# Evidence for Iron Age, Roman and early medieval occupation on the Greensand Ridge at Haynes Park, Bedfordshire

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*SUMMARY*

*During 1993 and 1994 Bedfordshire County Archaeology Service (now known as Albion Archaeology) undertook archaeological fieldwork in advance of the construction of a substantial new access road at Haynes Park House, Bedfordshire. Evidence for settlement from the early-middle Iron Age through to the early medieval period was located.*

*The early-middle Iron Age settlement was unenclosed and comprised small pits and scatters of postholes (some associated with hearths) suggestive of buildings. Very little artefactual or ecofactual material was recovered. The periphery of a 'Belgic' Iron Age/early Roman farmstead, continuing beyond the limit of the excavation, was examined. The farmstead was significant for two main reasons. It was located* c. *200m south of the earlier settlement, possibly fitting a regional trend of settlement shift. Also, when combined with probable contemporary cropmark enclosures in the vicinity, it fits a pattern of increasing settlement density during this period. The evidence for the Roman period was more extensive, comprising a ditched field/enclosure system with three discrete activity foci: a probable continuation of the earlier settlement, relatively isolated post-built buildings and an isolated drying oven. No exact parallels have been found for the structure of the drying oven. However, archaeomagnetic dating indicates that it is a relatively early example, which may account for its unusual design.*

*The Late Saxon / Saxo-Norman evidence appears to relate to the dispersed settlement of Haynes Church End. It comprised post-built buildings and a succession of timber structures associated with a natural spring hollow. A major boundary ditch separated these two elements of the settlement, suggesting that they were under different ownership. However, their broad contemporaneity was demonstrated by scientific dating techniques. The investigation of timber hurdling and a substantial timber tank have provided much information about contemporary woodworking techniques. The spring hollow contained waterlogged deposits, which have contributed to an understanding of the local environment. As for the Roman period, a range of ecofactual data suggests that the settlement was based on a mixed farming regime, operating within an open, managed landscape.*

*By the end of the 12th century the former settlement site had been incorporated into the township's field system. At some point after the late medieval period the fields were incorporated into the park.*

## INTRODUCTION

In 1993 a planning application was submitted for the construction of a new access road to Haynes Park House. The route of the proposed road was in an area of known archaeological interest. Following advice from the County Archaeological Officer (CAO) of Bedfordshire County Council (BCC), the local planning authority (Mid Bedfordshire District Council) requested a programme of archaeological investigation. This was in line with local plan policy and the guidelines in the Department of the Environment's *Planning Policy Guidance Note 16: Archaeology and Planning* (PPG 16). A field evaluation was undertaken which identified significant archaeological remains. These were then subjected to open area excavation prior to their unavoidable destruction by road construction. Bedfordshire County Archaeology Service (renamed Albion Archaeology during the preparation of this report) undertook the work on behalf of Radha Soami Satsang Beas (British Isles).

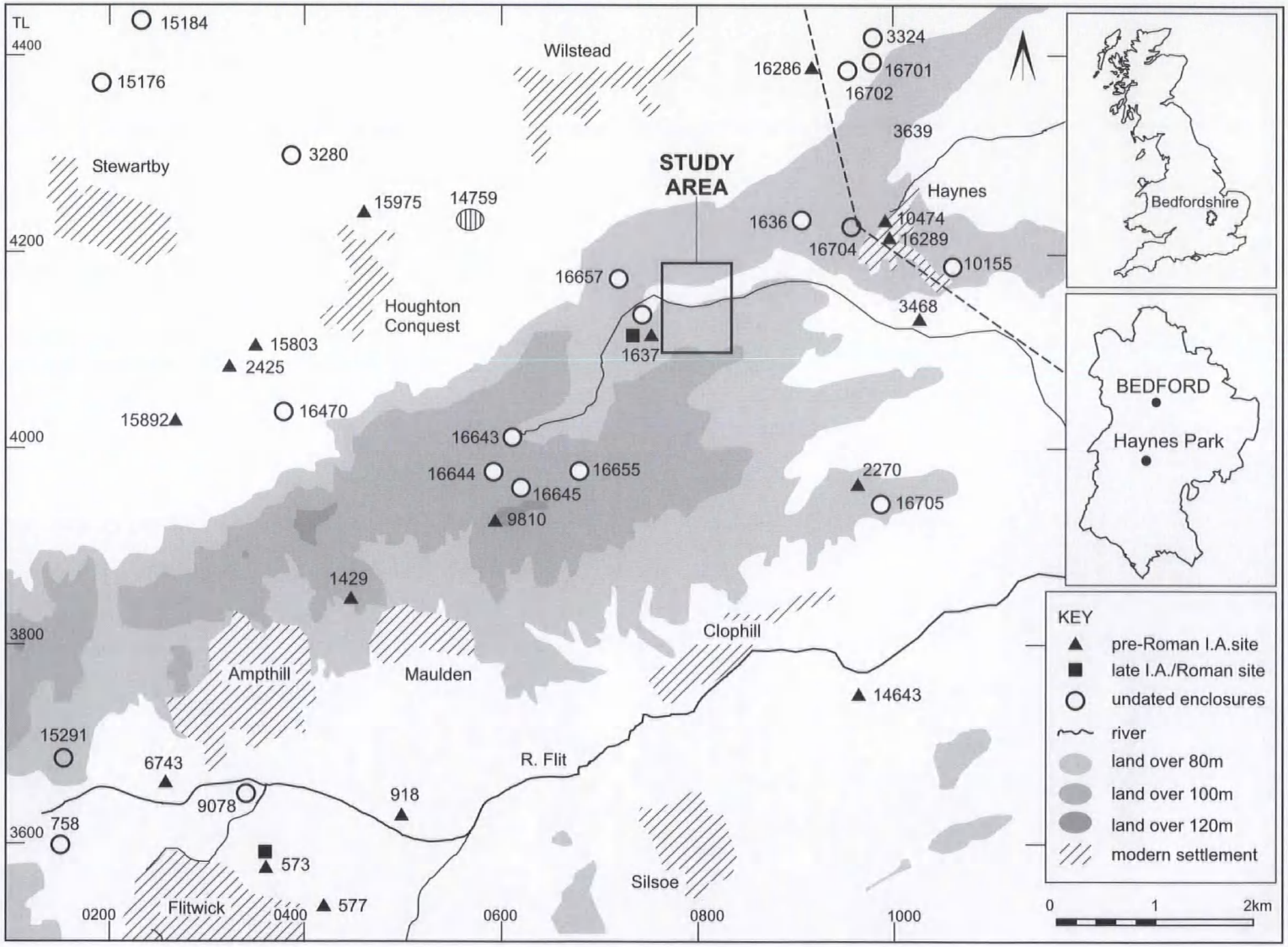



Figure 1 Topography and known Iron Age and Roman sites in the vicinity

## SITE LOCATION AND CONDITIONS

The investigations took place within the grounds of Haynes Park House, 9km SE of Bedford (Figs 1 and 2). They were centred on TL 07954120, adjacent to St. Mary's Church, which is located on the periphery of the hamlet of Haynes Church End.

Topographically the study area is located on a SW-NE ridge known as the "Greensand Ridge". From S to N the land slopes down from 120m OD to an E-W running stream at 85m OD before rising again towards the house itself at 95m OD. The underlying geology is Lower Greensand overlain in places by chalky Boulder Clay, as was the case towards the S of the study area. A number of natural springs occur at the junction of the sands and clays.

Downslope movement of both sand and chalky soils has led to the deposition of colluvial deposits which mask the original topography of the slope. A narrow band of alluvium is associated with the stream.

## ARCHAEOLOGICAL BACKGROUND

The Bedfordshire Historic Environment Record (HER) of BCC contains a considerable amount of evidence for the history of Haynes and adjacent parishes (Fig 1). However, prior to the investigations reported on here, no pre-medieval remains were known within the study area (these are now recorded as HER 15840).

Approximately 400m W of the study area a wide V-shaped ditch and a "possible occupation layer" were found in 1976 during limited archaeological investigations associated with the construction of the Southern Feeder gas pipeline (HER 1637) (Catherall et al. 1984, 24). The pottery associated with these features was considered to be both early-middle Iron Age and late 'Belgic' Iron Age in date.

Isolated finds of Roman pottery and coins are known from the parish. Many were recorded during the 19th century with no exact provenance (HER's 305, 1357 and 11294) and are, therefore, not shown on Fig 1. Discoveries of 'Belgic' and Roman pottery, along with metalwork, are not unusual on the Greensand Ridge (*e.g.* HER's 1429, 3468, 9810, 10474 and 16289). Two substantial Roman settlements are located in the Flit Valley to the S of the Greensand Ridge at Ruxox (HER 918) and Shefford (Fig 1). The Viatores suggested (1964, 260-263), based on circumstantial evidence, that a Roman road existed, *c.* 2km to the NE of the study area (HER 3634), linking settlements at Shefford and Bedford.

Prior to an aerial photographic survey undertaken in 1996 the Greensand Ridge had produced very few cropmarks suggestive of enclosed settlements. However, the 1996 survey was particularly effective in locating such sites (as indicated by the quantity of HER numbers in the 16000's on Fig 1). The nearest of these new sites was located *c.* 1km NW of the study area on the S-facing slope (HER16657). It comprised a group of small enclosures and a more extensive series of sub-circular enclosures linked to linear boundaries. Such enclosures are often interpreted as late Iron Age/Roman in date. However, only in a small number of cases has their date been confirmed.

The Manor of Haynes was recorded in Domesday Book, indicating the existence of a late Saxon settlement. Stone roofing tiles and 12th-15th century pottery located during fieldwalking E of the study area suggest that the village once continued to the N of the present church. Extensive cropmarks (HER 5481) to the E of Haynes Church End were originally interpreted as village earthworks but are now believed to be geological in origin (pers. comm. Stephen Coleman).

The earliest known references to a park in Haynes date to the 14th century (VCH 1908). However, its exact location is not known and it is not certain that it can be identified with the present-day park. A map of 1676 (BLARS: Z385/1 and 2) demonstrates that Haynes Church End was once a more extensive settlement than it is today.

## THE ARCHAEOLOGICAL INVESTIGATIONS

### FIELD EVALUATION

The field evaluation was undertaken between August and September 1993 in accordance with the Specification (BCC 1993a). It comprised a staged sequence of investigative techniques, each of which informed and partly determined the next stage (Fig 2).

An earthwork survey was carried out on the S-facing slope between Haynes Park House and the stream. The majority of the identified features were associated with the post-medieval garden (BCAS 1993). Four areas along the route of the proposed road were subject to detailed geophysical survey and a number of ditch- and pit-type anomalies were identified (Stratascan 1993).

Initially seven trial trenches (with a combined length of 365m) were opened to investigate geophysical anomalies and those areas that had not been subject to survey. Towards the N of the study area trenches 1-4 located post-medieval features associated with Haynes Park House and its gardens. Trenches 5, 6 and 7 contained a small number of pits,

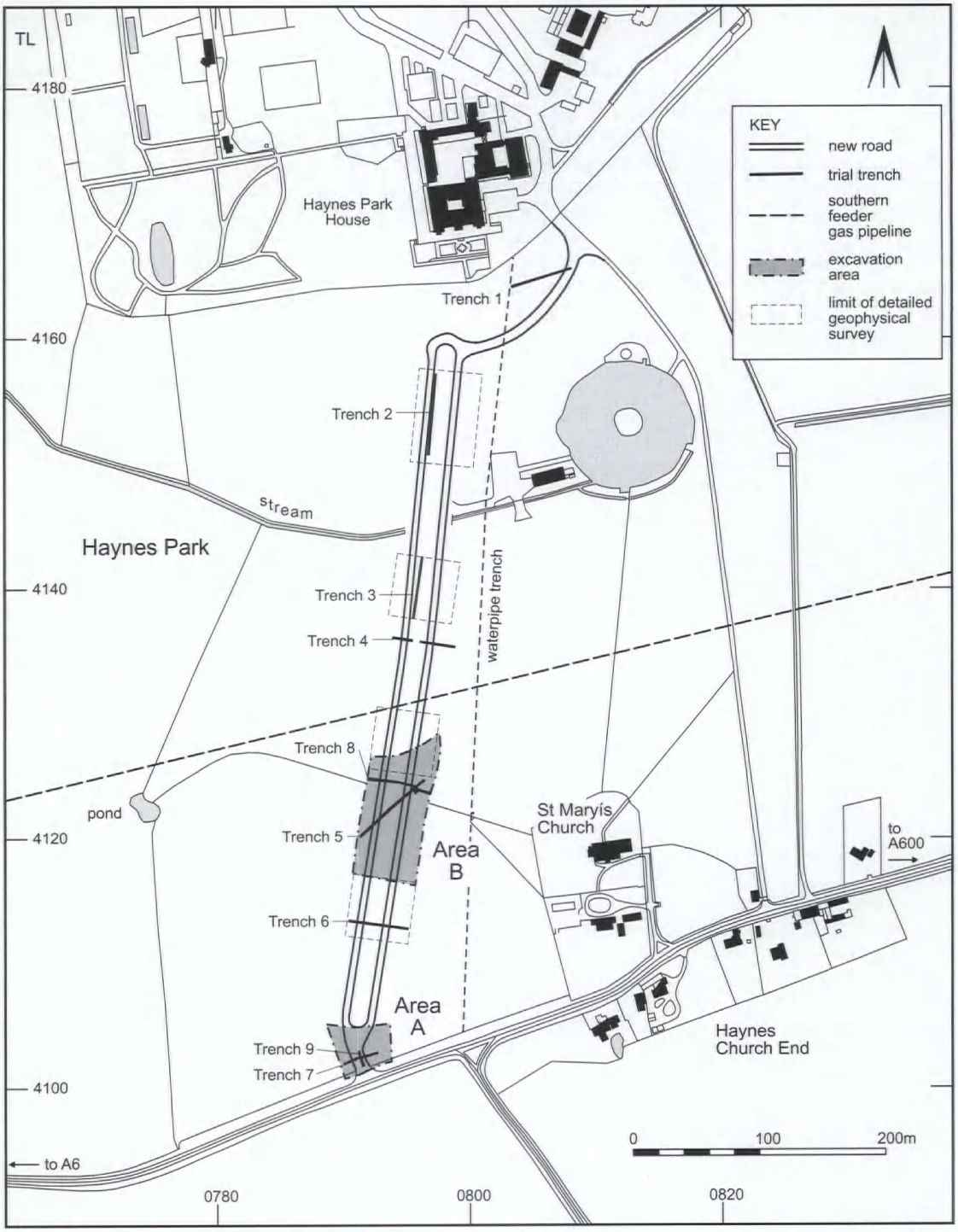



Figure 2 Site location and areas of investigation

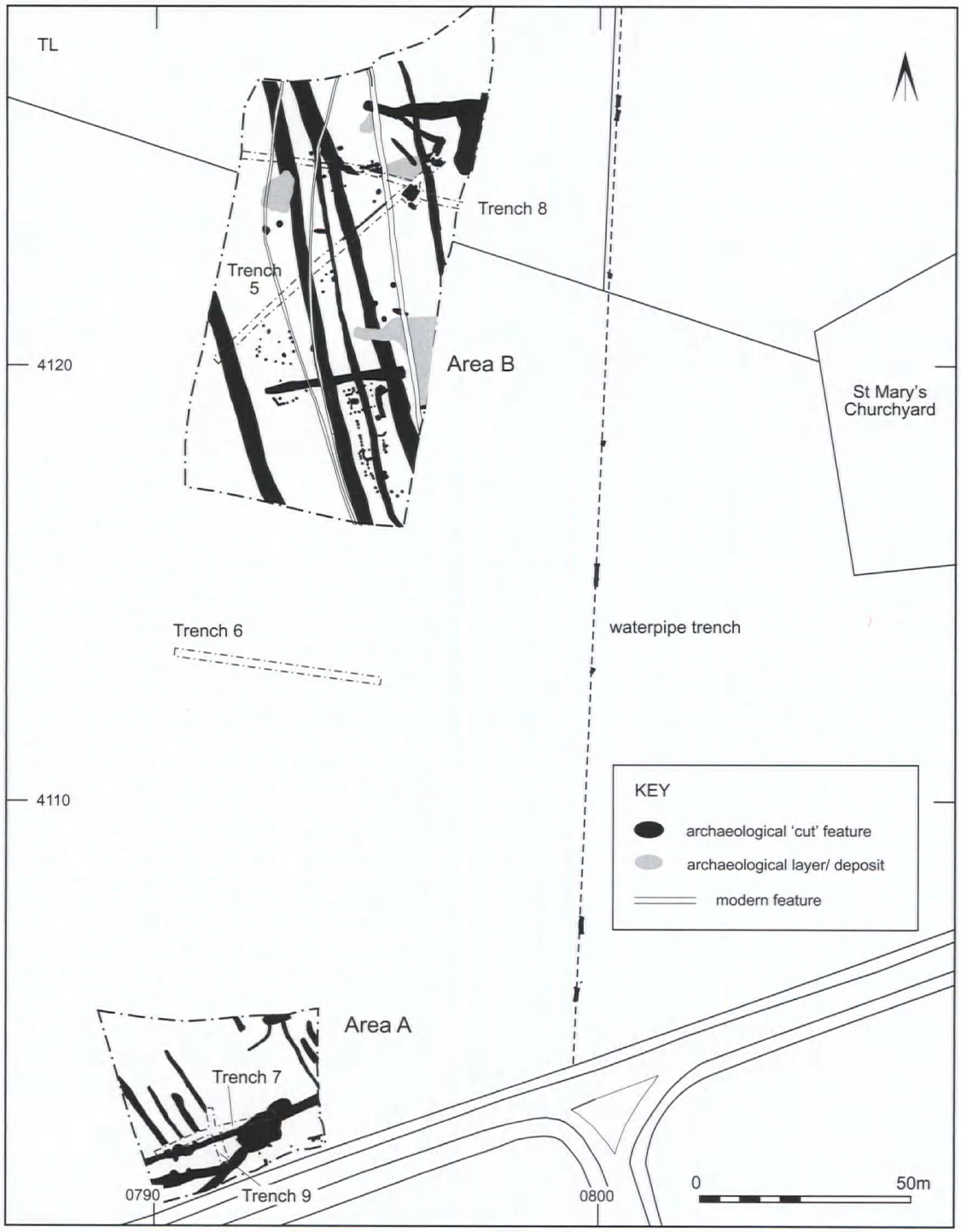
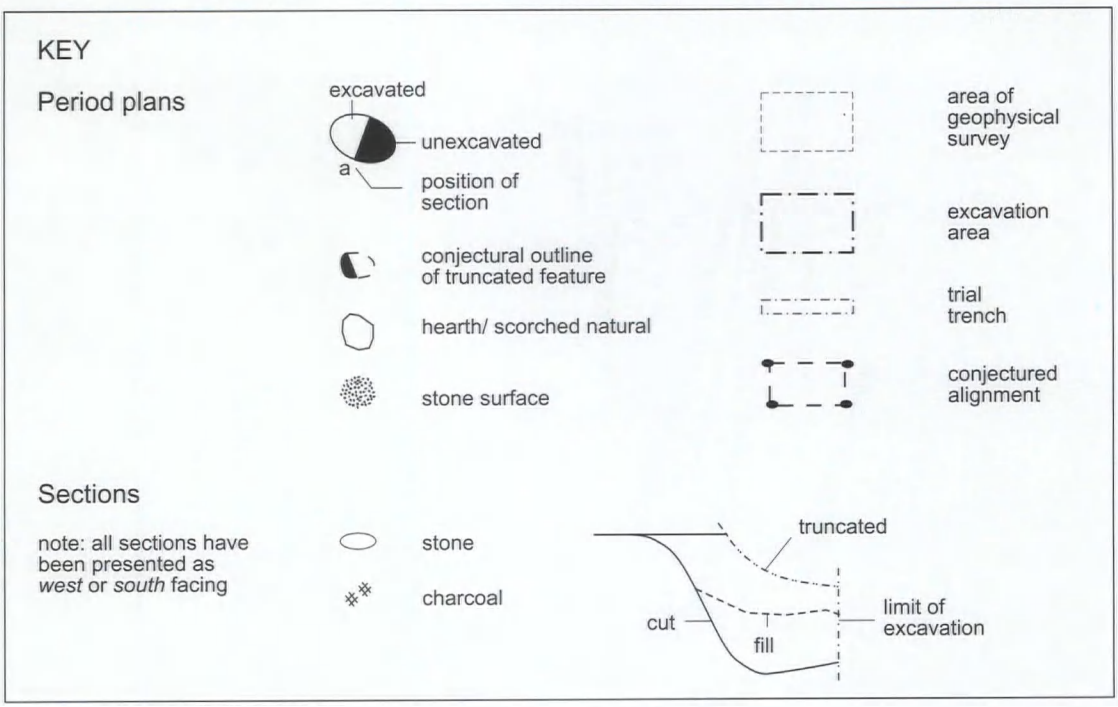



Figure 3 All features plan




Key to plans and sections

ditches and postholes associated with late Iron Age and Roman pottery. In trench 5 a Roman drying oven was identified. To clarify the nature and extent of archaeological remains two additional trenches (8 and 9) were opened.

MITIGATION STRATEGY

The field evaluation identified three areas of archaeological significance (BCAS 1993). Although important, they did not warrant preservation *in situ* and could be dealt with by detailed archaeological investigation in advance of construction. The Brief (BCC 1993b) required the implementation of an open area excavation over the two areas of Iron Age/Roman/Saxo-Norman remains to the S of the study area, along with a watching brief on post-medieval garden features to the N.

**Open area excavation**

The excavation was undertaken between June and September 1994 (Fig 3). The excavation areas were 120m apart and covered 1,600m$^2$ (Area A) and 5,000m$^2$ (Area B). The depth of the overburden removed by machine to reach archaeological features varied from 0.4m (Area A and S part of Area B) to 1.2m (N part of Area B, just below the crest of the ridge where colluvial deposits had accumulated). The site recording sequences started during the evaluation were continued. The majority of isolated archaeological features were half-sectioned, and ditches were investigated within segments.

**Watching Brief**

Observations were made along the road corridor N of Area B and within the entire length of a water pipe trench to the E of the excavation areas.

POST-EXCAVATION METHODOLOGY

During analysis a structural hierarchy was defined, comprising:

- sub-groups (indivisible units of interpretation, *e.g.* the primary fills of the same ditch);
- groups (more interpretative entities, *e.g.* a building, concentration of pits, or a boundary ditch);
- landscapes (a collection of broadly contemporary and spatially coherent groups, *e.g.* a boundary and associated activity, or a field system);
- phases (divisions of periods based on stratigraphical evidence);
- periods (broad chronological divisions *e.g.* Roman, Saxo-Norman *etc.*)

## STRUCTURE AND TERMINOLOGY IN THIS REPORT

After this introductory section, the site narrative presents the results of the investigations within a chronological framework of Period (in Roman numerals) and where appropriate Phase (in Arabic numerals). The site narrative is further sub-divided by Landscape (L prefix) and Group (G prefix). Along with describing the archaeological features the site narrative integrates a summary of the artefactual and ecofactual evidence. Where necessary an individual Feature number (F prefix) is provided in the text and labelled on the illustrations. More detailed artefactual and ecofactual data are presented within separate sections for the individual specialisms. It should be borne in mind that most of the specialist reports were written in 1996. A discussion of the results of the investigations is presented towards the end of the article. Appendices contain technical details on the artefactual and ecofactual evidence.

## RESULTS OF THE INVESTIGATIONS

Mike Luke and Jackie Crick

The results of all stages of fieldwork are presented here in chronological order. Although a small lithic artefact assemblage (spanning the Mesolithic to the late Neolithic/early Bronze Age) was recovered, it is entirely residual within later features. This prehistoric evidence has not been assigned to a phase and is only briefly described in the artefacts section.

### PERIOD I: EARLY-MIDDLE IRON AGE (PHASE 1) (Fig 4)

The earliest firm evidence for human activity within the study area occurred in Area B and probably represents an unenclosed farmstead L9. It comprised three structures. G69 and G73 were scatters of postholes, associated with hearths. G74 may have been similar but only the hearth survived. Three pits G55, *c.* 25m to the S of the structures, have been tentatively included in this period on stratigraphic and spatial grounds.

Although small and derived from a single feature within G69, the pottery assemblage comprised only pre-'Belgic' types. The assignment of the other features to this period is based on their proximity and similarity to the single dated structure, along with the fact that several were truncated by the Period III ditches G42 and G43.

#### Unenclosed farmstead L9

The three structures G69, G73 and G74 are located within *c.* 25m of each other, to the N of pit group G55.

*Structures G69, G73 and G74*

The location of hearths was indicated by either oval areas of scorched orange/red subsoil *e.g.* F1400 or by small pits with evidence of *in situ* burning on their sides *e.g.* F811 and F890 (Fig 4d and c respectively). Hearth F1400 was 2.7m by 0.7m; the other two were 1m by 0.7m. Hearth F890 contained a small quantity of pre-'Belgic' Iron Age pottery and fired clay. Unfortunately the *in situ* scorched/burnt clay was too fragmentary and cracked to be suitable for archaeomagnetic dating (pers. comm. Anthony Clark).

The postholes to the W of hearth F1400 appeared to form an arc around it, but those associated with hearth F890 formed no obvious pattern. All postholes were circular to sub-circular in shape, under 0.35m in diameter with concave profiles and *c.* 0.2m deep (Fig 4a and b). They were filled by a mid orange brown silty sand with occasional small stones and charcoal flecks. Posthole F1405 (associated with structure G73) was unusual in that it was larger and contained occasional medium-sized limestone fragments, possibly used for post packing.

*Pit group G55*

Little can be said concerning the three pits G55, partly because they had been truncated by later activity. They were oval in plan, *c.* 1.5m by 1m, with concave profiles and 0.55m deep (Fig 4e and f). They were filled by mid brown sandy silt with occasional small stones and charcoal flecks and fired clay. A small quantity of tiny pottery sherds of 'Belgic' and Roman types along with fired clay was recovered from pit F872. However, for stratigraphic reasons and given their spatial location, they are more likely to belong to this earlier period.

### PERIOD II: 'BELGIC' IRON AGE/EARLY ROMAN (PHASES 2, 3 AND 4) (Fig 5)

Evidence for activity during this period is restricted to Area A. At least two phases of occupation are suggested by the stratigraphic relationships between features. The earliest evidence is in the form of pitting and a post-built structure (Phase 2), with a trackway and boundary ditch established later (Phases 3 and 4). It is clear that the features within the excavation area are only a small part of a larger settlement which, given the absence of features in the northern part of Area A, probably extends to the S beneath the modern road.

The features contained a moderate quantity of pottery (mainly 'Belgic' types) and fired clay, along with small quantities of animal bone and ferrous slag. No pre-'Belgic' pottery was present within the assemblage, supporting the idea that this is a new settlement in a previously unoccupied area. The presence of a small quantity of later Roman material and a medieval coin RA 4 within these deposits is likely to be the result of contamination from overlying fills.

