time (c1250-1350); the pottery assemblage during this period was dominated by Potterspury and Oxford wares. The latter was widely distributed in the more important settlements from the second half of the 13th century. It was, however, relatively scarce in the St Neots area and

the considerable quantity found at Wintringham is indicative of the prosperity of the Brett family during this period. Its absence from the moated site at Tempsford may be significant. Similarly, although the range of utilitarian forms found at Tempsford are known from Wintringham, the latter also produced more specialised forms and a higher proportion of decorated vessels. The moated site at Tempsford may have been established earlier and occupied for a longer period but, on the evidence of the pottery assemblage, it was the homestead of a less prosperous estate.

Ceramic building material

Nine fragments of late/post-medieval flat roof tile and two fragments of ridge tile (total weight 612g) were recovered. Three fabric types were defined: fine orange sandy, coarse orange sandy and sand and calcareous inclusions. All fragments are abraded, and those containing calcareous inclusions are extensively leached. The bulk of this tile group (357g) derived from period 8 contexts, in particular made ground (129), from which over a third of the total tile assemblage was recovered.

Additionally, a single fragment, weighing 32g, in fine orange sandy fabric which was recovered from a period 7 layer, may represent a residual tegula fragment of Roman date.

The small size and fragmentary nature of the tile assemblage preclude further analysis.

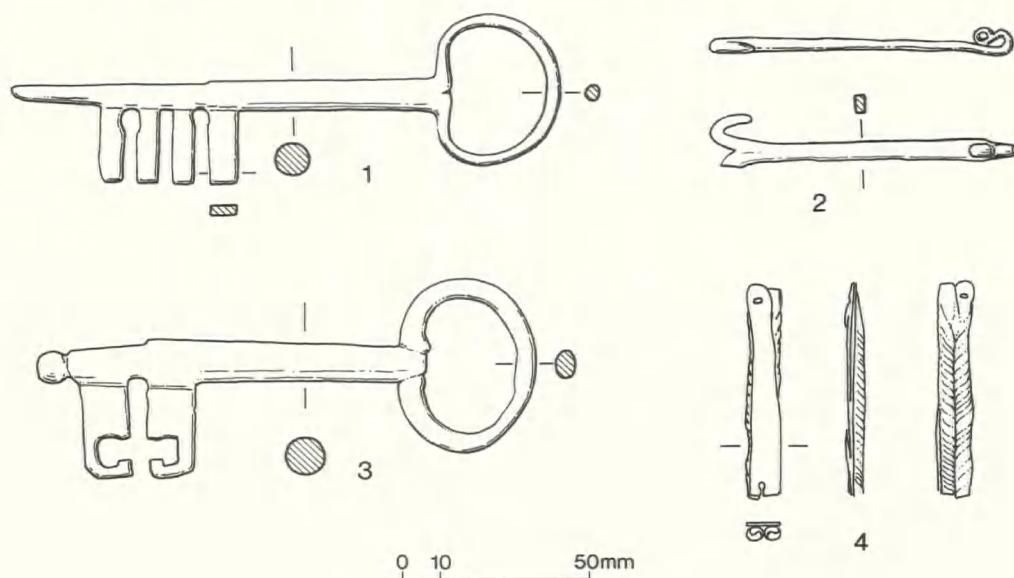


Fig 9 Selected registered artefacts

REGISTERED AND NON-CERAMIC BULK ARTEFACTS

Jackie Wells

Introduction

The field evaluation produced a total of 17 registered and 48 non-ceramic bulk artefacts. They are summarised by period in Table 2. Selected objects are illustrated in Fig 9.

All iron objects were submitted for X-radiography to Adrian Tribe of the Institute of Archaeology. One iron object (RF 8), which appeared from the X-ray to bear traces of a non-ferrous plating, was selected for conservation and X-ray fluorescence analysis to identify the nature of the non-ferrous material. The X-ray plates and conservation report form part of the site archive. The iron objects survived in a generally poor state of preservation, while the copper alloy finds were less corroded, with the notable exception of RF 2, a Roman brooch, which displayed extensive signs of

decay and was extremely fragile.

The registered finds were assigned simple names and functional categories, the latter after Crummy (1983), in accordance with the Bedfordshire Artefact Typology. Within these categories, each object has been fully described, a scale record drawing completed and, where possible, a date range assigned.

Bulk finds were identified, quantified and, where possible, assigned a date range. The flint assemblage, which spans the Mesolithic to the late Neolithic/early Bronze Age periods, was entirely residual and too small to merit detailed analysis. It is not, therefore, included in this publication.

The catalogue is organised by functional category with respective simple name components, in typological date order within each group. Where relevant, details of form, manufacture, parallels and suggested date have been discussed. The coding which prefixes each entry contains the following information:

2	layer	[260] (261)	trench 4	period 3	no 1
registered find number	context type	context number [cut] (fill/layer)	trench number	period	illustration number

In all cases measurements give the maximum surviving artefact length unless otherwise stated.

Catalogue

Objects of personal adornment

2 gravel surface (153), trench 4, period 3 *Copper alloy brooch*. Incomplete two-piece "Colchester B" type. Slightly tapering bow with a raised central rib and decorated flat margins bearing an incised zigzag design. Triangular catchplate with three perforations, two circular and one roughly square. Short, stubby, undecorated semi-cylindrical wings. Missing pin and chord. Remains of an axis bar and an extensively mineralised spring although the number of coils are unclear. The poor condition of the spring may indicate either a difference in composition from the brooch body, or may be the result of the greater stresses that it would have been subjected to compared with the rest of the artefact. Length: 34.3mm.

Two-piece Colchesters are often decorated along the raised mid-rib with distinctive zigzag designs (Hattatt 1985, fig 12: 252). Due to the rather corroded state of the example from Tempsford, it is impossible to discern, without further cleaning and conservation, whether the artefact bears this central decoration. It is worth noting that the use of the same zigzag design along the flat margins may represent a variation on the "standard" decorative scheme. This appears to be slightly unusual as no direct parallels could be found. Artefacts of this type, dated cAD 50-70, are among the most prolific forms of Romano-British brooch recovered (Hattatt 1985, 27). Parallels are readily available from excavations at Colchester (Crummy 1983, 12) and the Roman settlement at Gorhambury, Herts. (Neal *et al* 1990, 118).

4 gravel surface (253), trench 6, period 7 *Copper alloy strap-end or buckle plate*. Incomplete. Flat rectangular sheet, perforated at one end by a pair of parallel rivet holes. Length: 25.1mm. The artefact bears an asymmetrical tooled zigzag decoration around three of the four edges, a common feature of copper alloy strap-ends and buckle plates of the medieval period. The pattern, also known as "wriggle work", would have been produced using a walked engraver and appears to be quite roughly executed. Examples from excavations in London indicate the use of this technique on items from at least the early 13th to the early 15th century (Egan and Pritchard 1991, 31).

As only a small portion survives, it is impossible to determine accurately the method of manufacture, or original form of the object. It may represent a strap-end of the simplest form, consisting of a single strip of sheet metal, folded widthways along the outside edge, with a strap riveted in place between the metal (Egan and Pritchard 1991, fig 83: 583). Alternatively, the artefact could be part of a buckle plate, fashioned from sheet metal in a similar manner and folded around a buckle frame. Buckle plates provided a means of attaching the frame to a strap, that was arguably more secure than folding the leather or textile around the frame and then sewing the strap together to hold it in place (Egan and Pritchard 1991, 55). Strap-ends and buckle plates take various forms and are usually made of sheet bronze, secured by rivets.

Household utensils and furniture

12 fill (261) of ditch [260], trench 6, period 6 *Lava rotary quern fragments*. Three irregularly shaped fragments which join to form a roughly rectangular piece. Uneven surfaces,

showing traces of wear. Weight: 89gms, max. thickness: 20.0mm.

13 upcast from moat (163), trench 4, period 6 *Lava rotary quern fragment*. Incomplete. Roughly rectangular in shape and section, with faint grooves/wear marks running across one surface. Weight: 161gms, max. thickness: 27.0mm.

16 topsoil (301), trench 7, period 9 *Lava rotary quern fragments*. Five irregularly shaped fragments, none of which join or retain any trace of an original surface. Weight: 15gms.

All are manufactured from imported material and are likely to be of Rhenish origin. The majority of lava querns in Britain are generally held to have originated from the Mayen quarries of Germany, although recent petrological analysis indicates the exploitation of alternative sources, such as lava outcrops found near Volvic in the Auvergne region of France (King 1986, 94). The Mayen and presumably the Volvic quarries have a long production history spanning over a thousand years. During the Roman period, there was considerable trade with Britain, which although ceasing in the early Saxon period, was well established by the 9th/10th century and continued throughout the medieval period (Crummey 1983, 75). Consequently, finds of this type are common on multi-period sites and cannot be dated with any certainty. No lava querns in Britain have been dated earlier than AD 50 and although three distinct date ranges, based on form, have been recognised (King 1986, 95), it has been impossible, due to the fragmentary nature of the Tempsford examples, to determine whether the pieces fall within a Roman, late Saxon/early medieval, or late medieval group. Their recovery in association with pottery of early-mid Saxon and Saxo-Norman date may suggest that they derive from the earlier periods, although this cannot be demonstrated with any certainty.

Fasteners and fittings

3 gravel surface (253), trench 6, period 7, no 2, *Iron slide key*. Worn, incomplete and in poor condition. Rectangular-sectioned stem with a hooked 'S' shaped terminal (suspension loop) aligned on the opposing plane to a broken bifurcated end. Length: 80.9mm.

Slide keys are exclusively found in Roman and Saxon contexts in Britain and go out of use in the 9th century (Rogers 1993, 1423). None has been recovered from medieval contexts on sites which do not have pre-Conquest occupation (Ottaway 1992, 675). Small slide keys (those less than 100mm in length), of which RF 3 is an example, were designed for casket or chest locks.

8 fill (261) of ditch [260], trench 6, period 6, no 4, *Iron padlock fragment*. Rectangular strip with rectangular section, broken at both ends. Length: 60.0mm. X-ray revealed the remains of a thin iron sheet with two parallel iron rods attached, each spirally twisted, creating a "herring-bone" design. The object was almost entirely plated with a thin layer of copper alloy, which X-ray fluorescence analysis revealed to be brass (copper and zinc amalgam), with a small amount of lead present. The object forms part of a decorated strengthening rod found on a barrel padlock of Type A or B, as defined by Goodall (1980).

Barrel padlocks were the most common type of padlock in use during the medieval period. They generally have cylindrical cases and padlock bolts with springs attached to spines. They were opened by padlock keys which passed over

the springs, compressing them against the spine and thereby releasing the bolt (Goodall 1980, 123). Although barrel padlock cases are sometimes plain, most bear decoration of some form, much of which is thought to have originated as a by-product of the method of assembly (Goodall 1980, 131). The addition of decorative and functional longitudinal and transverse rods or straps between the end plates of padlocks of Types A and B is well attested. There is increasing evidence for the plating of padlocks, which would have acted as a protective, rust-preventative coating. Evidence from York indicates that plating was applied by dipping the component part into molten metal prior to final assembly of the padlock (Tweddle 1986, 193; Bayley 1992, 810).

Type A barrel padlocks were in use contemporaneously with box padlocks in the pre-Conquest period and examples bearing non-ferrous plating are known from Coppergate, York (Ottaway 1992, 665) and Fishergate, York (Rogers 1993, 1420). They probably ceased to be used during the 12th century (Goodall 1980, 125). Type B padlocks occur throughout the post-Conquest medieval period and are the most common type (Goodall 1990, 1001).

5 occupation debris (211), trench 5, period 6, no 1, *Iron door key*. Complete. D-shaped bow, solid, stepped stem with projecting tip and three symmetrical ward cuts, perpendicular to the stem, which run the depth of the bit, dividing it into four parts. One side of the bit retains traces of mineralised wood. Type G1 (Goodall 1980, fig 19). Length: 143.0mm.

7 topsoil (51), trench 2, period 9, no 3, *Iron door key*. Complete apart from missing tip. D-shaped bow, solid, stepped stem with symmetrical wards grouped around a central T-shaped opening. Type G2 (ibid.). Length 131.9mm.

Both are examples of Type G keys as defined by Goodall (1980). Type G keys are the single most common type of medieval key, principally because they were versatile enough to be used from either side of a lock; the step on the stem acted as a stop against the ward of the lock and prevented the key from being pushed too far through (Goodall 1980, 152). Thought to have been introduced in the 12th century, they are found in small numbers in the early medieval period, become most prolific in the late medieval period and continue as the principal key type in post-medieval times. Bow shape may be used as an indicator of date, with oval and D-shaped examples occurring predominantly during and after the 13th century (Goodall 1980, 152).

Transport and animal trappings

1 occupation debris (162), trench 4, period 6 *Iron horseshoe*. Incomplete branch with slightly lobate edge and three oval nail holes, which have rectangular countersinkings. Clenched nails survive in two of the nail holes, although it is impossible to determine whether they are worn examples of fiddle-key or trapezoidal form. Wear is indicated by the proximity of the nail holes to the edge and by thinning of the shoe towards the toe. Length: 82.1mm.

The horseshoe is of classic "Norman" type. They first appear in the archaeological record in mid-late 11th century contexts and continue in use throughout the 12th century when they predominate. They are superseded by shoes with rectangular nail holes during the 13th century (Clark 1995, 96). Horseshoes of this type, and their associated nails are well attested from early medieval sites such as Goltho (Lincs.), where examples were recovered from contexts dating from

Period	Pottery (vessels)									Registered finds	Metalworking residues	Other finds (no. of frags)
	IA	R	S	S-N	EM	HM	LM	P-M	Mod			
2	1									Flint scraper (RF 17)		Flint x 5
3										Ca brooch (RF 2)		
4			1	1								Flint x 1
5	3	2		15	1					Pb roll (RF 15)	Ferrous slag (16g)	Flint x 3
6	1		6	92	20	2			1	Fe horseshoe (RF 1) Whetstone (RF 6 and 14) Fe door key (RF 5) Fe barrel padlock frag (RF 8) Lava quern frags (RF 12 and 13) Fe slide key (RF 3) Ca strap-end/buckle plate (RF 4)	Ferrous slag (69g)	Fired clay x 1 Flint x 6 Roof tile x 2
7				25	12	5	2	1				Flint x 3 Fe nail x 2 Fired clay x 2 Roof tile x 3 Fe nail x 1 Fired clay x 1 Roof tile x 7 Flint x 14
8			1	3	1	4	2	2	1			
9	1	4	7	14	4	3	5		2	Fe door key (RF 7) Pb ?ingot (RF 9) Ca ?ferrule (RF 10) Ca ?handle (RF 11) Lava quern frags (RF 16)		
Total	6	6	15	150	38	14	9	3	4	17	691g	51

Table 2 Artefacts summary by phase

IA	Iron Age	HM	High medieval
R	Roman	LM	Late medieval
S	Saxon	P-M	Post-medieval
S-N	Saxo-Norman	Mod	Modern
EM	Early medieval		

c1000-1150 (Beresford 1987). The dating obtained from horseshoes cannot, however, be regarded as definitive. Evidence increasingly indicates the use of horseshoes in the Iron Age and Roman periods and, as yet, there appears to be no way of distinguishing date other than by association with securely dated artefacts within the same context (Taylor 1978). Bearing this in mind, it remains feasible to assign the horseshoe from Tempsford to the 12th century, given that it was recovered from a layer of occupation debris, in association with ceramics of indisputably early medieval date.

Multi-purpose

14 upcast from moat (319), trench 7, period 6 *Whetstone: ?greywacke sandstone*. Incomplete, roughly pyramidal in shape, broken across one end. Retains five surfaces, one of which appears to be smoothed through use. Length: 60.7mm.

6 occupation debris (211), trench 5, period 6 *Whetstone: quartzite*. Incomplete, an elongated oval in shape, one edge broken, the other terminating in a point. Smoothed surfaces indicate signs of use. Length: 103.4mm.

These multi-purpose implements are extremely common on sites of all periods. For this reason, they are largely undatable. Both examples appear to be secondary hones, in that they are stones which happened to have honing properties, as opposed to primary hones, which were deliberately quarried and traded, often over considerable distances (Moore 1978, 65).

Craft and industry

9 infilling of moat (109), trench 3, period 9 *Lead ?ingot*. Roughly oval in shape, with one slightly domed and one flat surface. The domed surface bears two circular impressions. Weight: 159gms. This object has been tentatively identified as part of a lead ingot, which could have been melted down during industrial processes and utilised for various purposes, including use on buildings such as caulking, flashing or guttering.

Metalworking residues A small quantity (total weight 691g) of ferrous slag, fuel ash and vitrified clay hearth lining was recovered (Table 2). The former is largely undiagnostic but, in conjunction with the hearth lining remains, may represent the debris from iron smithing activity. Ferrous slag weighing 79g was recovered from the fill (325) of a period 6 hearth, the remainder having been redeposited within the fills of ditches and pits. This secondary redeposition of slags is not uncommon, presumably resulting from the periodic cleaning of hearths and surrounding areas.

Weaponry (hunting and military)

15 building platform (314), trench 7, period 5 *Lead roll*. Crude, rectangular strip rolled to form a cylinder. Weight: 19gms. It is possible that this artefact served as a fishing net weight or sinker, used in association with a small, hand-held net. Evidence supporting the use of simple weights of this type, comes from sites ranging in date from the Iron Age through to the medieval period (Steane and Foreman 1988, 162). Given the proximity of the rivers Great Ouse and Ivel, it seems likely that these fresh water food sources would have been exploited during all periods of activity at the site.

Overview of the registered and non-ceramic bulk artefact evidence

The limited scale of the field evaluation and the small size of the resultant artefactual assemblage,

allow only limited conclusions to be drawn about the character and date of activity at the site. Individually, the artefacts are not of a particularly high quality and are fairly standard forms.

Considered collectively, the artefacts, although rather limited in range, hint at a variety of domestic activities, including grain processing, fishing and small-scale metalworking, probably smithing. The recovery of locking mechanisms suggests the presence of buildings on site.

Typologically datable artefacts are indicative of limited, early prehistoric and possibly Roman activity either at, or in the vicinity of, the site. Similarly, the recovery of a T-shaped slide key, residual in a period 7 context, points to occupation during the Saxon period. Activity during the early medieval period is attested by the "Norman" horseshoe. The bulk of the typologically datable artefacts (the padlock fragment, the two door keys and the strap-end/buckle plate) are associated with the occupation of the moated site from the 13th-15th century.

MACROSCOPIC PLANT AND INVERTEBRATE REMAINS

Mark Robinson

Introduction

In all nine soil samples were taken during the field evaluation. Sampling was targeted on waterlogged deposits and contexts containing visible charred plant remains.

Each sample was disaggregated in water. The flot was collected on a 500µm mesh. The gravel residue was collected on a 1mm mesh, dried and discarded once its artefactual and ecofactual

Sample	Trench	Context	Period
1	3	(127) primary, waterlogged fill of moat (N arm)	6
2	Bh1	(455) primary, waterlogged fill of moat (N arm)	6
3	Bh3	(465) primary, waterlogged fill of moat (S arm)	6
4	2	(63) fill of cut feature [62]	5
5	3	(146) layer of occupation debris	6
6	4	(162) layer of occupation debris	6
7	7	(330) fill of pit [329]	2
8	4	(160) layer of possible occupation debris	5
9	7	(328) layer in hearth [323]	6

components had been removed. The material from each sample was scanned under a binocular microscope and the occurrence of macroscopic biological remains was recorded. An assessment report on the material was written but no detailed analysis was undertaken.

Results

Sample 1 contains numerous well preserved seeds of three aquatic plants: *Ranunculus* sp. (water crowfoot), *Oenanthe aquatica* gp. (water dropwort) and *Lemna* sp. (duckweed). Shells of aquatic molluscs are abundant, including *Valvata cristata*, *Planorbis planorbis* and *Sphaerium corneum*. There is much woody plant debris, including *Prunus/Crataegus* (sloe/hawthorn) type thorny twigs and *Rubus* sp. (blackberry) prickles but seeds of terrestrial plants are few. However, seeds of *Urtica dioica* (stinging nettle) are present.

Sample 2 produced an assemblage very similar to that of sample 1.

Sample 3 contains numerous seeds of *Ranunculus* cf. *repens* (creeping buttercup) and a few seeds of the annual weed *Polygonum persicaria* (red shank).

Sample 4 contains of the order of 400 charred grains, many of them identifiable. Free-treshing *Triticum* sp. (wheat) predominates but *Hordeum* sp. (hulled barley), *Secale cereale* (rye) and *Avena* sp. (oats) are all present. No chaff was observed. There are a few weed seeds including *Anthemis cotula* (stinking mayweed).

Sample 5 contains a few badly preserved grains.

Sample 6 contains about 100 cereal grains, mostly *Triticum* sp. but also a very few grains of *Hordeum* sp., *Secale cereale* and *Avena* sp. Some *Quercus* (oak) and *Fagus* (beech) charcoal are also present.

Samples 7, 8 and 9 contain a few badly preserved grains.

All the non-waterlogged flats contain shells of dry ground, open country molluscs, particularly *Pupilla muscorum*, *Vallonia excentrica* and *Trichia hispida*.