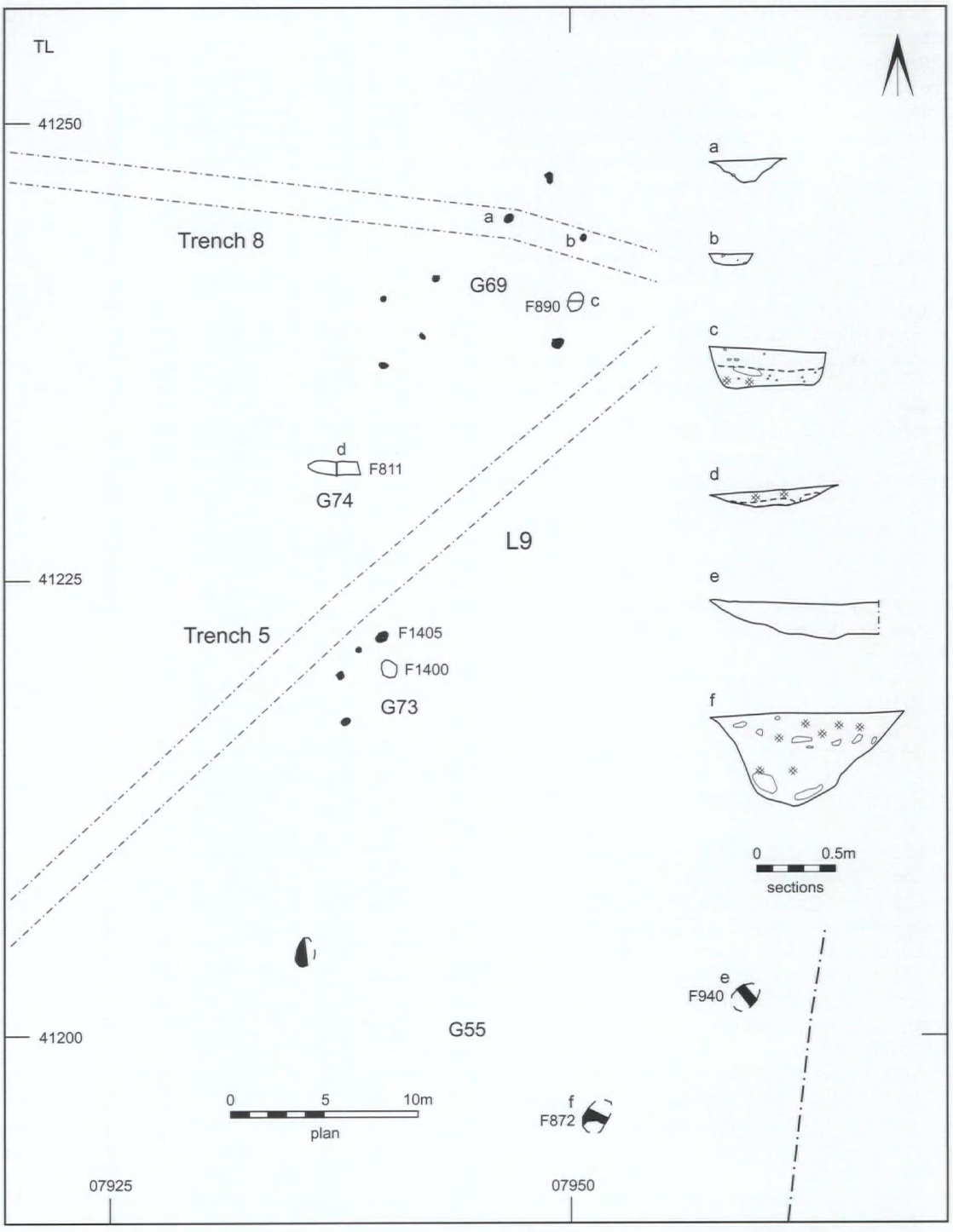



Figure 4 Period I: Pre-'Belgic' Iron Age (Phase 1); Overall plan

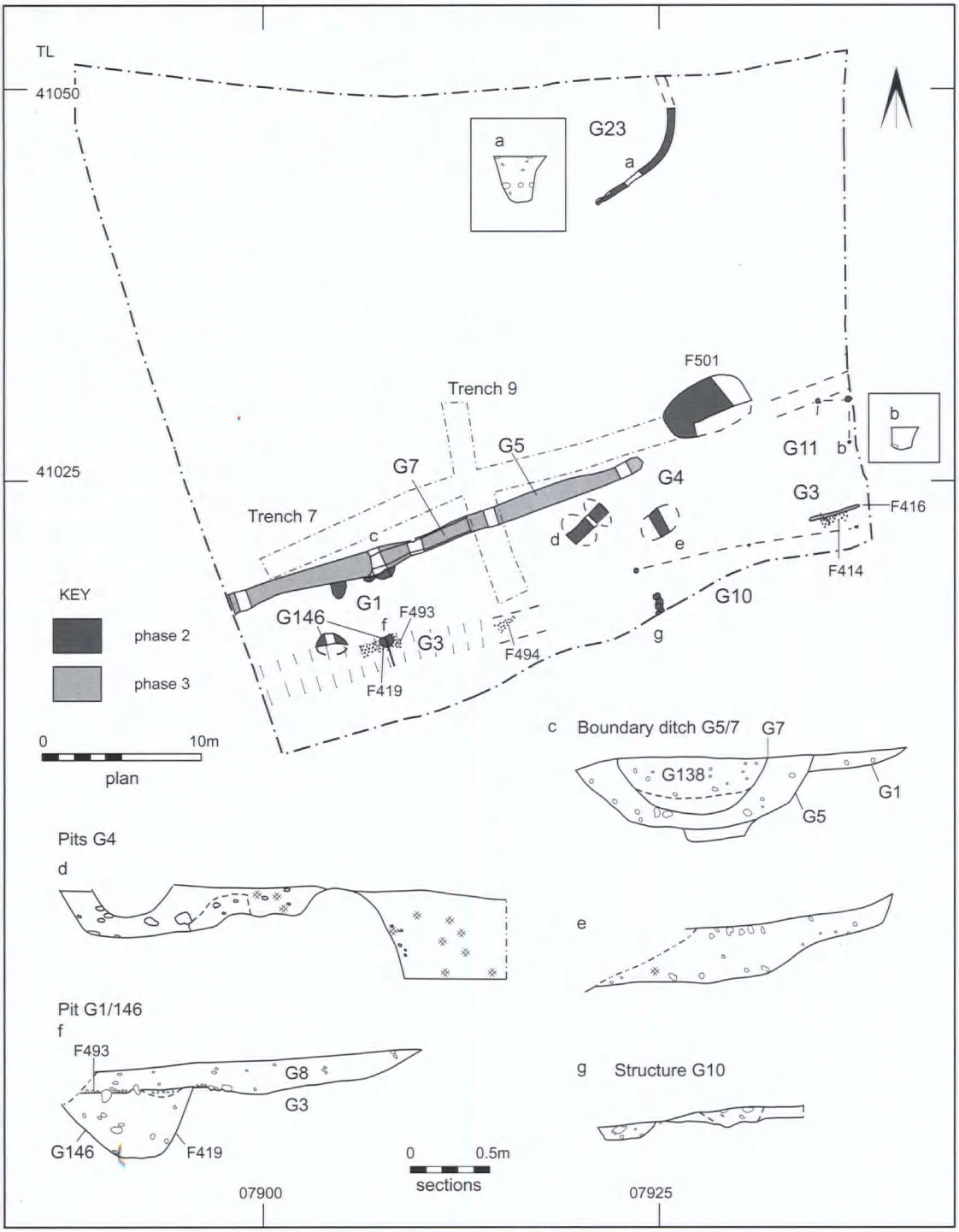



Figure 5 Period II: 'Belgic' Iron Age/early Roman (Phases 2 and 3); Overall plan

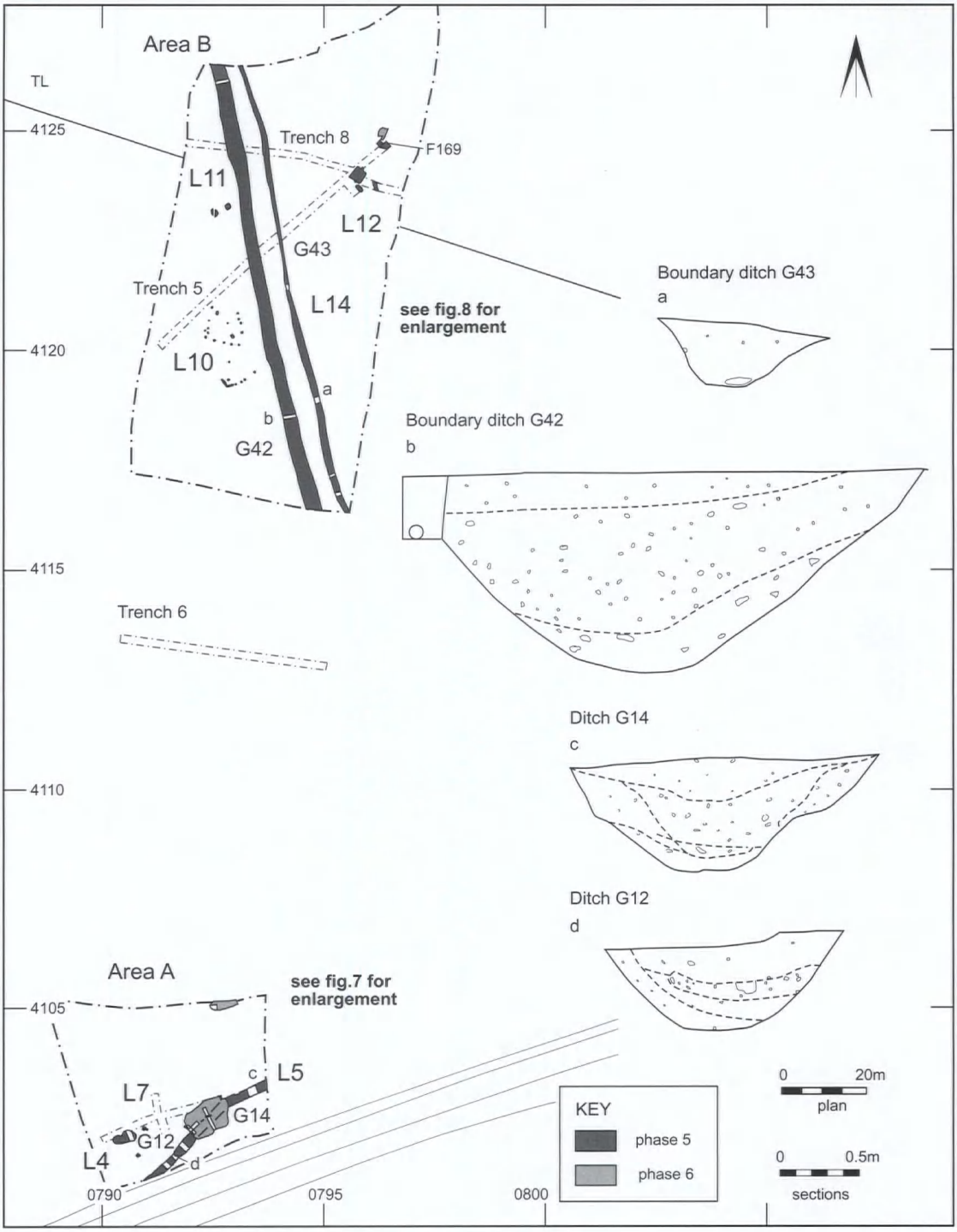



Figure 6 Period III: Early Roman (Phases 5 and 6); Overall plan

**Farmstead L1 (Phase 2)**

The earliest activity comprised two possible post-built structures G10 and G11, with a scatter of pits G1 and G4 to the west. Located *c.* 17m N of the pits was a curving ditch G23. The presence of domestic debris within the L1 features suggests they are associated with a settlement, although they presumably represent peripheral activity.

*Post-built structures G10 and G11*

The precise nature of G10 is uncertain but it appeared to comprise an arrangement of three postholes within a shallow slot and a perpendicular alignment of postholes. The former were all oval, 0.2m by 0.1m, with U-shaped profiles, 0.2m deep (Fig 5g). Although they may represent a rectangular building at least 14m in length, it is equally possible that they are better interpreted as a fenced yard. They were filled by a mid red brown silty clay with occasional small stones, charcoal flecks and a small quantity of 'Belgic' pottery.

Approximately 5m to the N a three-post structure G11, 2m W-E and 2.8m N-S, was identified. The postholes were sub-circular, 0.3 to 0.4m in diameter, with U-shaped profiles at least 0.2m deep (Fig 5b). They were filled by a mid reddish brown silty clay with occasional small stones and charcoal flecks. They contained a small quantity of 'Belgic' pottery and fired clay.

*Pits G1/146 and G4*

To the W of these structures was a scatter of eight pits, several truncated by later activity. Pits G1/146 to the W were generally oval in plan, under 1m in diameter, with U-shaped profiles between 0.3m and 0.8m deep (Fig 5c and f). Pits G4 to the E were larger, all over 1m in diameter, but of uncertain shape because they had been truncated by later activity. Their profiles varied from concave to vertical with flat bases (Fig 5d and e). Although pit F501 appeared to be very large at *c.* 5m by 3m, it was only 0.5m deep. Overall the size of pits G4 suggests they could have originally been dug to extract clay.

They were filled by G148, fairly uniform light brown grey silty clay deposits, varying slightly in colour and stone content. These contained moderate quantities of 'Belgic' pottery (the majority from pits G4), fired clay, a small quantity of animal bone, copper alloy waste RA 7, an iron nail and ferrous slag.

*Ditch G23*

This curving ditch terminated within the N part of Area A but continued beyond the limit of excavation. It was 0.35m wide with a U-shaped profile and flat base, 0.3m deep (Fig 5a). Only a tiny quantity of domestic debris (pottery and fired clay) was recovered from the fills suggesting it was some distance from the focus of the settlement. Given its isolated location, its function remains uncertain. It could have formed the boundary of an open sided enclosure or, less likely, a drainage gully associated with a roundhouse.

**Trackway and boundary L2 (Phase 3)**

A SW-NE trackway G3 and parallel boundary ditch G5/7 truncated a number of the earlier pits and postholes. As these features are later in date, they have been assigned to Phase 3. Although they may be peripheral to the main settlement, the quantity of domestic debris recovered from the ditch fill suggests that the focus lies only a short distance away.

*Trackway G3*

A linear hollow, 3m wide and 0.1m deep, crossing the S of Area A indicates the presence of a trackway G3 (Fig 5f). At its base three discrete patches of gravel survived (F414, F494 and F493), the largest 2.7m by 1m. They comprised small to medium sized rounded flints within a dark brown silty clay matrix. The medium sized stones tended to occur near the edge of the hollow. Adjacent to gravel patch F414 was a short (3.3m), narrow (0.2m) slot F416 which may represent a wheel rut. It is presumed that the trackway was bounded by ditch G5/7 to the N but no corresponding ditch was located to the S.

*Boundary ditch G5/7*

Boundary ditch G5 and its recut G7 were aligned SW-NE and terminated within Area A. The original ditch G5 was 1.5m wide with a concave profile 0.5m deep. A recut G7 with a similar profile was identified centrally within the original ditch fills (Fig 5c). The fills of both ditches were light to dark brown orange silty clays with occasional small stones. They contained moderate quantities of 'Belgic' pottery (with large quantities recovered from the W segments) and small quantities of fired clay and animal bone.

It is possible that evidence for the continuation of this boundary ditch in the E part of Area A has been destroyed by a later Period III ditch (G14) which followed its course.

**Infilling of trackway and ditch L3 (Phase 4)**

Fill G8 of the linear hollow and fill G138 of the adjacent boundary ditch were both light brown silty clays with occasional small stones. They contained moderate quantities of 'Belgic' pottery, fired clay, a fragment of vitrified clay hearth lining and small quantities of animal bone. The presence of these deposits could suggest occupation continued in the vicinity, beyond the excavation area. Fill G8 also contained an intrusive 13th century silver coin RA 4.

PERIOD III: ROMAN (PHASES 5 AND 6)
(Figs 6, 7 and 8)

Evidence for activity was identified in both excavation areas suggesting a shift or expansion of the earlier settlement. The arrangement of ditches L11/L14/L4/L5 suggests they could be part of a large rectangular enclosure or field system (Fig 6). The alignment of L5 within excavation Area A suggests that it was utilising part of the earlier Period II boundaries. Three zones of activity were identified within the ditch system: pitting L7 (within Area A), buildings L10 and a drying oven L12 (both within Area B).

Within Area B the large quantities of domestic debris, especially pottery, recovered from the fills of ditches L11/14 and drying oven L12 suggest nearby occupation. Although the features associated with

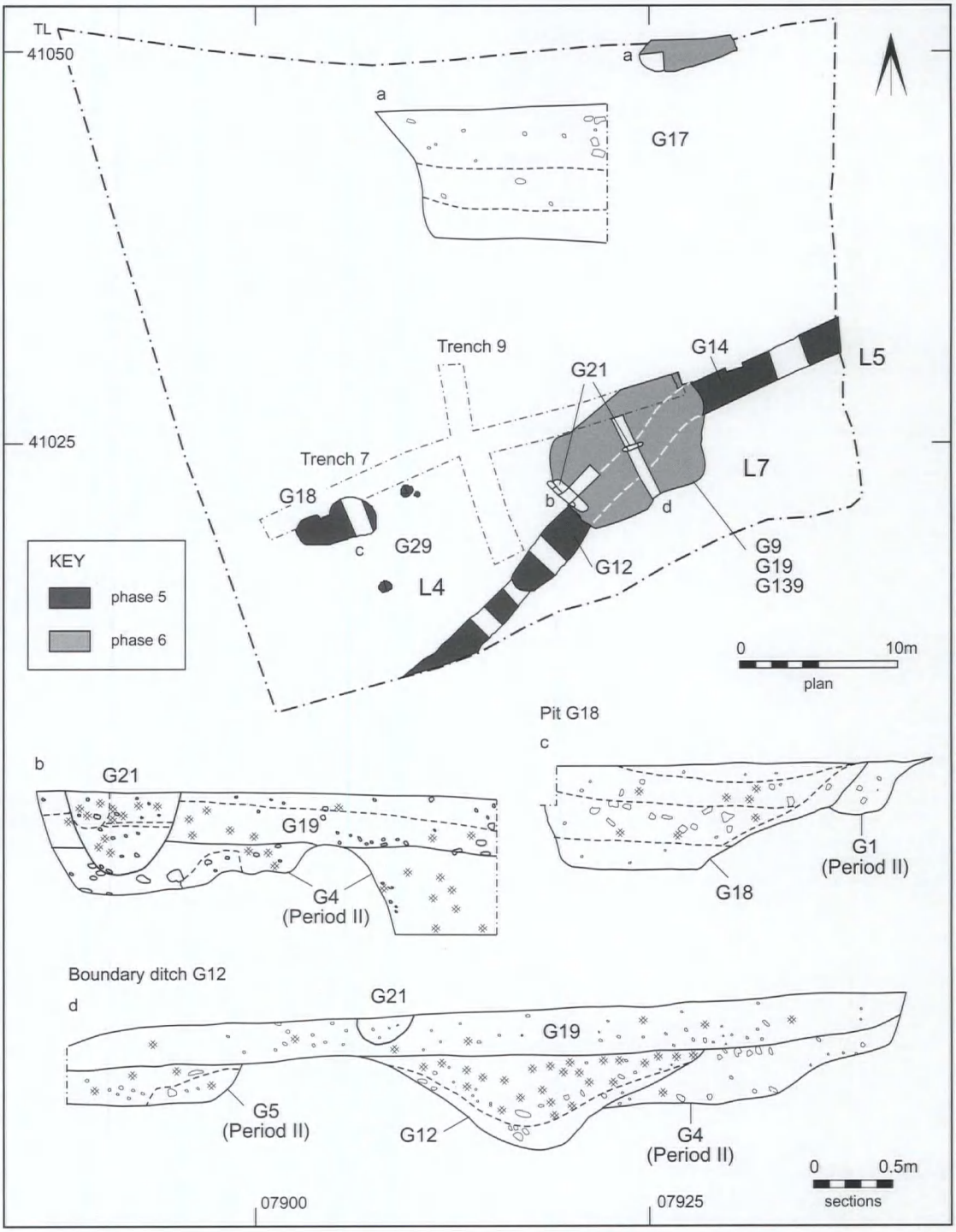



Figure 7 Period III: Early Roman (Phases 5 and 6); Area A only

the buildings L10 produced few artefacts, the material within the nearby ditch fills suggests that they may have served a domestic function.

The pottery assemblage comprises both 'Belgic' and Romano-British wares. An especially high proportion of 'Belgic' pottery was recovered from deposits within Area A. Although much of this material is derived from the upper fills of Period II features, the longevity of 'Belgic' wares is well known (see below). A sherd of type R11 pottery, which could not be earlier than the 3rd century, was recovered from colluvial deposits sealing the drying oven. This would appear to complement the archaeomagnetic dating of this structure to the late 1st /early 2nd century.

Other artefacts of note from these deposits included a 1st century AD brooch RA 3, two whetstones RA 6 and RA 61, and a millstone RA 24. The contrasting amounts of pottery recovered from the phases within this period may be significant. It could characterise Phase 6 as a period of less intense occupation and attest a shift in settlement away from the excavation areas.

A considerable quantity of Roman material was also recovered from colluvial deposits assigned to Saxo-Norman Periods IV and V. This material is presumably derived from Roman settlement remains situated on higher ground to the S. Approximately half of the pottery from the Period IV timber tank G132 is of late Roman date possibly suggesting this settlement was long-lived.

**Southern field boundaries L4/L5 (Phase 5)** (Figs 6 and 7)

Within Area A the E part of the S field boundary G14 (L5) partly corresponded to the earlier Period II boundary. However, the W part G12 followed a more southerly alignment.

These features contained a mixed assemblage of 'Belgic' and Roman pottery, along with small quantities of daub and a fragment of ferrous slag. Environmental samples 21 and 22 taken from pit G18 and ditch G14 respectively contained charred plant remains derived from grassland/wayside locations or from crops grown on ploughed up grassland. These results are consistent with the position of these features on the S edge of a field in an area that had once been a trackway (Phase 2). In the samples hulled wheat glumes substantially outnumbered cereal grains.

*Boundary ditches G12 and 14*

Ditch G14 was *c.* 1.8m wide, with steep sides and a flat base, 0.7m deep (Fig 6c). The continuation G12 of this ditch to the W took a more southerly alignment, possibly to avoid pits G18 and G29 (Fig 7). It was 1.5m wide with a similar profile and depth (Fig 6d and Fig 7d). The sequence of infilling of the two ditches differed slightly. However, the fills were similar mid to dark brown or orange silty clays with variable quantities of charcoal flecks. Ditch G12 contained a primary fill, which lay against the W side of the ditch only, suggesting it may have been derived from a bank on that side (Fig 6d). The fills contained large quantities of pottery, moderate quantities of fired clay, a small quantity of animal bone and ferrous slag. The secondary fills G16 of ditch G14 contained fragments of quernstone RA 10 and whetstone RA 6. Environmental sample 22 contained spelt wheat, along with a high proportion of small grass seeds and common mallow seeds.

*Pit G18*

Pit G18 was dug into the infilled Phase 4 ditch G5. It was suboval in plan *c.* 5m by 1.9m, with asymmetrical sides (the N near vertical, the S gently sloping) and a flat base (Fig 7c). It was filled by dark grey brown silty clay deposits G149, containing large quantities of fired clay, small and medium sized stones (many burnt) and charcoal flecks. It is clear that much of this material derived from the destruction of an oven or furnace, although there was no evidence for *in situ* burning of the sides of the pit. It is, therefore, uncertain if the pit was part of such a structure or merely a convenient place to dump material from one located in the vicinity. The fills contained a large pottery assemblage, a 1st century AD brooch RA 3 and a small quantity of animal bone. Environmental sample 21 contained a small quantity of six-row hulled barley, along with spelt wheat. Weeds included a high proportion of small grass seeds.

*Pits G29*

Three small pits G29 lay within 6m of pit G18. All were subcircular, 0.8m in diameter with U-shaped profiles, less than 0.3m deep. They were filled by grey brown silty clay deposits, with occasional small stones, charcoal flecks and small quantities of pottery.

**Disuse L6 of southern Phase 5 features (Phase 6)**

The infilling of Phase 5 features within Area A contained rich deposits of occupation debris, including large quantities of pottery, a whetstone RA 6, a quernstone RA 10 and small quantities of animal bone. The majority of the material derived from fill G16 of ditch G14. This could suggest that settlement continued outside the excavation area while these features were infilled.

**Unspecified activity L7 (Phase 6)** (Fig 7)

Based on stratigraphic relationships between features it is clear that some activity continued to take place in Area A after the Phase 5 ditches had apparently gone out of use. Evidence for activity comprised gravel and other deposits G9 and G19/G139, an isolated pit G17 and short slots G21.

These deposits contained large quantities of pottery, moderate quantities of fired clay, animal bone and an iron staple RA 8. The majority of the ferrous slag from the excavation was recovered from these

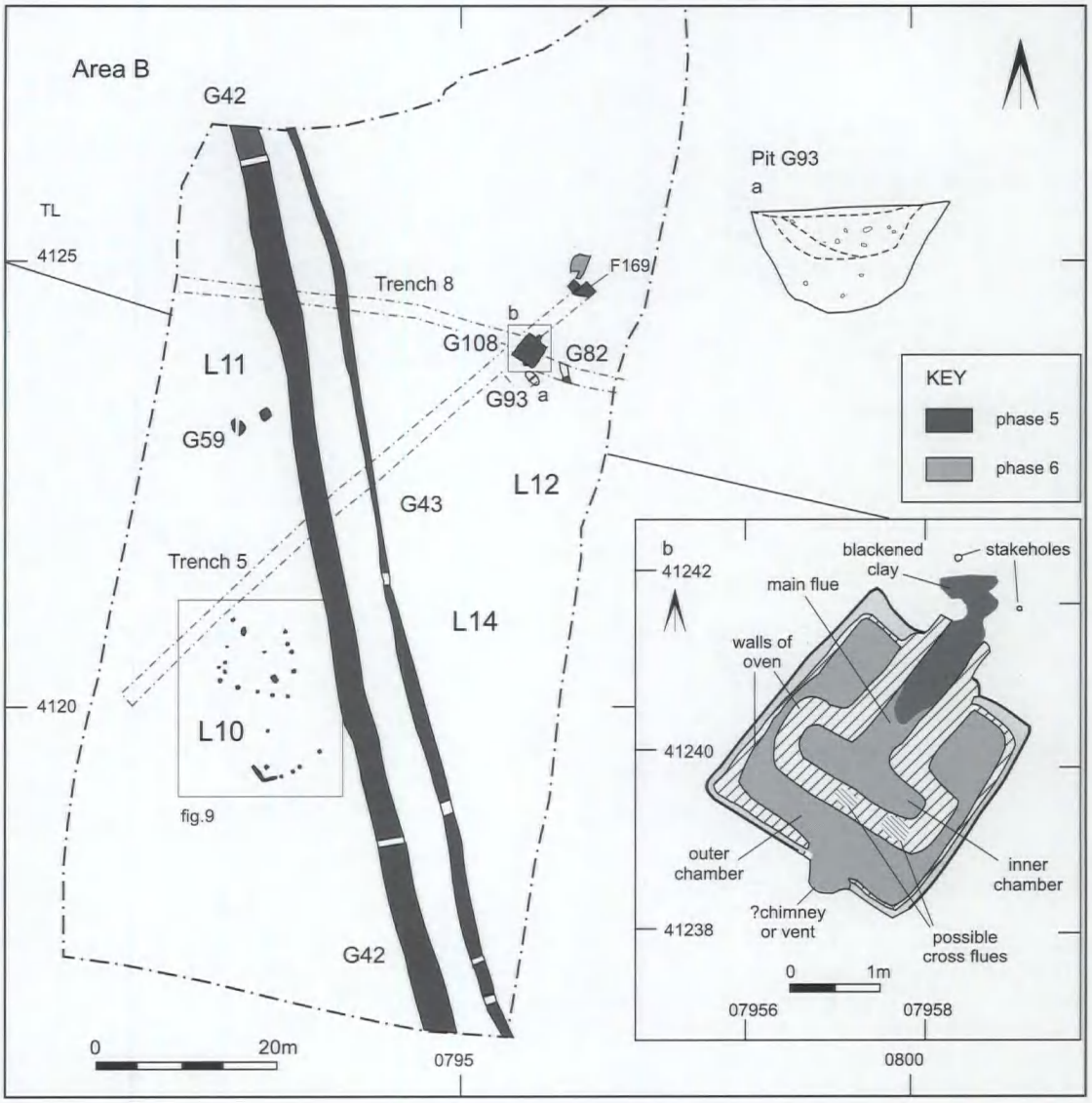



Figure 8 Period III: Early Roman (Phases 5 and 6); Area B only

deposits, along with fragments of vitrified clay hearth lining and hearth bowls. The two portions of plano-convex hearth bowls suggest iron smelting or smithing was taking place in the vicinity.

*Gravel and clay deposits G9 and G19/G139*

The Phase 5 ditches were sealed in places by a series of gravel spreads G9 and dark silty clay deposits G19/G139 up to 0.4m thick (Fig 7b and d). It is possible that the former were deposited to provide hardstanding over soft ground. This activity may have been associated with slots G21 although these appeared to truncate the layers. The deposits contained a moderate quantity of ferrous slag, vitrified clay hearth lining and plano-convex hearth bowls. They also contained large quantities of pottery and fired clay, along with an iron nail and a staple RA 8.

*Slots G21*

Two short (under 2.6m) linear slots gave the appearance of features that would be associated with structures, but none were identifiable. They were both *c.* 0.4m wide with steep sides and a concave base, but differed in depth (Fig 7b and d). One was aligned NW-SE, while the other was E-W. They were filled by mid grey brown silty clay deposits with occasional small stones and charcoal flecks. A small quantity of pottery and fired clay was recovered from the fills.

*Pit G17*

Isolated pit G17, situated at the N limit of Area A, was substantial and probably sub-rectangular in plan. It was 6.1m long and over 1.9m wide, with near vertical sides and a flat base, 0.8m deep (Fig 7a). Light to mid brown silty clay deposits with occasional charcoal flecks and small stones filled the pit. They contained large quantities of 'Belgic' and Roman pottery and small quantities of fired clay.

**Northern field boundaries L11 and L14 (Phase 5)** (Figs 6 and 8)

Two NW-SE boundary ditches L11 and L14 ran perpendicular to the S ditch L4/5. Their parallel arrangement only *c.* 6m apart suggests that while they may not have been dug at the same time they were broadly contemporary. Two unexcavated pits G59 were situated *c.* 6m to the W of ditch G42.

Small quantities of domestic debris were recovered from the ditch fills, including a mixed assemblage of 'Belgic' and Roman pottery, a single fragment of *tegula* and animal bone.

*Ditch G42 (L11)*

This ditch was substantial, 3.2m wide and 1.3m deep with a concave profile (Fig 6b). It was filled by a mid reddish brown silty sand with occasional small and medium stones. A small quantity of pottery and animal bone were recovered from the ditch.

*Ditch G43 (L14)*

Ditch G43 ran parallel to G42, *c.* 6m to the E. It was 1.1m wide, 0.4m deep with steep sides and a flat base (Fig 6a). Its fill was very similar to G42, although occasional charcoal flecks were present. It contained a small quantity of pottery and a fragment of *tegula*.

**Farmstead L10 (Phase 5)** (Figs 8 and 9)

Two adjacent rectangular buildings G35 and G37 lay *c.* 3m apart on differing alignments. Both were post-built, although G35 featured slot construction at the SW corner. They were situated *c.* 4.5m W of ditch G42 in an area devoid of other evidence for activity. The only domestic debris recovered from the constituent features of the buildings was a small quantity of tiny Roman pot sherds from G35.

*Building G35*

The ground plan of the more southerly of the two buildings was incomplete; only the S and part of the W wall survived. It was constructed with a combination of structural slots F645/F688 and postholes. The two slots were contiguous but not quite perpendicular. They were 0.3m wide with vertical sides and a flat base, 0.2m deep (Fig 9d). The postholes were generally circular, 0.35m in diameter, with concave profiles, under 0.25m deep (Fig 9e and f). A single posthole F1363 may represent the wall line on the N side. The surviving elements suggest the building was sub-rectangular in plan, orientated

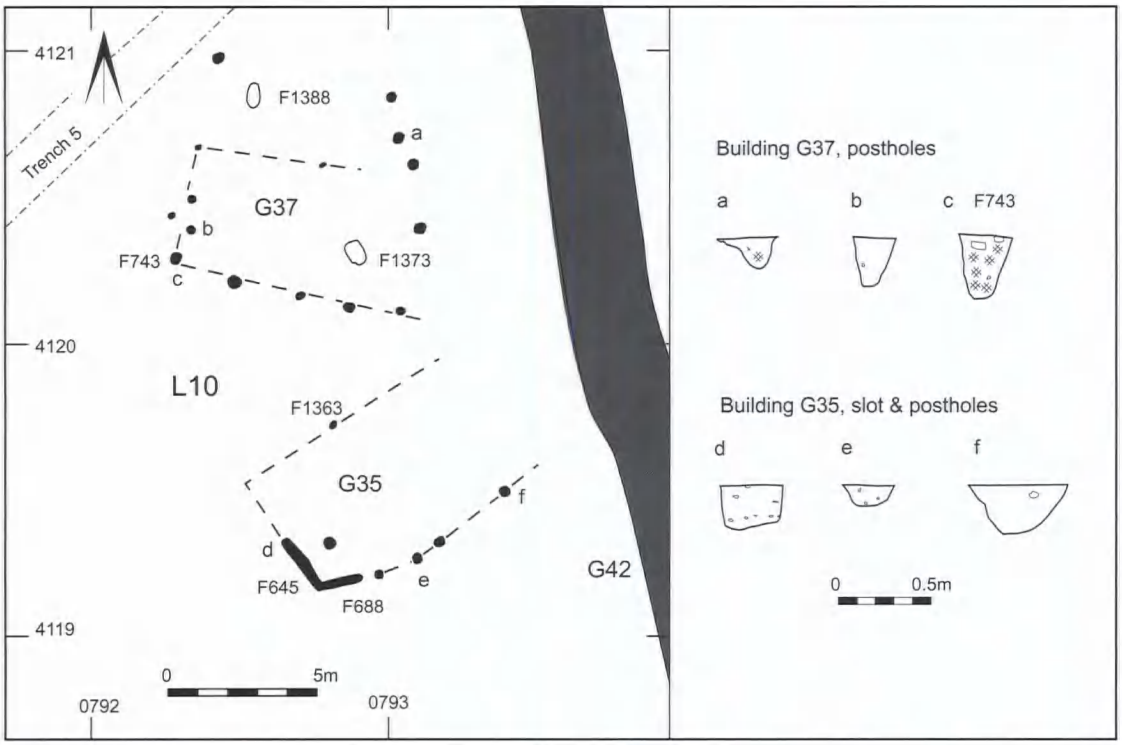



Figure 9 Period III: Early Roman; Buildings in L10

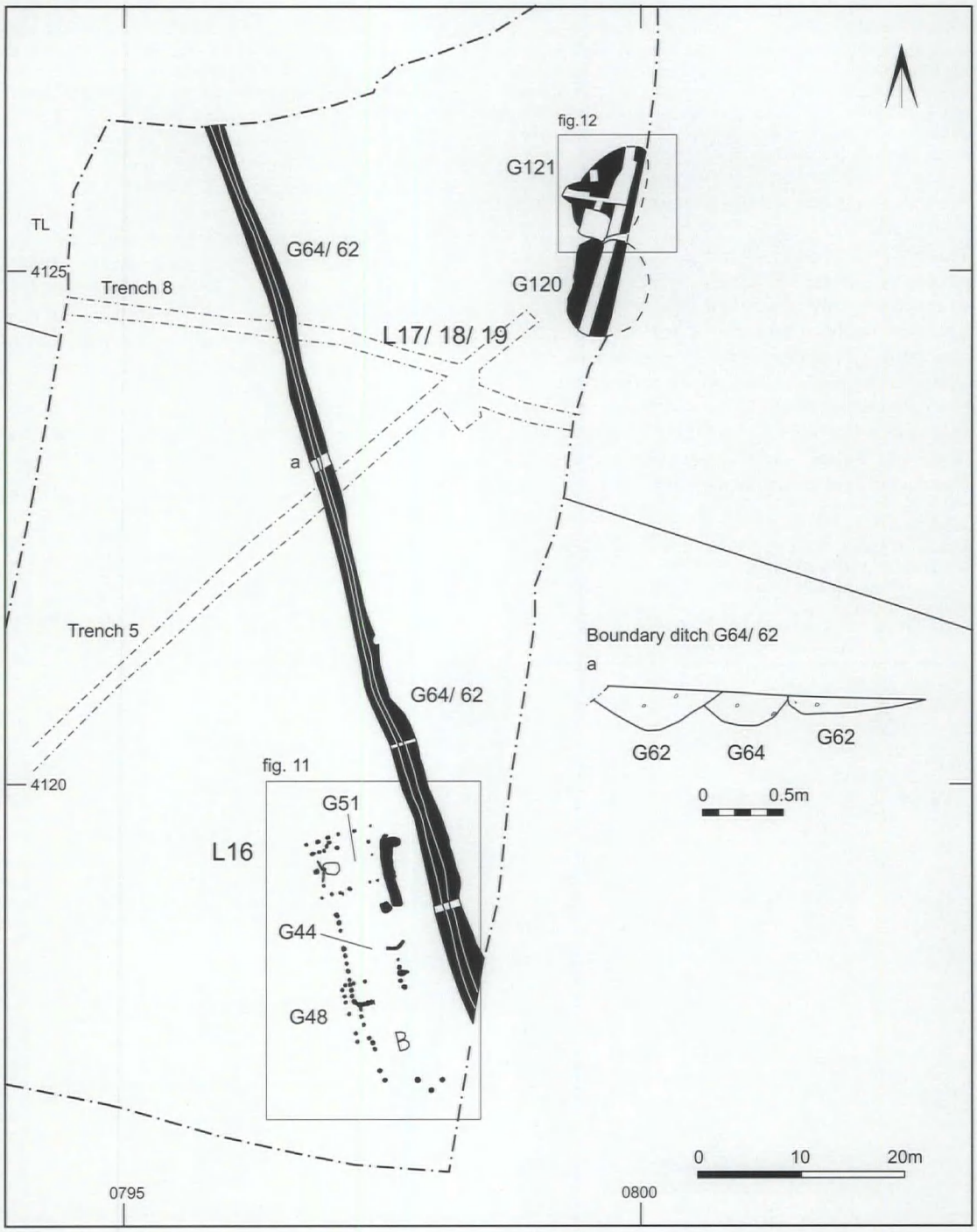



Figure 10 Period IV: Saxo-Norman (Phase 7); Overall plan

SW to NE, at least 7m long and 4.7m wide.

These features were filled by a mid red brown silty clay with occasional small stones. Two postholes contained charcoal flecks and others contained tiny quantities of pottery.

*Building G37*

The S and W walls of the more northerly building appeared fairly complete with close-set postholes. More scattered arrangements of postholes probably represent the position of the N and E walls. The postholes were generally sub-circular in plan, 0.35m in diameter, with steep sides and a flat base, between 0.15m and 0.35m deep (Fig 9b and c). To the SE of the interior an oval (0.9m by 0.6m) area of orange/red, burnt subsoil F1373 probably represents the location of a hearth. The intensity of scorching and cracked nature of the ground prevented archaeomagnetic dating (pers. comm. Anthony Clark). This building would probably have been rectangular in plan, orientated NW to SE and at least c. 7.7m by 4.5m in size.

The postholes were filled by a light-mid brown grey silty clay with occasional stones and charcoal flecks. Corner post F743 contained an exceptional fill with frequent charcoal flecks (Fig 9c). Environmental sample 33 from this deposit produced several fragments of oak charcoal along with a single grain of the weed, black medick.

Additional similar postholes (Fig 9a) and another probable hearth F1388 were located to the N of this building and may represent an extension to the original structure.

## Activity area L12 (Phase 5) (Fig 8)

A square drying oven G108 was identified *c.* 50m NE of buildings L10, beyond boundary L14. Because it had been terraced into the hillside and was sealed by colluvium, it was reasonably well preserved. Deposits F169, which only survived in a restricted area downslope (below colluvial deposits G105) are believed to be associated with the use of the oven. Pits G82 and G93 were situated within *c.* 3m of the oven and are presumed to be contemporary. They may have been dug to provide material for use in the construction of the oven.

Domestic debris from the construction and use deposits associated with these features is restricted to small quantities of pottery (pre-'Belgic' and Roman), a millstone RA 24 and nine iron nails. A large amount of material was recovered from destruction and disuse deposits, but these are only discussed in this section where they may provide evidence for the original structure of the oven.

*Drying Oven G108 (Fig 8b)*

The drying oven was nearly square in shape, 3m by 2.8m, and orientated SW-NE. It was constructed in part within a deliberately dug terrace in the hillside, onto which clay had been spread out as the base of the structure and built up to create walls. The walls defined two chambers. The inner chamber was T-shaped in plan and 0.6m to 0.8m wide. It also functioned as the main flue, opening to the NE where an area of intensely blackened clay suggests that it continued for at least 0.4m beyond the main structure. The outer chamber was *c.* 0.7m wide, narrowing to 0.15m in proximity to the T of the inner chamber.

Base and walls

The base of the structure and the walls of the chambers were constructed of similar clay, although some organic tempering was used in the latter. The walls of the outer chamber survived to a height of 0.3m and had been constructed within, but not apparently directly against the sides of the terrace cut. A brown sand filled the gap between the outer wall and the natural subsoil. The walls of the inner chamber survived to a height of 0.35m and were a continuous build with the outer chamber. Two hollows within the T-shaped area of the walls of the inner chamber may represent the location of cross flues. A chimney or vent was also constructed off-centre in the outer wall of the structure. Two stakeholes, approximately on line with, but 0.95m beyond the walls of the main flue, may have supported a roof or windbreak structure associated with the stokehole.

The clay base of the main flue had been blackened and vitrified by intense heat indicating the seat of the fire. Hot air would have circulated from the inner chamber into the outer chamber *via* the cross flues in the walls. As a result the walls of both chambers had been oxidised to varying degrees.

Superstructure

Evidence for the nature and form of the superstructure derives primarily from the destruction deposit G110 (L13), which contained *c.* 60kg of daub or baked clay. The larger fragments retain impressions of circular wattles and/or square pieces of timber suggesting they were part of the walls.

Nine nails from the dark, charcoal-rich, silty clay deposit G108 and seventeen from the destruction deposits G110 (L13) may have derived from a timber floor within the oven. A substantial Roman brick was found in between the primary fill G108 and destruction deposits G110. Its position suggests it may have been used in roofing the main flue hole. It is uncertain if the millstone fragment RA 24, found adjacent to the chimney or vent in the outer chamber, was also an integral part of the superstructure.

Primary charred deposits

Environmental samples 2 and 9 from the ashy lower fill of the main flue contained little grain or charcoal. However, a grain-rich layer G108, dominated by spelt wheat and possible spelt wheat (environmental sample 12), was recovered from the base of the inner chamber. Similar material was recovered from the destruction fills of the oven (environmental samples 5 and 11). This suggests that the drying of spelt wheat was undertaken within the oven, although it is possible that some of the wheat glumes present were used as fuel.

Dating evidence

A small quantity of pottery was recovered from the primary fills of the drying oven. It included both pre-'Belgic' and Roman types and was considered unreliable for dating the construction of the oven. Therefore, twelve samples were taken for archaeomagnetic dating from the clay base of the main flue (see Appendix 5). The mean magnetic direction at the last firing was:

Dec= 2.35°W; Inc= 63.4°; alpha –95= 2.33° (12 samples).

This gives a date span of AD90-140 (68% confidence) or AD60-160 (95% confidence) (measurement reference AJC-132).

*Charred deposit F169*

A dark, charcoal-rich deposit F169, *c.* 6.5m NE of the drying oven, survived because it had been sealed and protected by colluvial deposits G105. Charred plant remains (environmen-

tal sample 3) from this material suggest that the waste products of de-husking grain were used to fire the drying oven. Soil analysis has also identified a considerable dung content within this deposit suggesting that this too was used as a fuel.

*Pit G82*
Pit G82 was located *c.* 3m E of the drying oven. It had been truncated by later activity but appears to have been sub-rectangular, *c.* 2m long and 1.5m wide with a U-shaped profile, 0.7m deep. It was filled by a mid grey brown silty sand with occasional small to medium sized stones, frequent charcoal flecks and small quantities of pottery.

*Pit G93*
Pit G93 was located immediately to the SE of the drying oven. It was oblong *c.* 1.8m long and 1m wide with a concave profile, 0.5m deep (Fig 8a). The lower deposits appeared to be naturally derived from the sides of the pit. However, the upper fills G143 were grey brown silty sand, containing occasional small stones, moderate quantities of fired clay, and frequent charcoal flecks. A tiny quantity of 'Belgic' pottery and animal bone was recovered. Environmental sample 5 from this deposit was found to contain similar charred plant remains to those from drying oven G108. The daub was also comparable to that from the destruction of the oven.

**Destruction of drying oven L13 (Phase 5)**
The drying oven was initially infilled by deposit G110. The presence of *c.* 60kg of daub or baked clay in the light-mid brown silty clay matrix suggests this material principally derives from the oven's destruction. It also contained a small quantity of pottery, a substantial Roman brick, 17 nails, a whetstone RA 61 and animal bone. It was sealed by a dark brown silty sand deposit G111, which contained domestic debris including a moderate quantity of pottery, a single fragment of *tegula*, small quantities of animal bone, but very little fired clay. This material is presumably derived from the deliberate dumping of rubbish into the convenient hollow provided by the disused drying oven.

**Disuse L15 of northern Phase 5 features (Phase 6)**
Deposits G103 sealed the destruction layers associated with the drying oven. Although they contained a large quantity of fired clay, presumably derived from the oven's destruction, they are likely to be colluvial in origin. Within the small quantity of Roman pottery was a sherd of a type (R11) that could not be earlier than the 3rd century.

PERIOD IV: SAXO-NORMAN (PHASE 7) (Figs 10, 11, 12 and 13)
Evidence for activity during this period was only identified in Area B. Major boundary ditches G64/62 were dug adjacent to the Period III ditches, suggesting the earlier field/enclosure system was still a visible feature in the landscape. Three post-built buildings G44, G48 and G51 (L16) were constructed adjacent to these boundaries. Two large, natural spring hollows G120 and G121 (L17) had formed *c.* 65m N of the buildings, within a separate field/enclosure. Various attempts were made to prevent the spring hollows from silting up, including the construction of a hurdle revetment G125, which was replaced in turn by a timber tank G132.

Domestic debris derived from these features included pottery, animal bone, daub and two incomplete rotary quernstones RA 52 and RA 53. A small quantity of St Neots-type pottery was recovered, although the vast majority was residual Roman material. Waterlogging within the spring hollows G120 and G121 ensured the survival of fragments of leather shoes, typical of the Saxon or Saxo-Norman periods (with the exception of RA 30). A wooden spade/shovel handle RA 41 was also preserved; on typological grounds it too is likely to be post-Roman in date. Scientific dating confirms that at least one of the buildings and wooden structures G125 and G132 belong to this period. In addition, the absence of hulled wheat from the environmental samples from buildings G44 and G51 supports their assignment to the post-Roman period. Environmental samples 31, 35, 39 and 41 (building G44) and samples 28 and 44 (building G51) contained small quantities of grain and weed seeds, consistent with small-scale cereal processing.

**Field/enclosure boundary ditch G64/62**
The NW-SE ditch G64 was the only boundary identified during this period. Within the excavation area it divided three buildings from the spring hollows to the E. Although it was clear that the original ditch had been redug on several occasions, it was impossible to identify the same sequence of recuts along the entire ditch.

The boundary contained moderate quantities of pottery (mainly from the segments near the buildings) but no other domestic debris. The pottery was predominantly of Saxo-Norman date but included residual 'Belgic' and Roman wares.

*Original boundary ditch G64*
Originally the ditch was *c.* 0.5m wide with a concave profile, *c.* 0.5m deep. It increased in both width and depth to the S (Fig 10a). It was filled by G65 a mid grey sandy silt with occasional charcoal flecks, small stones and a moderate quantity of St Neots-type pottery.

*Recuts G62 of boundary ditch G64*
The later recuts G62 tended to be wider but not always deeper than the original ditch G64 (Fig 10a). They were filled by G63,

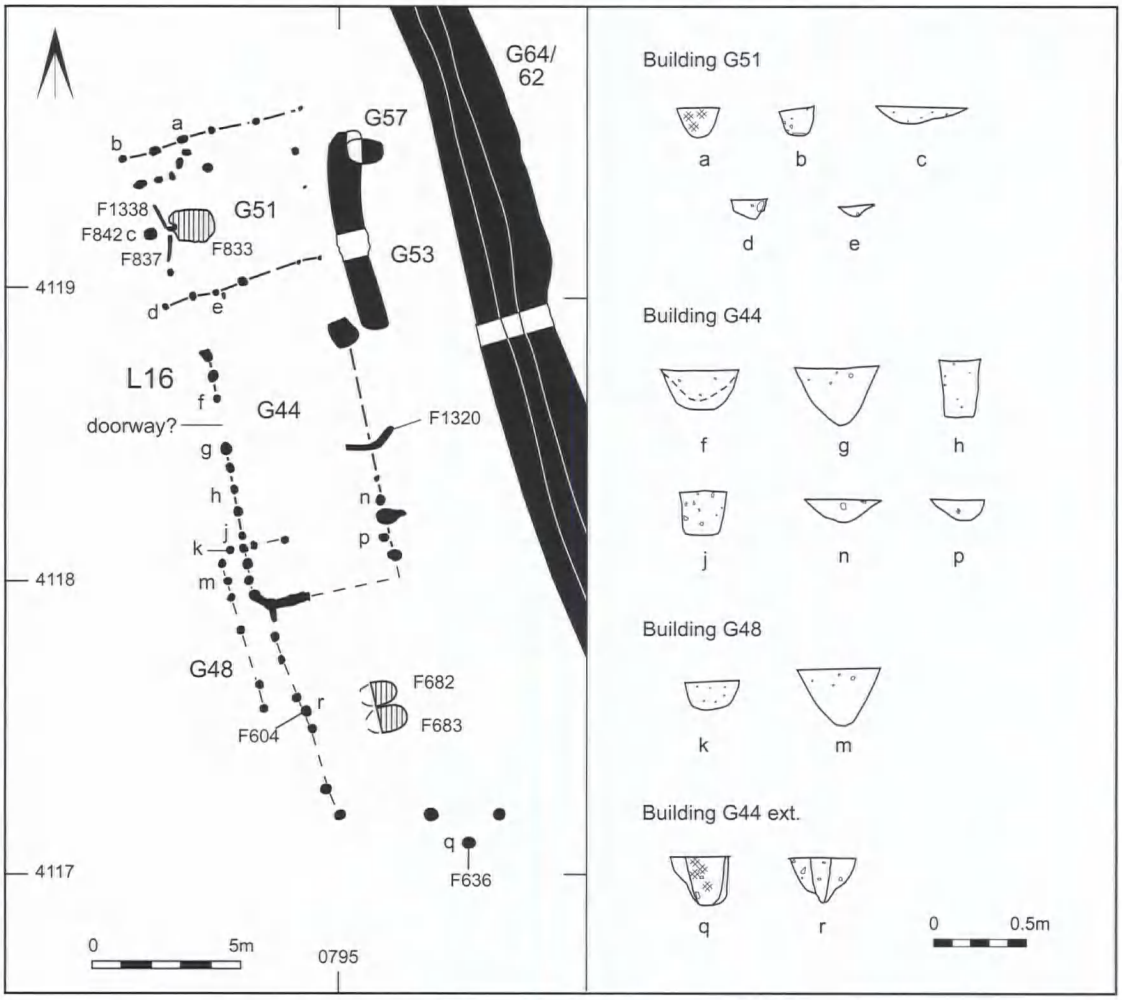



Figure 11 Period IV: Saxo-Norman (Phase 7); Buildings L16

a light yellow brown sandy silt, which contained a large quantity of St Neots-type pottery, along with a tiny quantity of animal bone and a large quantity of charcoal.

**Buildings G44, G48 and G51 (L16)** (Fig 11)

Three rectangular post-built buildings were situated *c.* 1.5m to the west of ditch G64/62. All three appeared to be parallel or perpendicular to the ditch suggesting they were contemporary with it. The arrangement of buildings G44 and G48 demonstrates that they were not contemporary. Regularly spaced postholes represented the main wall construction technique for all three. At least two contained hearths suggesting they served a domestic function. Although they contained little in the way of datable artefacts, an archaeomagnetic determination on the hearth in G51 confirms its assignment to this period.

*Building G44*

This building was positioned parallel to ditch G62/64. It was rectangular in plan, 9m by 5m, and orientated NW-SE. The W wall line was probably complete and comprised evenly spaced postholes under 0.7m apart. The only exception to this was one gap of 1.4m, which could represent a doorway. The postholes were all sub-circular in plan, *c.* 0.3m in diameter and under 0.3m deep. Those to the N tended to have more concave profiles, while those to the S had near vertical sides and flat bases (Fig 11f, g, h and j). Evidence for the E wall line survived only to the S, in the form of postholes and pits. The postholes had concave profiles, but were considerably shallower than those in the W wall line suggesting that they had been truncated (Fig 11n and p). The surviving part of the S wall at the SW corner comprised postholes placed in a short slot.

A shallow curving slot F1320 was aligned perpendicular to the E wall line and continued outside the building where it

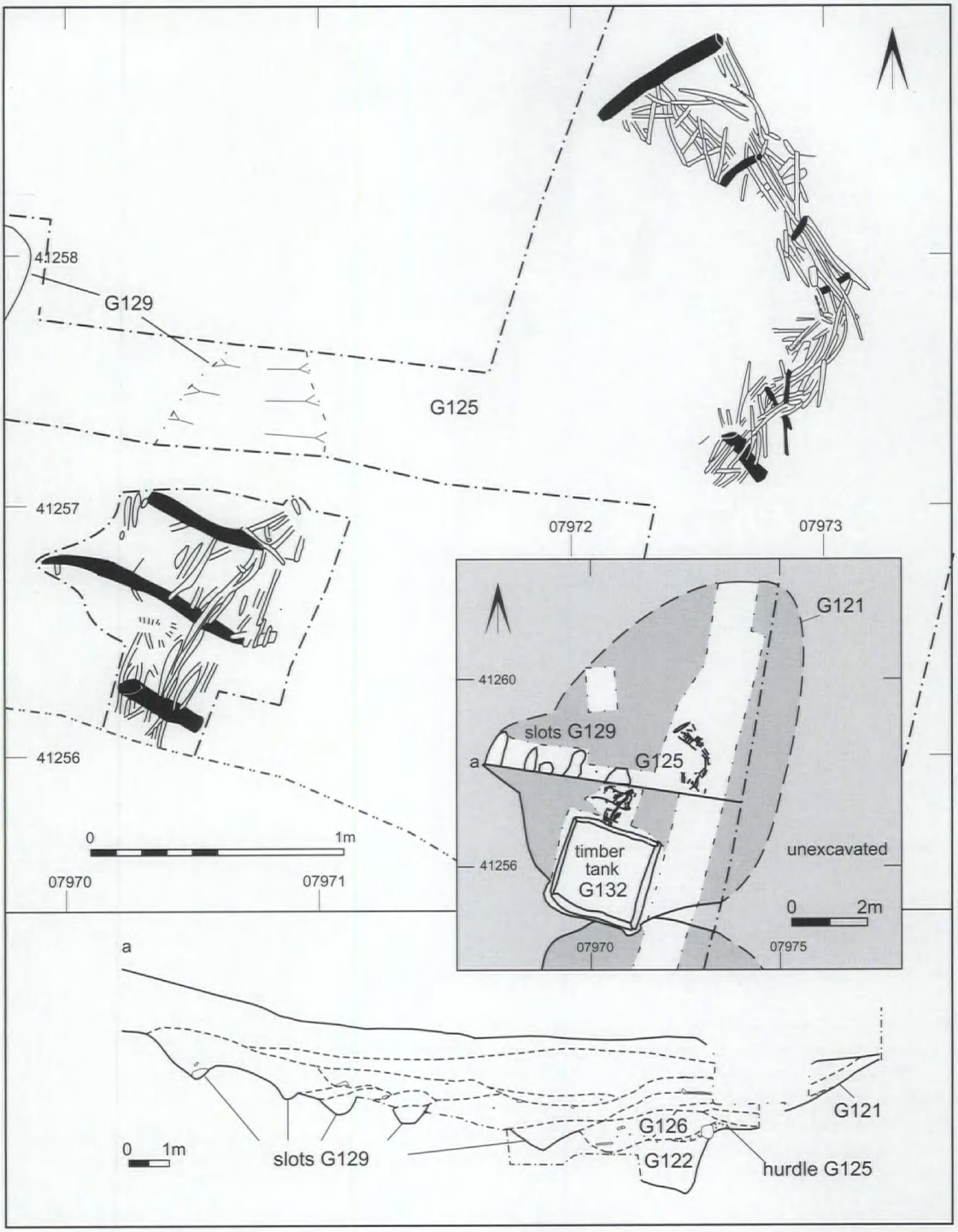



Figure 12 Period IV: Saxo-Norman (Phase 7); Hurdles G125

changed alignment slightly. It may have been associated with a doorway and it may be significant that it is nearly opposite the possible doorway in the W wall. Alternatively, it may represent a drain, associated with ditch G53 (see below).

All the constituent features of this building contained reddish brown silty sand with occasional small stones and charcoal flecks. Small quantities of residual Roman material recovered from these fills included pottery and *tegula* fragments, the latter at least used as packing material. The only other finds were small quantities of animal bone and a single nail. Environmental samples 31, 35, 39 and 41 were taken from postholes that formed both the W and E walls. They contained grain including wheat, rye, hulled barley and oats, along with weed seeds including vetch or tare. The charcoal was mostly oak and appeared to have been derived from domestic hearths rather than the building's destruction.