Discussion

Period 5 the pre-moat settlement

(mid-9th/10th-12th century)

Only sample 4 has some potential to elucidate the local agricultural economy. It is likely that the process which led to the formation of the assemblage of charred cereal remains and arable weeds was the parching of threshed and cleaned grain to harden it prior to small scale hand-milling. This would account for the absence of chaff and the predominance of wheat in the sample.

Period 6 construction and initial occupation of the moated site

(13th-14th century)

Samples 1, 2 and 3 provide some useful information

on environmental conditions in the moat but the absence of sewage or domestic debris means that no economic evidence is available. The aquatic molluscs *V. cristata* and *S. corneum* in samples 1 and 2 most usually occur in running water but the presence of duckweed, a small floating-leaved plant which carpets the surface of stagnant water, suggests that there was little flow to the moat. This would tend to corroborate the evidence of the earthwork survey for the moat being fed by groundwater rather than by a stream. The stinging nettle seeds indicate that some scrub was established around the edge of the moat. The absence of any remains of aquatic plants or molluscs in sample 3 suggests that this sample may represent an early stage in the ecological succession of the moat when the banks were still unstable and before aquatic species had colonised.

The assemblage of charred cereal remains from sample 6 is similar to that recovered from sample 4 and is likely to derive from similar agricultural and domestic processes. It is likely that the oak and beech charcoal represents the remains of fuel.

ANIMAL BONE

Tony Roberts

Introduction

Animal bone was hand collected from a total of 35 excavated contexts. In addition, five of the soil samples (taken to recover macroscopic plant remains) also produced fragments of animal bone. Where possible the material was identified to species and skeletal element. An assessment report was produced but no detailed analysis was undertaken.

Results

The assemblage is summarised below by period, species and fragment count; details on the individual bones are retained in the site archive. The distribution of the animal bone by trench is also tabulated.

Discussion

The bulk of the assemblage (90%) was recovered from contexts assigned to periods 5, 6 and 7 (Table 3). Period 6 accounted for more than half (55%) with the majority of the material deriving from layers of occupation debris (146) (162) (211) in trenches 3, 4 and 5 and the upper fills of a series of large cut features in trench 6.

Cattle, sheep and, to a lesser extent, pig were the dominant economic species. Variation in size and age was present. In period 6 there was evidence for

PERIOD	1	2	3	4	5	6	7	8	9	TOTAL
SPECIES										
Cattle (<i>Bos</i>)	2			1	5	15(1)	8			32
Sheep (<i>Ovis</i>)				1	1	9(1)	3		1	16
Pig (<i>Sus</i>)					1	1(3)	4			9
Horse (<i>Equus</i>)						4				4
Bird		(2)			(2)					4
Dog (<i>Canis</i>)						1(1)	1			3
Chicken (<i>Gallus</i>)						1(1)	1			3
Hare (<i>Lepus</i>)						1				1
Freshwater fish (small)					(1)					1
Sea fish (?cod)						1				1
Unidentified fragments				4	4	23	9			40
Total (economic species)	2	2	0	6	14	63	26	0	1	114
Frog (<i>Rana</i>)					(1)	(2)				3
Rodent					(5)	(7)				12

Table 3 Animal bone: number of fragments by period.

(Bracketed numbers indicate bone recovered from soil samples.)

butchery and possible working on a bovine metatarsal. Gnawed bone was present in both periods 6 and 7. The small size of the assemblage, however, precludes any detailed intra- or inter-period discussion of the relative frequency of the different species. The range of species is typical of a Saxo-Norman and medieval rural settlement (Grant 1988, Albarella & Davis 1994) and reflects

the importance of animal resources in the rural, domestic economy.

The presence of a large, sea fish (?cod) rib bone in period 6 is noteworthy. It is indicative of a food resource which does not derive from either the site itself or its immediate catchment area. It was presumably imported from the North Sea coast via the river Great Ouse. The freshwater fish bone in

TRENCH	1	2	3	4	5	6	7	8	9
SPECIES									
Cattle (<i>Bos</i>)		2	1	10	4	12	1	1	1
Sheep (<i>Ovis</i>)	2	2	3	2		5	1	1	
Pig (<i>Sus</i>)			3	2	1	3			
Horse (<i>Equus</i>)					3	1			
Bird		2					2		
Dog (<i>Canis</i>)	1		1			1			
Chicken (<i>Gallus</i>)				1		2			
Hare (<i>Lepus</i>)					1				
Freshwater fish (small)				1					
Sea fish (?cod)							1		
Unidentified fragments	2	4	4	6	2	10	7	4	1
Total (economic species)	5	10	12	22	11	34	12	6	2
Frog (<i>Rana</i>)		1	2						
Rodent		4	4	4					

Table 4 Animal bone: distribution of fragments by trench

period 5 suggests that the local rivers were also exploited.

In terms of its physical distribution the assemblage is concentrated within and immediately to the N of the moated site in trenches 2-7 (Table 4). The areas further to the N and to the S of the moat appear to have been peripheral to the main focus of domestic activity.

SOIL MICROMORPHOLOGY

Richard I Macphail and Gill M Cruise

Introduction

Two samples from undisturbed deposits were taken for soil micromorphological analysis to try to help characterise the dark, "occupation" deposits on site. In particular, sample 1 was intended to investigate the possibility that cut [62] represented part of a sunken featured building.

Sample	Trench	Context	Depth	Period
1	2	(63) fill of ?sunken featured building [62]	73-81 cm	5
2	4	(162) layer of occupation debris	51-59 cm	6

The samples were sent to the University of Stirling where they were impregnated with crystic resin and manufactured into soil thin sections (Murphy 1986). The thin sections were described according to Bullock *et al* (1985) and interpreted according to Courty *et al* (1989) with additional reference to (then) on-going research on rural and urban dark earth sites (Macphail 1994; Macphail and Cruise 1995, unpublished).

Results and interpretation

Sample 1 was taken from the central part of cut feature [62]. It is rich in calcitic ash residues with abundant fine charcoal and phytoliths, medium and fine quartz sand and silt, all of which have been subject to biological mixing. It also contains inclusions of coarse-sized charcoal, probable plaster, pottery fragments, human coprolites as well as possible charred peat and alluvial clay soil. It is far less well sorted and more heterogeneous than sample 2. In addition, it seems to contain some vertical stratigraphical variation. More clay and amorphous organic material are present in the lower part of the slide, which is also more compacted than the upper part. The lower part contains a 10mm

piece of layered sandy, silty plaster with many plant pseudomorphs.

A tentative interpretation of this deposit might be that the lower part contains information on the constructional materials and use of a sunken featured building, while the upper deposits relate to the subsequent infilling of the feature after it had gone out of use.

Sample 2 is dominated by calcitic ash residues and fine charcoal. It is exceedingly rich in phytoliths; some diatoms are also present. Coarse materials consist of "natural" unsorted medium and fine quartz sand grains and silt. "Anthropogenic" inclusions are infrequent. Its homogenised microfabric, the presence of Arionid (slug) granules and obvious earthworm burrows suggest that the deposit as a whole has probably been biologically mixed *in situ*. Earthworm activity may have mixed earlier ash deposits with those from later episodes of dumping, as some burrows appear to have been infilled with ash residues consisting almost entirely of phytoliths and fine charcoal.

Although rare vivianite crystals could suggest a weak breaking down of ashes and release of phosphates (apart from any liquid waste input) the deposit as a whole does not contain features associated with weathering. Nor does it contain textural features which might suggest trampling. The absence of such phenomena suggest the deposit was rapidly buried, possibly by successive accumulations of ash waste. No slag or residues from high temperature fires (such as may be encountered in industrial processes) were observed on the slide. Major midden dumping is also unlikely as only rare fragments of coprolitic material and occasional cess infills of void spaces were present.

Low temperature, possibly domestic fires (Courty *et al* 1989) must be considered to be the main source of the burned materials. In fact, it can be suggested that the high frequencies of phytoliths indicate *Gramineae*/cereal ash dumping. Most importantly, the homogenous, well-sorted nature of the fine materials points to a degree of sorting prior to dumping. Domestic floor sweepings (eg hearth debris, including possible burned peat or turf) or cereal processing residues are likely sources of this material.

Discussion

It is clear that the dark soils sampled during the field evaluation are evidence for a lengthy period of human occupation, both pre-dating and continuing beyond the construction of the moated site.

Period 5 the pre-moat settlement

(mid-9th/10th-12th century)

Without taking further samples from feature [62], so that soil micromorphological analysis of the complete sequence of its fills could be undertaken, it is not possible to confirm that it does represent a sunken featured building. Nevertheless, the presence of a probable stratigraphy within fill (63) indicates a possible sequence including collapse of an insubstantial, possibly turf-roofed building and its subsequent use as a repository for domestic waste, rich in ash residues.

Period 6 construction and initial occupation of the moated site

(13th-14th century)

Layer (162) was clearly derived from occupation of the moated site. The sample revealed well sorted ashes, comprising domestic hearth sweepings and/or cereal waste. These were dumped and probably rapidly buried by further accumulations of ash residues.

DISCUSSION

Introduction

Despite the limitations of scale, the field evaluation clearly demonstrated that the moated site in Tempsford Park was constructed, during the 13th century, on the site of a pre-existing settlement, which itself may have been in existence from as early as the middle Saxon period. This superimposition of moated sites on land already under occupation is a widely recognised phenomenon in medieval settlement studies; other regional examples include Wintringham, Cambridgeshire (Beresford 1977), Ashwell, Hertfordshire (Hurst 1967) and Bradwell Bury, Buckinghamshire (Mynard 1994). Concentrations of moated sites are often interpreted as primary assart settlement, reflecting late colonisation. This process has been recognised in Bedfordshire where in some parishes, eg Cranfield, the creation of moated sites can be shown to have been directly associated with assarting around the parish perimeter during the 12th and 13th centuries (Coleman 1990). However, moat origins are varied. In Surrey, for example, many exist on the long settled strip of river gravel beside the Thames near Chertsey (Blair 1991, 64). Similarly the moated site in Tempsford Park is not testament to the colonisation of previously unoccupied, marginal land but was one element in a

pattern of generally dispersed, river valley settlement which had been evolving over many centuries.

The pre-moat settlement

Evidence for settlement in Bedfordshire between the 5th and 11th centuries is considerably sparser than for the preceding Roman or Iron Age periods. However, from the late pre-Conquest period the terraces of river valleys, such as the Great Ouse and Ivel, were favoured areas for settlement. The densities of both population and plough teams recorded in Domesday Book are higher in such areas than on the adjacent claylands and Greensand Ridge (Darby and Campbell eds. 1962). All parishes, including Tempsford, which contained land in the valleys, have the eponymous settlements of the Domesday manors sited close to the river. Again like Tempsford, these tend to be characterised by rows or streets, rather than by clustered nucleations. Broadly speaking, there is a settlement hierarchy (related to function) with smaller sites located further away from the valleys and isolated farmsteads on the parish boundaries (Lewis and Fox 1992). The results of the field evaluation, in particular the large assemblage of St Neots-type wares, provide clear evidence for settlement of the river gravel terrace during this period. Interestingly, in 1934 a large collection of similar pottery was dredged from the river Great Ouse at the site of a former ford (Hurst 1956, 57) located approximately 300m NW of the settlement in Tempsford Park.

The moated site

Within Bedfordshire the main concentrations of moated sites appear to coincide with the distribution of heavy soils, derived from the Oxford, boulder and gault clays (Coleman 1990). They are relatively uncommon in parishes containing land in the river valleys. However, where present, they are, like the site in Tempsford Park, most frequently found within settlements close to the river. Again this appears to be a reflection of the continuation into the later medieval period of a manorial structure, which saw estate centres located on the river gravel terraces, with smaller, dependent, economically specialised settlements on the "periphery" (Lewis and Fox 1992).

It is now well understood that the presence of a moat in itself is not necessarily indicative of the manorial status of a site (Le Patourel 1978a, 22). It need signify no more than the location of the homestead of a reasonably prosperous farmer in the 12th, 13th or 14th century. However, the nature of

the medieval manorial structure in the Great Ouse/Ivel valley and the balance of the documentary evidence suggest that the moated site in Tempsford Park may be identified with the capital message of Brayes Manor. There is also some support for this conclusion from the excavated evidence. The area enclosed by the moat is relatively large, c0.45ha (1.1 acres). In Essex and Worcestershire it has been suggested that the majority of moats enclose areas less than one acre in extent (Hedges 1978, 68; Bond 1978, 76). The ecofactual and utilitarian artefactual assemblages highlight the agricultural and domestic nature of activity at the moated site. It does not appear to have been the centre of a large and prosperous estate. Nonetheless, by the late medieval period a homestead of some substance was in existence. The W half of the platform contained timber framed buildings, fronting onto an extensive, metalled courtyard, which was linked to a probable metalled trackway running from the NE corner of the moat towards the road frontage on Langford End. To the E outlying earthworks and further evidence for occupation, revealed by the gradiometer survey, suggest that the moated site itself was simply one part of a larger establishment.

Smaller manors, like Brayes, were not uncommon in N Bedfordshire. At the time of the Domesday survey, the area was characterised by manors which rarely covered whole parishes. This pattern survived into the later middle ages; Brown and Taylor (1991) have identified a number of moated sites in the area, belonging to small medieval estates, which can be traced back to the smaller holdings of land described in Domesday Book. In the pre-Conquest period these units were held by groups of sokemen (*ie* "lordship" was exercised by elements of the local peasant community) who were replaced by a single new overlord following the Conquest. If the identification of the moated site in Tempsford Park with Brayes Manor is correct, then the former provides more supporting evidence for this model of medieval land holding. According to Domesday Book the three sokemen who formerly held the two hide manor were replaced by Richard Poynant. However, although the tenurial organisation of estates changed, the pattern of small scale, dispersed land holding, from which they stemmed, endured into the medieval period. Rather than planned, nucleated settlements, villages took the form of a series of ends, consisting of long rows of properties. Tempsford is one such village and the

position of the moated site within the medieval Lambcourt End places it neatly into this pattern of non-nucleated settlement.

Once more with the caveat that the scale of work was limited, the results of the field evaluation are noteworthy in that the elements of continuity at the level of estate organisation and settlement pattern appear to be reflected in the similarity between the economic and material status of the moated site and the earlier establishment that it replaced. Both appear to be elements of not notably high status agricultural settlements. Unfortunately, however, assuming the moated site was a medieval estate centre, it is uncertain, given the limited *in situ* structural evidence for the pre-moat period of occupation, whether or not it was constructed with the purpose of enclosing a pre-existing capital message.

The continuing use of earthfast posts demonstrates a degree of similarity in building techniques between the pre-moat settlement and the initial period of occupation of the moated site itself. However, there are some differences in this area, characteristic of architectural developments on most rural sites of this date. The later phases of building (period 7) are characterised by the use of padstones and stone wall footings, associated with more elaborate timber framed structures. The artefactual and ecofactual assemblages, however, do provide a distinctive indication of continuity in the type and level of activity represented in the archaeological record. Throughout the period of occupation of the site the pottery is consistently utilitarian in nature and is dominated by local types, with few regional imports. Similarly, the non-ceramic artefacts are not of particularly high quality and are fairly standard forms. The animal bone and charred cereal remains are indicative of both similar agricultural regimes and small scale, domestic processing of grain. The latter is also reflected in the dominance of ash residues and fine charcoal in the samples of occupation deposits submitted for soil micromorphological analysis. In many ways the simple fact that the later homestead is moated and the earlier one is unmoated is the sole difference between the two phases of occupation.

Later history of the moated site

Beyond the end of the 15th century there is little structural or artefactual evidence for occupation of the moated site. This may be linked to the fact that the owner of Tempsford Manor also purchased Brayes in the mid-16th century. The excavated

evidence suggested that the moated enclosure may have continued to be used for livestock management. This may also be inferred from the documentary evidence. The property bought by Sir Gillies Payne in 1769 was described as "... that Close and Homestall called Brayes Manor Pasture...", the term "pasture" indicating that the land was used for animal grazing.

At some time during the second half of the 18th century extensive landscaping, associated with the creation of Tempsford Park, clearly took place around the moated site. This appears to have included the levelling of settlement earthworks along the Langford End frontage to the E of the moat. It is also possible that the E arm of the moat was infilled as part of this work, as it is not shown on the estate map dating to c1829. By the end of the 19th century knowledge of the original status of the surviving arms of the moat appears to have been lost, resulting in their annotation as fishponds on early edition OS maps.

Conclusions

The archaeological field evaluation revealed the moated site to be in an excellent state of preservation with late medieval surfaces and building foundations surviving very close to the present day ground surface. This appears to be due in no small part to its incorporation into Tempsford Park, which protected it from the detrimental effects of post-medieval or modern ploughing. The construction of the moat itself, however, did have a very damaging impact on the remains of the earlier settlement upon which it was built. The latter may have formed part of a late pre-Conquest estate centre, possibly associated with Brayes Manor, which at some point in the 13th century was furnished with a moated homestead. The artefactual and ecofactual data indicate similar, relatively low status, domestic and agricultural activity (as might be expected at the headquarters of a small estate) both before and after the establishment of the moat. However, without further, more extensive archaeological excavation, it is difficult to investigate further the nature and degree of this apparent continuity.

Moated sites are the one element of dispersed, lowland settlement to have received most attention from archaeologists, largely on account of their distinctive form and the fact that there is often an architectural dimension to their study (Austin 1989, 239). However, it has been repeatedly recognised that severe limitations exist within the methodological approaches adopted in their excavation. More

than twenty years ago Le Patourel (1974b, 42) and Hedges (1974, 68) drew attention to the need to investigate ancillary buildings and subsidiary enclosures, in order to understand how a moated site functioned as the centre of an agricultural complex. A similar call for investigation beyond the bounds of the moat ditch itself has been made in respect of moated sites which do not appear to contain dwellings (Clarke 1984, 59). In a survey of medieval rural settlement in East Anglia, published in 1989, Wade-Martins argued that only two moated sites in that region had been excavated on a sufficient scale to produce worthwhile results (Brome in Suffolk in 1967 and Hempstead in Norfolk in 1976). However, even there work had been insufficiently extensive to provide an adequate picture of how a medieval manor functioned as a working farm.

This situation is paralleled precisely in Bedfordshire. No extensive excavation of a well preserved moated site and its immediate environs has been undertaken. The field evaluation of the site in Tempsford Park, despite its inherent limitations, has given a clear indication of what could be achieved through the use of a suite of modern techniques on a sufficiently large scale. As a result of the work of English Heritage's Monuments Protection Programme, the sites of 297 moats have been identified in Bedfordshire. Of these, 174 no longer exist (Coleman 1990). The surviving examples vary greatly in form, origin and condition; should any be threatened with destruction, their full investigation must be made an urgent priority.

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Excavations At Elstow Abbey, 1995

MICHAEL DAWSON AND DAVID FELL

With contributions by A M Slowikowski, J La Niece and E Hutchins

Illustrations by C A Marshall and L Padilla

SUMMARY

Evidence for medieval leets, bridge abutments and post-medieval blocking of one of two parallel stream courses running south of Elstow Abbey was recorded during drainage widening works. A geophysical survey of the whole site added to information obtained from excavations between 1965 and 1972.

INTRODUCTION

In 1993 it was decided that the proposal to construct the Bedford Southern Bypass required the Bedfordshire and River Ivel Internal Drainage Board (IDB) to undertake remedial work along the Elstow Brook to reduce the risk of flooding south east of Bedford. Where the Brook flows past the site of Elstow Abbey widening works provided an opportunity to record a section through the monastic and later landscape.

Geophysical survey was carried out as evaluation work prior to the finalisation of widening plans on both banks of the Brook in 1994. The survey covered much of the previously partially excavated monastic site to the north (Geophysical Surveys of Bradford, Reports 94/83; 94/100). Appraisal of the evaluation survey in the light of documentary and earlier excavation evidence led to the design of a mitigation strategy in which widening took place on the south bank of the brook preceded by archaeological recording.

TOPOGRAPHY AND GEOLOGY

The solid geology of the region consists of Oxford Clay between the Jurassic Ridge to the north and the Lower Greensand Ridge to the south. In the post glacial period, the River Great Ouse laid down extensive gravel beds, forming a wide low-lying valley west of Bedford. Elstow is located on the divide between this valley and the flat featureless landscape of the clay vale to the west.

The Elstow Brook is a minor tributary of the River Great Ouse and follows a meandering course, cutting into the gravel to form a shallow valley, south of Bedford town, falling from approximately

26m OD at its source to 23m at its confluence. The Brook rises from a spring line at the base of the Lower Greensand Ridge, south west of Bedford. It flows north eastwards and enters the parish of Elstow from the west, following an easterly course for c.300m, before turning abruptly south for approximately 60m and approaching Elstow Abbey from the south west. It passes immediately to the south of the Abbey and medieval village of Elstow before meandering along an originally braided course, on the north east edge of Elstow parish towards Harrowden.

ARCHAEOLOGICAL BACKGROUND

Extensive archaeological investigation has taken place in the Elstow area over the past four decades. In 1965-1972 (Baker 1966, 1969, 1971) excavations south and east of the present parish church revealed the remains of a large Saxon inhumation cemetery as well as extensive evidence relating to the monastic period. In 1976 excavations at Peartree Farm shed further light on the Saxon origins of the village and provided evidence of Romano-British occupation (Woodward 1978). Recently work associated with the Bedford Southern Bypass at Village Farm and Medbury Farm has extended the area of known early medieval settlement (BCAS 1995/14).