*Possible extension to building G44*

The approximate alignment of the W wall line of building G44 was continued by seven postholes. A scatter of three additional postholes to the SE may also be associated. All were sub-circular, under 0.4m in diameter, with steep sides and often a flat base. Two postholes F604 and F636 contained packing material, surrounding a circular post-pipe, 0.12m in diameter (Fig 11q and r). They were filled by similar material to the other postholes in G44, although a small number contained moderate quantities of charcoal. No pottery was recovered.

Approximately 2.4m E of the wall line extension were two oval areas F682 and F683 of scorched subsoil *c.* 0.8m long and 0.75m wide. The intensity of scorching and cracked nature of the ground prevented archaeomagnetic dating (pers. comm. Anthony Clark).

The existence of one clear wall line and two hearths suggests building G44 was extended to the S creating a building 17m in length.

*Building G48*

The NW corner of another building G48 overlapped the SW corner of building G44. The arrangement of closely spaced postholes suggests a rectangular building, at least 5.6m by 2.3m. Although there was no stratigraphic relationship between the two buildings, it is clear that they could not be contemporary. The postholes were sub-circular, under 0.3m in diameter with U-shaped profiles and depths between 0.15m and 0.4m (Fig 11k and m). They were filled by mid grey brown silty sand with occasional small stones and charcoal flecks.

*Building G51*

The plan of the northernmost building survived in a more complete form than that of G44 or G48. It was rectangular in shape *c.* 6.7m by 5.5m, orientated SW-NE, with postholes *c.* 1m apart forming the N and S walls. They were generally sub-circular under 0.3m in diameter with steep, concave profiles, between 0.1m and 0.4m deep (Fig 11a, b, d and e). Generally the postholes appear to get smaller to the E, possibly indicating a greater degree of truncation in this direction. Given its location it is presumed that posthole F842, is part of the W wall, possibly supporting the gable end of the building although it was not significantly larger than the others (Fig 11c). An alignment of postholes within the building, parallel to but 0.9m S of the N wall, may define an internal structure or partition.

The postholes were filled by a mid reddish brown silty clay with rare charcoal flecks and small stones. One posthole contained a medium sized, vertically positioned stone, suggestive of post packing. No pottery was recovered from the fills of any of the postholes. Charred plant remains from the western postholes of the N and S walls contained small quantities of grain and weed seeds, as well as hazelnut shells (environmental samples 28 and 44).

Situated centrally within the building, but towards the W end, was an oval-shaped area of scorched subsoil F833, 1.4m by 1.1m in extent, presumably representing the location of a hearth. Adjacent to its W side were two shallow slots F837 and F1338 situated to either side of the axis of the building. Although they are presumed to be associated with the hearth, their proximity to the postulated end wall of the building leaves their precise function uncertain.

Thirteen samples were taken for archaeomagnetic dating from hearth F833. Most of these gave scattered and unusable magnetic direction. However, the results from four samples formed a distinctly tight group and it was believed these were the only samples unaffected by disturbance. The mean magnetic direction at the last firing was:

Dec= 24.07°W; Inc= 62.68°; alpha -95= 1.66° (4 samples).

This gives a date span of AD1040-1090 (68% confidence) or AD1020-1100 (95% confidence) (measurement reference AJC-133).

*Ditch G53*

This ditch was *c.* 1.1m wide with a steep concave profile, *c.* 0.6m deep, but only *c.* 7m long. It was located adjacent to buildings G44 and G51 and was parallel to boundary ditch G64/62. It was filled by similar material to that within the postholes and contained very little domestic debris.

The juxtaposition of this ditch and building G44 suggests they are broadly contemporary. It is possible, therefore, that it was originally a quarry for clay required for construction. Alternatively, it may have functioned as a drainage ditch to the W of a bank/hedge located in the *c.* 1.8m gap between it and boundary ditch G64/62.

*Pit G57*

Oval pit G57 was located to the E of building G51 and was *c.* 1.45m by 0.85m with a concave profile, 0.5m deep. It was filled by a mid brown grey silty sand with occasional small stones, charcoal flecks and a small quantity of residual 'Belgic' pottery.

The function of the pit is uncertain. Although its proximity to building G51 could suggest they are associated, it is stratigraphically later than ditch G53, which might also be thought to be related to this building.

## Spring line hollows L17

A spring, which may have existed in some form in the Roman period, created large hollows in the hillside approximately 60m N of the buildings on the opposite side of boundary ditches G64/62 (Fig 10). Their upper fills, which comprised colluvial deposits, were removed by machine revealing the approximate shape of the spring hollows. A 1m wide trench was then dug by machine on a N-S alignment to clarify the nature of the hollows. This resulted in the discovery of waterlogged deposits and, within the N hollow, waterlogged wood. Thereafter, hand

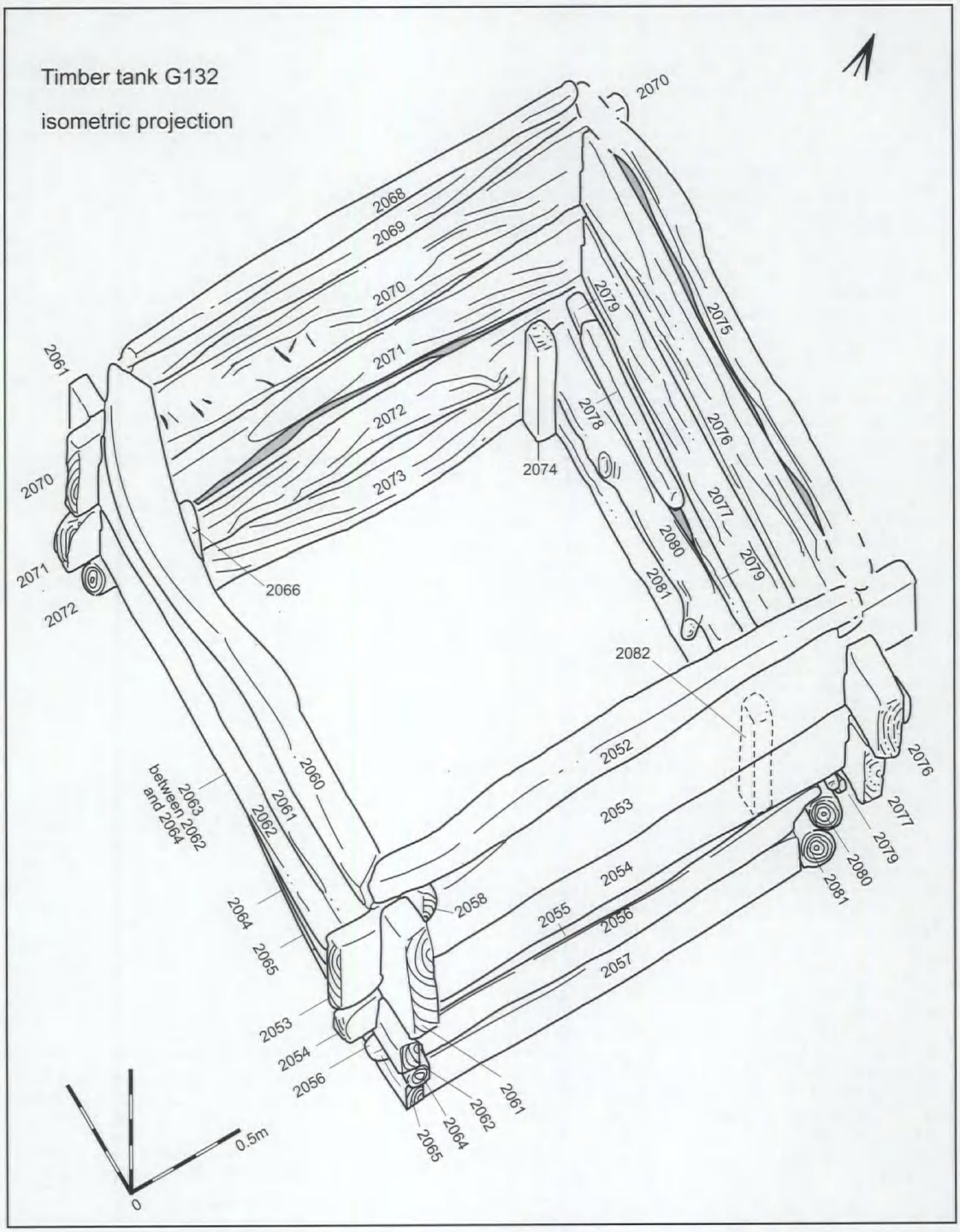



Figure 13 Period IV: Saxo-Norman (Phase 7); Timber Tank G132

excavation was concentrated on the investigation of restricted areas of the deposits where wooden structures were present and on the opening of a W-E trench to clarify the association of these deposits with the W side of the hollow.

The N hollow G121 was 8m by 6m; the S hollow G120 was 9.5m by 4m. The sides appeared to be steeper to the S and N and were more gently sloping to the W. Although the two spring hollows appeared to be separated by a gap of 0.5m, it is possible that they represent the deeper parts of a single, larger feature.

The primary fills of both hollows comprised dark grey black silty clay deposits with occasional small and medium sized stones. Only those in the N hollow produced any domestic debris: a single sherd of Iron Age pottery, a hobnail and a small amount of animal bone.

**Human use of spring hollows L18** (Fig 12 and Fig 13)

Deposits of dark greenish grey silty sand G122 with occasional small stones sealed the primary fills of both spring hollows. These are interpreted as colluvial deposits, derived from unstable, upslope soils. Timber hurdles G125 were used to create a rectangular structure at least *c.* 3m by 1.2m in the base of the N spring hollow G121, presumably in an attempt to keep an area open as a source of water. Situated on the W side of this structure were a number of linear slots G129 dug either into the side or primary fills of the spring hollow. It is unclear if these were parts of further revetments or represent the position of steps giving access down into the spring. There was no evidence of a deliberate attempt to keep the S spring hollow open, although along with brushwood, fragments of broken hurdles were found within deposit G122.

Deposit G122 also contained small quantities of pottery and fired clay, along with a relatively large quantity of animal bone. However, the latter was all very fragmentary and worn and was probably derived from the higher ground to the S. Although small in quantity, the assemblage of charred grain from these deposits is consistent with a medieval date (environmental sample 59).

*Hurdles G125 (Fig 12)*

Two lengths of interwoven wooden hurdles were found partly embedded in the primary fill of the N spring hollow G121. The N hurdle was *c.* 2m long and 0.3m wide with a distinct curve. It was composed of six sails, set *c.* 0.25m apart and linked by closely interwoven roundwood rods. The S hurdle was *c.* 0.9m long and 0.6m wide aligned SW-NE. It comprised three sails, set *c.* 0.25m apart linked by closely interwoven roundwood rods.

The majority of the rods and sails were hazel (*Corylus*). Where examined, the sails were found to have sharpened ends, which had been embedded not just in the primary fills of the spring hollow but also in the natural clay. Characteristic coppice 'heels' were visible confirming that they were grown and cut from coppiced stools.

The structure was fairly well preserved but had disintegrated at its extremities. Thirty-seven samples were taken from the N hurdle and twenty-two from the S hurdle. The range of species and the woodworking technology is described more fully below. It is clear that the hurdles continued beyond the area that it was possible to investigate fully.

The deposits directly around the hurdles contained a small quantity of Roman pottery, an undiagnostic leather shoe fragment RA 57 and a tiny quantity of animal bone, none of which provided reliable dating evidence. However, both hurdles are presumed to be contemporary because they were only *c.* 1m apart and shared the same stratigraphic position, construction method and materials. Modelling of radiocarbon determinations on samples from each hurdle suggests a date of cal AD960-1060 (95% confidence) for the structure. For further details see Appendix 5.

*Slots G129 (Fig 12)*

A number of shallow slots G129 dug into the W side of the N spring hollow were identified. They were over 0.7m long, between 0.2 and 0.4m wide with concave profiles and under 0.15m deep (Fig 12a). They were filled by mid to dark grey sandy clays with occasional small stones and no domestic debris. It is possible that they originally held timber as part of another attempt to keep the hollow clear of colluvial deposits. Alternatively they may represent the position of steps leading down to the area of open water.

**Disuse of spring hollows L19**

Deposits G126 (Fig 12a), overlying the hurdles in the N spring hollow, contained a mass of timber and wood. Along with fragments of rods and sails presumably derived from the collapse/robbing of the hurdle, there was also a mix of chips, brushwood, offcuts and planks clearly associated with woodworking. Fifty-two wood samples were taken and the range of species and the technology is described in more detail below. In addition, a hazel ?cattle goad RA 59 and a small quantity of Roman pottery were recovered.

Overlying G126, deposits G127 comprised mid to dark brown grey sandy clays with occasional small and medium sized stones. They contained a range of domestic debris including pottery, brick, a rotary quernstone fragment RA 52 and a relatively large quantity of animal bone, along with a small fragment of vitrified clay hearth lining. Waterlogged material included fragments of leather shoes RA 36, 38, 39, 42 and 43, an individual fragment of leather waste RA 55 and a wooden spade handle RA 41. Much of the pottery was Roman in date, although a small quantity of typical St Neots-type pottery was also recovered. Several pieces of animal bone exhibited

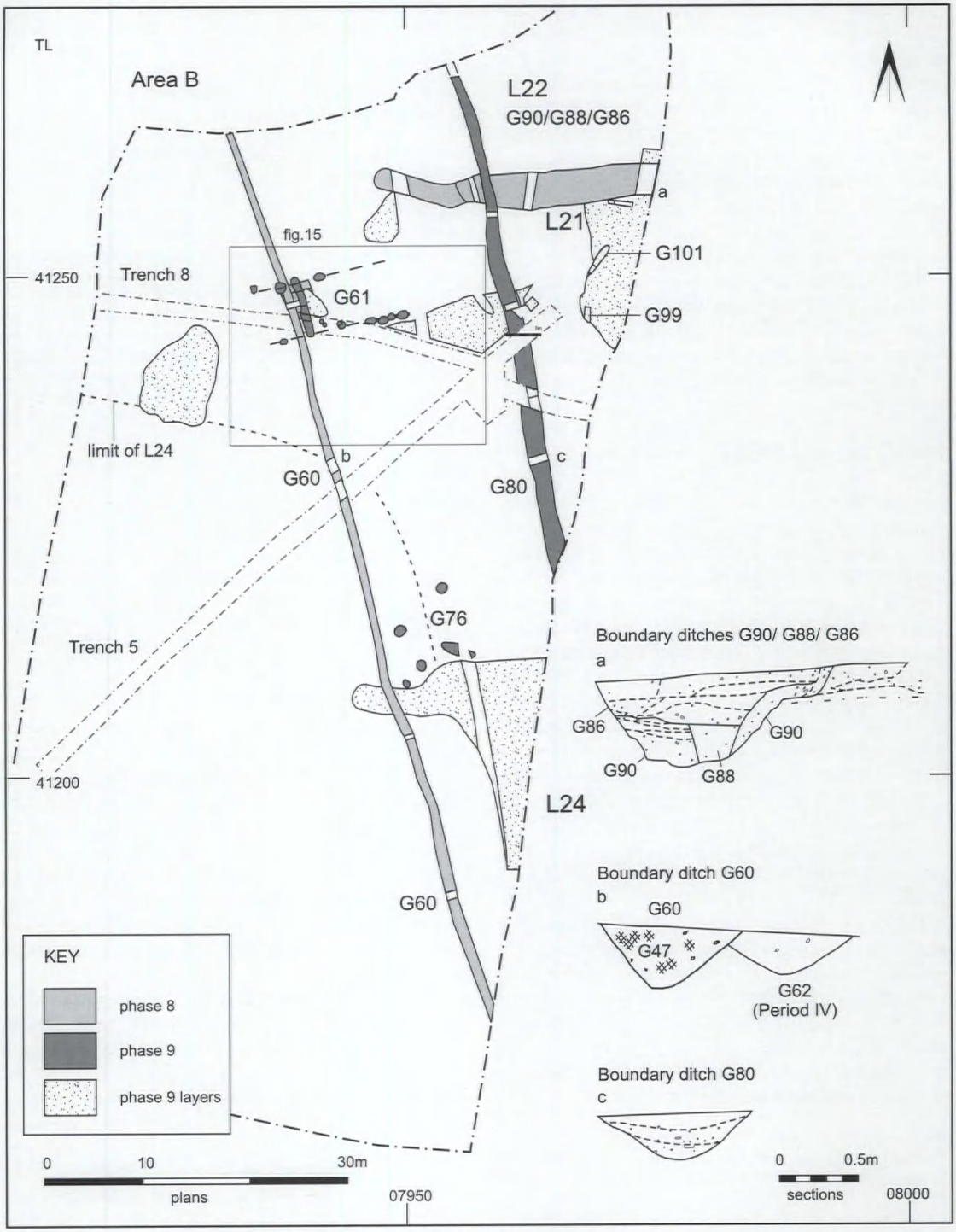



Figure 14 Period V: Early Medieval (Phase 8 and 9); Overall plan

evidence of gnawing suggesting this material may have been derived from a midden where animals were permitted to roam.

Deposits G123 within the S spring hollow G120 were very similar in both nature and inclusions. A few pieces of waterlogged wood were found, including fragments from two rods. In addition, there was a small quantity of residual Roman pottery, leather shoe fragments RA 30 and 31 (typologically Roman in date) and a relatively large quantity of animal bone.

The domestic debris was sealed by deposits G124, G128, G129 and G130, comprising light-mid grey brown sandy clays with rare small stones, suggestive of a colluvial origin. They contained moderate quantities of pottery (mainly Roman, but some Saxo-Norman), quern fragments RA 53 and a tiny quantity of animal bone.

### Timber tank L20

Following the infilling of the N spring hollow, a large pit was dug through the colluvial and other deposits to allow the construction of a substantial timber tank G132, presumably again to provide a source of water. A small pit G109 situated immediately to the NE of the tank may relate to its use, perhaps functioning as part of a frame supporting a bucket or ladder.

*Timber Tank G132 (Fig 13)*

A construction pit (at least 1.2m deep) was dug through the deposits filling the N spring hollow into the underlying natural clay (Fig 12). It was 2.7m square, orientated WNW-ESE. Within the pit an arrangement of interlocking timbers created a 2.2m square structure.

The tank was constructed in three distinct parts (Fig 13). The lower part comprised unworked, roundwood logs up to 0.48m in diameter laid horizontally and butted up at their ends. These were held in place by large, pointed cleft stakes at each corner of the structure. The middle part consisted of two major timbers on each side of the tank, linked by lap joints at the corners. These timbers comprised split lengths of oak, laid on edge and halved near their ends. The uppermost level of timberwork, as it survived, was not jointed but was butted at the corners. Smaller pieces of timber were used as packing in-between and behind the major timbers.

The gap between the edge of the tank and the side of the construction pit was packed with fairly pure, blue grey clay, although it also contained "packing" material in the form of a small number of timber offcuts. The clay may have acted as a seal to prevent groundwater escaping through the timber walls.

Dendrochronological analysis indicates that there was no difference in felling date between the timbers used in the lower and upper parts of the structure. Most were felled in the summer of AD1081.

No evidence for any craft or industrial processing was recovered within or in the vicinity of the tank, so it is presumed that it was used purely for water collection. The primary deposits within the tank contained a small number of residual Roman pottery sherds and animal bone fragments.

*Pit G109*

Pit G109 was circular with a diameter of 0.9m, steep sides and a slightly concave base, 0.35m deep. It was filled by a dark greyish brown silty clay with occasional small stones and a small quantity of fired clay.

## PERIOD V: EARLY MEDIEVAL (PHASES 8 AND 9) (Figs 14 and 15)

Evidence for activity during this period was restricted to Area B and initially comprised the digging of two ditches G60 and G90/88/86. The former was a recut of the earlier Period IV ditches G62/64 and the latter, positioned perpendicular, may have been designed, with an associated hedge/bank to the S, to restrict downslope soil movement. The majority of the colluvial deposits, including L21 within the former spring hollows and L24 have been assigned to this period based on their stratigraphic locations. Later within this period (Phase 9) ditch G60 was abandoned, but a new ditch G80 was dug *c.* 18m to the E. Contemporary activity includes building G61 and pit group G76.

Contemporary domestic debris recovered from these features is restricted to a small quantity of pottery and a single iron horseshoe RA 22. This may suggest that activity during this period was not domestic in nature. The incidence of residual 'Belgic' and Roman pottery is extremely high presumably reflecting the absence of contemporary domestic occupation and the continued erosion of material from the earlier settlement on the higher ground to the S. Ditches G90/88/86 produced small quantities of St Neots-type and Stamford wares of 10th-12th century date. The possible floor make-up layers within building G61 (Phase 9) also produced a small quantity of St Neots-type pottery suggesting that they are contemporary.

Environmental sample 30 from ditch G60 contained a considerable quantity of grain, probably from rivet or bread wheat, which may represent the accidental charring of clean, processed grain.

### Boundary ditches G60 and G90/88/86 (L22) (Phase 8)

The near-perpendicular arrangement of NW-SE ditch G60 and W-E ditch G90/88/86 suggests they are contemporary. The absence of domestic debris may indicate that they were part of a field system. Both appear to have remained in use during Phase 8 only. G60 was the latest in a series of ditches in this location, originating in Period IV. However, ditches

G90/88/86 represent repeated redigging of a boundary, which, due to the accumulation of colluvial deposits G117, went out of use by the end of Phase 8.

The ditches contained only small quantities of pottery (mainly residual Roman but also some St Neots-type wares), fired clay, a *tegula* fragment, an iron horseshoe RA 22, part of a shoe RA 54 and animal bone.

*Boundary ditch G60*

Ditch G60 was a recut of Period IV ditches G64/62. It was *c.* 0.9m wide with a concave profile, 0.5m deep (Fig 14b). It was filled by yellow brown silty sand deposits with occasional small and medium sized stones. The fills contained a small quantity of residual Roman pottery, fired clay, a single iron shoeing nail and an iron horseshoe RA 22. Although charcoal flecks were relatively rare to the S, they occurred far more frequently in the N segments. The charcoal from environmental sample 30 was predominately Pomoideae type, e.g. hawthorn, apple *etc.* and may represent the burning of a hedge associated with the ditch. This sample also contained a relatively large quantity of grain but hardly any weed seeds.

*Boundary ditch G90/88/86*

The boundary formed by ditch G90 and its recuts may have been designed to restrict downslope erosion (Fig 14a). The original ditch G90 was dug through colluvial deposits G91. It was 2.5m wide, with steep sides and a concave base, 1m deep. It was filled by light to mid grey brown silty sand deposits with occasional small stones. Recut G88 was 0.6m wide with near vertical sides, which may have been partially revetted with large stones. It was 1m deep with a flattish base. Its fills G89 were peat-like deposits comprised of black silty clay with rare small and medium sized stones. They contained a moderate quantity of animal bone including badger, a fragment of *tegula* and part of a shoe RA 54. The final form of the boundary G86 was 3m wide with steep sides and a flat base, 0.7m deep. It was filled by light grey brown sandy silts with rare small stones and charcoal flecks. These deposits contained only small quantities of residual Roman pottery and animal bone.

**Other evidence for activity (Phase 8)**

The only other evidence for activity within Phase 8 was the digging of a gully G101 and pit G99 into the infilled S spring hollow. The gully was aligned SW-NE. It was 3.5m long, 0.65m wide with a gentle concave profile, under 0.2m deep. Its fill contained only small quantities of domestic debris. Pit G99 was sub-circular, 0.8m in diameter with a concave profile, 0.5m deep. Although darker in colour, its fills were similar to the colluvial material it was dug into. Both features contained moderate quantities of residual Roman pottery.

**Disuse of the timber tank L21 (Phase 8)**

Dark grey brown silty sand deposits G118 accumulated within the timber tank G132 and were progressively darker with depth. They contained rare small stones and occasional charcoal flecks. Many of the offcuts and wood chips found within this deposit bore tool marks, suggesting that they were waste materials from woodworking. It also contained residual Roman material including pottery, two coins RA 35 and 37, along with flue and brick fragments. In addition, a moderate quantity of animal bone and a single iron nail were recovered. Overlying deposits G131 contained an undated lead weight RA 17.

**Other colluvial deposits L24 (Phase 8)**

During machining of the topsoil, extensive colluvial deposits were removed over the N and E of Area B. Small areas were left *in situ* to permit hand excavation and the recording of soil profiles. The depth of these deposits (confirmed in the sides of the excavation area) increased from 0.1m in the S, to 0.8m to the N. They comprised mid to dark orangey brown silty sands with rare small stones and charcoal flecks. Deposits G79 and G106 contained moderate quantities of pottery, the majority Roman but also some St. Neots-type ware, along with a single iron nail.

**Boundary ditch G80 (Phase 9)**

Approximately 18m E of boundary ditch G60 a new ditch G80 was dug on the same alignment. It was dug into colluvial deposits sealing the Period IV spring hollows. It is possible the boundary was moved eastwards to maximise the area of useable land to the W of the soft ground overlying the former spring hollows.

*Boundary ditch G80*

Ditch G80 had a consistently concave profile, increasing from 1m wide and 0.25m deep at the N to 2m wide and 0.6m deep at the S (Fig 14c). Its fills comprised mid orange brown silty sands with occasional small stones and rare large stones in the primary levels. The ditch produced moderate quantities of pottery (mainly Roman but also a small amount of Saxo-Norman and medieval wares) and fired clay.

**Building G61 and pit group G76 (L25) (Phase 9)** (Fig 15)

The alignment and location of building G61 would suggest it is contemporary with boundary ditch G80. It was constructed over the infilled Phase 8 ditch G60. One of its fills, G147, contained Pomoideae type charcoal (hawthorn, apple *etc.*), which may have derived from the destruction of an associated hedge prior to building construction (environmental sample 30). Situated *c.* 30m S of the building was a group of five pits or postholes G76.

The artefact assemblage from structural elements of the building was restricted to a small quantity of pottery (mainly residual but including St. Neots-type ware), fired clay and fragments of a rotary quern RA 44. The small quantity and limited range of artefacts recovered could suggest that the building served an agricultural rather than a domestic function.

*Building G61*

The N and S wall lines of this building were identified by two parallel alignments of postholes/pits. These suggest the building was at least 14m long and 6m wide. The postpits were generally oval in shape and large (0.7m in diameter and 0.5m deep) *e.g.* F855. They usually had steep sides and a gently concave base (Fig 15a, b and c). Those in the E part of the S wall were associated with a narrow slot, which may have held vertical planks (Fig 15c). These and the other postholes were filled by mid to dark orangey brown silty sand with rare small stones and occasional charcoal flecks.

Internally the building was partitioned into two by a substantial slot F916. This was 0.6m wide with near vertical sides and a flat, but sloping base, 0.5m deep (Fig 15a). It is possible the depth of this slot reflects the fact that it was dug into the soft infilling of ditch G62. The slot was filled by a light brown, red-mottled sandy clay with moderate quantities of small to large stones (some burnt) and charcoal flecks. The red mottling represented tiny fragments of fired clay. Despite being apparently truncated by the slot, deposit F899 was very similar to the fill of the slot and may be associated with the building, possibly representing a floor make-up. It contained seven fragments of quernstone RA 44. Three smaller postholes were situated inside the building adjacent to the S wall, but they formed no significant pattern.

The limited pottery assemblage from fills G61 and G68 associated with this building included residual 'Belgic' and Roman sherds, but also a small quantity of St Neots-type ware.

*Pit group G76*

G76 comprises five pits or large postholes, clustered within a 10m by 7m area. At least one of the pits truncated the upper fills of ditch G60, hence their assignment to this phase. They were all sub-circular in shape, under 1m in diameter with concave profiles and under 0.2m deep. Their fills G77 comprised yellowish brown silty sand with rare small stones and frequent charcoal flecks; they contained no artefacts. Large quantities

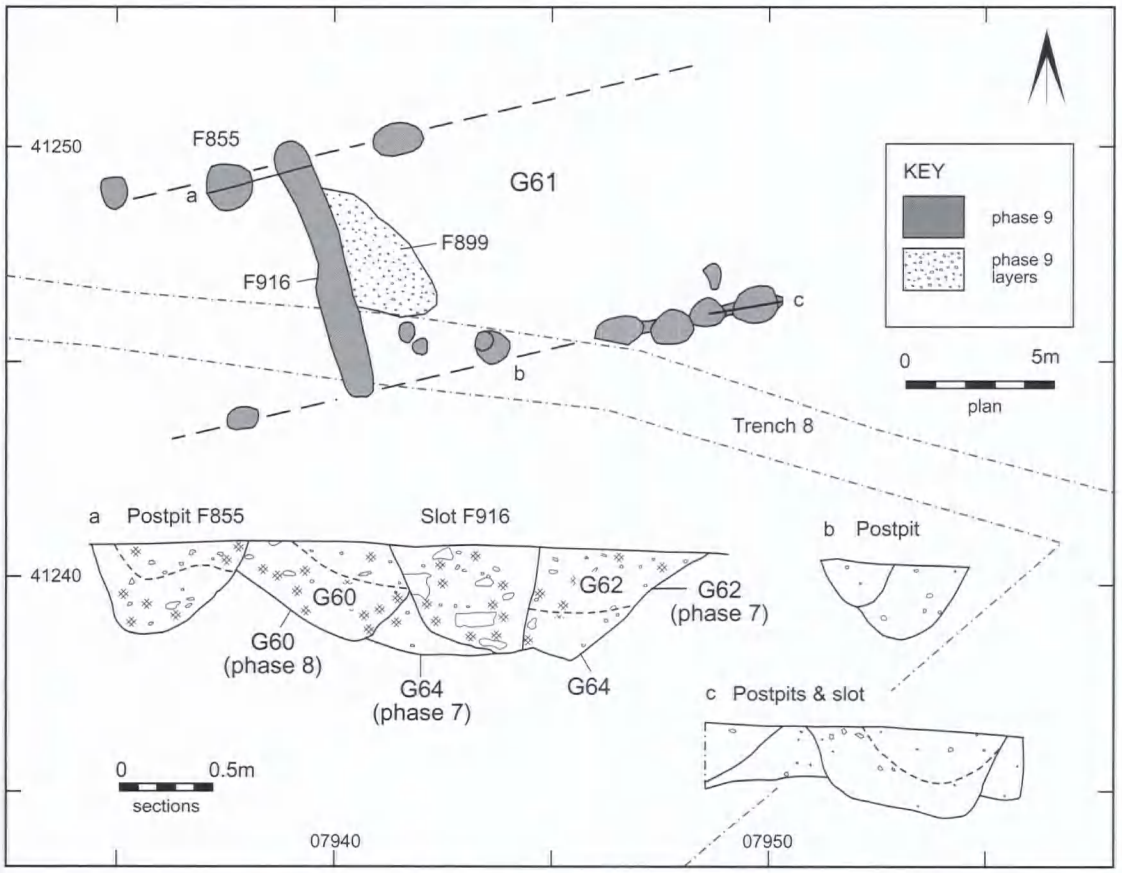



Figure 15 Period V: Early Medieval (Phase 9); Building G61

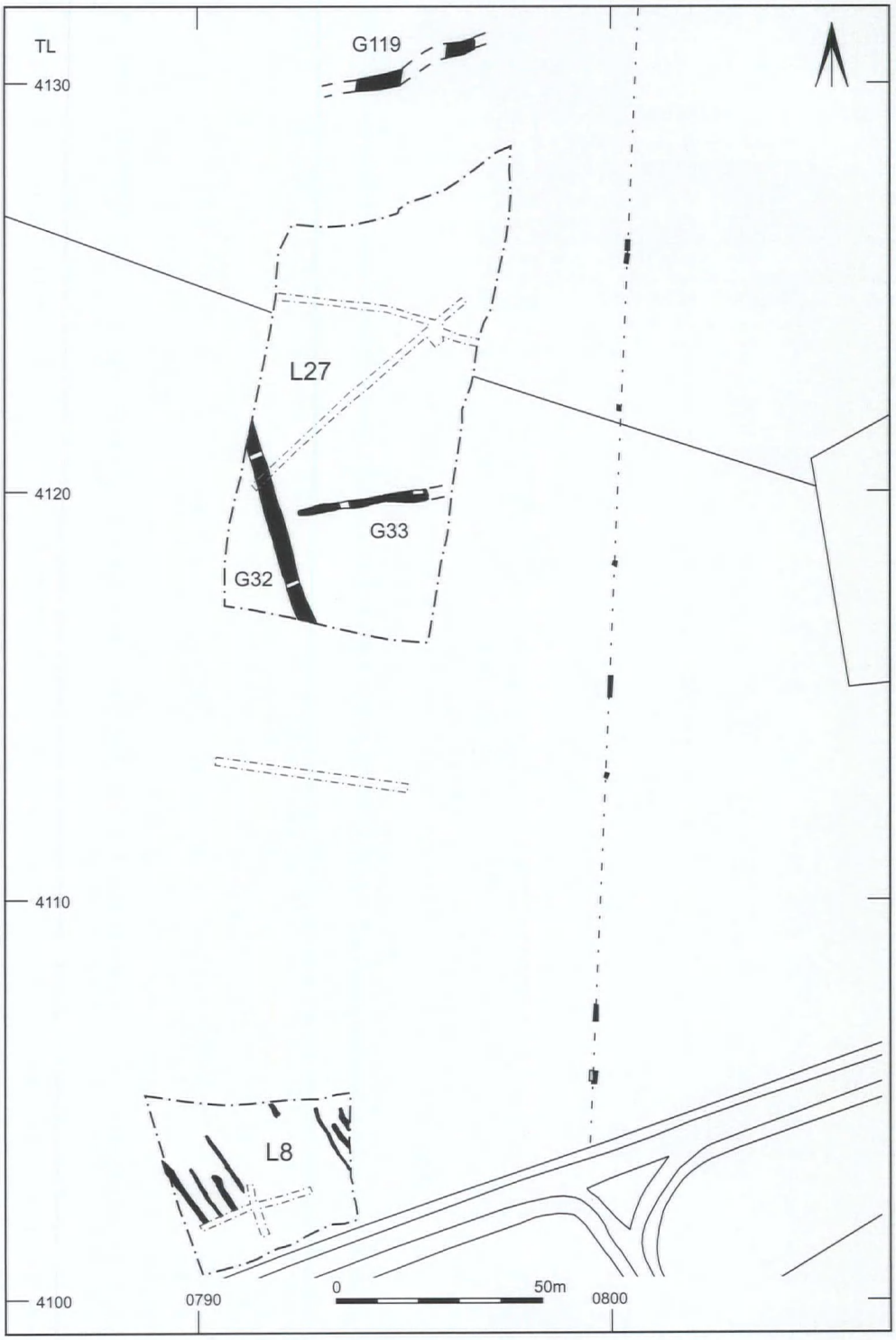



Figure 16 Period VI: Medieval (Phase 11); Overall plan

of oak charcoal but only small quantities of grain and chaff were recovered from environmental samples 38, 43 and 45.

## PERIOD VI: MEDIEVAL (PHASES 10 AND 11) (Fig 16)

There is no evidence in terms of types of features or artefacts to suggest that domestic activity took place during this period. It is presumed that settlement was focused on St. Mary's Church, *c.* 160m to the E (Fig 2). Apart from post-medieval and modern features, not described in this article, the features assigned to this period were the latest in the stratigraphic sequence.

Evidence for a field system, presumably associated with this settlement, was recovered from the excavation areas and the watching brief. Ditch G32 represents a major new boundary, although it was on the same alignment as the earlier boundaries. Perpendicular to this were two ditches, G33 within Area B and G119 located during the watching brief.

It is interesting to note that furrows L8 (within Area A) only appear to occur to the W of the major ditch G32. This could indicate that the land on either side of the boundary was subject to different use, although furrows to the E, truncating the colluvial deposits, would have been very difficult to identify. It may be significant, however, that (in contrast to the E) no sub-divisions were identified to the W of the boundary. Given its proximity to the Haynes Church End settlement and previous problems with erosion it may have been used solely for pasture.

### Disuse L26 of Phase 9 features (Phase 10)

The Period V boundary ditch G80 was infilled by a deposit G81 which contained 10th and 13th century pottery and a knife blade RA 46, along with a fragment of copper alloy waste RA 2. Colluvial deposits G116 continued to accumulate during this phase; they contained only small quantities of residual Roman pottery and tile.

### Ditches G32, 33 and 119 (L27) (Phase 11)

NW-SE ditch G32 at 3.3m wide and 1m deep clearly represents a major boundary. It was filled by light to mid brown silty clay with frequent small stones and rare charcoal flecks. It contained one sherd of medieval pottery and little other domestic debris. This ditch might correspond to a boundary marked on the 1676 map.

Perpendicular to G32, ditch G33 terminated 3.8m to the E. It had a similar profile but, at 2.1m wide and 0.9m deep, was less substantial. The full extent eastwards of this ditch could not be determined but it is presumed to have continued beyond the limit of excavation. It was filled by light brown silty clays with moderate quantities of small stones. Its upper fill contained a relatively large quantity of animal bone and small quantities of residual Roman and Saxo-Norman pottery.

Another substantial ditch G119 was located during the monitoring of ground disturbance to the N. It would appear to have been perpendicular to G32 and at *c.* 4m wide and over 0.5m deep was substantial. Its fills were similar although with a higher sand content. It also may correspond to a boundary visible on the 1676 map.

### Furrows L8 (Phase 11)

A system of parallel furrows G25 aligned NW-SE was located within Area A. They were between 2 and 3m apart with the spacing getting narrower to the E (nearer to the projected position of boundary ditch G32). They contained a small quantity of residual Roman pottery. Although the furrows are not precisely parallel to the ditch G32, this is likely to be the result of the curve in alignment that furrows normally exhibit towards the edge of a field (in this case only 10m beyond the excavation area).

## PERIOD VII POST-MEDIEVAL AND LATER ACTIVITY

Numerous post-medieval features were recorded during the fieldwork, especially near Haynes Park House. Many of these appear to represent park or garden features. They are not reported on here.

## ARTEFACTS

### POTTERY

Jackie Wells incorporating Samian report by Brenda Dickinson

### Introduction and methodology

The investigations produced 1622 sherds of pottery, representing 1058 individual vessels, weighing 17.79kg.

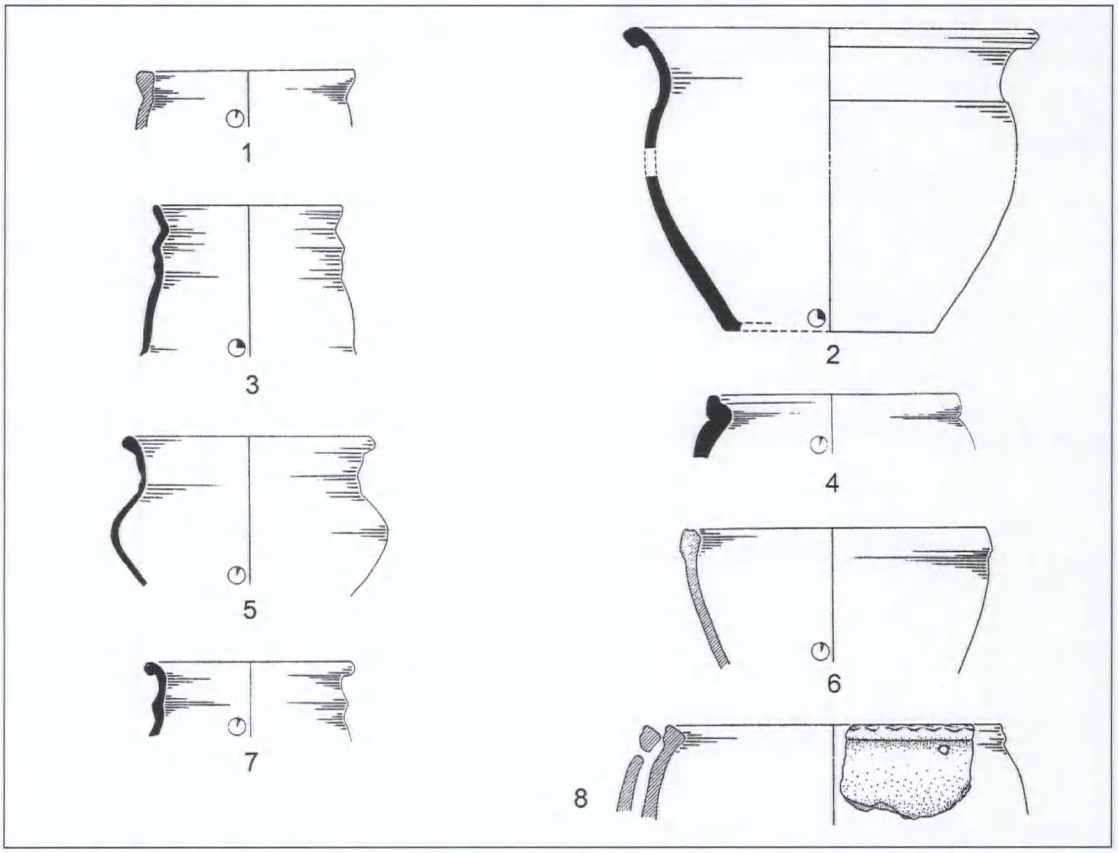
The pottery was examined by context and forty-three fabric types were identified (see Appendix 1) in accordance with the Bedfordshire Ceramic Type Series, held by Albion Archaeology. The assemblage was quantified by minimum vessel and sherd count, and by weight. Sherds belonging to the same vessel, but deriving from separate contexts were quantified as a single vessel. Unless otherwise stated, quantitative data in the text is based on vessel count.

Examination of attributes including extent of

abrasion, presence/absence of residues, sooting and wear marks was undertaken to provide an indication of vessel function.

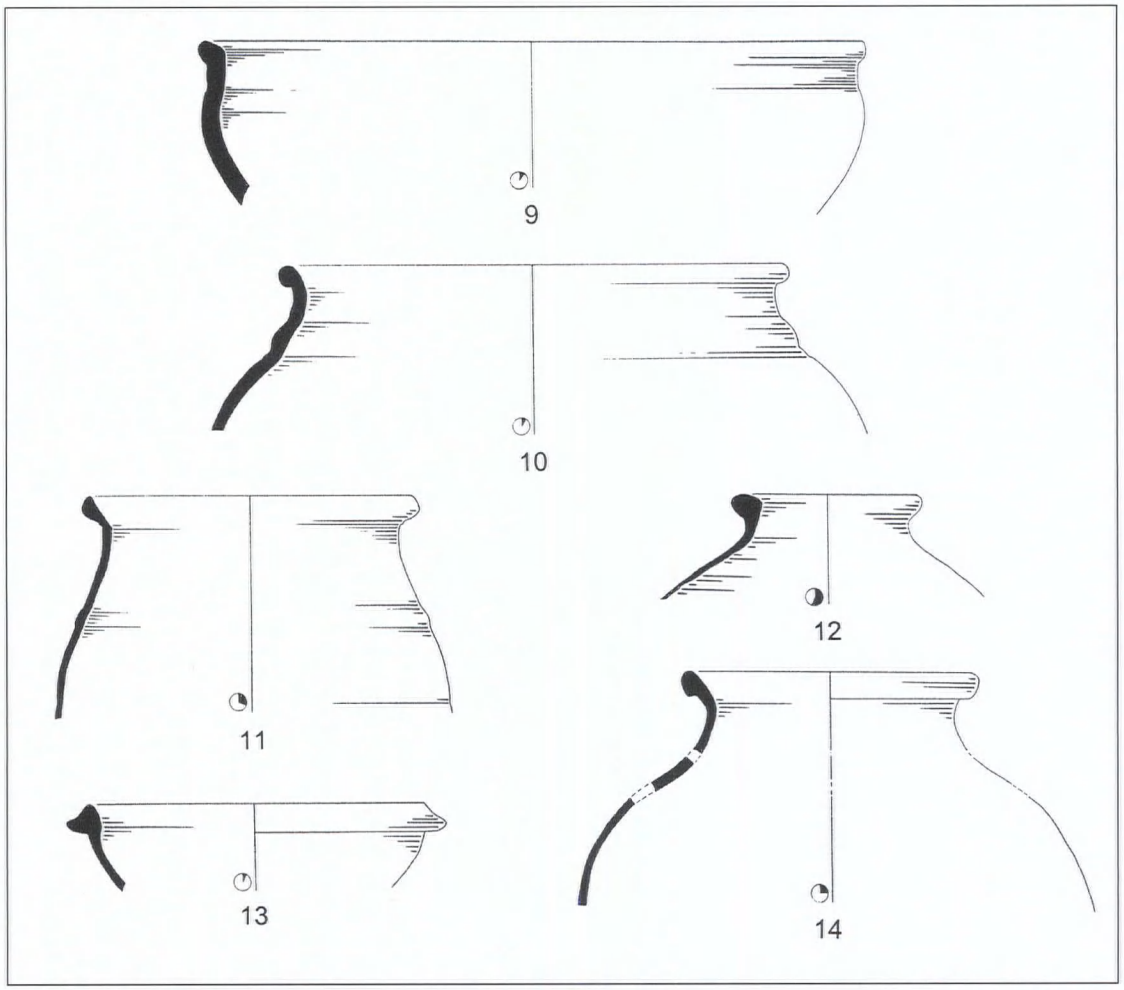
A representative sample of the pottery has been illustrated (Figs 17-20). Standard drawing conventions have been used, with vessels shown at one-quarter size, external view on the right and a section and internal view on the left. Hand-made vessels are illustrated with hatched sections and wheel-thrown vessels with solid sections. The pie diagram at the base of each illustration indicates the proportion of the vessel recovered. Omission of the pie diagram indicates illustration of all surviving sherds.

Approximately 7% of the assemblage displays abrasion and fabrics tempered with shell or organic matter are extensively leached as a result of deposition in acidic soils. The abraded nature of the shelly material, coupled with a general dearth of diagnostic forms has made the precise classification of Roman and Saxo-Norman wares problematic. A number of sand tempered sherds, particularly those deriving from waterlogged deposits are also poorly preserved, and have suffered a degree of surface damage.



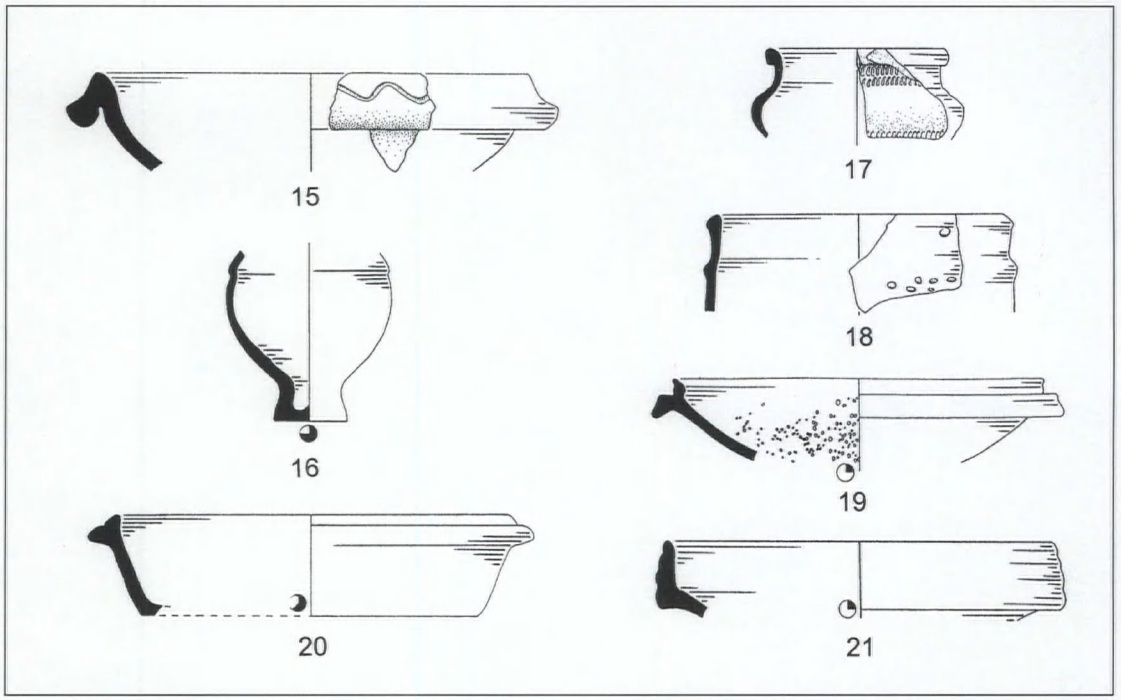

| ILLUST. | FABRIC TYPE | Description | PERIOD | Phase | Landscape | Group | Context |
|---|---|---|---|---|---|---|---|
| 1 | F03 | Vessel | III | 6 | 6 | 16 | 316 |
| 2 | F05 | Necked bowl | III | 5 | 13 | 111 | 155 |
| 3 | F06A | Cylindrical jar | III | 5 | 4 | 18 | 426 |
| 4 | F07 | Lid-seated vessel | II | 4 | 3 | 8 | 326 |
| 5 | F06B | Cordoned bowl | II | 2 | 1 | 148 | 452 |
| 6 | F09 | Lid-seated bowl | II | 3 | 2 | 6 | 351 |
| 7 | F06B | Cordoned jar | III | 5 | 4 | 12 | 336 |
| 8 | F05 | Lid-seated bowl with perforation | II | 4 | 3 | 138 | 353 |

Figure 17 Selected pottery (illust 1-8)



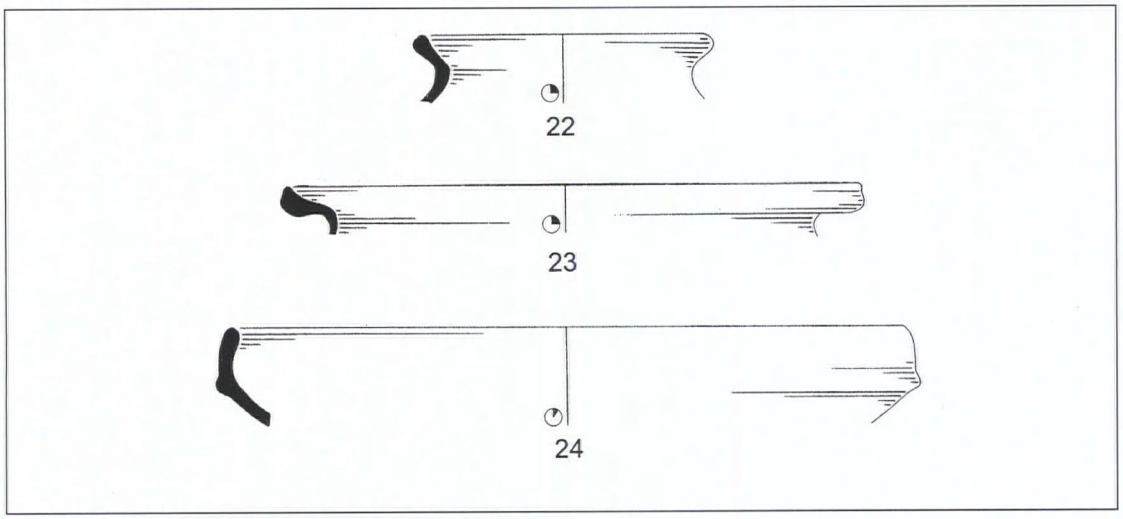

| ILLUST. | FABRIC TYPE | Description | PERIOD | Phase | Landscape | Group | Context |
|---|---|---|---|---|---|---|---|
| 9 | F09 | Bowl | II | 4 | 3 | 138 | 328 |
| 10 | F09 | Cordoned jar | II | 2 | 1 | 148 | 477 |
| 11 | F34 | Butt beaker | II | 2 | 1 | 2 | 420 |
| 12 | R13 | Neckless jar | - | - | - | 113 | 723 |
| 13 | R13 | Bowl | III | 5 | 13 | 111 | 155 |
| 14 | R13 | Triangular rim jar | V | 7 | 19 | 128 | 1009 |

Figure 18 Selected pottery (illust 9-14)




| ILLUST. | FABRIC TYPE | Description | PERIOD | Phase | Landscape | Group | Context |
|---|---|---|---|---|---|---|---|
| 15 | R13 | Bowl | IV | 8 | 21 | 118 | 1068 |
| 16 | R12B | Beaker | V | 8 | 22 | 117 | 800 |
| 17 | R11D | Rouletted bowl | IV | 7 | 19 | 127 | 1067 |
| 18 | R11D | Cordoned bowl with white-painted dot decoration | III | 5 | 13 | 111 | 155 |
| 19 | R11F | Flanged mortarium | V | 8 | 22 | 100 | 763 |
| 20 | R12B | Flanged bowl | V | 8 | 22 | 100 | 763 |
| 21 | R12A | Wall-sided mortarium | IV | 7 | 18 | 122 | 1038 |

Figure 19 Selected pottery (illust 15-21)




| ILLUST. | FABRIC TYPE | Description | PERIOD | Phase | Landscape | Group | Context |
|---|---|---|---|---|---|---|---|
| 22 | B01 | Everted rim jar | IV | 7 | 19 | 127 | 1085 |
| 23 | B01 | Everted rim jar | V | 9 | 25 | 61 | 204 |
| 24 | B01 | Bowl with inturned rim | V | 9 | 25 | 61 | 899 |