Elstow Abbey was founded in c1078. Map evidence and the current landscape attests the widespread development of fishponds and flood meadows along the Brook during the life of the abbey. It was dissolved in 1539 and the history of the site becomes obscure until the 17th century. In 1620-30 a mansion was built for Thomas Hillersden incorporating parts of the 14th century south and west ranges of the cloister. An estate map of 1767 (Beds CRO: X 1/6/1) showing Thomas Hillersden's estate, illustrates the extent to which the landscape had been changed. Reflecting 18th century taste the environs of the mansion were fronted by parterres and included a walled garden to the south. The estate was bought by the Whitbread family in the late 18th century and the mansion was partially



Fig 1 Location of excavations at Elstow Abbey, see Fig 2 for details



Plate 1 Detail of the 1767 estate map showing (centre) Hillersden Mansion with parterres to east and the Elstow Brook and fishponds to the south (Beds CRO X 1/6/1)

dismantled, probably in the 1770s. Today only the north facade and parts of the east, including the porch, survive.

METHOD STATEMENT

Scheduled Monument Consent for the evaluation and to widen the Elstow Brook was obtained from the Department of National Heritage with the condition that archaeological recording take place in accordance with a brief and specification approved by English Heritage.

The geophysical survey established that the area of greatest archaeological survival was on the north bank. Widening was therefore planned on the south bank, where the archaeological excavation took place.

The archaeological objectives of the Elstow Brook scheme were: to establish the date range of archaeological features; to determine their nature and function; to establish the nature of any relationship with the abbey, to recover palaeoenvironmental remains; to determine local environmental conditions and to recover artefacts. The archaeological strategy was designed to address these aims and to integrate with the subcontractors ground works. During the course of widening the aims were modified by the ground conditions and by the extent of the widening scheme. In particular it became clear that until full publication of the results of excavations at the Abbey relationships between the two areas will remain preliminary, and further the excavation did not recover significant environmental data.

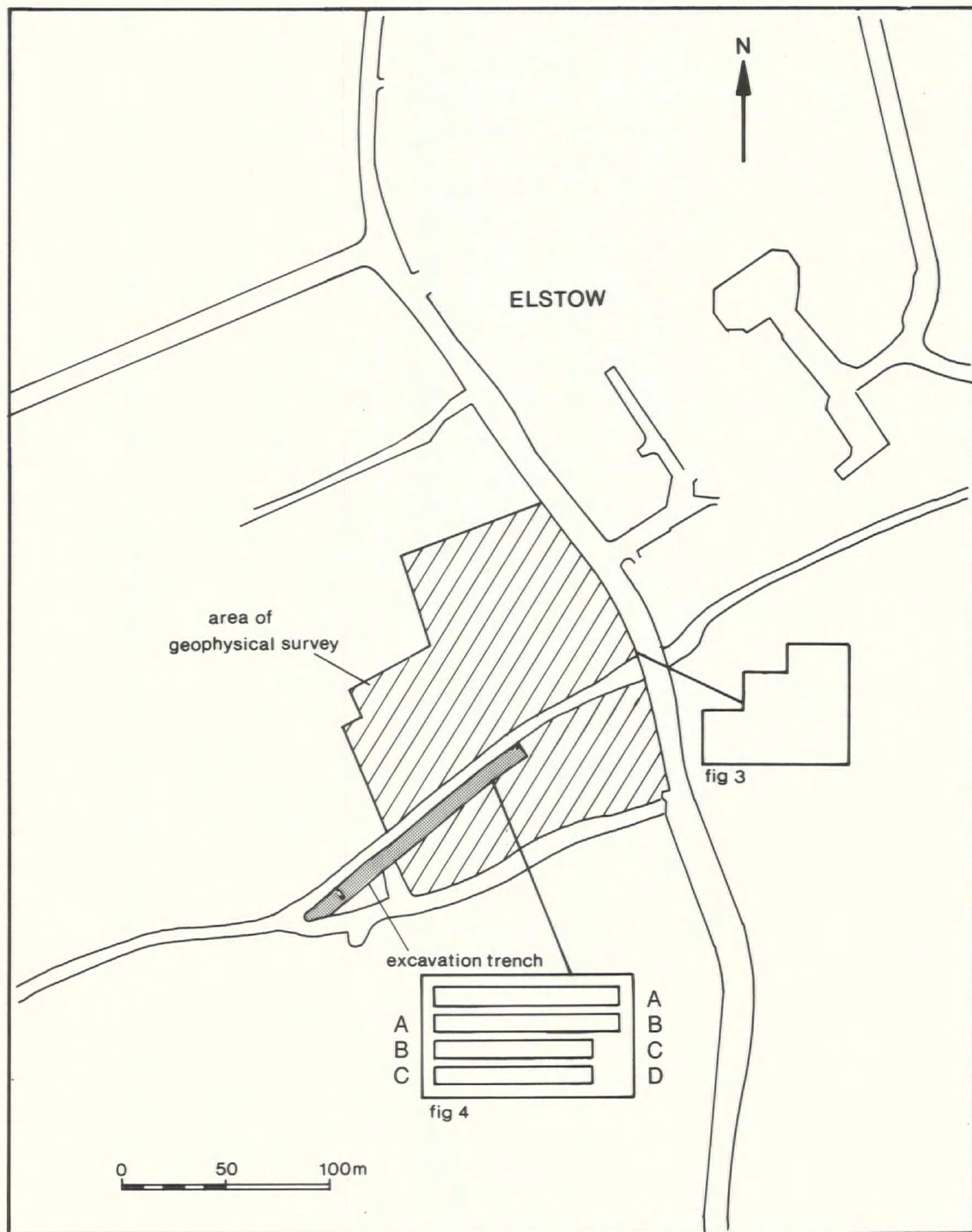


Fig 2 Location of archaeological areas: geophysical survey and excavation

The archive of finds and records will be lodged with Bedford Museum, Accession No 1995/5

THE GEOPHYSICAL SURVEY

Geophysical survey was restricted by the presence of trees, shrubs and dense undergrowth (Fig 3). It was carried out on two separate occasions during autumn 1994 using a fluxgate gradiometer: Geoscan FM36.

The survey covered areas to the east and south of the abbey and on the south side of the Elstow Brook. In front of the Abbey, on the east, numerous linear high resistance anomalies were recorded indicating the possible remains of buildings and garden features, although some of the anomalies probably result from use of the area as a bulk petrol store in the Second World War. South west of the Abbey, ground conditions contributed high levels of magnetic disturbance which obscured any archaeological evidence. South of the Elstow Brook the survey was dominated by two discrete areas of strong magnetic disturbance. Both these areas, on the east side of the site, may be the remains of fishponds shown on the 1767 estate map and backfilled with a variety of material with a high brick content. A second concentration of more restricted linear anomalies suggests ditched features possibly boundaries or drains.

THE ARCHAEOLOGICAL EVIDENCE

The results of the geophysical survey led to excavation on the south side of the Elstow Brook, west of Wilstead Road. Excavation was confined to a narrow strip of land, approximately 150m long and 10m wide, on the bank of the Brook, in an area that has been extensively modified, suggesting the present course is almost entirely artificial.

In addition the depositional sequence of the area was made more complex because the upper most layers (150) of the entire excavation area had been inverted by dumping from recent desilting.

CHRONOLOGICAL FRAMEWORK

At the western end of the excavation the background material (173, 157, 217) comprised a surviving remnant of the monastic landscape. Further eastwards there was a stream course, blocked after 1767, and beyond this an area of mixed imported material which represents straightening of the Brook course. Two bridge abutments dating to the monastic period were also investigated.

The monastic period

The leets

The earliest evidence of activity was at the west end of the excavations where the remains of two stone lined leets were recovered. These were truncated by the Elstow Brook to the north and a smaller field ditch to the south, with later robbing responsible for the removal of stones from both structures (156, 158). The leets were founded in an extensive deposit of homogenous greenish grey silty sand (157) which contained sherds of 13th and 14th century date.

The two leets (161) and (181) ran perpendicular to the present Brook. The first (Fig 5) survived for 1.4m and was built in a shallow trench (162). It was formed from a double row of flat limestone slabs set on edge creating a channel 200mm wide. The second leet had been inserted through the first but was slightly offset from the earlier line. This leet was similarly constructed of two uprights and a third lining slab to form a channel 350mm wide. It survived for 1500mm and had been allowed to silt up with grey silty sand.

The leets drained to the south and probably formed part of a drainage system serving the monastic complex. The line of the leet was not picked up on the geophysical survey although earthworks still visible to the north of the Brook may represent a continuation of the line. Finds from the silts within the first leet suggest it was constructed during the 14th century.

The bridges

The most substantial structures on site were the abutments of two stone built bridges. Approximately 70m apart, both were set slightly back into the stream bank. The first was located at the east end of the excavation, the second further west near to filled course of the Brook (Figs 4, 6, 7). Both bridge abutments were similar in size and both were constructed from a mixture of dressed and slab limestone.

Bridge 1 (Fig 6)

Bridge 1 comprises two bridge abutments at the east end of the site. The first abutment was excavated between 1968 and 1970 (Baker 1971, 63) and comprised a rubble limestone core, between layered facings. It was not investigated in 1995, being on the north side of the Brook.

The second abutment, which was re-excavated, was set into layers of brown silty clay (164, 187, 188). The structure was limestone masonry (163),

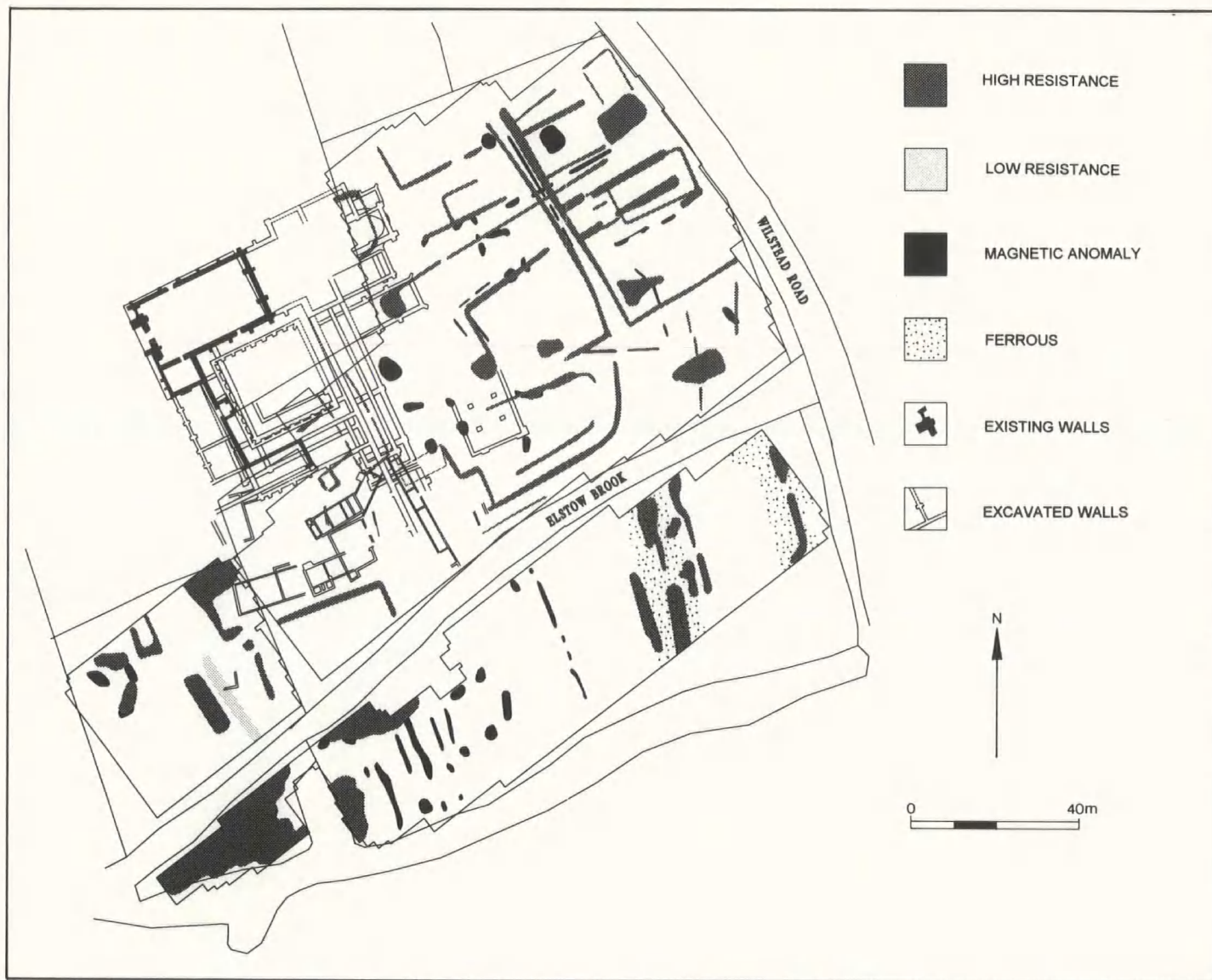


Fig 3 The results of geophysical survey

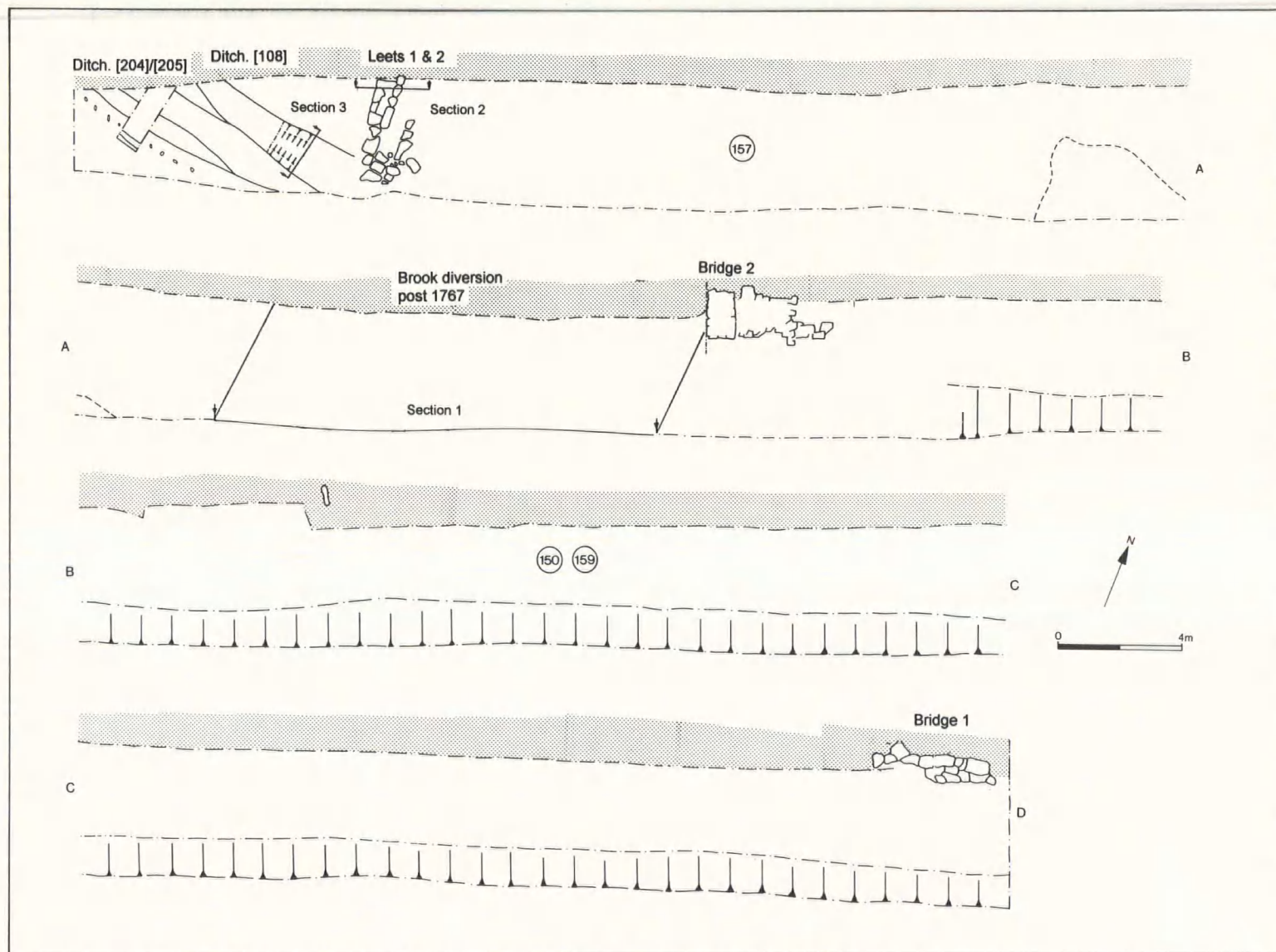


Fig 4 The results of archaeological excavations

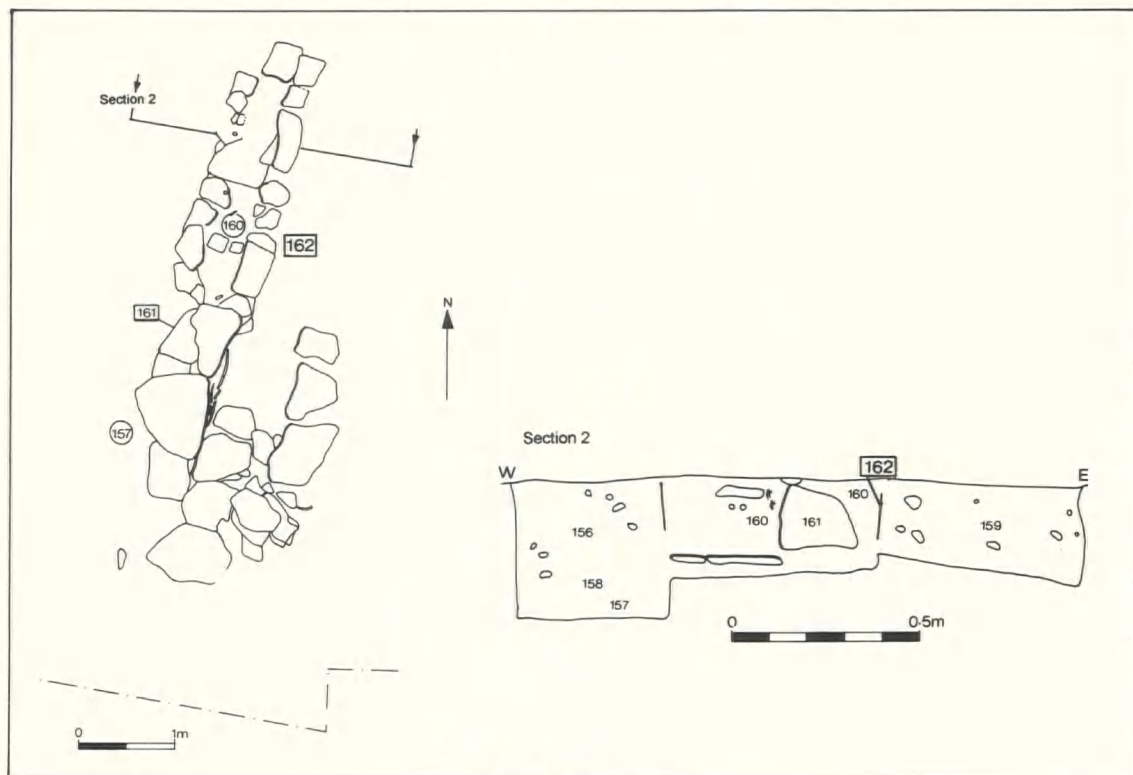


Fig 5 The monastic period leets

with undressed slabs forming the core and roughly hewn ashlar the exterior courses. The abutment was 2.5m wide, but had been truncated and only survived to 1.8m high. The whole was mortar bonded.

Bridge 2 (Fig 7)

The second bridge was situated west of the first, adjacent to the earlier stream course. The foundations were cut into the stream bank (213, 214, 216, 217) but the bulk of the structure projected slightly into the course of the Brook. At the base of the abutment a course of roughly squared stones provided the foundation and were visible at the base of the western end. The fabric of the abutment comprised limestone blocks with the core made of unfaced randomly placed ashlar (211, 219).

The masonry survived to 950mm high on the west side whilst on the east preservation was much poorer where extensive robbing had taken place. This abutment was 2800mm wide. On the west side of the bridge was a triangular cutwater projecting

2500mm forward of the pier (212, 218). Above and behind the abutment three layers of sandy gravel (hoggin) may be the remains of a pathway (167, 193, 195).

There is limited dating evidence for the second bridge. The stream bank deposit cut by Bridge 2 (217), contained a sherd of Medieval Shelly ware (BO7) dating to the thirteenth century and providing a *terminus post quem* for construction of the bridge. Sherds from the two gravel surfaces, probably paths (193, 195) associated with the bridge, were of the same date.