Figure 20 Selected pottery (illust 22-24)

| | | | | | Early-middle Iron Age | | | | 'Belgic' Iron Age | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period | Phase | Lscp | Gp | Group description | F | F28 | F16 | F19 | F03 | F05 | F06 | F07 | F09 | F34 |
| | 13 | 27 | 94 | secondary fills of ditch G32 | | | | | | | | | | |
| | 12 | 27 | 47 | secondary fills of ditch G33 | | | | | | | | | | |
| | 11 | 8 | 25 | fills of furrow G25 | | | | | | | | | 2:2 | |
| VI | 10 | 26 | 116 | colluvial deposits | | | | | | | | | | |
| | 9 | 25 | 147 | secondary fills of ditch G60 | | | | | | | | 2:2 | | |
| | 9 | 25 | 95 | secondary fills of ditch G60 | | | | | | | | | | |
| | 9 | 25 | 87 | secondary fills of boundary ditch G86 | | | | | | | | | | |
| | 9 | 25 | 81 | secondary fills of ditch G80 | | | | 2:3 | | | | | | |
| | 9 | 25 | 80 | primary fills of ditch G80 | | | | | | | | 1:1 | | |
| | 9 | 25 | 68 | secondary fills of building G61 | | 1:1 | | | | | | | | |
| | 9 | 25 | 61 | primary fills of building G61 | | | | | | | 1:1 | 9:11 | | |
| | 8 | 24 | 106 | colluvial deposits | | | | | | | 1:1 | | | |
| | 8 | 24 | 79 | colluvial deposits | | | | | | | | | 1:1 | |
| | 8 | 22 | 144 | secondary fills of gulley G101 | | | | | | | | | | |
| | 8 | 22 | 117 | colluvial deposits | | | | | | | | | | |
| | 8 | 22 | 100 | secondary fill of pit G99 | | | | | | | | | | |
| | 8 | 22 | 86 | primary fill of recut G86 of ditch G88/90 | | | | | | | | | | |
| V | 8 | 21 | 118 | secondary fills of timber tank G132 | | | | | | | 2:2 | | | |
| | 7 | 19 | 132 | primary fills of timber tank G132 | | | | | | | | | | |
| | 7 | 19 | 130 | colluvial deposits | | | | | | | | | | |
| | 7 | 19 | 128 | colluvial deposits within S spring hollow G120 | | | | | | | | | | |
| | 7 | 19 | 127 | upper fills of N spring hollow G121 | | | | | | | | | | |
| | 7 | 19 | 126 | destruction of hurdles G125 | | | | | | | | | | |
| | 7 | 19 | 123 | upper fills of S spring hollow G120 | | | | | | | | | | |
| | 7 | 18 | 125 | wooden hurdles G125 | | | | | | | | | | |
| | 7 | 18 | 122 | lower fills of S spring hollow G120 | | | | | | | | | | |
| | 7 | 17 | 120 | primary fills of S spring hollow G120 | | | | | | | | 1:1 | | |
| | 7 | 16 | 65 | secondary fills of original boundary ditch G64 | | | | | | | | | | |
| | 7 | 16 | 63 | secondary fills of recut boundary ditch G62 | | | | | | | | | | |
| | 7 | 16 | 62 | primary fills of recuts G62 of boundary ditch G64 | | | | | | | | | | |
| | 7 | 16 | 57 | primary fills of pit G57 | | | | | | 1:1 | 1:4 | | 1:1 | |
| | 7 | 16 | 54 | secondary fills of ditch G53 | | | | | | | | | | |
| | 7 | 16 | 45 | secondary fills of building G44 | | | | | | 1:1 | | | | |
| IV | 7 | 16 | 44 | primary fills of building G44 | | | | | | | | | | |
| | 6 | 15 | 103 | colluvial deposits | | | | | | | | | | |
| | 6 | 14 | 50 | secondary fills of boundary ditch G43 | | | | | | | | | 1:1 | |
| | 6 | 7 | 140 | secondary fills of slots G21 | | | | | | | 1:2 | | 2:2 | |
| | 6 | 7 | 139 | clay deposits | | | | | | | 1:1 | | 18:21 | |
| | 6 | 7 | 22 | secondary fills of pit G17 | | | | | | 1:2 | 3:6 | | 3:3 | |
| | 6 | 7 | 19 | clay deposits | | | | | | 13:15 | 23:28 | 1:1 | 72:80 | |
| | 6 | 7 | 17 | primary fills of pit G17 | | | | | | | | | | |
| | 6 | 6 | 16 | secondary fills of boundary ditch G14 | 1:1 | | | | 1:1 | 10:17 | 23:30 | 1:1 | 60:69 | |
| | 5 | 11 | 70 | secondary fills of boundary ditch G42 | | | | | | | | 1:1 | | |
| | 5 | 13 | 143 | secondary fills of pit G93 | | | | | | 1:1 | | | 1:1 | |
| | 5 | 13 | 111 | occupation deposits sealing drying oven G108 | | | | | | 6:39 | | | | |
| | 5 | 13 | 110 | destruction deposits of drying oven G108 | | | | | | 1:1 | | | 4:15 | |
| | 5 | 13 | 83 | secondary fills of pit G82 | | | | | | | | | | |
| | 5 | 12 | 108 | primary fills of drying oven G108 | 3:15 | | | | | | | | | |
| | 5 | 12 | 105 | colluvial deposits G105 | | | | | | | | | | |

| Roman | | | | | | | | | | | | Saxo-Norman | | | Medieval | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R | R02 | R01 | R03 | R06 | R13 | R07 | R05 | R14 | R11 | R12 | R22 | B01 | C08 | C12 | B07 | C60 | Mod | Total |
| | | | | | | | | | | | | | | | 1:1 | | | 1:1 |
| | | | | 1:1 | | | | | | | | 1:1 | | | | | | 2:2 |
| 1:1 | | | | | | | 1:1 | | | | | | | | | | | 4:4 |
| | | | | | 2:2 | | | | 4:4 | 1:1 | | | | | | | | 7:7 |
| | | | | | | | | | | | | | | | | | | 2:2 |
| | | | | 1:1 | 1:1 | | | | | | | | | | | | | 2:2 |
| | | | | | 1:1 | 1:1 | 2:2 | | 2:4 | | | | | | | | 1:1 | 7:9 |
| | | | | | 6:9 | | | | 2:2 | 1:1 | | | 1:1 | 1:1 | | 1:1 | | 14:18 |
| | | | | 1:1 | 1:1 | | | | | | | | | | | | | 3:3 |
| | | | | | | | | | | | | 1:1 | | | | | | 2:2 |
| | | | | | 4:5 | | | | | | | 1:14 | | | | | | 15:31 |
| | | | 1:1 | 1:1 | 1:1 | | | | | | | | | | | | | 4:4 |
| | | | | 2:2 | 1:1 | | | | 1:2 | | | 1:1 | | | | | | 6:7 |
| | | | | | | | | | 1:1 | | | | | | | | | 1:1 |
| | | | | | 1:1 | 1:1 | | | 4:4 | 3:11 | | 1:1 | | | | | | 10:18 |
| | | | | 2:2 | 4:4 | 1:1 | 1:1 | | 6:7 | 5:5 | | | | | | | | 19:20 |
| | | | | | | | | | 1:3 | 1:1 | | | | | | | | 2:4 |
| | 1:4 | | | 3:4 | 9:10 | | 1:1 | | 10:10 | 6:6 | | | | | | | | 32:37 |
| | | | | | | | | | 1:1 | 1:1 | | | | | | | | 2:2 |
| | | | | | 3:5 | | | | 1:1 | | | | | | | | | 4:6 |
| | | | | 3:3 | 7:16 | 1:1 | | | 3:3 | 3:3 | | 2:2 | | | | | | 19:28 |
| | 1:1 | | | 3:3 | 7:34 | | | | 3:3 | 1:1 | 1:1 | 1:2 | | | | | | 17:45 |
| | | | | | | | | | 1:1 | | | | | | | | | 1:1 |
| | 1:1 | | | | 2:2 | 2:2 | | | 1:2 | | | | | | | | | 6:7 |
| | 1:1 | | | 1:1 | 1:1 | | | | | | | | | | | | | 3:3 |
| | | | | | | | | | | 1:1 | | | | | | | | 1:1 |
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| | | | | | | | | | | | | 6:10 | | | | | | 6:10 |
| | | 1:1 | | 2:2 | 2:5 | | | | 1:1 | | | 10:16 | | 1:1 | | | | 17:26 |
| | | | | | | | | | | | | 4:4 | | | | | | 4:4 |
| | | | | | | | | | | | | | | | | | | 3:6 |
| | | | | | 1:1 | | | | | | | | | | | | | 1:1 |
| | | | | 1:1 | | | | | | | | | | | | | | 2:2 |
| | | | | | | | | | | | | | | | | | 1:1 | 1:1 |
| | | | | | 4:5 | | | | 1:1 | | | | | | | | | 5:6 |
| | | | | | 5:7 | | | | | | | | | | | | | 6:8 |
| | | | | 0:2 | 1:1 | | | | | | | | | | | | | 4:7 |
| | | | | 3:3 | | | | | | | | | | | | | | 22:25 |
| | | 1:1 | | 6:15 | | 1:1 | | | | | | | | | | | | 15:28 |
| | | 3:3 | 5:5 | 26:40 | 6:7 | 3:3 | 1:2 | | | | | | | | | | | 153:184 |
| | | 1:1 | | 5:6 | 1:1 | | | | | | | | | | | | | 7:8 |
| | | 8:9 | 2:10 | 27:81 | 11:17 | | | | | 2:2 | | | | | | | | 146:238 |
| | | | | 1:1 | | | | | 1:1 | | | | | | | | | 3:3 |
| | | | | | | | | | | | | | | | | | | 2:2 |
| | | | | 7:13 | 18:49 | | | | 2:2 | 1:1 | | | | | | | | 34:104 |
| | | | | 2:2 | 6:9 | 1:2 | | | | | | | | | | | | 14:29 |
| | | | | | 1:1 | 1:1 | | 1:1 | 2:2 | | | | | | | | | 5:5 |
| | | | | 1:1 | 3:3 | | | | | 1:1 | | | | | | | | 8:20 |
| | | | | | 1:1 | | | | | | | | | | | | | 1:1 |

| | | | | | Early-middle Iron Age | | | | 'Belgic' Iron Age | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Period | Phase | Lscp | Gp | Group description | F | F28 | F16 | F19 | F03 | F05 | F06 | F07 | F09 | F34 |
| | 5 | 10 | 36 | secondary fills of building G35 | | | | | | | | | | |
| | 5 | 5 | 14 | primary fills of boundary ditch G14 | | | | | | 4:6 | 2:2 | | 5:5 | |
| | 5 | 5 | 13 | secondary fills of boundary ditch G12 | | | | | | | 2:3 | | 8:8 | |
| | 5 | 4 | 149 | secondary fills of pit G18 | | | | | | 6:13 | 6:9 | 1:2 | 14:18 | |
| | 5 | 4 | 29 | primary fills of pits G29 | | | | | | | 4:6 | | 1:1 | |
| | 5 | 4 | 18 | primary fills of pit G18 | | | | | | 9:10 | 12:27 | | 26:36 | |
| III | 5 | 4 | 12 | primary fills of boundary ditch G12 | | | | | | 1:1 | 2:2 | | 4:4 | |
| | 4 | 2 | 138 | secondary fills of W part of boundary ditch G7 | | | | | | 4:4 | 15:22 | | 26:49 | |
| | 4 | 2 | 8 | secondary fills of trackway G3 & ditch G7 | | | | | | 3:3 | 19:26 | 3:6 | 17:30 | |
| | 3 | 2 | 24 | single fill of ditch G23 | | | | | | | | | | |
| | 3 | 2 | 7 | primary fills of recut boundary ditch G5 | | | | | | | | | 2:2 | |
| | 3 | 2 | 6 | secondary fills of boundary ditch G5 | | | | | | 1:1 | 3:3 | | 3:6 | |
| | 2 | 1 | 148 | secondary fills of pits G4 | | | | | | 2:4 | 10:17 | 1:4 | 22:28 | |
| | 2 | 1 | 146 | primary fills of pits G146 | | | | | | 1:1 | 1:2 | | 3:6 | |
| | 2 | 1 | 136 | secondary fills of structure G10 | | | | | | | | | 1:1 | |
| | 2 | 1 | 11 | primary fills of structure G11 | | | | | | | | | 1:2 | |
| | 2 | 1 | 4 | primary fills of pits G4 | | | | | | 1:1 | | | 5:6 | |
| II | 2 | 1 | 2 | secondary fills of pits G146 | | | | | | | 1:2 | | 1:4 | 1:6 |
| | 1 | 9 | 56 | secondary fills of pits G55 | | | | | | | | 1:1 | | |
| | 1 | 9 | 97 | secondary fillls of structure G69 | | | 1:29 | | | | | | | |
| I | 1 | 9 | 69 | Primary fills of structure G69 | | | | 3:6 | | | | | | |
| | | | | **Totals** | 4:16 | 1:1 | 1:29 | 5:9 | 1:1 | 66:122 | 133:196 | 22:31 | 304:401 | 1:6 |

Table 1 Pottery seriation table presented in chronological order (by vessel and sherd count).

## Discussion

The proportions of fabric types within each period, phase and landscape are presented in the form of a seriation table (Table 1). This provides the structure for the following discussion, which considers the pottery characteristic of each period with percentage figures for the total assemblage. For clarity, fabric type divisions have been amalgamated where appropriate, and are represented in the table by a generic type code. Approximately 8% of the assemblage derives from unphased features; this material is not considered in the following discussion.

*Early-middle Iron Age (Period I: Phase 1) (< 1%)*

The Period I assemblage comprises locally manufactured vessels in coarse shell (F16), sand/organic (F19) and sandy (F28) fabrics. It derives from features in unenclosed farmstead L9 and residually within later deposits.

*'Belgic' Iron Age/early Roman (Period II: Phases 2-4) (16%)*

Period II is characterised by the appearance of locally produced vessels in grog (F06), shell (F07), grog/shell (F05) and grog/sand tempered (F03/F09) fabrics. The predominance of the latter is likely to reflect the exploitation of raw materials deriving from the lower Greensand Ridge. Recognisable forms are indicative of a domestic assemblage, comprising tablewares, storage jars and cooking pots (Fig 17 and Fig 18, nos. 9-11). Use of the latter for this purpose is indicated by the presence of sooting on the exterior of the vessels. A number of sherds bear traces of internal black residues, probably resulting from the accidental burning of vessel contents during cooking. A single sherd has a severely pitted internal surface, suggesting that the vessel from which it derived may have contained acidic substances.

*Roman (Period III: Phases 5 and 6) (52%)*

This assemblage attests both the continuity of late Iron Age traditions and a transition to the use of Romano-British wares. The similar quantities of 'Belgic' material (*c.* 60%) within both phases of the Period III assemblage, and association with early

| Roman | | | | | | | | | | | | Saxo-Norman | | | Medieval | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R | R02 | R01 | R03 | R06 | R13 | R07 | R05 | R14 | R11 | R12 | R22 | B01 | C08 | C12 | B07 | C60 | Mod | Total |
| | | | | 1:1 | | | | | | | | | | | | | | 1:1 |
| | | | | 3:3 | | | | | | | | | | | | | | 14:16 |
| | | 2:2 | | 2:3 | 1:3 | | 1:1 | | | | | | | | | | | 16:20 |
| | | | | 13:15 | 1:2 | | | | | | | | | | | | | 41:59 |
| | | | | | | | | | | | | | | | | | | 5:7 |
| | | | | 6:8 | | | | | | | | | | | | | | 53:81 |
| | | | | 2:2 | 1:1 | | | | | | | | | | | | | 10:10 |
| | | | | 1:1 | | | 1:1 | | | | | | | | | | | 47:77 |
| | | | | 4:7 | | | | 1:1 | | | | | | | | | | 47:73 |
| | | | 1:1 | | | | | | | | | | | | | | | 1:1 |
| | | | | | | | | | | | | | | | | | | 2:2 |
| | | | | | 1:1 | | | | | | | | | | | | | 8:11 |
| | | | | 3:5 | | | | | | | | | | | | | | 38:58 |
| | | | | 2:2 | | | | | | | | | | | | | | 7:11 |
| | | | | | | | | | | | | | | | | | | 1:1 |
| | | | | | | | | | | | | | | | | | | 1:2 |
| | | | | | | | | | | | | | | | | | | 6:7 |
| | | | 1:2 | 2:2 | | | 1:1 | | | | | | | | | | | 7:17 |
| | | | | | 2:5 | | | | | | | | | | | | | 3:6 |
| | | | | | | | | | | | | | | | | | | 1:29 |
| | | | | | | | | | | | | | | | | | | 3:6 |
| 1:1 | 4:7 | 16:17 | 10:19 | 138:235 | 117:213 | 12:13 | 9:10 | 2:2 | 48:55 | 27:35 | 1:1 | 28:52 | 1:1 | 2:2 | 1:1 | 1:1 | 2:2 | 958:1479 |

Pottery that is unstratified, unphased or in post-medieval features has been omitted

Roman fabrics attest the longevity of this tradition. This is consistent with the established regional pattern, where the longevity of 'Belgic' form and fabric has been demonstrated, in some instances, to extend into the early second century (cf. Stagsden (Slowikowski 2000) and Biddenham Loop (Albion in prep. a)).

Amongst the Roman material, jars and bowls constitute the majority of diagnostic vessels. Less common forms are generally represented by single vessels only. The basic, utilitarian types present, coupled with the relatively small amount of both regional and continental imported wares, are indicative of a low status, domestic assemblage. Coarsewares are represented by a standard range of local greywares (R06), oxidised sandy wares (R05), blackwares (R07) and imported whitewares (R03) from the Verulamium region. Diagnostic shell tempered forms (R13) (Fig 18, nos. 12-14, and Fig 19, no. 15) are comparable to vessels produced at kilns in Harrold, N Bedfordshire (Brown 1994). Exteriors of the shelly wares are sooted, while those of the greywares are clean, indicating the use of the former for cooking and the latter for storage. Internal residues were noted on nine vessels.

A limited range of continental and regional finewares is represented in the assemblage. The former comprise Samian ware vessels (R01) of 2nd-3rd century date, and the latter colour coat vessels from Oxfordshire (R11) (Fig 19, nos. 17-19), Hertfordshire (R22) and the Nene Valley (R12) (Fig 19, nos. 16, 20 and 21), datable to the 3rd-4th centuries.

The Period III pottery assemblage does not enable a division into two phases to be confirmed. However, the fragmented nature of the Phase 6 'Belgic' material, indicated by a vessel:sherd ratio (233:279) close to equality, implies a greater degree of residuality than the preceding phase.

*Saxo-Norman (Period IV: Phase 7) (7%)*

Period IV pottery derives entirely from Area B. Vessels of Saxo-Norman date are restricted to a small assemblage of utilitarian wares in the St Neots-type tradition (B01) (Fig 20). Five jars bear external sooting, and a single vessel has an internal black

residue, suggesting the contents were either deliberately or accidentally burnt.

Over 80% of the Period IV assemblage comprises residual Roman material, mainly recovered from the infilling of spring hollows G120 and G121. This is likely to have derived from Roman settlement remains on the higher ground to the S.

*Early medieval (Period V: Phases 8 and 9) (12%)*
The Period V assemblage contains very little contemporary material. A small amount of St Neots-type ware and contemporary Stamford ware (C12) was recovered.

Residual pottery, predominantly of late Roman date, constitutes over 86% of the Phase 8 assemblage. The majority, however, occurred within colluvial deposits L22 and L24 and had presumably eroded downslope, as in the preceding period, from Roman settlement remains. The incidence of 3rd-4th century wares (fabrics R11, R12 and R22) may suggest this settlement continued into the later Roman period. In Phase 9, the incidence of residuality rises to 94% with the assemblage comprising a comparable range of 'Belgic' and Roman wares to those of the preceding phase.

*Medieval (Period VI: Phases 10 and 11) (2%)*
The paucity of the ceramic evidence for this period indicates that domestic activity no longer took place within the excavation areas. Single vessels of imported Stamford ware and Hertfordshire-type greyware (C60) suggest occupation may have ceased in the late 12th or early 13th century. The remainder of the Period VI assemblage (*c.* 88%) comprises residual Roman material.

## CERAMIC BUILDING MATERIAL
Jackie Wells

The ceramic building material comprises a small quantity of roof tile and brick, and a sizeable assemblage of structural daub and fired clay. These are discussed separately below. Quantification of all material is by fragment count and weight, and unless otherwise stated, quantitative data in the text is based on the latter.

### Brick and Tile

*Introduction*
The assemblage comprises 27 fragments, weighing 5.7kg and includes material of both Roman and late medieval/post-medieval date (Table 2).

The assemblage was examined by context and six broad fabric types were defined (*see* Appendix 2).

| Period | Phase | Landscape | Group | Group description | Roman brick | Flat roof | Flue | *Tegulae* | Unid | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | L27 | G94 | secondary fills of ditch G32 | | | | | 7 | 7 |
| | 11 | L8 | G25 | fills of furrow G25 | | | | | 18 | 18 |
| VI | 10 | L26 | G116 | colluvial deposits | | 305 | | 176 | | 481 |
| | 8 | L24 | G79 | colluvial deposits | | | | | 11 | 11 |
| | 8 | L22 | G89 | secondary fills of recut G88 of ditch G90 | | | | 138 | | 138 |
| V | 8 | L21 | G118 | secondary fills of timber tank G132 | 44 | | 69 | | | 113 |
| | 7 | L20 | G132 | primary fills of timber tank G132 | | | | | 47 | 47 |
| | 7 | L19 | G127 | upper fills of N spring hollow G121 | 63 | | | | | 63 |
| | 7 | L19 | G128 | colluvial deposits within S spring hollow G120 | | | | | 46 | 46 |
| IV | 7 | L16 | G44 | primary fills of building G44 | 205 | | | 145 | | 350 |
| | 6 | L15 | G103 | colluvial deposit | | | | 25 | | 25 |
| | 5 | L13 | G111 | occupation deposits sealing drying oven G108 | | | | 566 | | 566 |
| | 5 | L13 | G110 | destruction deposits of drying oven G108 | 3700 | | | | | 3700 |
| III | 5 | L12 | G108 | primary fills of drying oven G108 | | | | | 131 | 131 |
| II | 2 | L1 | G2 | secondary fills of pits G146 | | | | | 36 | 36 |
| | | **Total** | | | 4012 | 305 | 69 | 1050 | 296 | **5732** |

Table 2 Brick and tile seriation table (by weight). Unstratified, unphased and brick/tile in post-medieval features has been omitted

The majority of the assemblage is battered and abraded, and those fragments containing calcareous inclusions are leached.

*Discussion*

The majority of the diagnostic types comprise shell tempered forms of Roman date, the bulk of which (*c.* 4.3kg) are associated with the Period III drying oven G108. It is worth noting, however, that this material comprises only eight fragments, (including an incomplete brick weighing 3.7kg), and there is, therefore, no suggestion that Roman buildings with tiled roofs existed within the excavation areas. It is conceivable that the brick could have formed part of the oven superstructure, functioning as a cheek or cap associated with the main flue arch. One surface is differentially scorched, although it is unclear whether this occurred during the manufacturing process, or as a direct result of use within the oven. Extant dimensions (290mm wide by 33mm deep) suggest the brick is either a *pedalis* or *lydion* (Brodribb 1987, 36-7), although its incomplete nature precludes precise identification. The remainder of the assemblage derives from secondary fills of features.

## Daub and fired clay

*Introduction*

A total of 2862 fragments, weighing 69.93 kg were retained for analysis. An additional 9.44kg of miscellaneous daub and fired clay recovered from the drying oven G108 was assessed on site and subsequently discarded.

Four fabric types A to D were identified and are described in Appendix 3. Types A-C bear traces of

| Period | Phase | Landscape | Group | Group description | Type A | Type B | Type C | Type D | Total |
|---|---|---|---|---|---|---|---|---|---|
| | 9 | L25 | G95 | secondary fills of ditch G60 | 47 | | | | 47 |
| V | 9 | L25 | G61 | primary fills of building G61 | 61 | | | | 61 |
| | 7 | L20 | G46 | secondary fill of pit G109 | 54 | | | | 54 |
| | 7 | L18 | G122 | lower fills of S spring hollow G120 | 84 | | | | 84 |
| IV | 7 | L16 | G51 | primary fills of building | 5 | | | | 5 |
| | 6 | L15 | G103 | colluvial deposit | 2703 | | | | 2703 |
| | 6 | L7 | G140 | secondary fills of slots G21 | 84 | | | | 84 |
| | 6 | L7 | G139 | clay deposits | 55 | | | | 55 |
| | 6 | L7 | G19 | clay deposits | 147 | | | | 147 |
| | 6 | L7 | G17 | primary fills of pit G17 | 14 | | | | 14 |
| | 6 | L6 | G16 | secondary fills of boundary ditch G14 | 23 | 31 | 19 | | 73 |
| | 5 | L13 | G143 | secondary fills of pit G93 | 208 | 30 | | | 238 |
| | 5 | L13 | G111 | occupation deposits sealing drying oven G108 | 85 | | | | 85 |
| | 5 | L13 | G110 | destruction deposits of drying oven G108 | 46405 | 1047 | | | 47452 |
| | 5 | L12 | G108 | primary fills of drying oven G108 | 7141 | | | 8994 | 16135 |
| | 5 | L12 | G105 | colluvial deposits G105 | 25 | | | | 25 |
| | 5 | L5 | G14 | primary fills of boundary ditch G14 | 15 | 18 | | | 33 |
| | 5 | L4 | G149 | secondary fills of pit G18 | | | 56 | | 56 |
| | 5 | L4 | G18 | primary fills of pit G18 | 342 | 619 | | | 961 |
| III | 5 | L4 | G12 | primary fills of boundary ditch G12 | | | 128 | | 128 |
| | 4 | L3 | G138 | secondary fills of western part of boundary ditch G7 | 336 | | | | 336 |
| | 4 | L3 | G8 | secondary fills of trackway G3 & boundary ditch G7 | 121 | | 69 | | 190 |
| | 3 | L2 | G24 | single fill of ditch G23 | 3 | | | | 3 |
| | 3 | L2 | G7 | primary fills of recut boundary ditch G5 | | | 20 | | 20 |
| | 3 | L2 | G6 | secondary fills of boundary ditch G5 | 14 | | | | 14 |
| | 2 | L1 | G148 | secondary fills of pits G4 | | | 79 | | 79 |
| | 2 | L1 | G11 | primary fills of structure G11 | 3 | | | | 3 |
| | 2 | L1 | G4 | primary fills of pits G4 | 13 | | | | 13 |
| II | 2 | L1 | G2 | secondary fills of pits G146 | 102 | | | | 102 |
| | 1 | L9 | G56 | secondary fills of pits G55 | 23 | | | | 23 |
| I | 1 | L9 | G97 | secondary fillls of structure G69 | 69 | | | | 69 |
| | | **Total** | | | 58182 | 1745 | 371 | 8994 | **69292** |

Table 3 Daub and fired clay seriation table (by weight). Unstratified, unphased and daub/fired clay in post-medieval features has been omitted

organic matter, presumably added during preparation to strengthen and bind the clay. These are most frequent in the coarser fabric A. Occasional distinct grain impressions are also present on the surfaces of many fragments.

*Discussion*

The incidence of daub and fired clay is presented in Table 3. Approximately 86% of the total assemblage derived from excavation Area B, and is associated with the construction/use (16.1kg) and destruction (44.6kg) of the drying oven G108. The upper fills G143 (L13) of adjacent pit G93 produced 238g of clay fragments and are probably derived from the drying oven.

Small quantities of daub and fired clay, predominantly of fabric type A, were recovered from the fills of structural features associated with farmsteads L1 (Phase 2), L16 (Phase 7) and L25 (Phase 9). The remainder of the assemblage derived largely from ditch fills across all periods, and cannot be directly associated with the use of these features.

*Drying Oven*

The base and lower walls of the oven were made from untempered natural clay (fabric type D). By contrast the upper portion of the *in situ* wattle and daub walls was constructed almost entirely using fabric type A; small quantities of fabric type B also occurred. This specific use of fabrics indicates that organic tempering was considered unnecessary for flooring, but provided a useful addition to the wall fabric, increasing the binding and adherence qualities of the material.

Most of the larger daub fragments retain impressions of circular wattles and/or squared pieces of timber, which range in size from 25-30mm in fragments of fabric type A and 10-15mm in fragments of fabric type B. This distinction between wattle dimensions, coupled with the differentiation between the rough, uneven surfaces of daub in type A and the smoother, higher quality of those in type B, may suggest the use of the latter for more delicate, finishing work.

Eleven fragments have finished edges, which represent either the top or bottom of a wall. One has the impression of a brace running behind and at right angles to a thinner wattle, while the second shows impressions of a pair of parallel struts of approximately 10mm diameter, although their orientation is uncertain. A single fragment appears to bear impressions of thin vertical beams and two horizontal braces.

Fragments of fired clay with gently curving outer surfaces are similar to those recovered from hearth linings, and may be the remnants of a clay lining to the sub-structure.

The remaining fragments lack finished edges. However, the majority have one finished surface - the oxidised external wall face, with wattle impressions on the reduced sides and reverse. A single fragment displays two alternately oxidised and reduced layers, each approximately 30mm thick, indicating rebuilding or repair of the structure.

Evidence of scorching and the carbonised remains of roundwood wattles on the daub are likely to relate to the accidental destruction of the oven, rather than an isolated drying episode.

## OTHER ARTEFACTS

Jackie Wells incorporating reports by Quita Mould (leather), Carole Morris (wood) and David Williams (petrology).

### Introduction and methodology

Excavation produced sixty registered artefacts, thirty-five iron nails and 479g of ferrous metalworking debris (Table 6).

These artefacts were assigned broad terms and functional categories, in accordance with the Bedfordshire Artefact Typology. Catalogue entries are given only in cases where the artefact is typologically datable or of intrinsic interest (see 3.3.11). Unstratified finds deriving from ploughsoil, and those artefacts whose date range places them beyond the scope of this article are not included. Full details of these objects are contained within the site archive.

All iron objects were submitted for X-radiography; the X-ray plates and assessment cards form part of the site archive. Leather shoe RA 54 was selected for stabilisation treatment and was subsequently freeze-dried to allow examination and illustration of the object.

### Nails and staples

Thirty-five iron timber nails and nail fragments, and an iron staple RA 8 were recovered. Staples were used to hold together adjacent pieces of wood and to reinforce joints in timbering. They are a long-lived form, and are well attested from sites of Roman, medieval and post-medieval date. However, the association of RA 8 with a quantity of Roman pottery suggests that the find may be dated to this period. Comparative Roman examples are known from excavations at Gorhambury (Neal et al. 1990, Fig

| Period | Phase | Lndscpe | Group | Group description | Artefact summary |
|---|---|---|---|---|---|
| VI | 11 | L8 | G25 | fills of furrow G25 | fe nail x1 |
| | 9 | L25 | G95 | secondary fills of boundary ditch G60 | fe horseshoe (**22**), fe shoeing nail x1 |
| | 9 | L25 | G81 | secondary fills of boundary ditch G80 | fe knife (**46**), ca waste (**2**) |
| | 9 | L25 | G61 | primary fills of building G61 | quern (**44**) |
| | 8 | L24 | G106 | colluvial deposits | fe nail x1 |
| | 8 | L22 | G89 | secondary fills of boundary ditch G88 | leather shoe (**54**) |
| | 8 | L21 | G131 | colluvial deposits sealing timber tank G132 | pb disc (**17**) |
| V | 8 | L21 | G118 | secondary fills of timber tank G132 | ca coins (**35** & **37**), fe nail x1 |
| | 7 | L19 | G130 | colluvial deposits | quern (**53**) |
| | 7 | L19 | G127 | upper fills of N spring hollow G121 | quern (**52**), wooden spade (**41**), primary leather waste (**55**), leather shoe fragments (**36 38**, **39**, **42**, **43**) |
| | 7 | L19 | G126 | destruction of hurdles G125 | wooden ?cattle goad (**59**) |
| | 7 | L19 | G123 | upper fills of S spring hollow G120 | leather shoe frags (**30**, **31**) |
| | 7 | L18 | G125 | wooden hurdles G125 | leather shoe (**57**) |
| | 7 | L17 | G120 | primary fills of S spring hollow G120 | fe nail x 1 |
| IV | 7 | L16 | G45 | secondary fills of building G44 | fe nail x 1 |
| | 6 | L7 | G19 | clay deposits | fe staple (**8**), fe nail x 1 |
| | 6 | L6 | G16 | secondary fills of boundary ditch G14 | quern (**10**), whetstone (**6**) |
| | 5 | L13 | G110 | destruction deposits of drying oven G108 | whetstone (**61**), fe nails x 17 |
| | 5 | L12 | G108 | primary fills of drying oven G108 | millstone (**24**), fe nails x 9 |
| III | 5 | L4 | G149 | secondary fills of pit G18 | ca brooch (**3**) |
| | 4 | L3 | G8 | secondary fills of trackway G3 & boundary ditch G7 | ag coin (**4**) |
| II | 2 | L1 | G148 | secondary fills of pits G4 | ca waste (**7**), fe nail x 1 |

Table 4 Summary of other artefacts. Bold figures denote registered artefact number

137) and Baldock (Stead and Rigby 1986, Fig 68).