The late 18th and early 19th centuries

On the 1767 estate map (Pl 1) the channel of the Brook is shown to divide opposite the site of the Hillersden Mansion. The northern channel now forms the main course of the Brook whilst the southern arm survives only as a shallow depression running north to south, perpendicular to the present Brook. It ends approximately 5m south of the Brook where it was blocked.

The blocking material in the earlier course was

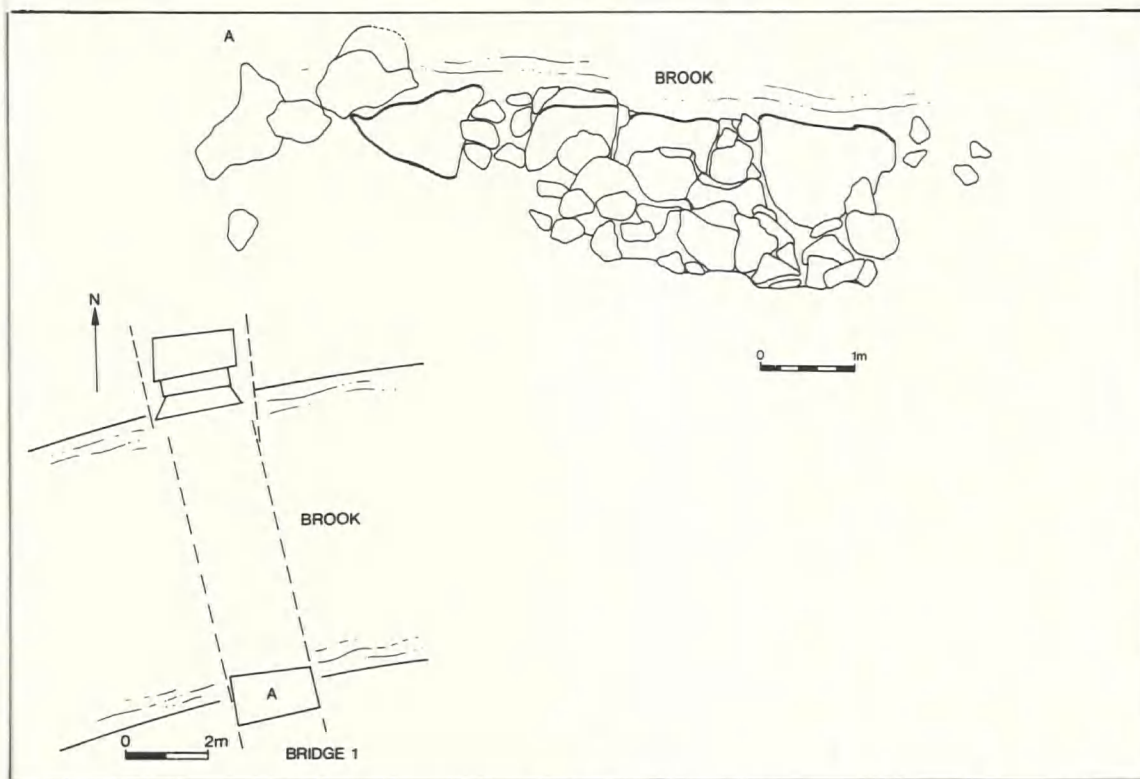


Fig 6 Bridge 1, showing the relationship between the 1970s excavation and that of 1995

sectioned (Fig 8) and comprised layers (173, 175, 176, 177, 178) of imported material, whilst the stream bed was briefly examined (189, 191) and found to have comprised clays and gravels. Landscaping as part of the infilling of the course is represented by (172) which encroaches on Bridge 2.

The latest activity on the site was the excavation of a series of minor ditches aligned obliquely to the Brook at the west end. The earliest ditch [206] (205) was subsequently replaced by [204] (203, 202, 201) and by a third ditch [180] Fig 9). The latest ditch [180] contained finds in its upper fills (151, 152) ranging from the fourteenth to eighteenth centuries.

THE ARTEFACTUAL EVIDENCE

The Pottery

A total of 116 sherds, representing the remains of 61 vessels and weighing 1988g, was recovered from the excavation. Quantification was by vessel count, sherd count, EVE's and weight; the full record may be found in the site archive. Quantification used in the following report is vessel and sherd count.

Twelve pottery types were recognised, falling into two broad chronological periods: medieval and post-medieval. These types are listed below in chronological order and are identified by the standard codes in the Bedfordshire Ceramic Type Series (held by BCAS).

Standard conventions have been used to depict the pottery, with an external view on the right and an internal view and section on the left. All vessels are wheel-thrown and therefore have their sections blacked in. The pie diagram at the base of each illustration shows the proportion of the vessel which survives.

Type Series

C61 Calcareous inclusions

Fabric: fairly smooth, grey-brown fabric with buff-grey core. Characterised by the presence of frequent chalky inclusions; quartz and iron ore are also present.

Forms: hand made vessels; represented at Elstow by one jug fragment, residual in 159, the disuse of leet 1.

Date: 11th-12th century

This type was first recognised at the deserted medieval village of Stratton (BCAS, in prep).

Illustrations: Fig 10, no 2.

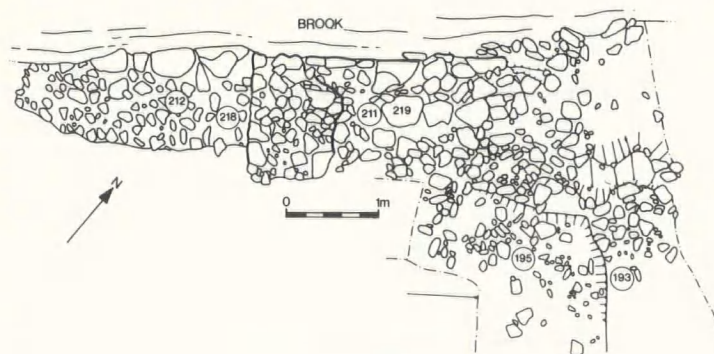


Fig 7 Bridge 2

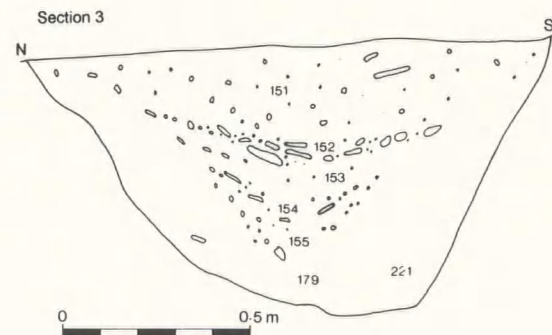


Fig 9 Section through the late ditch [180]

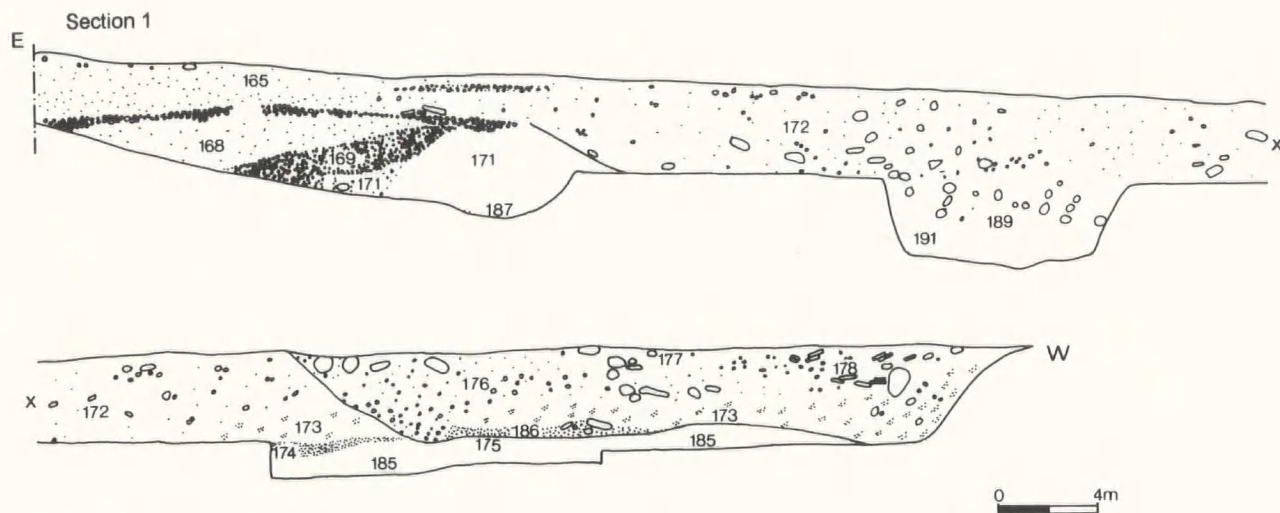


Fig 8 Section through the course of the Elstow Brook which was filled in between 1767 and 1884

B07 Medieval Shelly ware (developed St. Neots-type)

Fabric: hard, fairly smooth fabric with orange surfaces and distinctive blue-grey core. Predominantly shell tempered, with sparse quartz and iron ore.

Forms: wheel-thrown vessels; represented at Elstow by five jug fragments, of which two had internal white residue, and eighteen undiagnostic body sherds from eleven vessels, one of which was reduced. Number 4, although surviving to a substantial amount, is residual in a post-medieval layer.

Date: 12th-13th century.

This type is described by Hall (1972); examples from Bedford are published by Baker and Hassall (1979, 167).

Illustrations: Fig 10, no 4.

C60 Hertfordshire-type Greyware

large south Fabric: a hard, light grey fabric, which contains poorly sorted frequent quartz and sparse red and black iron ore. Forms: mainly wheel-thrown, although some may have been partly hand-made. This type is represented at Elstow by a single jug fragment, which has worn thumbing round the base, and eight undiagnostic body sherds from six vessels.

Date: 12th-13th century

Examples from Bedfordshire are described by Brine (1988, 43); a fuller discussion of the type is found in Havercroft and Turner-Rugg (1987) Grove Priory (BCAS in prep).

C59a Early medieval hand-made type

Fabric: hard, gritty fabric with grey-brown surfaces and a grey core, containing frequent, well sorted quartz, sparse red iron ore and occasional mica.

Forms: hand made; one fragment of a jug, with a grid stamp over applied strip.

Date range: 12th-13th century, possibly starting in the 11th century.

Examples are known from Grove Priory (BCAS in prep) and Chalgrave (Brine 1988, 43).

C59b Medieval sandy harsh type

Fabric: rough, sandy fabric with a grey core and patchy orange or grey surfaces, depending on reduction. Characterised by an abundance of rounded quartz inclusions which give the fabric a harsh texture. Also contains sparse, coarse, blackened organic voids and occasional grog.

Forms: predominantly wheel-thrown; one jug fragment and single body sherds from two separate vessels were found.

Date: 11th-13th century.

Examples are known from Grove Priory (BCAS in prep) and Chalgrave (Brine 1988, 43).

C09 Brill-Boarstall ware

Fabric: fine, smooth fabric, usually pink-orange in colour, equating to Ivens' Fabric 2 (1981, 144).

Forms: wheel-thrown; twenty five sherds representing eleven jugs. The most substantial jug (no. 1) consists of twelve sherds, found in three contexts (see below).

Date range: 13th-14th century

A source was first recognised at the kiln site at Brill and then at Boarstall (Buckinghamshire); the type the type is discussed fully by Jope (1953) and more recently by Ivens (1981).

Illustrations: Fig 10, no 1.

C10 Potterspurty ware

Fabric: a smooth fabric, with pale orange-pink or grey surfaces and a distinctive dark grey core. Contains inclusions of well-mixed quartz, grog and mica.

Forms: wheel-thrown; nine sherds representing six jugs and eight undiagnostic body sherds were recovered.

Date range: 13th-14th century

Kilns are known in Potterspurty, Northamptonshire; the type is fully discussed by Mynard (1970).

C05 Medieval sandy type

Fabric: distinctive fabric with dark grey-black surfaces, grey core and characteristic red margins. Contains frequent, well sorted quartz, and sparse red iron ore and mica.

Forms: wheel-thrown; three undiagnostic body sherds were discovered.

Date: 12th-14th century.

This type was first recognised at Bedford (Baker and Hassall 1979, 172).

E01 Late medieval reduced ware

Fabric: this type has a rough, hard and gritty fabric, and although usually fully reduced, can occasionally be oxidized to a light brown colour. Often has a vesicular appearance caused by the leaching/burning out of calcareous material. Other inclusions consist of variable amounts of quartz, mica and grog. Forms: wheel-thrown; one jar fragment and eleven undiagnostic body sherds were found. The jar in 159 is phased to the disuse of leet 1, giving a probable 15th-century date to this event.

Date : late 14th-15th century, possibly continuing into the 16th century.

This type is found over a large area of the east Midlands (Moorhouse 1974). Kiln sites producing this type are known in Bedfordshire at Flitwick (Mynard 1983) and Everton (Hassall 1976).

Illustrations: Fig 10, no 3.

C71 Buff grey cored type

Fabric: distinctive, rough fabric with buff-orange surfaces and a characteristic buff-grey core. Contains frequent, well-sorted quartz and rare red inclusions, possibly iron ore.

Forms: wheel-thrown; represented at Elstow by three jug sherds, which have worn thumbing around the base.

Date range: ?13th-15th century.

First recognised at Stratton Village (BCAS in prep).

P01 Unglazed Earthenware

Fabric: a fine, smooth, hard fabric with quartz and flecks of red inclusions present within the fabric. The fabric is oxidised, with an orange surface and a blue-grey core

Forms: wheel-thrown; represented at Elstow by fifteen jar sherds and two undiagnostic sherds.

Date range: 17-18th century.

Examples from Bedford are described by Baker and Hassall (1979).

P53 Slipware

Fabric: reduced grey fabric with oxidized external surface, orange-brown in colour. The fabric consists of frequent ill-sorted quartz, frequent red and black inclusions and iron ore. The white slip decoration has been "swirled" to create a marbled effect. The clear glaze in a reduced atmosphere gives the appearance of a dull olive green.

Forms: represented by one sherd belonging to either a dish or bowl.

Date range: late 17th-18th century.

A possible source for this type may be the kilns at Potterspurty, where bowls and dishes were the predominant forms (Mayes 1968, 55).

An examination of the vessels with sherds from different contexts was made (Table 2). The substantial sherds from the Brill/Boarstall (C09) jug (Fig 10, no.1), dated to the 13th-14th centuries, and the sherds from the Medieval Shelly (B07) vessel and jug (Table 2 on p 141), originate from within the

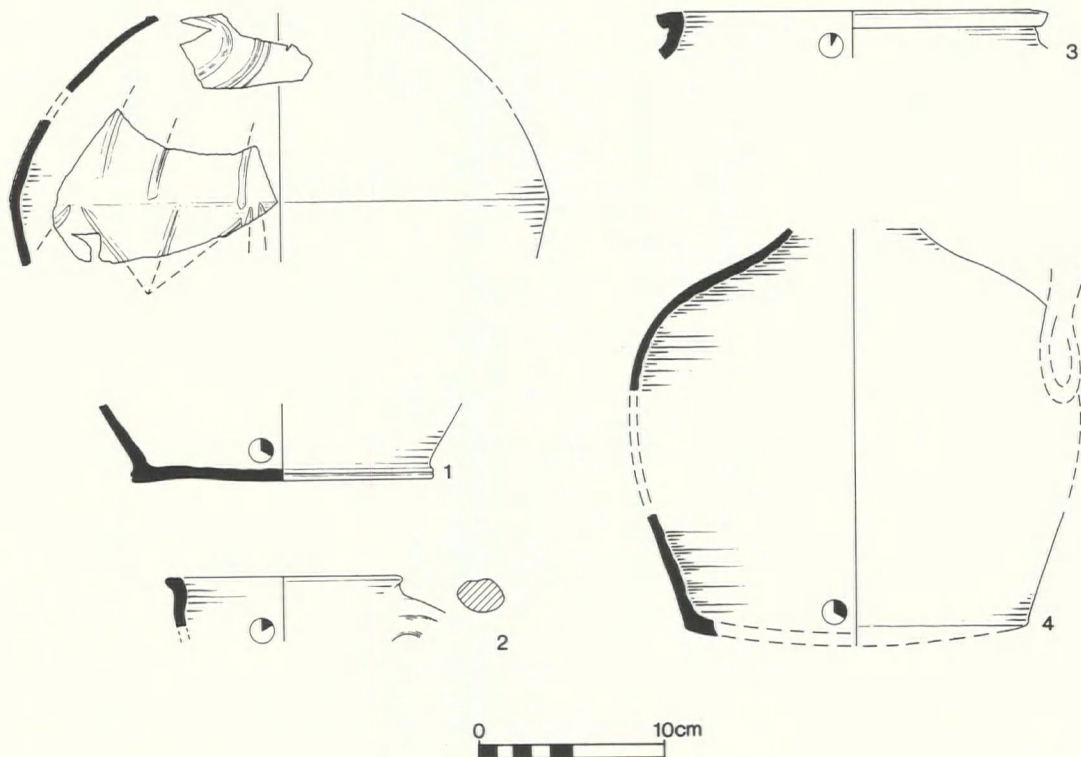


Fig 10 The ceramic assemblage

Fabric type	Monastic landscape		Leet 1			Bridge 2		Brook section		Ditch [180]		Modern desilting	
			Robbing	Disuse/silting		Pathway		In-filling post 1767	Stream bed	Silts			
C61	157	217	158	156	160	193	195	172	189	151	152	150	159
B07	3:4	1:1	0:1	1:6		1:2	1:1			1:1		5:8	1:1
C60	3:4			3:8	1:1								
C59a							1:1						
C59b							2:2						
C09	1:3		1:2	2:3	1:1					1:1		4:6	0:8
C10	1:1			5:8	3:4								1:1
C05							1:1			2:2			
E01								1:2	1:4	1:1	1:1	1:1	3:3
C71								1:3					
P01										2:13	3:4		
P53										1:1			

Table 1 distribution of pottery, quantified by vessel: sherd

Fabric type	Form	Monastic landscape	Leet 1			Ditch [180]	
			Robbing	Disuse/silting		Silts	
		157	158	156	159	151	152
B07	jug	1	1	2			
B07	vessel	2		3			
C09 (no. 1)	jug	3		1	8		
E01	vessel					3	3
P01	jar					12	3

Table 2 Vessels with cross-context sherds

monastic landscape. Sherds from these vessels were redeposited in later contexts with the robbing of Leet 1. The two vessels with sherds from contexts

151 and 152, the upper silts of ditch 180, indicate some intermixing of these sediments.

Ills no.	Fabric code	Common name	Form	Context	Comments
1	C09	Brill/Boarstall	Jug	157/156/159	cross-contexts: monastic landscape/robbing and disuse of Leet 1
2	C61	Calcareous inclusions	Jug	159	disuse of Leet 1 (residual)
3	E01	Late Medieval Reduced ware	Jar	159	disuse of Leet 1
4	B07	Medieval Shelly	Jug	150	modern desilting (residual)

Table 3 Illustrations in Figure 10

Building material

Flat roof tile

A total of 234 fragments of flat tile weighing 8742g, was recovered. Few tiles had any complete measurable dimensions. Four fabric types were identified. All are possibly of late post-medieval date; type B probably has a closer dating to the 18th century. The different types have been described and discussed by Baker and Hassall (1979, 254).

Type B Vesicular

Medium to hard fired, with a pink-orange surface and a blue-grey core. This fabric is characterised by voids, particularly on the surface where calcareous inclusions have fired or leached out. Occasionally roughly mixed with gault clay. Only round peg holes are present on this type.

Type N Vitrified

A hard, glassy texture, with a red-brown surface and red-orange core. The fabric is quite coarse with occasional flint inclusions. Only round peg holes are present on this type.

Type O Sandy

Medium to hard fired, pale pink-red throughout. This fabric has frequent ill-sorted quartz inclusions. Both peg holes and nail holes are evident within this type.

Type P Gault clay

Medium to hard fired, with a white surface and core; there are a few pinkish cores present. Inclusions are primarily quartz. Only peg holes can be seen within this type. A few fragments seem to be roughly mixed with fabric type B.

A few fragments of tile are intrusive in earlier contexts; most, however, come from the silting of ditch [180] (table 4). Their post-medieval date and position in these late contexts suggests that they might be demolition debris from the mansion house.

Stone roof tile

A total of 32 limestone roof tile fragments, weighing 8636g, was recovered. Among the assemblage was a single complete roof tile weighing 1513g. This tile measures: width at top 60mm; width at bottom 190mm; length 300mm.

Limestone roof tiles were in use on high status buildings from the 12th century, suggesting possible re-deposition from the demolition of monastic buildings. Table 5, however, shows the positions of

Fabric type	Monastic landscape			Leet 1				Bridge 1	Bridge 2
	River bank deposits			Robbing		Disuse/silting		Structure	Pathway
B N O P	157	174	190	158	156	159	160	163	195
		1*	1		4		1	2	
	1	2		3	6	1		2	5

Fabric type	Brook section					Ditch [180]			Modern desilting	
	In filling post 1767			Stream bed		Silts				
B N O P	172	177	178	189	185	151	152	201	150	165
	13*	3	5	3		21	8		1	2
	2									
	9	7		4	1	78	32	1	7	2
						1			1	

Table 4 Distribution of flat roof tile quantified by fragment count (*clay mixtures)

these tiles solely in post-medieval contexts, indicating rather that they may have originated, like the clay roof tiles, from the demolition of the mansion.