Twenty-six of the timber nails were recovered from the Phase 5 drying oven G108. Four bore traces of charcoal and mineral-preserved wood. These probably derived from a timber floor within the oven. It was possible to classify 23 examples according to head form (Table 5), after Manning (1985). The remainder were too fragmentary, corroded or distorted through use to be positively identified. The majority of the nails comprise examples of Type 1B, measuring, on average, 90-95mm in length. This is consistent with the incidence of nail types on other sites of Romano-British date, where this form is most prevalent, reflecting their general usefulness.

| Nail type | Description | Quantity |
|---|---|---|
| 1A | Conical/pyramidal head | 1 |
| 1B | Flat, round, square or rectangular head | 20 |
| 4 | Flat-headed, rectangular off-set | 2 |
| Unclassified | Shank only | 12 |
| | | **35** |

Table 5 Nail types

Head types are a combination of round, square and rectangular shape. All have square or rectangular sectioned shanks, tapering towards the tip, which are predominantly rounded, although a single wedge-shaped example was noted. Three shanks are clenched, indicating use. Additionally, two nails with flat, rectangular off-set heads (type 4) were recovered. The latter is a relatively rare form, which could be driven into wood almost concealing the head.

### Quernstones

Fragments of at least four rotary querns RA 10, 44, 52 and 53 and one millstone RA 24 were recovered. Quern RA 52 was made from ferruginous sandstone which was probably obtained locally. On the basis of King's work (1986, 86), the Millstone Grit quernstone (RA 10) and millstone (RA 24) probably originated in the Yorkshire/Derbyshire area.

RA 44 and 53 are manufactured from imported material deriving from either the Mayen quarries of Germany, or from French lava outcrops found near Volvic (King 1986, 94). During the Roman period there was considerable trade with Britain, which although ceasing in the early Saxon period, was well established again by the 9th/10th century and continued throughout the medieval period (Crummy 1983, 75). Although distinct date ranges, based on form, have been recognised (King 1986, 95), it has been impossible, due to the incomplete nature of the

examples, to determine the date of these fragments. Their recovery in association with pottery of Roman and Saxo-Norman date (RA 53 and 44 respectively), may suggest that they derive from these periods, although this cannot be demonstrated with any certainty. Although the quernstone and millstone fragments were recovered from Roman, Saxo-Norman and early medieval periods they were all found within *c.* 30m of the Roman drying oven G108. It is possible, therefore, that they derived from activity associated with this oven.

## Crafts and industry

*Metalworking residues*

A small quantity (total weight 479g) of ferrous slag and vitrified clay hearth lining was recovered. The former, comprising amorphous, highly vesicular fragments of iron silicate, is not indicative of a particular type of ironworking: neither are the remains of hearth lining. Both may represent the debris from either iron smelting or smithing processes. Material clearly indicative of the latter, however, consists of two portions of plano-convex hearth bowls and a small quantity of flake hammerscale, the latter dislodged by mechanical or thermal shock during hot working. The former are both approximately 75mm in diameter, and range between 15mm and 34mm in depth.

The bulk of the assemblage derived from early Roman features associated with L7 (Phase 6). None of the metalworking residues were recovered *in situ*, having been redeposited within external dumps and the fills of ditches and pits. This secondary redeposition of material is not uncommon, presumably resulting from the periodic cleaning of hearths and surrounding areas.

*Non-ferrous metalworking debris*

Two amorphous copper alloy waste fragments (RA 2 and 7) provide minimal evidence for the working of non-ferrous material. Given the absence of crucibles or moulds at the site, they may represent the reworking of material, or repairs and alterations to copper alloy products manufactured elsewhere.

### Multi-purpose

Multi-purpose implements are extremely common on sites of all periods, and for this reason, are largely undatable. Whittle tang knives like RA 46 are known to have been used throughout both the Roman and medieval periods. It is too fragmentary to allow recognition of blade form, and consequently cannot be classified. Whetstone fragment RA 6 is an example of a primary hone, deliberately quarried and traded probably from the Forest of Dean, Bristol and South Wales regions. In contrast, RA 61 is a secondary hone in that it happened to possess honing properties, but was not specifically quarried or imported for this purpose (Moore 1978, 65). It is likely to have been obtained from local formations.

### Coins

Of the three coins recovered, RA 4 is medieval and therefore intrusive within 'Belgic' Iron Age/Early Roman deposits L3 (infilling of trackway/boundary L2, Phase 4). Roman coins RA 35 and RA 37 are residual within the infillings G118 of 11th century timber tank G132 (L20, Phase 7).

### Horseshoe

Based on the classifications devised by Clark (1995), RA 22 is a type 2A, 'Norman' horseshoe. These 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. Horseshoes of this type are well attested from excavations in London, where examples were recovered from contexts dating from *c.* AD1050-1150 (Clark 1995, 96).

| Period | Phase | Landscape | Group | Description | Total wgt (g) |
|---|---|---|---|---|---|
| II | 2 | L1 | G148 | Ferrous slag | 28 |
| | 4 | L3 | G138 | Hearth lining | 10 |
| III | 5 | L5 | G14 | Ferrous slag | 6 |
| | 6 | L7 | G19 | Ferrous slag (258g); hearth lining (48g) | 306 |
| | 6 | L7 | G139 | Ferrous slag (98g); hearth lining (21g) | 119 |
| IV | 7 | L17 | G120 | Ferrous slag | 1 |
| | 7 | L19 | G127 | Hearth lining | 9 |
| | | | | | **479** |

Table 6 Metalworking residues

**Personal adornment**

*Brooch*

Langton Down brooch RA 3 represents one of the less numerous brooch forms in use during the 1st century AD in this country. The type distribution is restricted almost entirely to eastern and southern England (Olivier 1988, 45). Langton Down brooches occur mainly in deposits of *c.* AD43-63, as at Baldock, Herts (Stead 1986, 113) and Gorhambury, Herts (Neal et al. 1990, 117), although some examples are known to derive from pre-conquest contexts, as at King Harry Lane, St Albans (Stead and Rigby 1989, 17).

*Shoes*

With the exception of RA 54 recovered from fill G89 of boundary G88 (Saxo-Norman/early medieval Period V), all the leather shoe fragments were recovered from waterlogged deposits associated with the Saxo-Norman spring hollows G120 and G121 (L18 and infilling L19, Period IV). In addition to those given registered artefact numbers, other highly fragmentary shoe remains and a piece of primary waste (hide edge) were also recovered from Period IV deposits.

Dating of the assemblage is problematic due to the highly fragmentary nature of the shoe components. RA 30 is believed to be a Roman shoe of nailed construction and is therefore residual. The remaining fragments, with the probable exception of RA 54 (see below), are believed to date to the late Saxon or Saxo-Norman periods. Distinguishing characteristics include large circular stitch holes indicative of the use of woollen thread (RA 38 and 43) and the use of fine thonging to sew a side seam (RA 43). A fragment of very narrow rand (RA 42) was also recovered, a feature observed on turnshoes from the Sutton Hoo ship burial (East 1983, 788ff) and also noted on two shoes of 10th century date from the

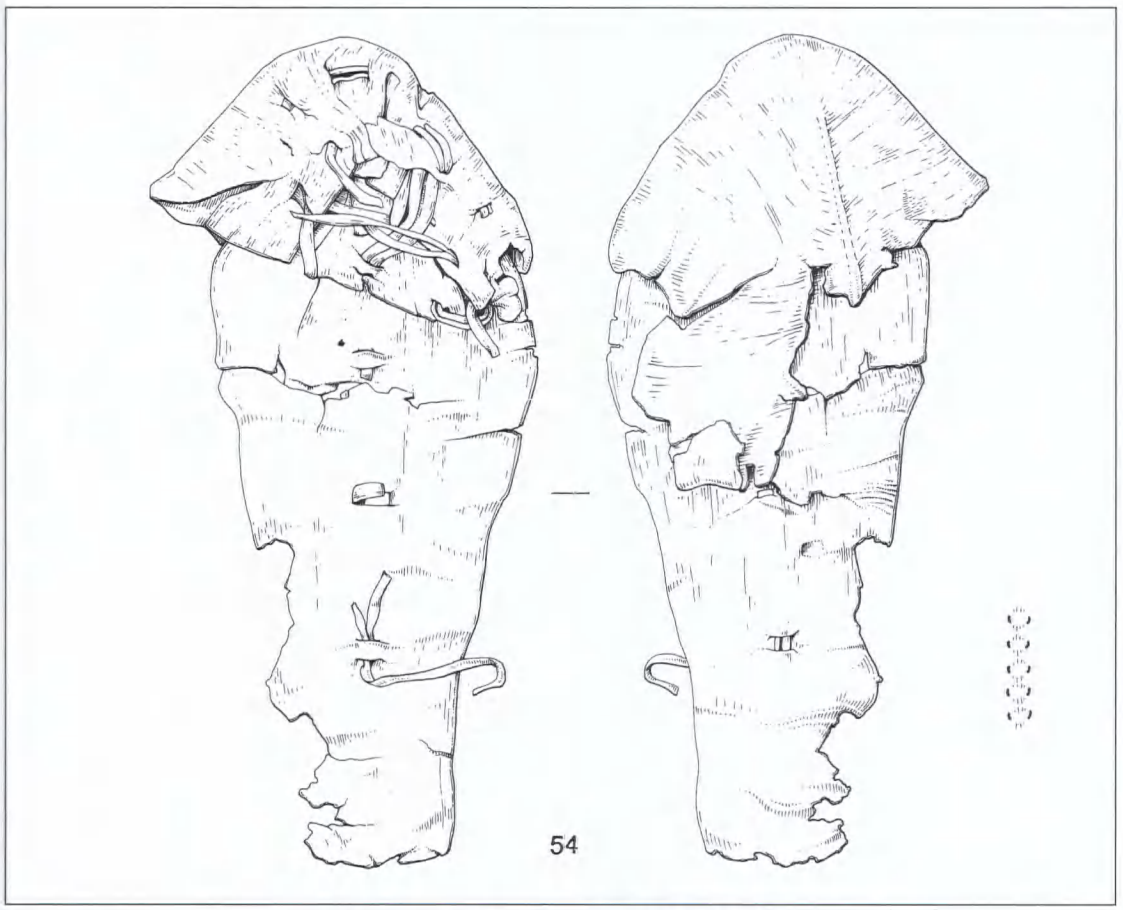


Figure 21 Leather shoe (RA 54) (scale 1:2)

City of London (Pritchard 1991, nos. 271 and 279).

RA 54 (Fig 21) is of particular interest as it is of Roman shoe construction with a decorative technique on the vamp first seen on shoes of late Roman date and occurring subsequently on Saxon and later footwear. The multi-part bottom unit, comprising a separate insole, middle and sole is a commonly found Roman construction. Although the insole showed no obvious signs of nailing, the attachment of the insole and middle by constructional thonging running vertically down the centre, suggests that the shoe was originally of nailed construction, rather than stitched. The attachment of the upper to separate bottom unit components by simple 'running' thonging along the edge was used on Roman shoes of stitched and of nailed construction. (*c.f.* a nailed shoe from late 3rd/4th century well deposits at Dalton Parlours, Yorks. (Mould 1990, 231 Fig 142/11). The sewing of the upper to the sole by narrow thongs was also common on Saxon footwear of turnshoe construction though different types of stitching were employed. The use of similar, simple, running thonging was used to attach clump sole repairs.

The vamp had a line of paired slits running vertically toward the toe. These slits are the remains of a decorative embroidered toe stripe. In England embroidered toe stripes are more frequently found on turnshoes of 10th-12th century date, see for example, those from London (Pritchard 1991, 218, 232), and are commonly represented in English figurative art of the period. Amongst the earliest known toe stripes are those found on turnshoes from Sutton Hoo (East 1983, 794 Fig 520, 573, shoes 2 and 4). The use of a decorative stitched toe stripe on shoes of Roman date is extremely rare, but not unparalleled. An example occurred on a shoe of nailed construction recovered from a late Roman pit fill at Rectory Farm, West Deeping (WED94 (40662), tag 201044, Mould in prep.), associated with Roman pottery post-dating AD250. This fragmentary shoe shares several construction characteristics with RA 54. A shoe from a mid-4th century deposit at Portchester (Ambrose 1975, 250/267 and Fig 133) may be a more complete example; the slightly ambiguous description suggests that the line of stitching present running up the vamp may not have been functional. A single line of tunnel stitching down the front of the vamp, thought to be decorative, occurred on an unstratified shoe of Roman date recovered at Bancroft, Bucks. (Swann 1994, 365 and Fig 188/409).

It is interesting to note here, that a turnshoe with a round-toed vamp with stitching from a double toe stripe, recovered from Swan Lane in the city of London (Pritchard 1991, 218 and Fig 3.103), was associated exclusively with Roman pottery. This shoe was attributed to the 10th century on stylistic grounds, though it could be of earlier date.

The decorative stitched toe stripe could be considered as a skeuomorphic representation of the central toe seam commonly found on shoe uppers of Roman date. The line of decorative thonging running down the vamp from throat to toe noted on two shoes deriving, respectively, from the backfill of 4th century wells at Skeldergate, York (MacGregor 1978, 31 Fig 28/353), and Piddington, Northants. (Friendship-Taylor 1997), is apparently in the same decorative tradition.

RA 54 derives from a deposit of Saxo-Norman date, and bears a decorative toe stripe commonly found on shoes of this period. However, the construction technique, comparable decoration on a small number of late Roman shoes from southern England and the presence of a probable Roman shoe RA 30 as a residual find, suggest that RA 54 is Roman. It probably dates to the 4th century, and certainly no earlier than the mid-3rd century.

(Note – this report submitted in 1995).

**Spade handle**

Typologically, the fragment of wooden spade/shovel handle RA 41 (Fig 22) appears to be a triangular-enclosed type, known to have been in use during the Saxon and medieval periods (Edlin 1949, Fig 3.6c). For strength, however, it would have required a separate cross-piece to link the ends of the arms into a triangle.

There are no other documented archaeological examples of triangular-enclosed handles such as RA 41. The handle form is, however, depicted in various representations and manuscripts, and occurs on both spades and shovels. Figures using these implements can be seen on two 11th century representations: 'Aelfric's Paraphrase of the Pentateuch and Joshua' (BL Cotton Claud. B IV fol 22v), and the Bayeux Tapestry (Wilson 1985, 12). An early 12th century manuscript 'The Chronicle of John of Worcester' (CCCO MS 157 fol 382) depicts the same handle type, and there are later medieval illustrations which show the form to be long-lived.

(Note – this report submitted in 1996).

**Objects of unknown function**

*Wood*

Object RA 59 (Fig 22) was recovered from fills G126 associated with hurdle structure G125 (Period IV) suggesting it may have been re-used as a sail.

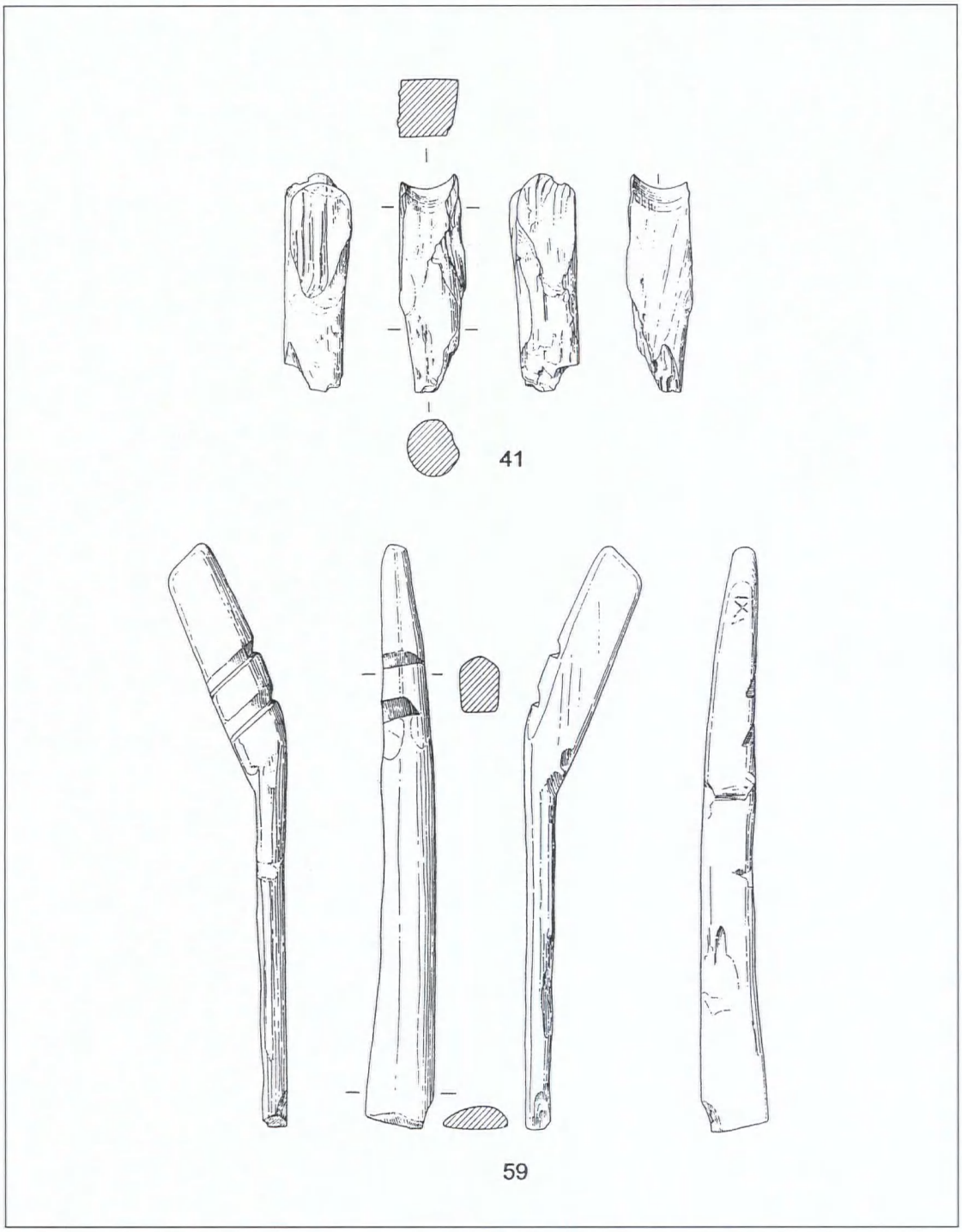


Figure 22 Wooden spade/shovel handle (RA 41) and wooden implement (RA 59) (scale 1:4)

The precise function of RA 59 remains unclear, although a possible use may have been as a cattle switch or goad. The pliable nature of the shaft, attained by the use of young hazel (*c.* 5 years old) and the shaped handle would make the object ideal for this purpose. Subsequent re-use of the object within the wattle hurdle reflects a common practice, and is paralleled by the recovery of a re-used wooden shovel within a hurdle structure from excavations at Saddler Street, Durham (Carver 1979, 24-6, Fig 16; Morris 1980, 206, Fig 2d).

*Lead*

The form of RA 17 is broadly comparable with those of disc-shaped weights, used in conjunction with scale pans and it is possible the object may be a degraded example.

## Catalogue

The catalogue is organised by registered artefact number (only those objects relevant to this publication are listed). The coding which prefixes each entry contains the following information:

| 51 | G108 | L20 | Phase 3 | Period III | no. 1 |
|---|---|---|---|---|---|
| registered artefact no. | group | landscape | phase | period | illustration no. |

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

**RA 2** G81, L26, Phase 10, Period VI. *Copper alloy waste fragment.* Amorphous lump of cast material. Weight 16g.

**RA 3** G149, L4, Phase 5, Period III. *Copper alloy Langton Down brooch.* Camulodunum Type XII. Fragments of spring, cylindrical housing and upper part of reeded bow with a convex, curved head. Poorly preserved and extremely fragile. Length 13.7mm.

**RA 4** G8 (G3), L3 (L2), Phase 4, Period II. *Silver coin.* Henry III, Long-Cross penny 1247-1272, Class III.

**RA 6** G16 (G14), L6 (L5), Phase 6, Period III. *Pennant Sandstone whetstone.* Dark grey in colour and medium-grained in texture, containing quartz and micaceous grits. Sub-rectangular in shape and section, broken at both ends. Surfaces smoothed through use, one bearing a series of striations towards the broken end. Deep, angled sharpening grooves run along both edges. One edge is markedly dished. Length 54.2mm, width 47.3mm, thickness 18.1mm.

**RA 7** G148, L1, Phase 2, Period II. *Copper alloy waste fragment.* Highly corroded strip fragment. Length 15.1mm.

**RA 8** G19, L7, Phase 6, Period III. *Iron staple.* Incomplete L-shaped, square sectioned bar, probably part of a staple or small timber dog. Length 36.9mm.

**RA 10** G16 (G14), L6 (L5), Phase 6, Period III. *Millstone Grit rotary quern.* Indeterminate fragment with a worn, burnt grinding surface and a roughly pecked surface and part of outer edge. Weight 1.1kgs, max. thickness 70mm, est. dia 300mm.

**RA 17** G131, L21, Phase 8, Period V. *Lead disc.* Crudely formed, sub-rounded disc with one surface slightly bevelled. Dia 16.6mm, thickness 6.3mm, weight 11.7g.

**RA 22** G95 (G60), L25 (L22), Phase 9, Period V. *Iron horseshoe.* Incomplete branch of type 2A shoe with lobate outer edge and three circular nail holes which have oval/rectangular countersinking. A single shoeing nail of fiddle-key type recovered from the same context is likely to be associated with the horseshoe. Length 80.7mm.

**RA 24** G108, L12, Phase 5, Period III. *Millstone Grit millstone.* Portion of lower stone with part of central feeder surviving. Surfaces roughly dressed by pecking. The outer edge does not survive. Max. thickness 105mm, est. dia > 110mm.

**RA 30** G123 (120), L19 (L17), Phase 7, Period IV. *Leather shoe fragments.* Bottom unit of nailed construction, comprising a middle and middle packing, with a fragment of the upper lasting margin. The latter is thonged to the edge of the middle packing. The middle has constructional thonging of type 1 running in a central line, thong width 3.0mm. A number of small hobnails are present, each with a head diameter of 9.0mm.

**RA 31** G123, L19, Phase 7, Period IV. *Leather scrap fragments:* Four irregularly shaped calfskin scraps, two of which have a cut edge. Length (largest fragment) 35mm.

**RA 35** G118 (G132), L21 (L17), Phase 8, Period V. *Copper alloy coin.* ?late Roman, illegible.

**RA 36** G127 (G121), L19 (L17), Phase 7, Period IV. *Leather shoe fragments.* Nine+ fragments.
**A** Three pieces, (two joining) of possible shoe sole with fine grain/flesh seam, stitch length 5.0mm. Stitch holes are figure-of-eight form, suggesting the seam had been sewn with either two threads or using a back stitch. Length (largest joining fragments) 30.0mm, width 62.0mm.
**B** Narrow, folded binding, width 4.0mm, with a grain/flesh seam, stitch length 4.0mm.
**C** Two fragments of ?upper or clump repair, one with fine thonging present in one corner. Length a) *c.* 100 x 62mm, b) *c.* 80 x 53mm.

**RA 37** G118 (G132), L21 (L17), Phase 8, Period V. *Copper alloy coin.* 4th century, illegible.

**RA 38** G127 (G121), L19 (L17), Phase 7, Period IV. *Leather shoe fragments.* Ten+ pieces of turnshoe upper, including two with a line of grain/flesh stitching with a scored line running parallel, possibly a lasting margin. The stitch holes are round and relatively large, stitch length 8.0mm, suggesting original stitching with a woollen thread. Length (largest fragment) 58.0mm.

**RA 39** G127, L19, Phase 7, Period IV. *Leather shoe fragments:* Nine pieces of upper, two of which bear stitching from a grain/flesh seam. The leather is worn and compacted. Length (largest fragment) 30.0mm.

**RA 41** G127 (G121), L19 (L17), Phase 7, Period IV, Fig 22. *Wooden spade/shovel handle.* Fragment of a composite handle of willow (*Salix* sp.), made from either a radially or tangentially split section from a sizeable tree. In its original form, the handle would have been Y-shaped, with a circular cross-sectioned shaft surmounted by bifurcating arms of oval cross-section, the terminals of the latter joined by a linking cross-bar. The shaft would probably have terminated in a carved, single piece blade. Extant remains of the Haynes Park example are limited to a small portion of the shaft. The original surface at the base of the Y is rounded and smoothly polished, and the surfaces at the junction of the shaft and arms are cut flat, indicating that the tool was carefully made and finished. Length 83.0mm, width 32mm, dia (shaft) 27.0mm, arm cross-section *c.* 52x27mm.

**RA 42** G127, L19, Phase 7, Period IV. *Leather shoe fragments.* Portion of turnshoe upper of worn ?calfskin, and numerous undiagnostic fragments, including a very fine rand 3.0mm wide. Length (upper fragment) 76.0mm.

**RA 43** G127 (G121), L19 (L17), Phase 7, Period IV. *Leather turnshoe fragments.*
**A** Small piece of clump sole repair with tunnel stitching on the flesh side along the remaining original edges.
**B** Fragment of worn calfskin upper quarters area with a closed grain/flesh seam.
**C** Piece of worn calfskin upper with a butted edge/flesh seam and a closed grain/flesh seam. The latter has large, round stitching, suggesting the use of a woollen thread.
**D** Six miscellaneous fragments, two with evidence of fine thonging. One fragment with a butted edge/flesh seam retains a thong *in situ.* Thong width 2.0mm, thong slots 8.0mm apart.

**RA 44** G61, L25, Phase 9, Period V. *Lava rotary quern fragments.* Seven abraded, irregularly-shaped, indeterminate fragments, none of which join or retain any trace of original surfaces. Weight 65gms.

**RA 46** G81 (G80), L26 (L25), Phase 10, Period VI. *Iron knife.* Fragment of whittle tang knife blade, the surfaces of which bear traces of carbonised organic material. Length 63.8mm.

**RA 52** G127 (G121), L19 (L17), Phase 7, Period IV. *Ferruginous sandstone rotary quern.* Abraded fragment of upper stone with worn and eroded surfaces, occurring as a result of deposition in waterlogged conditions. Weight 2.0kgs, max. thickness 48mm.

**RA 53** G130 (G121), L19 (L17), Phase 7, Period IV. *Lava rotary quern fragments.* Two sub-rectangular conjoining fragments of upper stone, which retain a worn grinding surface and a roughly pecked upper surface and part of the outer edge. Weight 363gms, max. thickness 24mm, est. dia. 560mm.

**RA 54** G89 (G88), L22, Phase 8, Period V, Fig 21. *Leather shoe.* Worn calfskin insole for the left foot with an oval toe, medium tread tapering to the waist and seat. There is no distinct waist and the seat shape is unknown as it is torn away. The insole has constructional thonging of type 1 running vertically down the centre, thong width 3.0mm. Insole length *c.* 222mm, tread width 82.0mm, and waist width 58.0mm.