Medieval Floor Tile

Part of a two colour floor tile was found residual in context 151, the upper silts of ditch 180.

Fabric: hard, well-fired with a reduced core and orange-red margins. The fabric contains moderately sparse small rounded quartz grains, clear and opaque, up to 0.5mm in size; small rounded grains of red and black iron ore; some red iron pellets up to 2mm in size and numerous very small flecks of mica. Also present are voids from rare larger

inclusions, up to 20mm in size, presumably from either clay pellets or small pebbles, and occasional voids left by burnt out organic matter, possibly straw, up to 20mm long.

This tile was identified as a close relative to 14th-century Penn Type 44 (Hohler 1942). This tile type was found during earlier excavations on the Elstow site (Baker in prep), and is catalogued in the BCAS Floor Tile Type Series as Type 517, design 146, shape 97. The pattern is also illustrated in Eames as Design no 2232 (Eames 1980). It is part of a very rich assemblage of 13th and 14th century tiles, mainly line impressed and mosaic, found in monastic contexts in the Benedictine nunnery.

This particular family of Penn designs is very

	Leet 1/ robbing	Brook section: Infilling post 1767		Ditch [180]			Unstratified
Contexts	156	177	196	151	152	207	u/s
No of fragments	13	3	4	9	1	1	1
Comments						complete tile	mortar on one side

Table 5 Distribution of stone roof tile, quantified by fragment count

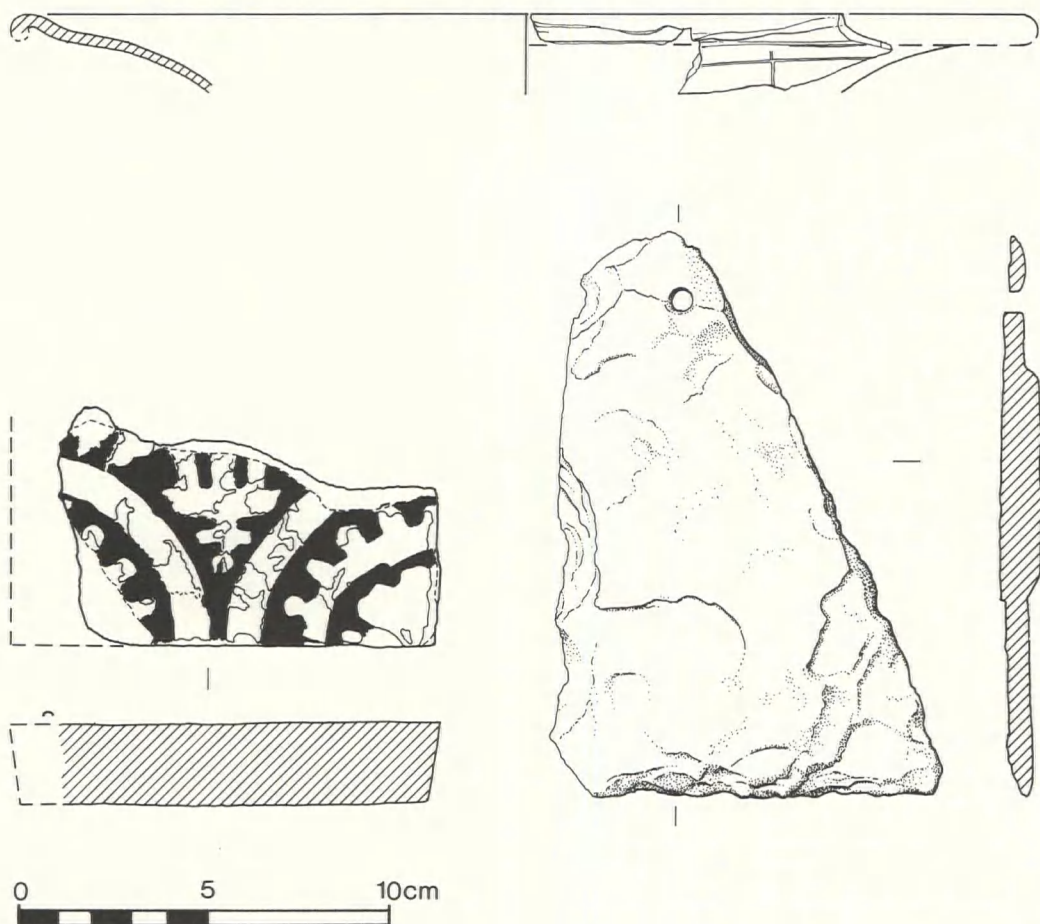


Fig 11 The finds assemblage: floor tile, glass, roof tile

common, and appears in at least seven almost identical forms. Penn 44 has been identified in several sites in Buckinghamshire (including Penn, the production centre), in Berkshire, Hertfordshire, and Northamptonshire, and as a mass produced article, has been found as far away as London, Kent and Oxfordshire.

The example found during the 1995 Elstow Brook excavations is worn, with c 90% lead glaze missing, and the white slip printed design only partly legible. The sides appear to have been moulded and trimmed, and the base was sanded.

Post-Medieval Brick

Three fabric types were defined. They are comparable to the tile fabrics, and all occur in Bedford (Baker and Hassall 1979, 253-254). Further discussion of the brick industry in Bedfordshire may be found in Cox (1979).

Type B Vesicular

Medium to hard fired, with a pale pink-orange surface and light blue-grey core. There are frequent ill-sorted quartz inclusions and voids where calcareous matter has fired or leached out.

Type O Sandy

Medium to hard fired, with pale-orange surfaces and a reddish core. The fabric is fairly coarse with frequent quartz inclusions and occasional calcareous and flint inclusions.

Type N Vitrified

A hard glassy texture, with a red-brown surface and core. The fabric is coarse and has frequent quartz and occasional flint inclusions.

A total of 11 sherds was found weighing 1981g; all come from post-medieval contexts. All are fragmentary and none have complete dimensions. A single fragment was found in (152) the fill of ditch [180], while the other ten fragments were found in modern desilting layers. The brick fragments cannot be closely dated but the latest date of the pottery from these contexts is 17th-18th century; a closer date can be obtained from a clay pipe fragment dated to 1722-32 (see below). The bricks are probably derive from the demolition of garden features associated with the Mansion.

Plaster/mortar

A total of 541g of wall plaster and 49g of mortar was recovered, all deposited in contexts phased to the post-medieval period. The plaster fabric was consistent, being a white-cream throughout, with occasional calcareous inclusions present, many of which have leached out. Whitewash surfaces survived, and occasional keying on the underside. Due to the fragmentary survival, the original thickness could not be determined.

The mortar was also a white-cream throughout, with frequent flint and sand, and occasional iron ore and quartz inclusions; as only two pieces survived, both fragmentary, the original thickness could not be discerned.

Context (Brook section)	Plaster	Mortar
177 (Post 1767 in-filling)	41g	
178 (Post 1767 in-filling)	500g	
189 (Stream bed)		49g

Table 6 Distribution and weight of plaster and mortar

Architectural Fragments

A representative sample of nine pieces of worked stone (AF) was retained from the bridges and the first leet. AF1-8 were limestone ashlar blocks with one or two roughly worked faces: their average dimensions 298mm (L), 139mm (W) and 105mm (H). No tooling was evident. The surviving face of AF 5 however, had random shallow shaped grooves which may be keying for plaster.

A single fragment of clunch (AF 9) retained portions of three dressed faces which were produced by a broad bolster with a notched blade, a technique which post-dates the 12th century.

Clay pipes

Six stem fragments were found in (151) and (201), in addition to an almost complete clay pipe stamp from (154), fills of ditch [180]. The stamp bears the initials "CM" with three dots below, and originally would have had three dots above the initials. This stamp occurred at Bedford and dates to 1722-32 (Baker and Hassall 1979, 252-253).

Small Finds

Five registered artefacts and four nails were recovered (Table 7). The majority are undatable because they are either too fragmentary or long-lived forms. These artefacts are not included in this report although a full catalogue accompanies the site archive. The single datable artefact is the fragment of a small glass dish similar to an example from Norwich recovered from early to mid 17th century deposits (Haslam 1993, 97; 109, 112; cat 710-711).

RF 1 Rim and body sherd fragments of a small dish of translucent light green potash glass with surface weathering. Thickness ranging from 1.1mm to 2.2mm. Context: 151.

Registered Find No	Context	Location	Object type
1	151	(Silts of ditch [180])	glass dish
	151	"	4 iron nails
2	154	"	iron rectangular staple
3	190	Stream bed	wood plank
4	207	(Modern de-silting)	iron sheet fragments
5	213	(Modern de-silting)	iron strip

Table 7 Registered finds

THE FAUNAL ASSEMBLAGE (E Hutchins)

Species	Monastic landscape		Bridge 1	Brook section				Leet 1 Disuse/silting		
				Stream bed	Infilling post 1767					
	157	208	164	174	185	172	178	156	159	160
pig	*		*			*			*	
cow	*			*		*			*	
horse		*			*			*		*
gnawed fragments					*	*				
sheep/goat						*		*		*
horn core								*		
dog									*	*
butchery						*	*			

The animal bone from this excavation comprises a limited range of domesticated species including gnawed fragments and those with butchery marks. In (172) both the pig and cow have been chopped whilst sheep/goat bones have knife marks; in (201), cow has been chopped and in (151), the cow has been dismembered, evident from knife marks. Dog remains, including three femurs in (160), indicate that at least two dogs had been thrown into the disused leet.

CONCLUSION

The archaeological investigation at Elstow Abbey was deliberately limited in scope, and intended to identify areas within the scheduled area where widening of the Brook would cause the least damage. The evaluation strategy resulted in excavation in an area chosen for its lack of archaeological potential. Nevertheless the discovery of the

Species	Ditch[180]			Ditch [202]	Modern de-silting
	Ditch silts			Silts	In-filling
	151	152	154	201	150
pig	*				*
cow	*	*		*	*
horse			*		
gnawed fragments				*	
sheep/goat					
horn core		*	*		
dog					*
butchery	*			*	
ribs					

* indicates presence of animal bone in the context.

Table 8 Distribution of Animal bone

leets and a second bridge add to the already extensive evidence of the monastic complex first investigated in the late 1960s. The geophysical survey, combined with the 1767 estate map evidence, has shown the potential for locating parterres and other garden features of the Mansion as well as further, probably, monastic buildings.

The results of both evaluation and excavation have produced evidence important to the wider interpretation of the monastic and post monastic periods, and which will be fully integrated with the results of the earlier work (Baker in prep).

ACKNOWLEDGEMENTS

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The Cottage, Manor Farm, Clipstone

JACKIE CRICK AND DREW SHOTLIFF

With contributions by Jackie Wells and illustrations by Cecily Marshall

SUMMARY

The complete renovation of a Grade II listed cruck building in Clipstone near Leighton Buzzard prompted the instigation of an archaeological watching brief during ground-breaking works. This building may have been converted from a barn to a residential use. Removal of a modern floor in the east bay of the building revealed the remains of an early flagstone surface/hearth base, together with elements of a former passageway. The renovation also exposed smoke-blackened roof timbers suggesting the building was, during its initial residential use, open to the roof.

INTRODUCTION

A programme of archaeological investigation was undertaken at The Cottage, Manor Farm, Clipstone (SP9477 2631) (Fig 1), following the granting of planning permission and listed building consent for the complete renovation of this Grade II listed building. Construction work began in October 1994 and this report presents the results of the archaeological watching brief and small scale excavation carried out by Bedfordshire County Archaeology Service (BCAS) during the early stages of the renovation.

HISTORICAL BACKGROUND

The hamlet of Clipstone was, until the mid 19th century, a dependent part of the parish of Leighton Buzzard, the origins of which lie in the Royal Manor of Leighton. Today Clipstone forms part of the modern parish of Eggington-with-Clipstone.

Early settlement in this area appears to have favoured the higher ground afforded by the gault ridge to the south of Eggington. Here excavation and fieldwalking have identified sporadic settlement during the Iron Age, Romano-British, Saxon and early medieval periods. Whilst less archaeological investigation has been undertaken in Clipstone itself, cartographic evidence shows it to have had a more organic arrangement of enclosures and closes in contrast to Eggington's planned layout. This is indicative of Clipstone's presumed Saxon origins.

During the early medieval period Eggington and Clipstone are referred to as settlements of equal

stature, each with independent open field systems and chapels (CRO: RY 66). Eggington benefited from opportunities for settlement expansion along the foot of the gault ridge and from its location alongside the ancient trade route known as Theedway or Edeway (later a medieval Salt Way). Clipstone's position on a low knoll (100m OD) between two branches of the Clipstone Brook was topographically limiting and it witnessed a decline in settlement from the mid medieval period onwards. Eggington, over time, acquired sub-manorial status and assumed power over Clipstone (Coleman 1982).

Today Clipstone comprises two farms and The Cottage (Historic Environment Record (HER) 4415). A series of heavily ploughed earthworks (HER 10797), stretching from the A4012 junction in the S to the brook N of The Cottage are testament to the hamlet's former, more extensive, layout.

THE COTTAGE (Fig 2)

The Cottage lies to the S of Manor Farm on the summit of a low knoll. The building is of timber-framed cruck construction and one of only fourteen known examples in Bedfordshire (Alcock and Woodward 1976, Bailey 1980, Bedfordshire HER).

The timber frame is supported by a brick plinth which, towards the W end of the building, incorporates several large sandstone blocks. These may represent the remains of an earlier plinth. A measured survey, undertaken in 1976 (Alcock and Woodward 1976), suggested the building had been foreshortened by at least one bay to the W, where a modern brick wall seems to have replaced a third cruck truss. The two remaining sets of cruck blades define the E bay. The construction technique is in contrast to that found in most of the county's other cruck frames, inferring its origins lie in a different design tradition. The technique does, however, bear a strong similarity to that of a demolished four bay cruck barn on the opposite side of the road (HER 6760). The open truss form of The Cottage, with tie beams raised well above the spurs, suggests that it may originally have functioned as a barn. It is generally assumed to be 15th-16th century in origin.

At an unknown date the building, assuming it was

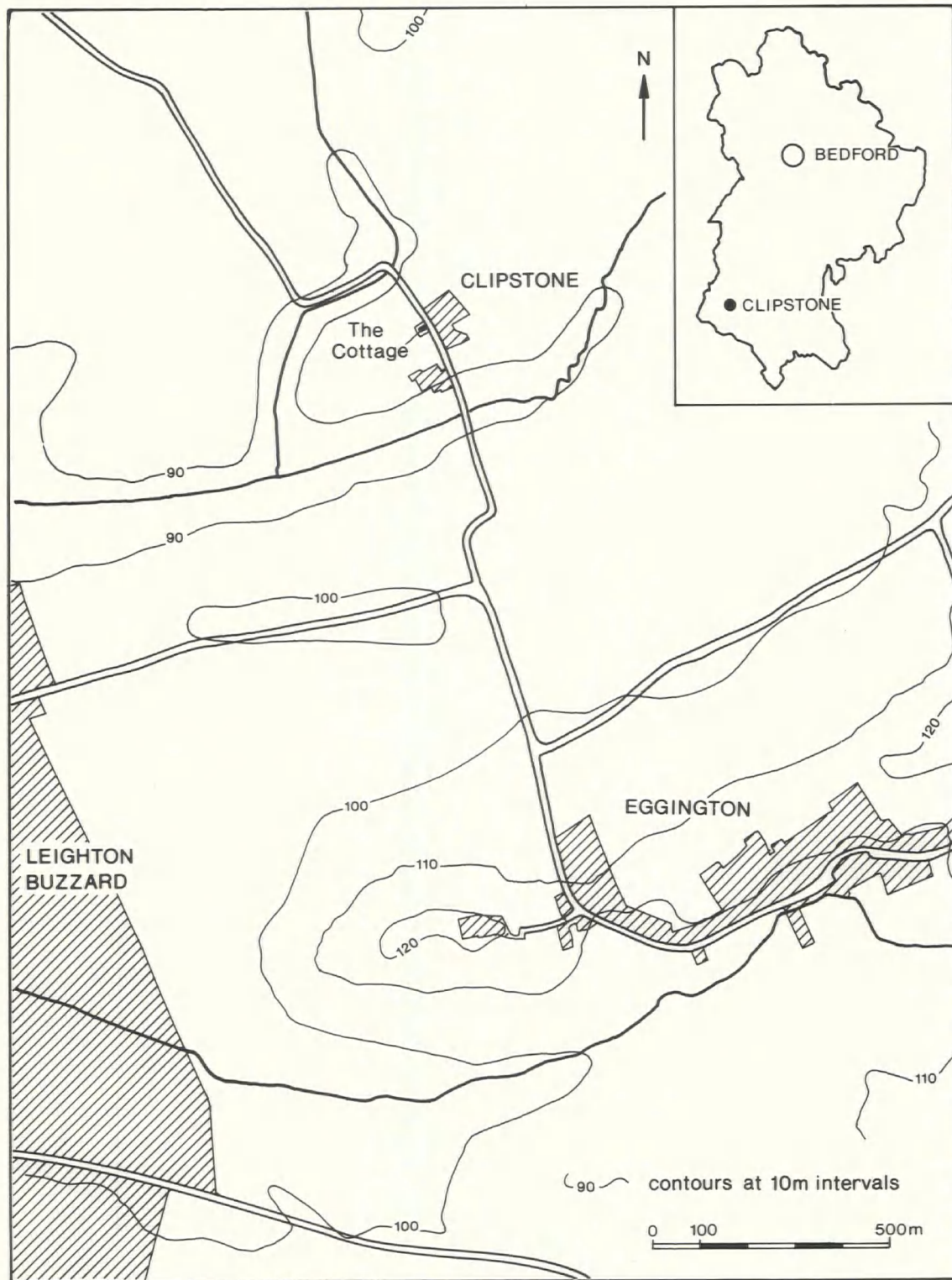


Fig 1 Site location plan

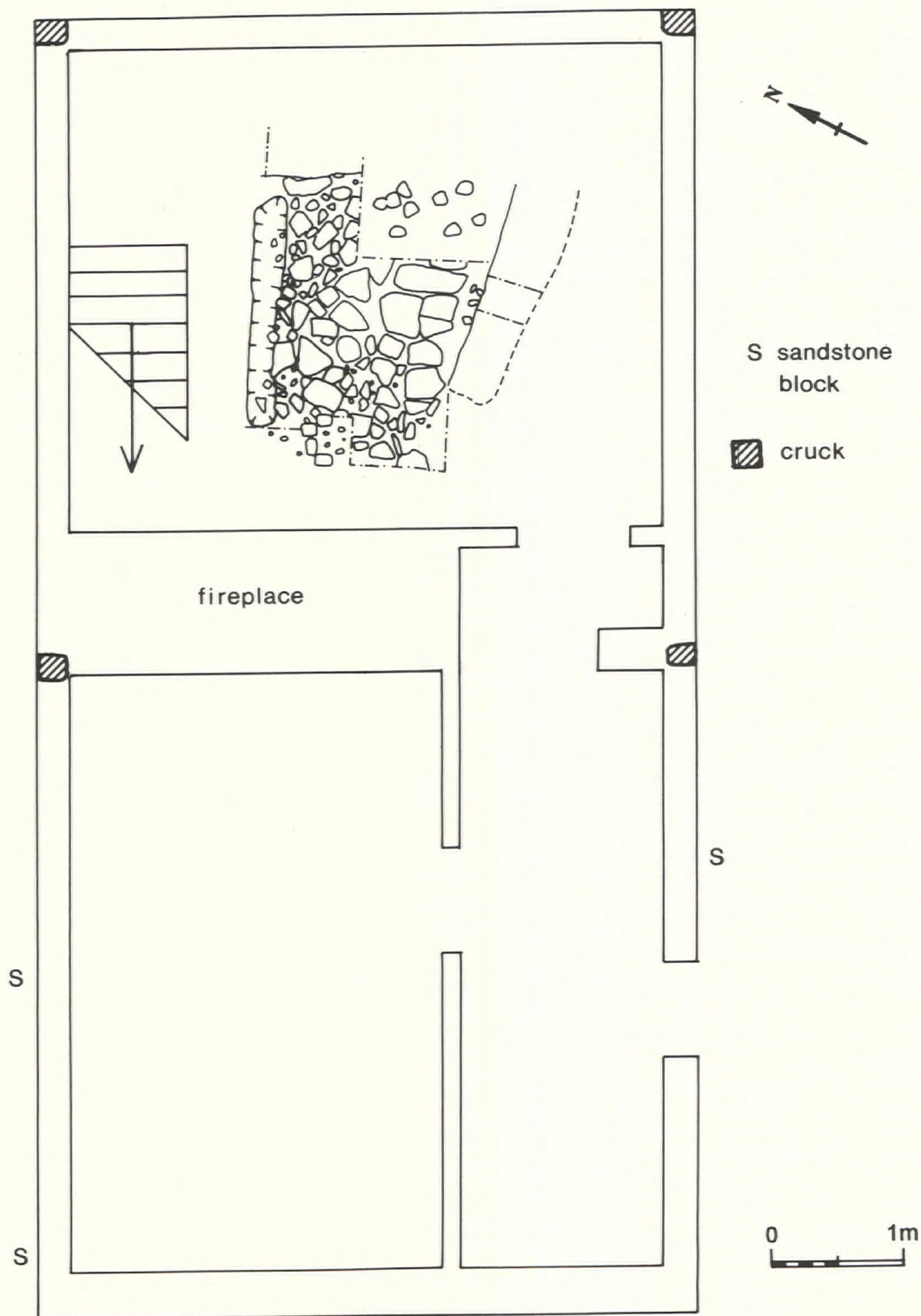


Fig 2 Ground plan (after Alcock and Woodward (1976)) showing surviving archaeological deposits in E bay

originally a barn, was converted to residential use. A chimney was subsequently inserted against the W end of the E bay.

THE RENOVATION WORKS

Renovation of The Cottage involved ground-breaking works comprising full underpinning of the structure and the removal of an existing concrete floor, prior to the insertion of a new floor. An archaeological watching brief was maintained during these works. An extension to the rear of the building was, unfortunately, built before the start of the watching brief. It was, therefore, impossible to confirm the presence of the third bay postulated by Alcock and Woodward.

During the renovation works a number of archaeological deposits and features were uncovered in the E bay of the building. These were sample excavated to determine their nature, function and character with a view to providing information about the building's function and development.

THE ARCHAEOLOGICAL WATCHING BRIEF (Fig 3)

Evidence for a number of successive episodes of structural activity was recorded during the watching brief.

Period 1 initial construction of the building

The undisturbed geological deposits comprised orange sands and gault clay. These were overlain by 300-500mm of mixed dark grey/brown silty clay (10), with frequent inclusions of small, sub-angular flints and pebbles, occasional fragments of clunch and a fragment of late/post-medieval roof tile. This layer increased in thickness to the E where the land sloped down to the road; it represents a deposit of made ground, deliberately laid to provide a level building platform. Three sherds of pottery, with a combined 10th-15th century date range, were retrieved from this layer.

Period 2 conversion of the building for domestic use

In the centre of the E bay the building platform was overlain by an arrangement of clunch flagstones with occasional ironstone and flint pebbles (7). These were set into a 50mm thick bed of yellow clay (9) and covered an area measuring 2.25m x 1.77m. The form and layout of the flagstones varied. The central area comprised large irregularly shaped pieces, while around the outer margins they were smaller and more widely spaced. Towards the W

end of the bay the upper surfaces of the flagstones were burnt. 600mm from the burnt stones, towards the centre of the bay, a 300mm wide band of ash (8) overlay the flagstones. The burnt stones and the raked-out ash suggest that the flagstones served a dual function as a hearth base and a working surface in front of the fire setting. The smoke-blackened roof timbers of the building suggest that this hearth was open.

The flagstones stopped in an even line, 1.25m short of the E wall of the building. The surface clearly respected some structure or feature, although no archaeological traces of the latter had survived.

Period 3: internal structural alterations to the E bay

Along its N edge the flagstone surface was overlain by the remains of a relatively insubstantial wall footing. This consisted of a shallow trench [15] (running parallel to the N wall of the building) formed of a layer of yellow clay which bore the impressions of sub-rounded stones. A skim of wall plaster (14), found *in situ* along the SE side of the trench, marked the inner face of the former wall.

In the NE corner of the bay the flagstones were overlain by a rectangular arrangement of red, late or post-medieval bricks [3]. These were bonded with yellow clay (13) and are interpreted as the remains of a hearth surround. Their relationship to the flagstones suggests they are contemporary with the construction of foundation trench [15].

The flagstones (7) appear to have continued to form the internal surface of the E bay following these structural alterations.

Period 4 replacement of the internal surface of the E bay

Along the S edge of the E bay a shallow trench [11] ran E – W, on an oblique alignment to the building. It took the form of an irregular, 500mm wide cut with an uneven base and was less well defined than trench [15]. Whilst the full extent of [11] was not recoverable inside the building due to modern disturbance, excavation during the underpinning of the E wall found no evidence to suggest its continuance outside the building. It is interpreted as a robber trench, dug to facilitate the removal of flagstones from surface (7).

Trench [11] was backfilled with crushed ironstone and sandstone, which continued beyond the limits of the cut as a more extensive deposit (2). This material was 110mm thick and contained charcoal and brick fragments. It physically sealed

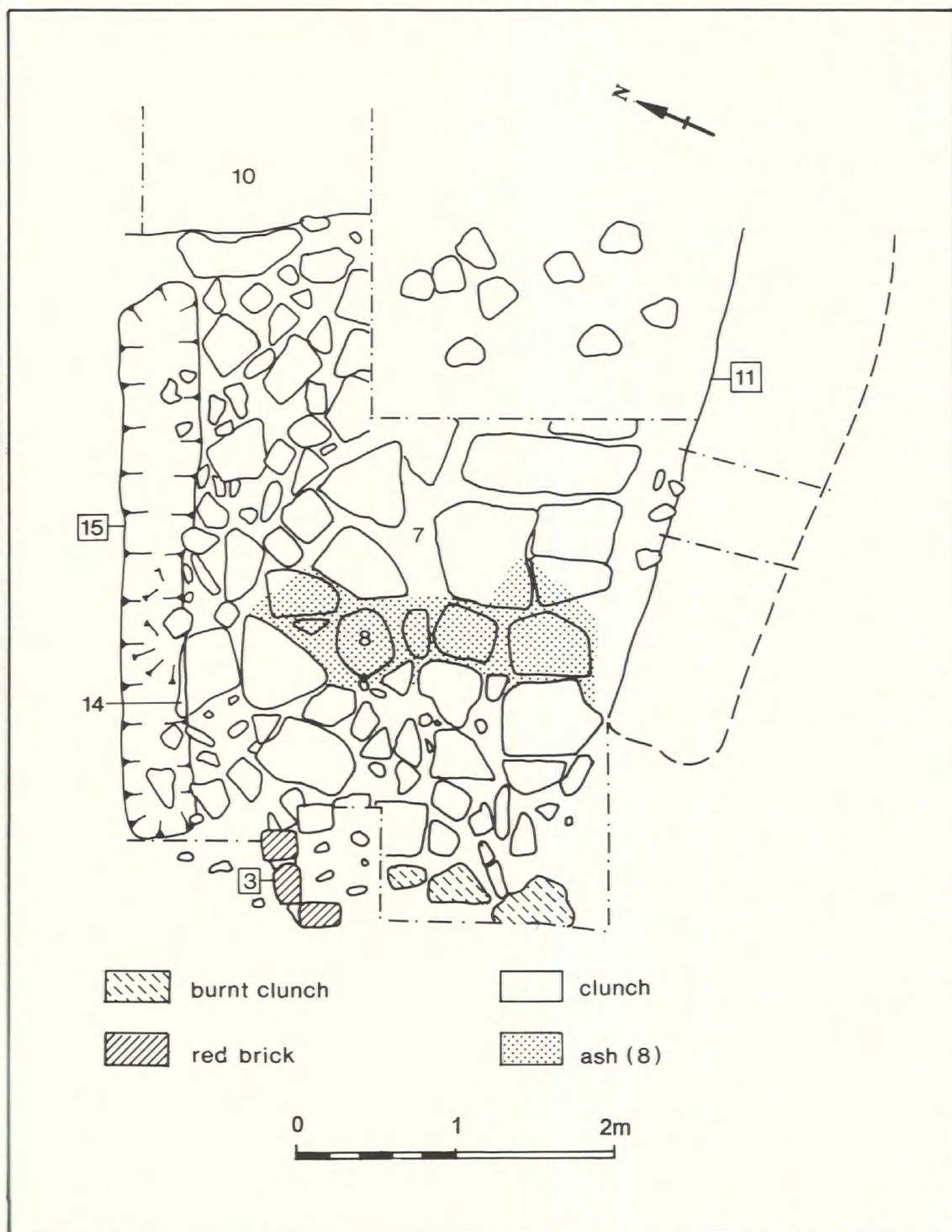


Fig 3 Clunch flagstone surface/hearth base (7) and later features

all earlier deposits with the exception of the fill of trench [15] in the north of the bay where it abutted the wall plaster (14). This suggests that the wall founded on [15] was still in place when layer (2) was deposited. This material served to raise the internal surface of the E bay, presumably prior to the insertion of a replacement floor, which was subsequently removed, leaving no archaeological trace.

Period 5 construction of the modern concrete floor in the E bay

The wall founded on trench [15] was later dismantled and the resulting void infilled with a variegated mid grey/brown deposit (5), with inclusions of late/post-medieval roof tile, clunch, flint pebbles and coarse sand.

A concentration of large clunch fragments (1), 300mm thick, sealed layer (2), raising the floor level once more at the E end of the building prior to the laying of a modern concrete floor. The absence of similar stone within the fabric of The Cottage suggests this material may be derived from the demolition of a separate building. Inclusions of roofing slate suggest an 18th century or later date for the deposition of this layer. A single residual sherd of 12th-13th century pottery was also retrieved from (1).

THE FINDS

Jackie Wells

The watching brief at The Cottage produced a small artefact assemblage, comprising mainly pottery and ceramic building material (Table 1).

THE POTTERY

Four sherds of pottery (total weight 78g) dating from the Saxo-Norman to late medieval periods were recovered. None of the material shows signs of abrasion. Four fabric types were identified. They are listed chronologically below, using type codes and common names in accordance with the Bedfordshire Ceramic Type Series, which is held by BCAS.

Type Series

Type B01 St Neots-type ware

Fully described by Hurst (1956), and discussed more recently by Hunter (1979).

Form: wheel-thrown jar with everted rim

Date range: 10th-11th century.

Type C59B Early medieval sandy harsh

Fully described by Brine (1988).

Form: undiagnostic wheel-thrown body sherd

Date range: 11th-13th century.

Type C60 ?Hertfordshire-type Greyware

Examples from Bedfordshire are described by Brine (1988).

This type is further discussed by Havercroft and Turner-Rugg (1987).

Form: undiagnostic wheel-thrown body sherd

Date range: 12th-13th century

Type C11 Brill/Boarstall type

Discussed fully by Jope (1953) and Ivens (1982).

Form: wheel-made glazed jug

Date range: 13th-15th century

Layer (10) produced a rim sherd of a St Neots-type ware jar (type B01), a sherd of early medieval harsh sandy ware (type C59B) and the handle of a jug of Brill/Boarstall fabric (type C11), which falls into a later date range of the 13th-15th century.

The St Neots type ware jar has an everted rim and is a form characteristic of this shell-tempered fabric. Although no kiln sites are known, St Neots type vessels are widely distributed throughout a core area in the south and east Midlands and have been recovered from numerous excavations on settlement sites in the Ouse Valley.

The early medieval sandy sherd is sooted externally, suggesting its use over a fire as a cooking pot. This type is assumed to have been manufactured locally, although there are no known production sites.

A single sherd of medieval greyware (type C60) was recovered from layer (1), dating to the 12th-13th century. This type is thought to derive from production sites in Hertfordshire. The presence of internal sooting or a black residue suggests the vessel may have been used either as a storage vessel or perhaps as a receptacle for contents which were deliberately burnt.

Less utilitarian wares are represented by the presence of the Brill/Boarstall type jug. The rod handle retains traces of a dense olive green glaze and is decorated with a single row of stabbed holes running vertically down the centre. The interior of the handle junction shows evidence for plugging and provides an indication of manufacturing techniques. Produced at kiln centres at Brill and Boarstall (Bucks.) this vessel attests the presence of regional imports at the site.

TILE AND BRICK

Five fragments of late/post-medieval flat roof tile (total weight 620g) in orange sandy fabric were recovered from layers (1) and (10), and from fill (5).

A large portion of a hand-made brick weighing 858g was retained from hearth surround [3]. Its incomplete nature precludes precise dating based on

dimensions, although the style of manufacture suggests it is likely to be late medieval/post-medieval in date.

Context	Pottery (sherds)	Tile & brick (frags.)	Other finds
1 (layer)	Medieval x 1	Flat roof tile x 2	Fe nail x 1 Animal bone x 1
3 (hearth surround)	—	Brick x 1	—
5 (fill trench [15])	—	Flat roof tile x 2	—
10 (layer)	Saxo-Norman x 1 Medieval x 2	Flat roof tile x 1	—
14 (layer)	—	—	Wall plaster frag
Total	4	6	3

Table 1 Finds Assemblage by Context

DISCUSSION

The archaeological deposits recorded during the watching brief at The Cottage relate principally to the construction of the building and its subsequent use and alteration. Residual sherds of Saxo-Norman and early medieval pottery are likely to derive from the known earlier, more extensive settlement at Clipstone. The presumed construction date for the building was confirmed and a broadly dated sequence of subsequent structural alterations within the E bay was elucidated.

The first stage of construction on the site comprised levelling of the ground surface in advance of the construction of the timber-framed building. Ceramic dating suggests a *terminus post quem* of the 13th-15th century for this initial work, which accords well with Alcock and Woodward's suggested construction date of 15th-16th century. Structural evidence from the standing building suggests it may originally have functioned as a barn. It was not possible to identify any archaeological deposits which could be related to this phase of the building's use.

The rising natural ground level to the W entirely precluded archaeological survival at that end of the building. Archaeological deposits, the most substantial being a flagstone surface/hearth base, survived only in the E bay. The distinct E limit to the flagstone surface suggests the presence of an internal structural division, running parallel to the E end of the building. A doorway, later blocked, but still visible in the N side of the external E elevation could have provided access to a passageway running along this end of the building. These features probably relate to the building's residential use, since a barn

would most likely have been entered *via* a larger door in the centre of either the N or S wall.

The position of the hearth base appears to have remained close to the W cruck truss in the E bay throughout the building's residential use. Renovation work on the roof revealed a crossed apex of cruck blades with smoke-blackened roof timbers. Smoke-blackening was greatest in the W half of the E bay but was also visible to a lesser degree along the length of the W bay. This suggests that on conversion to residential use the interior remained open to the roof, perhaps with a loft over that part of the E bay where no smoke-blackening was visible. At a later date a chimney was inserted against the W cruck truss and an upper floor constructed over the remainder of the building.

The creation of an upper floor necessitated the insertion of an upstairs doorway, through the tie beam of the W cruck truss. This alteration to the tie beam would have weakened the structure and the insertion of a wall below, in foundation trench [15], could have helped to redistribute stress loads. These changes appear to be contemporary with the construction of the brick hearth surround and may be broadly dated to the early post-medieval period.

The floor surface in the E bay was renewed at least once, possibly in the 18th century, before the internal wall was dismantled and a modern concrete floor was laid over a thick deposit of clunch hardcore.

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From ruin to rebuilding: a study of Pulloxhill church after the fall of the steeple in c.1653 to its rebuilding in 1845-6.

CHRIS PICKFORD

SUMMARY

A plan of Pulloxhill church prepared before the building of the present nave and tower in 1845-6 shows that only the ancient chancel remained in the ruined shell of the mediaeval church. The nave and tower were virtually abandoned after the chancel was adapted for use as a church in about 1745. Research in 1980 showed the history of the building during the two centuries following the collapse of the tower in the 1650s to be particularly well documented in a range of archival sources. This account draws on those sources and a study of the physical evidence of the building to chronicle the disaster and subsequent attempts at repair. The case is interesting in the more general context of illustrating the problems faced by the ecclesiastical authorities and parish officers in maintaining church buildings in the period before the religious revival of the nineteenth century.

INTRODUCTION

According to the petition for a faculty to sell the bells dated 1713, the tower of Pulloxhill church fell about 60 years previously (1). This gives us a date of c.1653 (2), and although we cannot be certain that this is accurate it is known that the tower was in ruins by 1668 when the Churchwardens reported in their presentment to the Archdeacon that "the Steeple is fallen down" (3). Presumably some temporary repairs were carried out more or less immediately after the tower collapsed. We know a good deal about work carried out between 1687 and 1746, but the church remained a partial ruin until the site of the nave and tower was cleared and the present building erected in 1845-6.

THE STATE OF THE BUILDING IN THE EARLY NINETEENTH CENTURY

It is perhaps best to begin a study of the history of the church after the fall of the tower by examining it as it was immediately before the rebuilding in the mid nineteenth century. Archdeacon Bonney described it in the 1820s as, "the Remnant of what

was once standing, and consists of the chancel and part of the Tower on which is a wooden Bell Chamber containing one Bell – the nave has been demolished upwards of 150 years, and the Chancel, which is large, serves for the accommodation of the Parishioners at Divine Worship" (4). Writing in 1827, the Rev G R Boissier of Chiddingstone in Kent commented that "the Tower & Chancel only remain of the original building. The nave is destroyed" (5). There are no illustrations of the church at this date, but the wooden bell turret can be seen in the distance in a view of the village street drawn in about 1820 (6).

The most valuable record of the old church, however, is a plan drawn by the Bedford architect James Tacy Wing (Fig 1) (7). It is dated 1st January 1845, and it shows that the chancel was entered through an open wood porch at the west end. The internal dimensions of the chancel were about 18 feet by 39 feet, and a gallery had been provided at the west end to give additional accommodation. The walls of the nave had entirely gone, but there was a wood rail fence on both the north and south where the walls once stood, each with a gate in the centre. At the end of the site stood the walls of the western bay of the nave, and the base of the tower. Of the latter, only the east wall with the tower arch, and parts of the north and south walls remained. A spiral staircase in the south east angle of the old tower is shown on the plan, but its entrance had been blocked up.

The wooden bell chamber described by Archdeacon Bonney is also shown on the plan, but it was built in the western end of the nave and not on the ruins of the tower as he suggested. Wing's plan shows a four inch wall spanning the nave and standing some 7½ feet to the east of the tower arch, and a similar wall stood in the centre of the tower arch itself. These walls, together with those of the old nave and tower, formed the base for the turret which was weatherboarded with a pyramid roof (possibly tiled) and topped with a wrought iron weathervane or finial. The "Steeple" was 40 feet high (8).

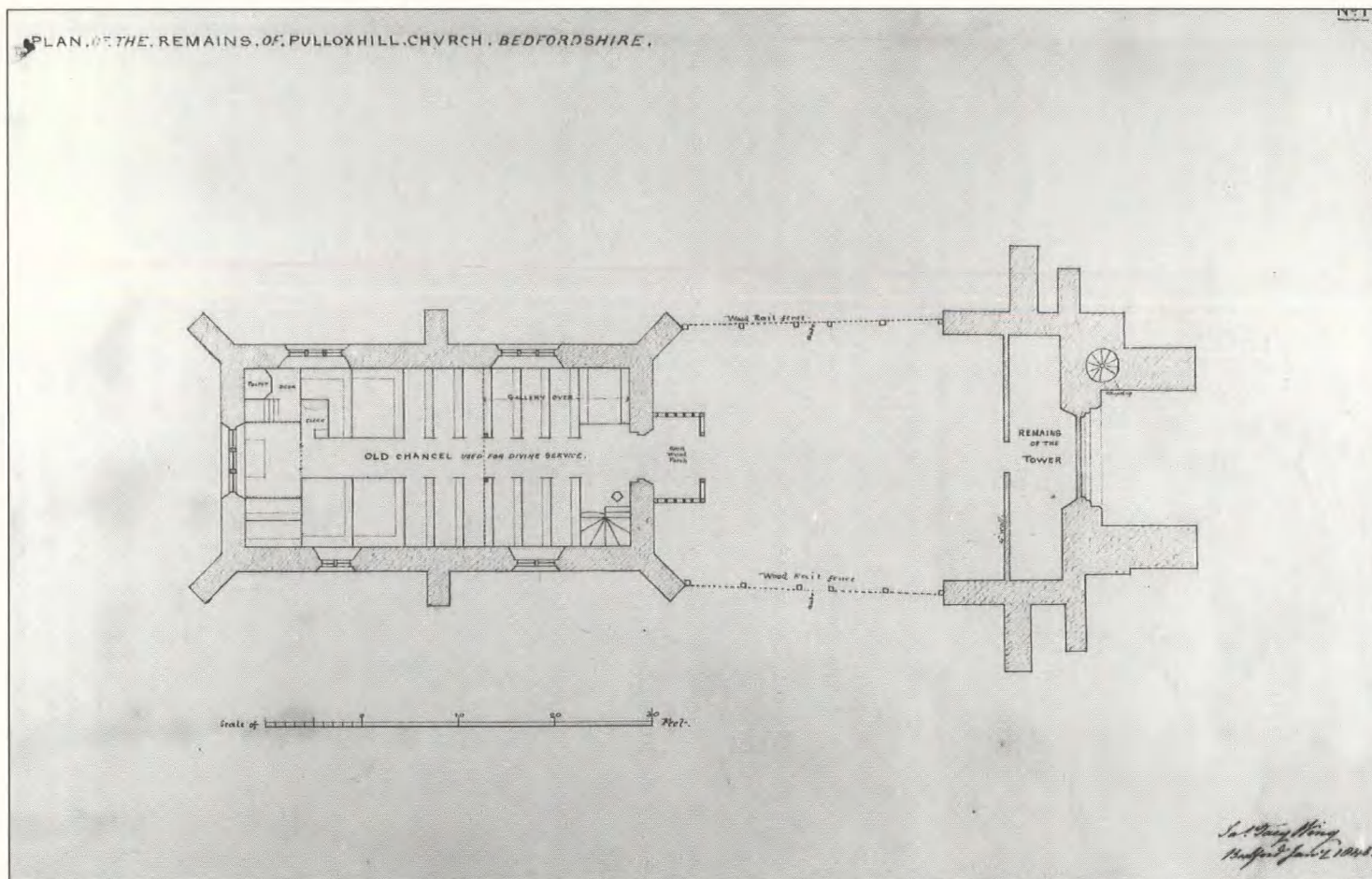


Fig 1 Plan of Pulloxhill church by James Tacy Wing in 1845 prior to rebuilding

THE AFTERMATH OF THE FALL OF THE TOWER

To return to the Seventeenth century, it is clear that the mediaeval church consisted before the fall of the tower in 1653 of a chancel, aisleless nave, south porch, and a western tower (9). There may also have been a porch on the north side unless the main entrance was originally, as now, through the West door under the tower. The collapse of the tower must have caused considerable damage to the nave, although no contemporary account survives to show the extent of the devastation or the nature of the immediate repairs undertaken. In 1665 the Churchwardens bought 500 tiles (10), but the early Churchwardens accounts give no other indications of work done. It seems likely that the roof of the nave was made good, the west end of the church made weathertight, and a small vestry made in the base of the tower (11).

Evidently the repairs were of a temporary nature, but over thirty years elapsed before the church authorities began to press the parish into taking further action. In 1687 the Churchwardens were ordered by the Archdeaconry Court to levy a rate of the parishioners and landowners for the repair of the steeple and bells described in the monition as "out of repayre" (12). The summary accounts of William Bishop and Lewis Plummer, Churchwardens in 1685, 1686 and 1687, are entered in the account book from which it seems that the Archdeacon's order was not complied with (13). The disbursements in 1687 amounted to £2 11s. 8d., and the total sum raised by rates in the three years was only £9 4s. 4d. Certainly no major repairs were carried out, and in 1708 it was reported that the four bells were still lying "in the south porch of the Church..., all crack'd & ye clappers of all but one sold." (14). Presumably successive Churchwardens felt the task too great for the resources of a small parish.

EIGHTEENTH CENTURY REPAIRS

Some work was done when William Fisher and Thomas Handscombe were wardens in 1708, and over £33 was spent on the church (15). By this date all hope of rebuilding the tower had been abandoned, but under the influence of Archdeacon Thomas Frank the parishioners embarked on a scheme to tidy up the ruins. Since the fall of the tower most of the reusable materials had been sold or otherwise disposed of, including the lead, timbers, stone, and the clappers of three of the bells (16). In 1713 the Vicar, Churchwardens and parishioners applied for a faculty to sell the bells

themselves and with the money "...to prepare One or Two new Bells, and to build a Frame over the Vestry belonging to the sd Church or in some other convenient Place in which to hang them ... & with the Remainder of the sd Money, if any shall be, to repair the Breach in the West End of our sd Church." (17). The faculty was granted, and in 1714 Thomas Mastin and Richard Allen spent £109 3s. 5d. on the church (18). Unfortunately their detailed accounts have not survived and even the new bell put up in 1714 has since been recast, and so one can only speculate as to what was done. It seems that a wooden structure was built over the remains of the tower to house the bell (19), and that further repairs to the west end of the nave (apparently still in use) were carried out at the same time.

By the late 1730s the church was again in poor condition, and in 1739 it was reported that "...the Church ... is by length of time become very ruinous & decay'd; almost all the Roof having some time since faln down; and the chancel, which remains cover'd, is so small that it is not near sufficient to contain the Inhabitants of the said Parish; and also so ruinous in the Foundation & Walls thereof, that the same cannot longer be supported, but must be wholly taken down & rebuilt;" (20). Although there is a good deal of "standard form" in the wording of this statement, which was incorporated in a petition to the Lord Chancellor for the issue of a brief, it is clear that the alterations carried out in the early 1740s left the church in the form represented on Wing's plan of 1845.

FUND-RAISING BY BRIEF IN 1739

With the tower in ruins, the nave roofless (probably since the 1720s), and only the chancel in use, something had to be done. The task was a daunting one, and the Vicar and Churchwardens decided to apply for a charitable brief in order to raise money. As Philip Birt, the Vicar, was a Justice of the Peace sitting in Quarter Sessions where applications for briefs were first considered, and Philip, 2nd. Earl of Hardwick, was Lord Chancellor of England responsible for issuing briefs under Letters Patent, it seems likely that the application had an easy passage! (21).

Before a brief was granted, it was necessary for the authorities to have statements of "able & experienced Workmen" (22) to show that the work contemplated was essential and to give some idea of the cost. The estimate for rebuilding Pulloxhill church is preserved in the Quarter Sessions rolls, and the total cost was computed to be £1083 6s. 6d.

(23). Dated 16th January 1739/40, the estimate prepared by Thomas Bishop, carpenter, and endorsed by Joseph Neale and John Heath, carpenters, and Thoroughgood Fann and Robert Wildman, masons, appears to relate to the rebuilding of the whole church although we know that the work eventually carried out was completed on a much smaller scale. It included £14 "for a new arch betwixst the Church & Chansill", new stonework for the walls with "5 new windos & gams [jambes]" and "4 new Doars & gams", and a new roof with "17 tun & ½ of Lead" costing £437 10s. resting on "32 sqr of Boarding". The church was to be paved with "1800 foot of Kettun stone", and the internal furnishings included "Pews & Seats" at £65 10s., the "Pulpit, Desk, Rails etc" at £15, and the painting was estimated at £21. The old materials were valued at a meagre £44 8s. However, it must be borne in mind that this estimate was prepared in order to establish a notional cost of repairs, and although the workmen who drew it up may have been employed on the building it would be dangerous to attempt to correlate the details in the estimate with the work eventually done.

The petition for a brief was sent to the Lord Chancellor in January 1739/40 but it seems that the brief itself was not circulated until almost four years later. There is apparently no record of the total sum raised, nor of the amount paid to the parish after the deduction of the collector's fees (probably about 50% of the total), but we do have some information on the collections made in individual parishes. Northill, for example, contributed 3s. on 11th March 1743/4, (24) and outside the County the collection at Dowles, Worcestershire, on 20th May 1744 raised 4d. "for ye Briefe of Pulloxhill Ch. in Com. Bedford" (25). The net gain to the parish from the brief was probably about £300 or £400, a sum far short of the estimated £1083 mentioned in the petition but nevertheless sufficient to enable a considerable amount of work to be done. Efforts were concentrated on enlarging and repairing the chancel, clearing away the ruins of the nave, and building a new timber bell turret. We shall examine the various stages of the work in detail.

ADAPTING THE OLD CHANCEL AS A CHURCH, c.1745

The chancel was described in 1739/40 as "... so small that it is not near sufficient to contain the inhabitants of the parish" (26). It seems, however, that part of the money raised by the brief was used to enlarge the chancel by extending it westward on

the site of the old nave. Wing's plan of 1845 shows that the chancel was disproportionately long in relation to the nave, and its regular plan suggests that the work done in the 1740's amounted to rather more than a simple remodelling of the mediaeval chancel. There can be little doubt that the west wall of the chancel with its diagonal buttresses, together with the open wood porch, dated from this period, but what of the rest of the building?

Several mediaeval features survive in the chancel as it stands today, including the roof and the window tracery. According to the *Victoria County History* (27) the windows in both the north and south walls of the chancel are of fifteenth century date and the three light east window dates from the mid fourteenth century. Wing's plan of 1845 shows the positions of the windows before the chancel was shortened by some ten feet in 1845-6, and there were two three light windows in the south wall and two two light windows in the north side. The chancel had diagonal buttresses in the four main angles, and buttresses half way along both the north and south walls. Although the fenestration of part of the present chancel is undoubtedly mediaeval, the positions of the buttresses and western windows of the pre-1845 chancel, together with its overall size, suggest an eighteenth century date.

In the absence of any definite documentary evidence, these features indicate that the chancel may have been mostly rebuilt (at least from the central buttresses westward) in the early 1740s, using old materials and mediaeval window tracery from the old chancel and from the nave which, as we shall see, was then finally demolished. The crown-post roof with two original trusses may be partly original, and may repay closer study.

The internal arrangement of the chancel shown on Wing's plan clearly dated from the 1740s. The altar beneath the East window was flanked on the left by two stalls, probably for the choir, while the Vicar's desk and the pulpit stood in the South East corner on the right. In front of the altar rails on the south side of the aisle there was a desk for the clerk, and there were two large box pews and six rows of open seats on each side of the aisle in the body of the church. The font stood just inside the door at the back of the building near the stairs leading to the wooden gallery above. The gallery itself occupied the western 15 feet of the building, and it was supported at the east end by two stout wooden pillars on either side of the aisle. Unfortunately there are no illustrations of what must have been a delightful eighteenth century interior, but the plan

suggests that it bore some resemblance to the church at Old Dilton in Wiltshire (28).

THE ABANDONED NAVE AND TOWER

It is not entirely clear when the nave was finally abandoned, but the available evidence indicates that it remained in use for some time after the fall of the tower. By 1739/40, however, the roof had gone and services were held in the chancel (29), but in all probability the walls of the nave and south porch were still standing. We know from Wing's plan that no traces of the nave walls (except those round the bell turret at the west end) remained in 1845, and it seems likely that they had been demolished in the 1740s. The wood rail fence and gates shown on the 1845 plan were doubtless erected at about the same time.

As we have already seen, a wooden structure was erected in the ruins of the tower in 1714 to house a new bell. However, this was entirely replaced in the early 1740s by the wooden bell turret which existed until 1845, already described. The new turret was completed by February 1746 when Philip Birt wrote to the Earl of Hardwick on the matter (30). He wrote:

"... the difficulty about the steeple at Pulloxhill still subsists. As the timber part had not been long erected, I hoped it might be taken down and put up again at the end of the Chancel without much charge, but upon the mensuration it is found to be too wide for it, and must be new framed, which, I fear will cost a good deal: Mr. Bishop (31) has been directed to make a distinct estimate of that: if it should remain at a Distance from the Chancel, it would be of the same use to the People but it would still have the appearance of a Ruin..."

Birt seems to have wanted to have the turret directly at the west end of the newly refurbished chancel and to clear away the ruins of the old tower, and such an arrangement would undoubtedly have improved the appearance of the church. But his suggestion came too late, and so the turret remained at a distance from the chancel. The bell cast in 1714 was probably hung in the new turret, but it later became cracked and in 1800 it was recast by Thomas Mears of London (32).

MINOR REPAIRS IN 1816-17

The repairs carried out in the 1740s left Pulloxhill with a small church which served the needs of the

Parish for a little over a hundred years. No more major work was carried out, but the surviving Churchwardens accounts for the early Nineteenth century give some idea of the minor repairs undertaken from time to time. In the year from Easter 1816 to 1817, the expenditure included: (33)

Paid W Taylor a bill for Repairs			
Done to the Church	£4	8s.	0d.
Pd J Neal a Bill for Ditto	1	2	0
paid G. Rich for 1 Dozen Bases			
[kneelers]	15	0	
Pd Mrs. Rees bill for Repair Church			
windows	18	3	
Paid for pair of New window Curtains			
for the Church & making &c.	1	0	8
Paid for a matt for the parsons Desk	1	0	

The Glebe terrier drawn up in 1822 includes a list of the furnishings of the church then in use (34).

THE REBUILDING IN 1845-6

Despite the attention given to the church by the Churchwardens its condition was gradually deteriorating. In 1833 Archdeacon Bonney ordered that "the weeds be removed from the Top of the Bellfry" and in 1836 he specified that "... the walls be cleaned and washed stone colour, ... the weeds be taken out of the Buttresses and the crevices pointed, the turret be painted stone colour, & the Churchyard Fence be repaired" (35).

Ten years later, in 1845, the condition of the building was giving rise to serious concern and eventually the Bedford architect, James Tacy Wing was called in to prepare plans for rebuilding the nave and tower and restoring the chancel (36). In 1845-6 Wing's plans were put into execution (Fig 2). The remains of the old tower were finally cleared away, the chancel was shortened by about ten feet and restored to its original dimensions, and a new church rose in place of the "remnant of a ruin" (37) which had occupied the site for almost 200 years (Pl 1). Wing produced a neat and simple building in the Gothic style, and even the fiery "W.A." commented favourably on the design and on the condition of the chancel (38) although the *Victoria County History* later made scathing comment on the loss of the old work (39). The church was re-opened for worship on 1st May 1846, and the *Bedfordshire Times* of 9th May carried a report of the event giving a brief account of the work undertaken, which stated: (40)

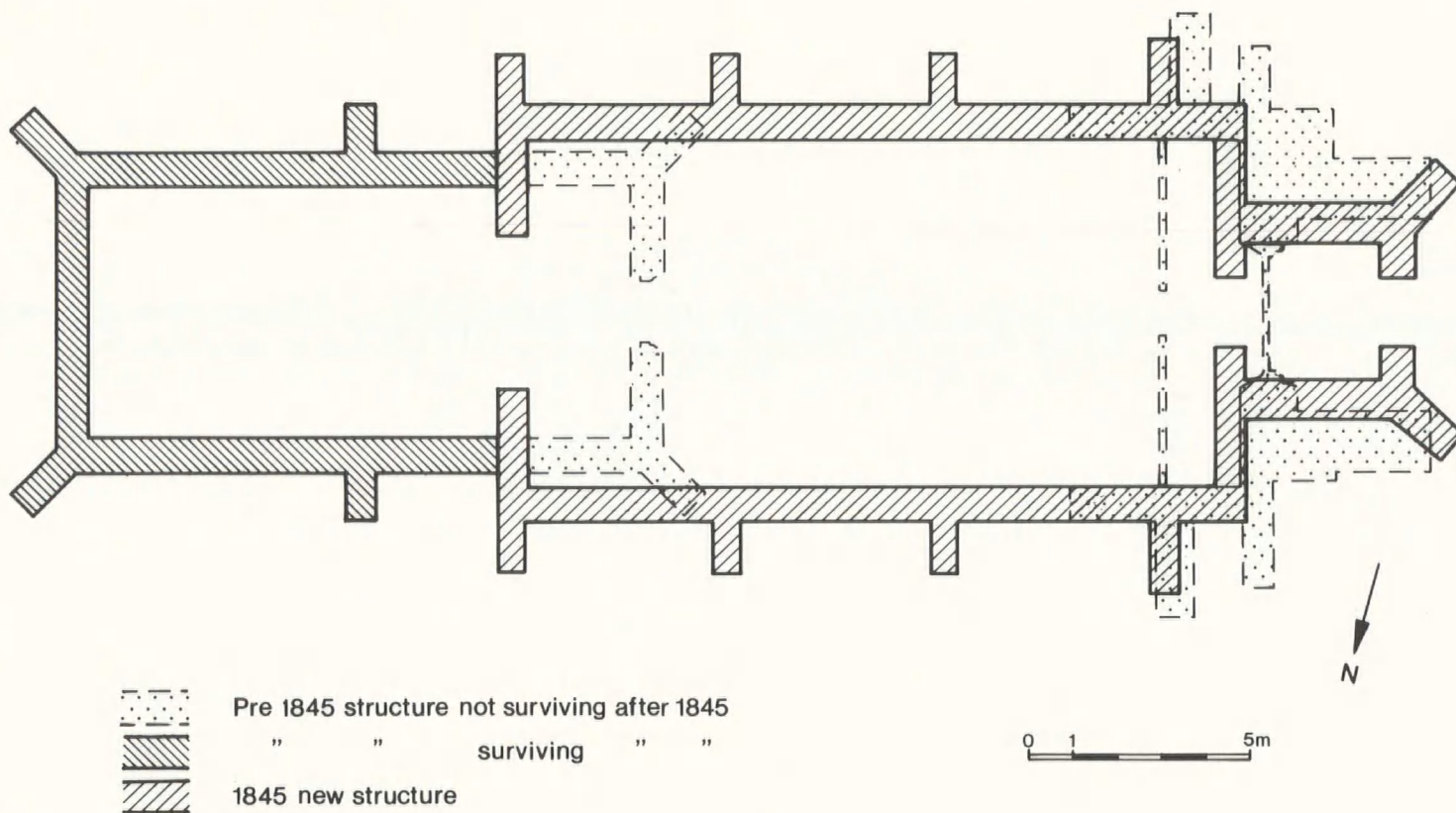


Fig 2 Plan of Pulloxhill church after rebuilding in 1845

RE-OPENING OF PULLOXHILL CHURCH

This ceremony took place on Friday the 1st inst. as we briefly announced in our last publication. The whole of the Church has been re-built, with the exception of the Chancel, at a very considerable cost, but this was rendered absolutely necessary in consequence of the dilapidated condition of the old edifice. The new Church is a plain, but very neat structure, and the principal entrance is at the west end, under the Tower. Very great credit is due to the parishioners for the zeal and liberality they have displayed about the sacred building, and it is worthy of remark that, notwithstanding the great expense which has been incurred, there is only a deficiency of about £100; which, it is confidently expected, will shortly be made up. The opening ...

CONCLUDING REMARKS

Although the history of the church is particularly well documented, there are a number of questions

which cannot be satisfactorily answered from the available evidence. Further information is needed on the deterioration and abandonment of the nave in the early eighteenth century, and the writer's suggestion that the chancel was virtually rebuilt in the 1740's using old materials needs to be substantiated by fuller documentation on the work done at that time.

There is scope, too, for further examination of the structural evidence as and when parts of the buildings are exposed in the course of repairs and alterations. The chancel roof could repay further study, and excavation in the eastern part of the nave and at the west end of the church may shed light on the history of the building.

Doubtless additional information on other aspects of the history of the building will cast a new light on matters covered in these notes, but at the time of writing the above account incorporates a great deal of material previously ignored and helps to build up a picture of a rural church which struggled to survive.



Plate 1. Pulloxhill church in 1977

NOTES AND REFERENCES

1. Faculty petition, 1713, ref: ABF 3/175
2. Simon Houfe points out that the monument to Sir William Briers, buried in the chancel on 7 June 1653, was erected shortly afterwards – perhaps in 1654 – by his widow. He considers it unlikely that she would have erected the monument if the church had already tumbled down, and suggests a slightly later date of 1654-5 for the collapse of the tower. Perhaps significantly there is no monument to Lady Briers who died in 1662.
3. Visitation presentments, 1668, ref: ABC 7 f.33d. (or p.27 of typed transcript by Mr. J. Thompson on searchroom shelves, clf. 170)
4. This quotation is an amalgamation of two separate descriptions of the church by Archdeacon H K Bonney, one in the Visitation notebook 1823-39 (ref: ABV 28), and the other in his church notes of c.1840 (ref: Li/Lib B 1/19/12)
5. Notes on Bedfordshire churches compiled by the Rev G R Boissier of Chiddingstone, Kent, in 1827 (British Library ref: Add.Ms. 48977 f.415d)
6. Photograph of watercolour of village street, c.1820, ref: Z 102/62 and slide 279
7. The framed plan at the church is a copy of the original now held at the Record Office (ref: P 13/2/2/2). A reproduction of the plan appears in the booklet "Pulloxhill Church and Village" (1978) p.26
8. Glebe terrier, 1822, ref: FAC 35/11
9. The South porch is mentioned in the 1708 Glebe terrier, ref: ABE 2, Vol.ii, p.546
10. Note in Churchwardens' account book, 1665-6, ref: P 13/5
11. There is no other likely place where the vestry can have been, and certainly in 1713 it was proposed that the new bell should be hung over the Vestry. See the faculty petition, ref: ABF 3/175
12. Monition to Churchwardens, 1687, ref: ABF 3/174
13. Churchwardens summary accounts, 1685-7, in P 13/5
14. Glebe terrier, 1708, ref: ABE 2, Vol.ii, p.546
15. Churchwardens summary accounts, 1708, in P 13/5
16. e.g. "the greatest part of the materials have long since been disposed of" 1713 (in ABF 3/175), and "ye clappers of all but one [of the four bells] are sold" 1708 (in ABE 2, Vol.ii, p.546)
17. Faculty petition, 1713, ref: ABF 3/175
18. Churchwardens summary accounts, 1714, in P 13/5. The papers concerning the 1845-6 rebuilding also state that the church was "last repaired in 1714" (Lambeth Palace Library: ICBS file 3426)
19. It seems that only one bell, weighing about 6 cwt., was provided for the church in place of the four old ones in 1714. It may have been cast by Thomas Russell of Wootton, but there is no record of its inscription as it became cracked and had to be recast by Thomas Mears of London in 1800.
20. Petition of Quarter Sessions to the Lord Chancellor for a brief, 16 January 1739/40, ref: QSR 1740/103
21. Philip Birt was Vicar of Pulloxhill from 1728-1742, and as a Justice of the Peace he attended Quarter Sessions when the brief was discussed. He resigned the living before the repairs to the church were completed, but evidently retained an interest in the proceedings (see note 29 etc.). Philip, 2nd. Earl of Hardwicke, the Lord Chancellor, was Patron of the living.
22. Brief petition, 1739/40, ref: QSR 1740/103
23. Estimate dated 16 January 1739/40, ref: QSR 1740/116
24. Northill brief register, ref: P 101/3
25. Extracts from Dowles brief book by J.Steele Elliott, ref: CRT 110/15
26. Brief petition, 1739/40, ref: QSR 1740/103
27. *Victoria County History*, Bedfordshire, Vol.II, p.379
28. The church at Old Dilton is a good example of a small mediaeval church with Eighteenth century fittings and furniture.
29. Brief petition, 1739/40, ref: QSR 1740/103
30. Letter from Birt to Lord Hardwick, 5 February 1746, original at British Library, ref: Add.Mss.35,693.1, and transcript at CRO, ref: CRT 100/27/3(i), p.3
31. "Mr. Bishop" was presumably Thomas Bishop, carpenter, who prepared the estimate to accompany the brief petition, 1739/40, ref: QSR 1740/116
32. T North, *Church Bells of Bedfordshire* (1883), p.177
33. Churchwardens accounts (detailed) 1816-17, in P 13/5
34. Glebe terrier, 1822, ref: FAC 35/11
35. Archdeacon's Visitation order book, 1823-1839, ref: ABV 28
36. The Incorporated Church Building Society records at Lambeth Palace Library (ref: ICBS 3426) include papers relating to the rebuilding and a plan by the architect J.T. Wing of the new church. Although submitted as a record of the new church, the plan differs in several respects – notably in the overall length of the building and in the positions of buttresses – from the church as actually built.
37. Archdeacon Bonney's description, in church notes (Li/Lib B 1/19/12)
38. Articles by "W.A." from the Northampton Mercury, copy at CRT 120/34
39. *Victoria County History*, Bedfordshire, Vol.II, p.379. It was pointed out that as the church was dedicated in 1219 the original fabric may have been "a valuable dated example of thirteenth century work"
40. Brief mention of the reopening also appeared in the *Bedfordshire Times* of 2 May 1846, but the main report is in the issue of 9 May 1846, p.3

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Acquisitions, Enquiries, Research on Collections and Fieldwork at Bedford and Luton Museums, 1994-95

ANN INSCKER AND ROBIN HOLGATE

INTRODUCTION

The following articles provide information on the most significant archaeological acquisitions and objects brought for identification to Bedford and Luton Museums during the past two years, and summaries of research undertaken on the museums' collections and of associated fieldwork. It does not include archaeological material acquired through excavation or other fieldwork which is published in full reports elsewhere.

Objects are grouped chronologically under general period headings. Provenances are given as the parish, followed by locality detail and the grid reference; grid references in brackets [] have been inferred from the description of the findspot.

Both Bedford and Luton Museums offer an identification service free of charge and are always pleased to consider offers of appropriate archaeological material from N Bedfordshire and S Bedfordshire respectively. For further information please contact:

Keeper of Archaeology, Bedford Museum, Castle Lane, Bedford MK40 3XD, tel. (01234) 353323.

Curator, Luton Museum Service, Wardown Park, Luton LU2 7HA, tel. (01582) 746719.

BEDFORD MUSEUM

ANN INSCKER

MESOLITHIC/NEOLITHIC/BRONZE AGE

FLINT

Fig 1.1

Podington (in grounds of Christopher Reeves Lower School)

[vicinity of SP 94 62]

An incomplete unifacially worked arrowhead of Mesolithic or Neolithic date, part of which appears to have broken off during the pecking procedure. At this point the artefact was either abandoned or, perhaps, had a secondary function as a scraper, since the expected sharpness of the worked edges was not in evidence. It measured 72mm in length, 30mm at its greatest width, and had a maximum thickness of 6mm.

BEDFM enquiry 979, reported by Oliver Francis of Higham Ferrers, Northamptonshire.

FLINTS

Fig 1.2-1.3

Biddenham

TL 01 49

Two late Neolithic/early Bronze Age flints. Figure 1.2 shows evidence of retouch, while 1.3 is an original flake without secondary modification.

BEDFM enquiry 988, reported by Eric Compton of Queen's Park, Bedford.

FLINT

Fig 1.4

Bedford

[vicinity of TL 06 50]

A unifacial scraper of Neolithic or early Bronze Age, date trimmed around its lower edge by very fine pressure-flaking.

BEDFM enquiry 959, reported by Heather Bailey of Devon Park, Bedford.

IRON AGE

METALWORK

Fig 1.5

Colmworth (Chapel Farm)

[vicinity of TL 10 58]

An umbonate disc brooch of the second century BC, similar in construction to Hattatt's (1989) type 1574¹. The brooch is decorated with an enamelled sunburst pattern, formed by two concentric circles of triangular cells within a deep concentric groove and surrounded by eight large peripheral rounded lugs bearing an intaglio dot-and circle motif. Nearly all the enamel is missing with the exception of the first circle, where eight of the ten cells still contain their red coloration.

BEDFM enquiry 1014, reported by Mr Brightman of Colmworth.

ROMANO-BRITISH

COIN

Marston Moretaine

SP 98 42

An $\text{Æ } \frac{3}{4}$ of Constantius II as Caesar (AD 324-337). Obverse: FL IVL. CONSTATIVS NOB.C with laureate bust facing right. Reverse: GLORIA EXERCITVS with two soldiers standing either side of two standards.

BEDFM enquiry 982, reported by Mr R Elmore of Bedford.

COINS

Marston Moretaine

[vicinity of SP 97 42]

A Colchester Æ Antoninianus of Allectus (AD 293-296). Obverse: IMP. C. ALLECTUS P.F.AVG with

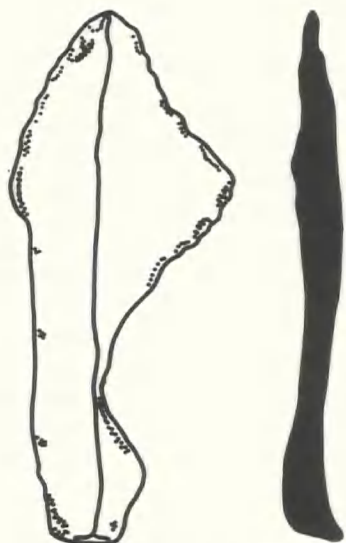


Fig 1.1 (scale 1:1)

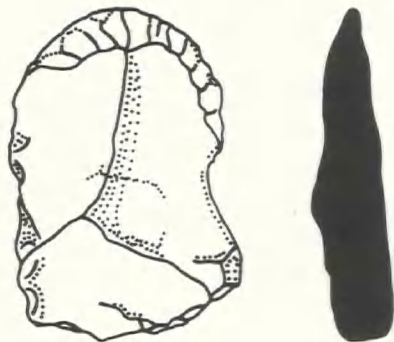


Fig 1.4 (scale 1:1)

a radiate and cuirassed bust facing right. Reverse: PAX AVG. with Pax the god of peace holding an olive-branch and sceptre.

An Æ follis of Maximinus II (AD 309-313). Obverse: IMP. MAXIMINVS P.F. AVG with laureate and cuirassed bust facing right. Reverse: R.GENIO POP.ROM with a genius standing with head turned to the left.

BEDFM enquiry 966, reported by Mr R Elmore of Bedford

COINS AND BROOCH

Kempston (Church End) [vicinity of TL 02 48]

A bronze – centenionalis of Magnentius (AD 350-353). Obverse: D.N. MAGNENTIVS P F AVG with a bare-headed bust facing right. Reverse: R VICTORIAE DD NN AVG ET CAES with two Victories facing each other and holding a shield between them inscribed with the words VOT V



Fig 1.2 (scale 1:1)

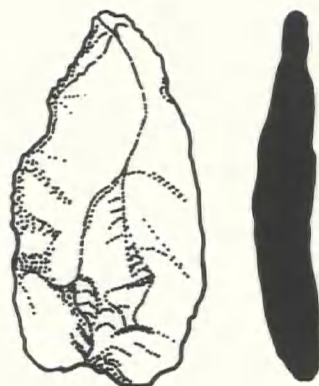


Fig 1.3 (scale 1:1)

MVLT X.

A bronze follis of Galerius (AD 305-311). Obverse: IMP C MAXIMIA NVS P F AVG with laureate bust facing right. Reverse: GENIO POPVLI ROMANI with a genius facing left.

A sestertius of Trajan (AD 95-117). Obverse: IMP CAES NERVA TRAIAN AVG GERM with a bust facing right. Reverse: too faded to give a positive identification.

A fragment of a Colchester type bronze bow-brooch, of the first century AD and a composite copper-plated brooch with segmented enamel inlays, dating somewhere between the first century AD and the end of the medieval period. The mount and pin of the latter are missing, however, the large catchplate remains. Although many composite enamel brooches have been discovered in Britain, the particular specimen falls into the rarer uncommonly shaped group.

BEDFM enquiry 961, reported by Mr A Parker of Bedford.

ANGLO-SAXON

GLASS

Wrestlingworth (Biggleswade)

TL 26 48

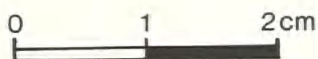
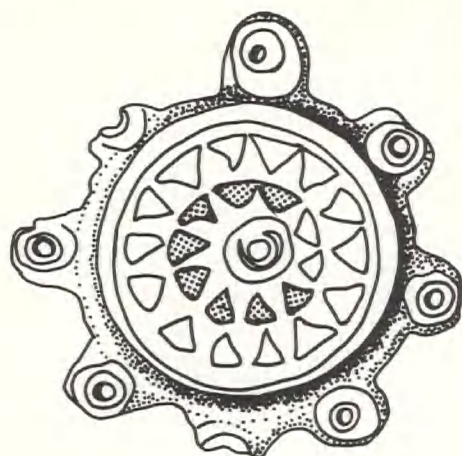
A glass bead featuring reticella trailed decoration. Reticella is a method by which fine tubes of coloured glass are wrapped around one another and subsequently mounted in a heated state on to an object. The twisted tubes then sink into the receiving glass to give a uniform surface appearance.

LEAD

Marston Moretaine

[vicinity of SP 97 42]

A lead spindle whorl similar to specimens found at Winchester and Dover. Probably also contains tin.



Traces of red enamel

Fig 1.5

MEDIEVAL

TILE Elstow

Fig 2.1
TL 05 47

A line impressed floor tile fragment decorated with an all over white slip covered by a clear lead glaze, featuring a cinq foil boarded by two concentric circles, with five equidistant circles distributed between them. From the minor traces of border above the main design, it can be recognised that the pattern is repeated and, therefore, appears to bear a strong resemblance to type 521 from Elstow Abbey in the 'Bedford Medieval Floor Tile Type Series²'. Type 521 features five such designs, one in each corner around a central stamp. It is likely that the stamp would have been impressed into the tile five times. Therefore, while the general placing of the design would have been easy to replicate, the exact distances between them might vary, as they do in this instance; the smallest gap between the central and outer stamps on type 521 being 11mm and on this specimen a mere 4mm. To date tiles featuring the cinq foil and concentric circle design have only been recorded at Warden and Elstow Abbeys, suggesting they were produced locally.

BEDFM enquiry 981, reported by Museum Attendant Alan Sibley of Elstow. Thanks to pottery specialist Liz Pieksma for her assistance with the identification of this specimen.

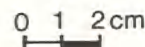
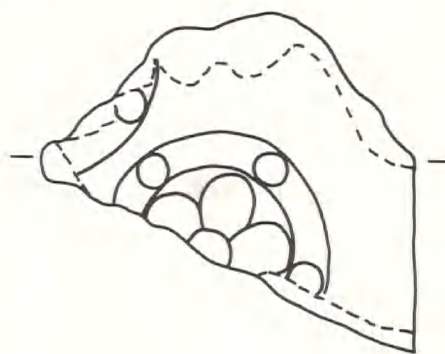


Fig 2.1

COINS

Marston Moretaine

SP 98 43

A silver longcross coin of Henry III (1216-72), produced by Willem and probably minted in London. Obverse: HENRICVS REX III with a bust of Henry holding a sceptre (left) and wearing a type 5d crown³. Reverse: WILLEM_VID.

BEDFM enquiry 994, reported by Mr R Elmore of Bedford.

Biddenham (Church)

TL 01 50

A framed fragment of an English Lectionary or Martyrology, intended to be read as a daily lesson in a refectory or church service. Dated by Dr Michelle Brown of the British Museum to between 1280 and 1300. Following the Dissolution of the Monasteries the volume may have gone into private ownership and, as the folds in the remaining specimen indicate, subsequently became a vellum wrapper for other papers. During the Tudor period the letter 'E' was added at the top of one of the pages, perhaps as a filing system for the documents held within. Still later, the manuscript was cut down to Parish Register size, where it may have served its time as a paste-down, before someone finally decided it deserved more prestigious treatment and placed it in a frame.

BEDFM enquiry 1029, reported by Jackie Stubbs of the Church Records Group. This item is now on long term loan from Biddenham Church.

SEAL MATRIX

Plate 1

Marston Moretaine (near Beancroft Farm)**[vicinity of SP 98 42]**

A circular lead seal matrix (2.7cm diameter), with legend located around the edge of an eight petalled central floral design. Identified by John Cherry, of the British Museum, as being an official seal, possibly of Thomas Dografi, dating to the thirteenth century.

BEDFM enquiry 1027, reported by Mr R Elmore of Bedford.

POST MEDIEVAL**POTTERY****Odell and Harrold Country Park****[vicinity of SP 95/96 56/57]**

Medieval coarseware body sherds of indeterminate vessels.

BEDFM enquiry 1008, reported by Mrs Earl of Wootton.

COSTUME BRASS

Plate 2

Marston Moretaine**SP 99 42**

A fragment of a civilian costume brass, dating from the fifteenth to sixteenth century. Possibly the work of John Stonor who produced similar works in four Buckinghamshire churches.

BEDFM enquiry 1037, reported by Mr R Elmore of Bedford.

LUTON MUSEUM**ROBIN HOLGATE****IRON AGE****COIN****Chalton****TL 03 25**

Bronze coin of Cunobelin, AD 20-40, with Pegasus on one side and a horse on the other side.

LTNMG enquiry 4001 reported by Mr T Bryson. Found near Chalton.



Plate 2



Plate 1

ROMANO-BRITISH**POTTERY****Luton/Wodecroft Road****TL 07 24**

Two potsherds of 2nd-4th centuries date, one of which is a mortaria fragment.

LTNMG enquiry 4042 reported by Mr D McGreevy. Found in the garden of 27 Wodecroft Road.

BEAD**Luton/Catsbrook****TL 07 24**

Glass paste necklace bead.

LTNMG enquiry 4006 reported by Mr A Izzard. Found in Catsbrook, Runfold, Luton.

COINS**Luton/Bushmead****TL 09 24**

Four coins. *Follis* of Constantine I, AD 308-309, in good condition. Obverse: CONSTANTINVS P.F.AVG. bust facing right. Reverse: SOLI INVICTO COMITI Sol standing left, holding a globe with mint mark PLG (Lyons). $\text{AE} \frac{3}{4}$ commemorative issue of Constantine I, AD 330-346, in poor condition. Obverse: CONSTANTINOPOLIS helmeted bust of Constantinopolis facing left, wearing imperial mantle and holding sceptre. Reverse: no legend, Victory standing left with an illegible mint mark. $\text{AE} \frac{3}{4}$ commemorative issue of Constantine I, AD 330-346, in poor condition. Obverse: VRBS ROMA helmeted bust of Roma facing left, wearing imperial mantle. Reverse: no legend, she-wolf standing left, suckling Romulus and Remus with mint mark TR (Trier). Antoninianus, possibly of Victorinus or Claudius II Gothicus, in poor condition.

LTNMG enquiry 3963 reported by Mr C Hamilton. Found in a garden on the Bushmead estate.

COIN

Luton/Icknield Way**TL 07 24**

Follis of Maximianus, AD 286-305, in good condition. Obverse: IMP MAXIMIANVS AVG, bust facing right. Reverse: GENIO POPVLI ROMANI, genius standing left with patera and cornucopiae with mint mark PLG (Lyons).

LTNMG enquiry 4169 reported by Mrs C Robinson. Found in the garden of 163 Icknield Way.

COIN

Luton/Hillary Crescent**TL 08 20**

Follis of 3rd-4th centuries date in poor condition.

LTNMG enquiry 4055 reported by Mr Bradley. Found in the garden of 66 Hillary Crescent.

COIN

Dunstable/Bunhill Close**TL 01 21**

Æ 2/3 of Valentinian I, AD 364-375, in poor condition. Obverse: bust facing right. Reverse: Victory advancing to the left.

LTNMG enquiry 4022 reported by Mr Tearle. Found in the garden of 4 Bunhill Close.

COIN

Totternhoe**SP 98 21**

Sestertius of late 1st-mid 2nd century date in poor condition.

LTNMG enquiry 4094 reported by Mr P Wilson. Found at Totternhoe.

MEDIEVAL POTSHERDS

Toddington**TL 02 30**

A total of ten fragments of medieval pottery, including six rim fragments of cooking and other vessels, two jug handles and two other fragments. LTNMG enquiry reported by Mr T Bryson and found by him on the surface of cultivated land to the north-east of Toddington.

LEAD SEALS

Caddington**TL 06 19**

Two circular late medieval lead cloth seals.

LTNMG enquiry 4020 reported by Mr A Dosa. Found in Caddington.

NOTES

1. Hattatt, R, 1989, Ancient Brooches and other Artifacts, Oxbow Books, 126-127
2. 'Bedford Medieval Floor Tile Type Series' is held at St. Mary's Archaeological Centre in Bedford.
3. North, J J, 1963, English Hammered Coinage: Volume 1, Spink & Son, London, 166

The Bedfordshire Archaeological Council is grateful to Bedford Borough Council and Luton Borough Council for supporting the publication of this paper.

Book Review

EVELYN BAKER

Excavations on Medieval Sites in Milton Keynes 1972 - 1980

D C Mynard, Buckinghamshire Archaeological Society Monograph Series No 6, 1994

Series Editor: J Chevenix Trench

This, the last of the monograph series produced by the now defunct Milton Keynes (Development Corporation) Archaeology Unit, is generally a handsome, clearly presented large format report. Or rather, a series of individual reports of excavations and watching briefs carried out by the unit in the area of the city of Milton Keynes over a period of eight or so years.

The volume starts in a promising way, with a list of the various sites, the contents of the individual reports, the reports' illustrations, and a location map showing the spread of sites throughout the city. The separate reports follow, all sections in the same order as far as the material will allow, which lends coherence to the reports overall. Where possible, there is an introduction giving a brief topographical placing which includes geology and relationship to contemporary trading routes. It gives the timing and circumstances of the project, always a useful insight into the restrictions placed on the excavators, and therefore their chosen strategy and methodology. This is followed by acknowledgements to the archaeological team and others associated with the project. The historical background follows, when relevant documentation is available. This is useful for placing the sites into their historical context and understanding the significance of the findings, but excavation and survey results tend to appear here instead of in the discussion. Further topographical information sometimes follows as a separate section rather than being subsumed within the introduction. This is usually the case where the investigations are centred on earthwork sites, and is necessary in order to understand the strategy and results of trial trenches and larger excavations.

The main meat is divided into two parts: structural evidence and finds. The structural evidence is clearly presented in terms of good quality simple drawings with sufficient detail to tell the story. A description of the earthworks and/or excavation follows the introductory and historical sections. The stratigraphic descriptions of the excavations are reasonably concise, but tend to mix straight observations and documentary evidence with interpretation and dating. There is no

formal summary and no overall conclusions, these being subsumed within a general introduction and framework to the structural evidence. Given the nature of the excavations this works well, the descriptions of the buildings themselves being well balanced, sufficient to understand the structure without being swamped with unnecessary detail. The drawings are of high quality and economic, complimenting the text well. The plates are well chosen but suffer from the paper on which they are printed, ending up rather greyer than one suspects the negatives could deliver, not doing what looks clean, competent excavation, justice. There is one minor quibble: as with many excavation reports one wonders whether some of the detailed descriptions of pit fills and the like would be better left to the archive.

Publication of the finds follows the improved modern format of being published according to activity and function rather than material. The drawings are generally of excellent quality, though their scale might be considered extravagant. Each report has its own separate finds section. Again, this works reasonably well, but the question must be asked whether there might have been a better way of presenting the material so that it served both the individual excavations and examined the pattern of material culture across the whole city. One or two assemblages are shown, mainly of ceramics, but one has to rely mostly upon the structural descriptions to get an idea of the associated finds. The editor might have eradicated some of the spelling errors. It would have been helpful to have had the site name in question printed on the page; the structural illustrations are generally labelled with the site name, but not the finds. There is very little environmental material, but this is a symptom of the age of the excavation. There is a full, and useful, bibliography.

Perhaps the most disappointing aspect of the volume is that there has been no attempt at synthesis. A dozen medieval sites have been examined across the city, but no attempt has been made to draw out any conclusions about any aspect. Perhaps this was a considered and deliberate omission, which should have been flagged for the reader. It may have simply been lack of time or funding, this being the penultimate product of the Milton Keynes Archaeology Unit before its untimely and much lamented demise. On the whole, the criticisms are mere quibbles, the volume representing good professional standards from one of the better local units.



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