The toe area and part of the vamp of the upper are *in situ,* no upper seams remain and all edges are torn away, although sufficient remains to indicate a closed upper of heavily worn sheep/goatskin. On the vamp, running vertically from the toe towards the throat, is a line of paired small incisions from a single decorative, embroidered stripe. The incisions occur only in the upper face of the leather and do not penetrate to the interior, flesh, side.

The upper lasting margin is preserved at the toe. It has been folded under the insole, causing it to be pleated under the oval toe and braced together from one side to the other with narrow thonging 3.0mm in width. A fragment of the middle present at the toe, is held to the insole by the vertical constructional thonging. The lasting margin of the upper overlies this and, therefore, was originally sandwiched between the middle and the sole.

Running along the edge where the upper has been folded over the insole, is a line of fine thonging by which the sole was originally attached. A small, delaminated fragment of the sole can be seen attached to the thonging at the toe.

**RA 55** G127, L19, Phase 7, Period IV. *Leather primary waste.* Undiagnostic, folded fragment of hide edge. Length 34.0mm.

**RA 57** G125, L18, Phase 7, Period IV. *Leather shoe fragment.* Portion of worn shoe upper with lasting margin, stitch length 5.0mm, edges cut and torn away. Length 67.0mm.

**RA 59** G126 (G125), L19 (L17), Phase 7, Period IV, Fig 22. *Wooden implement.* Hazel (*Corylus* sp.) ?handled tool, made from a naturally curving branch, deliberately selected to allow the tool to be fashioned in one piece. Roundwood handle, cut and shaped to a sub-rounded cross-section, with smooth, flat sides and an angled, flat cut terminal, set at an angle of 155 degrees to the shaft. Two deeply incised, asymmetrical V-shaped notches 4mm deep (?finger grips) are cut into one side, and, if held in the right hand, the upper surface of the handle. The handle has broken across one of the grooves. A small incised X bounded by two incised lines, possibly representing an owner's mark, is cut into the lower edge of the handle approximately 20mm from the end. The surfaces of the handle are darkened and polished/smoothed as if by constant use. The slightly tapering shaft has a D-shaped cross-section and in its original form, may have measured up to 535mm in length. Present length (handle) 115mm, (shaft) 273mm, width (shaft) 30mm, thickness (shaft) 11-12mm, (head) 29x19mm.

**RA 61** G110 (G108), L13 (L12), Phase 5, Period III. *Jurassic Limestone whetstone.* Light grey in colour and fine-grained in texture. Sub-rectangular in shape and section with smooth/polished surfaces through use. Length 31.9mm, width 22.4mm, thickness 18.7mm.

## ECOFACTUAL EVIDENCE

The investigations produced assemblages of animal bone (hand collected and from environmental samples), waterlogged wood and charred plant remains (from environmental samples). A multi-disciplinary study into evidence for land-use history at the site was also undertaken. Samples were taken to recover waterlogged plant and insect remains; unfortunately, due to incorrect processing, no material of analytical value was recovered. Material with high analytical potential is presented in detail here. Otherwise, the

assessment reports are in the site archive.

ANIMAL BONE
Mike Luke based on assessment by Tony Roberts

**Introduction**
The small size of the animal bone assemblage from each chronological period severely restricted the potential for analysis to provide meaningful and reliable conclusions concerning the exploitation of animal resources at the site. The fragmentation and surface erosion of the bone resulted in loss of ageing, metrical, butchery and gnawing data. It also left a high proportion of unidentifiable material, further reducing the analytical potential of the material.

No detailed analysis was undertaken; the following discussion is based on the assessment report.

**Summary discussion**
A total of 130 animal bone fragments were recovered (113 from the chronological periods that are the subject of this article) weighing *c.* 13.5kg. The bulk (93%) of the assemblage was recovered from Period IV and V (Saxo-Norman/early medieval) deposits, principally from spring hollow G120 (Phase 7).

The Iron Age and Roman assemblage is too fragmentary for identification. Cattle and to a lesser extent pig and horse were the dominant species within the Saxo-Norman and early medieval periods. This is fairly typical of a rural settlement of this time, although the small number of sheep bones may be significant. Butchery marks, usually made by knives, occur mainly on cattle bones but occasionally on horse bones. Evidence for gnawing occurs in most periods mainly on cattle and pig bones.

CHARRED PLANT REMAINS
Mark Robinson

**Introduction**
Extensive sampling was undertaken for charred plant remains during the investigations resulting in 114 samples. These were deliberately taken from a range of feature types and spatial/chronological locations. The samples were floated onto a 0.5mm mesh and dried. Following assessment twenty flots, sub-sampled as necessary, were subject to detailed analysis on the basis of significant charred plant or wood remains. Nine were from Roman deposits (Period III), eight from Saxo-Norman deposits (Period IV) and four from early medieval deposits (Period V). The results are given in Tables 7-10. Nomenclature follows Clapham et al. (1987).

**The Roman charred plant remains (Period III)**
Two samples from Area A (pit G18 and ditch G14) and six from Area B (all from or associated with drying oven G108) were analysed in detail (Table 7 and Table 8).

*Crops (Table 7)*

Area A
Samples 21 (pit G18, L4) (ditch G14, L5) and 22 (ditch G14, L5) both contained waste apparently derived from the weed seed cleaning and de-husking of spelt wheat. Apart from a very slight presence of six-row hulled barley (sample 21), all the cereal remains could have been from spelt wheat (oats being regarded as a weed because these are Roman deposits). Hulled wheat glumes outnumbered cereal grains by a factor of ?5 in sample 22 and a factor of ?1.3 in the much smaller assemblage from sample 21. Allowing that chaff is more vulnerable to complete combustion than grain, the remains probably represented material that was very rich in chaff.

None of the grain had germinated, which suggests that grain was being de-husked and cleaned prior to milling for flour rather than that the material was from the cleaning of malt.

Area B
Samples 2 and 9, from the lower fill of the main flue of the drying oven G108 (L12), contained little charred grain or charred wood and this deposit was probably ash from burning under almost fully oxidising conditions. There was, however, a grain-rich layer from the base of the inner chamber dominated by spelt wheat and possible spelt wheat (sample 12). Cereal grain predominated in this sample and outnumbered hulled wheat glumes by a factor of ?18. Many of the better preserved grains of wheat had compressed ventral surfaces and glume impressions along their length, suggesting that they had been charred while they were still tightly enclosed in their spikelets. Allowing again for chaff being more vulnerable than grain to complete combustion, it is possible that these samples represent the accidental burning of spelt spikelets (clusters of grains in their glumes) that were being parched in the oven.

In contrast, flots from a nearby deposit F169 (sample 3 analysed in detail and sample 4 assessed only) were dominated by glumes of spelt and emmer or spelt wheat, which outnumbered the grain by a factor of over ?3. No sprouted grains were observed. This material probably represents the burning of waste from the parching of spelt wheat spikelets in

| | | | Area A | | Area B | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | **Sample** | **21** | **22** | **2+9** | **12** | **3** | **5** | **11** |
| | | **Group** | G18 | G14 | G108 | G108 | G108 | G143 | G110 |
| | | **Group description** | pit | ditch | use of drying oven | | | destruction of drying oven | |
| | | | | | main flue | inner chamber | spread F169 | pit G93 | inner chamber |
| | | **Landscape** | L4 | L5 | L12 | L12 | L12 | L13 | L13 |
| | | **Sample volume (litres)** | 10 | 10 | 10 | 1.25 | 4 | 2.5 | 4 |
| **Cereal Grain** | | | | | | | | | |
| *Triticum spelta* L. | | spelt wheat | 2 | 14 | 3 | 187 | 29 | 112 | 21 |
| *Triticum* sp. | | wheat | 5 | 53 | 4 | 287 | 72 | 188 | 45 |
| *Hordeum vulgare* L. | - hulled lateral grain | six-row hulled barley | 1 | - | - | - | - | - | - |
| *Hordeum* sp. | - hulled median grain | hulled barley | 1 | - | - | - | - | - | - |
| *Hordeum* sp. | - hulled | hulled barley | - | - | - | 1 | 1 | - | - |
| cereal indet. | | | 18 | 36 | 6 | 498 | 103 | 475 | 115 |
| **Total cereal grain** | | | **27** | **102** | **13** | **973** | **205** | **775** | **181** |
| **Cereal Chaff** | | | | | | | | | |
| *Triticum* cf. *dicoccum* Shubl. | - glume base | emmer | - | - | - | - | 1 | - | - |
| *Triticum spelta* L. | - glume base | spelt wheat | 13 | 331 | 1 | 25 | 238 | 37 | 3 |
| *T. dicoccum* Shubl. or *spelta* L. | - glume base | emmer or spelt wheat | 22 | 184 | 1 | 28 | 426 | 72 | 22 |
| *Triticum* sp. | - rachis | wheat | 1 | 17 | 1 | - | 16 | 2 | - |
| *Hordeum* sp. | - rachis | barley | 1 | 1 | - | - | - | - | - |
| *Avena* sp. | - awn fragments | oats | - | 1 | - | - | - | 1 | - |
| **Total chaff excluding awn fragments** | | | **37** | **533** | **3** | **53** | **681** | **111** | **25** |
| **Weed Seeds** | | | | | | | | | |
| *Stellaria media* gp. | | chickweed | 5 | 1 | - | - | 1 | - | - |
| Caryophyllaceae indet. | | | - | 1 | - | - | - | - | - |
| *Chenopodium album* L. | | fat hen | 3 | - | - | - | - | - | - |
| *Atriplex* sp. | | orache | - | 1 | - | - | - | - | - |
| Chenopodiaceae indet. | | | - | - | 1 | - | - | - | - |
| *Malva sylvestris* L. | | common mallow | - | 18 | - | - | - | - | - |
| *Vicia* or *Lathyrus* sp. | | vetch or tare | 2 | - | - | 3 | 2 | - | 1 |
| cf. *Medicago lupulina* L. | | black medick | - | 2 | - | - | - | - | - |
| *Aphanes arvensis* agg. | | parsley-piert | 1 | - | - | - | - | - | - |
| *Polygonum aviculare* agg. | | knotgrass | 4 | 3 | - | - | - | - | - |
| *Rumex acetosella* agg. | | sheep's sorrel | 2 | - | - | - | - | - | - |
| *Rumex* sp. (not *acetosella*) | | dock | 8 | 8 | - | 1 | 6 | - | 2 |
| *Urtica dioica* L. | | stinging nettle | - | 2 | - | - | - | - | - |
| *Euphrasia* or *Odontites* sp. | | | 1 | - | - | 1 | - | - | 3 |
| *Valerianella dentata* (L.) Poll. | | cornsalad | 2 | - | - | - | - | - | - |
| *Tripleurospermum inodorum* (L.) Sch. B. | | scentless mayweed | 1 | 12 | - | - | 1 | - | 2 |
| *Carduus* or *Cirsium* sp. | | thistle | - | 3 | - | - | - | - | - |
| *Eleocharis* S. *Palustres* sp. | | spike rush | - | 1 | - | - | - | - | - |
| *Carex* spp. | | sedge | - | 4 | - | - | - | 1 | - |
| *Bromus* S. *Eubromus* sp. | | brome grass | 7 | - | 1 | 14 | 21 | 15 | 3 |
| *Avena* sp. | | oats | - | 15 | - | 4 | 1 | 41 | 12 |
| Gramineae indet. | | grass | 18 | 33 | - | - | 2 | - | 3 |
| weed seeds indet. | | | 21 | 54 | 1 | 1 | 3 | 2 | 4 |
| **Total weed seeds** | | | **75** | **158** | **3** | **24** | **37** | **59** | **30** |

* sample 33 from F743 (building G37) is not tabulated but contained one grain of black medick

Table 7 Roman (Period III, Phase 5) charred plant remains* (excluding charred wood)

the oven in order to de-husk them prior to milling. Such waste would, prior to burning, have comprised almost entirely glumes.

Two samples were analysed from deposits believed to represent destruction deposits associated with the oven. Samples 5 (G143 within pit G93, L13) and 11 (G110 within inner chamber of drying oven G108, L12) yielded high concentrations of cereal remains. Remains of spelt wheat and possible spelt wheat dominated the cereal component, like sample 12. Cereal grain outnumbered hulled wheat glumes by a factor of x7 in sample 11. A similar grain-rich assemblage was present in sample 5 and, therefore, both deposits are thought likely to have resulted from the use of the drying oven.

*Weeds (Table 7)*

Area A

The weed seeds from samples 21 and 22 were most-

ly from typical arable weeds. However, both flots contained a rather high proportion of small grass seeds and sample 22 also had many seeds of *Malva sylvestris* (common mallow). This hints that some of the material could have had a grassland / wayside origin or possibly that the assemblages were derived from crops grown on ploughed-up grassland.

Area B

Concentrations of weed seeds were low in relation to cereal remains in all the samples associated with the drying oven G108. Those weed seeds that were present were mostly from plants with large seeds such as *Rumex* sp. (dock), *Bromus* S. *Eubromus* sp. (brome grass or chess) and *Avena* sp. (oats, probably wild oats). The spikelets of spelt wheat had probably been cleaned of small weed seeds by sieving prior to parching in the oven. This was in contrast to the assemblages from Area A, where spelt wheat had evidently been parched along with the full size range of weed seeds.

*Charred wood (Table 8)*

Area A

The charred wood in samples 21 and 22 was mostly oak and presumably represents fuel.

Area B

Oak charcoal was present in all the flots from samples associated with the drying oven G108. Ash, hazel, hawthorn type and sloe type charcoal were also identified from some of the flots. This presumably represented mixed wood used as fuel. There was no evidence that any of the charcoal amongst the demolition debris of the oven was part of its structure.

*Roman summary*

The results show part of the typical pattern for Roman rural settlements in the South Midlands. Spelt wheat would certainly have been a major crop but six-row hulled barley, here no more than a minor contaminant of the wheat, would also have been important. The reason that more barley was not found was probably due to the limited range of activities represented by the charred remains. Had a greater part of the Roman settlement been excavated, a more balanced picture would probably have emerged. The charred wood was unexceptional and derived almost entirely from fuel.

**The Saxo-Norman charred plant remains (Period IV)**

The analysed samples from Saxo-Norman deposits can be conveniently divided into those from buildings (the majority) and those from colluvial deposits (Table 9 and Table 10).

*Samples from buildings G44 and G51 (Table 9 and Table 10)*

The samples from building G44 (31, 35, 39 and 41) and building G51 (28 and 44) contained very small quantities of grain and weed seeds, with no more than 16 items per flot. A few of the grains were from hulled barley and the other seeds were mostly from potential arable weeds, although a couple of hazelnut

| | | Area A | | Area B | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Sample** | | **21** | **22** | **2+9** | **12** | **3** | **5** | **11** | **33** |
| **Group** | | G18 | G14 | G108 | G108 | G108 | G143 | G110 | G37 |
| **Group description** | | pit | ditch | use of drying oven | | | destruction of drying oven | | building |
| | | | | main flue | inner chamber | spread F169 | pit G93 | inner chamber | |
| **Landscape** | | L4 | L5 | L12 | L12 | L12 | L13 | L13 | L10 |
| **Sample volume (litres)** | | 10 | 10 | 10 | 1.25 | 4 | 2.5 | 4 | 10 |
| **Weight of charred wood (gm)** | | 2 | 28 | <1 | 5 | 3 | 10 | 11 | 8 |
| *Prunus* sp. | sloe etc | | | | + | | | | |
| Pomoideae indet. | hawthorn etc | + | + | | | | | +++ | |
| *Corylus avellana* L. | hazel | | | | | ++ | | | |
| *Quercus* sp. | oak | ++ | +++ | + | + | + | +++ | + | ++ |
| *Fraxinus excelsior* L. | ash | | | | + | | | | |

(+ present, ++ several fragments identified, +++ many fragments identified)

Table 8 Roman (Period III) charred wood

| | | Sample | 31 | 35 | 39 | 41 | 28 | 44 | 59 |
|---|---|---|---|---|---|---|---|---|---|
| | | Group | G44 | G44 | G45 | G44 | G51 | G51 | G122 |
| | | Group description | Building G44 | | | | Building G51 | | colluvium |
| | | Landscape | L16 | L16 | L16 | L16 | L16 | L16 | L18 |
| | | Sample volume (litres) | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| **Cereal Grain** | | | | | | | | | |
| *Triticum* sp. | - free threshing short grain | rivet or bread wheat | - | - | - | - | - | - | 5 |
| *Triticum* sp. | | wheat | 1 | - | 1 | - | - | - | - |
| *Secale cereale* L. | | rye | 2 | - | - | - | - | - | - |
| *Hordeum* sp. | - hulled median grain | hulled barley | 1 | - | - | 1 | - | - | - |
| *Hordeum* sp. | - hulled | hulled barley | - | - | 1 | 4 | - | - | - |
| *Hordeum* sp. | | barley | - | - | - | - | 2 | 1 | - |
| *Avena* sp. | | oats | 33 | 2 | 1 | - | - | - | - |
| cereal indet. | | | 21 | 3 | 17 | 5 | 1 | - | 1 |
| **Total cereal grain** | | | **58** | **5** | **20** | **10** | **3** | **1** | **6** |
| **Cereal Chaff** | | | | | | | | | |
| *Triticum* sp. | - free threshing tetraploid rachis | rivet-type wheat | - | - | - | - | - | - | 1 |
| *Secale cereale* L. | - rachis | rye | - | - | - | - | - | - | 1 |
| **Total chaff** | | | **0** | **0** | **0** | **0** | **0** | **0** | **2** |
| **Weed Seeds** | | | | | | | | | |
| *Papaver rhoeas* tp. | | poppy | 1 | - | - | - | - | - | - |
| Caryophyllaceae indet. | | | 1 | - | - | - | - | - | 1 |
| *Chenopodium album* L. | | fat hen | - | - | - | - | 1 | - | - |
| *Atriplex* sp. | | orache | 2 | - | - | - | - | - | - |
| *Vicia* or *Lathyrus* sp. | | vetch or tare | 16 | - | 2 | 2 | - | - | - |
| *Polygonum aviculare* agg. | | knotgrass | - | - | - | - | - | 1 | - |
| *Corylus avellana* L. | | hazel | - | - | - | - | 1 | 1 | 2 |
| *Anthemis cotula* L. | | stinking mayweed | 4 | - | - | - | - | - | 3 |
| *Tripleurospermum inodorum* (L.) Sch. | | scentless mayweed | 4 | - | - | - | - | - | - |
| *Centaurea* sp. | | | 1 | - | - | - | - | - | - |
| *Eleocharis* S. *Palustres* sp. | | spike rush | - | - | 1 | - | - | - | - |
| *Carex* sp. | | sedge | 1 | - | - | - | - | - | - |
| Cyperaceae indet. | | | - | - | - | 1 | - | - | - |
| *Bromus* S. *Eubromus* sp. | | brome grass | - | - | 1 | - | - | - | - |
| Gramineae indet. | | grass | - | - | - | 1 | - | - | 1 |
| weed seeds indet. | | | 4 | - | 6 | 2 | 1 | - | 2 |
| **Total weed seeds** | | | **34** | **0** | **10** | **6** | **3** | **2** | **9** |

Table 9 Saxo-Norman (Period IV, Phase 7) charred plant remains (excluding charred wood)

shells were found from G51. Some of the samples from G44 contained higher concentrations of remains, with wheat, rye, hulled barley and oats amongst the cereal grains. The majority of grains in sample 31, the richest of the flots, were oats. This sample also contained many weed seeds, especially *Vicia* or *Lathyrus* sp. (vetch or tare).

The absence of hulled wheat, which might be expected in Roman deposits, confirms the post-Roman date for these buildings. The charred grain and weed seeds from the buildings would be consistent with small-scale domestic activity involving the use of cereals, but in contrast to the Roman period they need not imply large-scale crop processing.

| Sample | | 31 | 35 | 39 | 41 | 28 | 44 | 53 | 59 |
|---|---|---|---|---|---|---|---|---|---|
| Group | | G44 | G44 | G45 | G44 | G51 | G51 | G63 | G122 |
| Group description | | Building G44 | | | | Building G51 | | Ditch G62 | Colluvium |
| Landscape | | L16 | L16 | L16 | L16 | L16 | L16 | L16 | L18 |
| Sample volume (litres) | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Weight of charred wood (gm) | | 4 | 35 | 8 | 3 | 1 | 3 | 8 | 7 |
| *Corylus avellana* L. | hazel | + | | | + | | + | | + |
| *Quercus* sp. | oak | + | +++ | ++ | + | + | + | +++ | + |

(+ present, ++ several fragments identified, +++ many fragments identified)

Table 10 Saxo-Norman (Period IV) charred wood

The charred wood from the buildings was mostly oak, with large quantities from sample 35. It appears to have been derived from domestic hearths rather than being debris from the destruction of the buildings.

*Samples from colluvial deposits G122 (Table 9 and Table 10)*
Colluvial deposits G122 within spring hollow G120 contained little charred material (sample 59). However, the occurrence of grains of free-threshing wheat and a rachis fragment of free-threshing tetraploid wheat (rivet-type wheat) confirm the Saxo-Norman rather than the Roman date for the accumulation of these deposits.

*Saxo-Norman summary*
The Saxo-Norman charred plant remains included most of the crops that might be expected on a settlement of this period in the region: wheat, rye, hulled barley and oats. Only free-threshing tetraploid wheat (rivet wheat) was identified with certainty but free-threshing hexaploid wheat (bread wheat) is also likely to have been grown. The barley would most probably have been six-row hulled barley. The identification of free-threshing tetraploid wheat, albeit one grain, adds to a growing number of records from the region for a species of wheat only recently shown to have been cultivated in medieval England (Moffett 1991). However, insufficient large assemblages of crop remains were found to establish the relative importance of the different cereals. This was also probably the reason that crop legumes such as field bean and pea were not found although they were identified from medieval sites along the Bedford Southern Bypass (Albion in prep. b).

**The early medieval charred plant remains (Period V)**
The analysed samples from early medieval deposits can be conveniently divided into fills of pits G77 and the fill of a ditch G60 (Table 11 and Table 12).

*Samples from pits G76 (Table 11 and Table 12)*
The fills G77 of pits G76 (samples 38, 43 and 45) all contained large quantities of oak charcoal but little other charred material. A glume of spelt wheat in sample 43 was perhaps residual from the Roman activity on the site. This sample also contained a rachis of rye.

*Samples from ditch G60 (Table 11 and Table 12)*
Ditch fill G147 (sample 30) of ditch G60 contained a surprisingly high concentration of charred remains. There was much charred wood, mostly of Pomoideae type (hawthorn, apple *etc.*) which may have been derived from the burning of a hedge. This sample also produced the highest concentration of grain (32 per litre) from any of the post-Roman flots. Most of the grain had been damaged by the process of charring. Apart from single grains of rye and barley, it either was or could have been from a free-threshing short grained variety of *Triticum* sp. (rivet or bread wheat). No chaff and only a couple of weed seeds were present in the flot. One of these was from *Centaurea* sp., probably *C. cyanus* (cornflower), an arable weed whose seeds are very difficult to clean from grain. This assemblage possibly represented the accidental charring of clean grain that was being parched to harden it prior to milling.

*Early medieval summary*
The charred plant remains included some of the crops that might be expected on a settlement of this

| | | | **Sample** | **30** | **38** | **43** | **45** |
|---|---|---|---|---|---|---|---|
| | | | **Group** | G147 | G77 | G77 | G77 |
| | | | **Group description** | ditch G60 fill | Pits G76 | | |
| | | | **Landscape** | L22 | L25 | L25 | L25 |
| | | | **Sample volume (litres)** | 2.5 | 10 | 10 | 10 |
| **Cereal Grain** | | | | | | | |
| *Triticum* sp. | - free threshing short grain | rivet or bread wheat | | 6 | - | - | - |
| *Triticum* sp. | | wheat | | 5 | - | - | - |
| *Secale cereale* L. | | rye | | 1 | - | - | - |
| *Hordeum* sp. | | barley | | 1 | - | - | - |
| cereal indet. | | | | 67 | - | 2 | 1 |
| **Total cereal grain** | | | | **80** | **0** | **2** | **1** |
| **Cereal Chaff** | | | | | | | |
| *Triticum spelta* L. | - glume base | spelt wheat | | - | - | 1 | - |
| *Secale cereale* L. | - rachis | rye | | - | - | 1 | - |
| **Total chaff** | | | | **0** | **0** | **2** | **0** |
| **Weed Seeds** | | | | | | | |
| *Crataegus* cf. *monogyna* Jacq. | | hawthorn | | - | 1 | - | - |
| *Galium aparine* L. | | goosegrass | | - | - | 1 | - |
| *Centaurea* sp. | | | | 1 | - | - | - |
| *Bromus* S. *Eubromus* sp. | | brome grass | | - | 1 | - | - |
| weed seeds indet. | | | | 1 | 1 | 2 | - |
| **Total weed seeds** | | | | **2** | **3** | **3** | **0** |

Table 11 Early medieval (Period V, Phases 8 and 9) charred plant remains (excluding charred wood)

| | | **Sample** | **30** | **38** | **43** | **45** |
|---|---|---|---|---|---|---|
| | | **Group** | G147 | G77 | G77 | G77 |
| | | **Group description** | Ditch G60 fill | Pits G76 | | |
| | | **Landscape** | L22 | L25 | L25 | L25 |
| | | **Sample volume (litres)** | 2.5 | 10 | 10 | 10 |
| | | **Weight of charred wood (gm)** | 31 | 33 | 39 | 25 |
| Pomoideae indet. | hawthorn etc | | +++ | | | |
| *Corylus avellana* L. | hazel | | | | | |
| *Quercus* sp. | oak | | + | +++ | +++ | +++ |

(+ present, ++ several fragments identified, +++ many fragments identified)

Table 12 Early medieval (Period V) charred wood

period in the region: wheat, rye and barley. The assemblage is too small to comment on any changes from the preceding period. The preponderance of oak amongst the charred wood might suggest that the settlement had a woodland source of fuel and was not just dependent on hedgerows or scrub for firewood.

## WATERLOGGED WOOD

Rowena Gale, with discussion of the timber tank by Richard Darrah

### Introduction

Two hundred and forty-two samples of wood were taken from waterlogged Saxo-Norman/early medieval deposits associated with spring hollows G120 and G121 (Periods IV and V). All sails and a selection of rods from the hurdles G125 were sampled (59 samples), along with a representative sample of wood within deposits G126 overlying the hurdles (52 samples). In addition, samples were taken from major timbers along with offcuts that had been used as "packing" associated with the timber tank G132 (7 samples). The remainder was derived from other fills of the spring hollows. All sampled wood was issued a unique number during fieldwork commencing at 2000 and where relevant this is referred to in this article.

Microscope slides were prepared from all samples. Thin sections were taken using a double sided razor blade to show the transverse, tangential longitudinal and radial longitudinal planes. These were mounted in 50% glycerol on glass microscope slides and protected with glass cover slips. The anatomical structure was examined using a light transmitting microscope at magnifications of up to ?400 and matched to reference material.

There follows a description of the wood used in the construction of the hurdles and the timber tank, with a discussion of the wood types and woodworking techniques. Appendix 4 contains a fuller description of the waterlogged wood but for details of individual pieces the site archive should be consulted.

### Description of the two timber structures

*Hurdle G125 and collapse G126 (Period IV)*

Two arrangements of interwoven timber hurdles were recorded. Both were made predominantly of hazel (*Corylus*) sails and rods. The sails were between 30mm and 50mm in diameter and the rods, with one exception, between 12mm and 22mm. Willow (*Salix*) and/or poplar (*Populus*) rods were also present (Fig 23, nos. 2184, 2185 and 2193). In general they appear to be fast grown, and the occasional presence of characteristic coppice 'heels' confirms that they were grown and cut from coppice stools. The anatomical structure suggested that the rods had mostly been gathered in winter while dormant, although a few had been collected during the growing season. The hurdles appeared to contain a mixture of winter and summer cut rods implying that they had been made from a store of rods containing this mixture, or if the hurdles were made in the summer months, some extra rods were cut then and used.

Many of the samples from the deposits G126 above the hurdle were consistent in species content and stem diameter to the rods used in the hurdle (Fig 23, no. 2011). In addition to wooden implement (RA 59, Fig 22), a number of wood chips were recovered, clearly representing woodworking waste.

*The timber tank G132 (Period IV)*

During the excavation it was possible to re-assemble six of the eight middle timber planks (2053, 2061, 2062, 2070, 2071 and 2076) into the single oak (*Quercus*) tree, from which they had been converted. In addition, dendrochronological analysis indicated that two other trees provided two lower timbers (2056 and 2066) and a corner stake (2074), and one lower timber (2065) and a corner stake (2073) respectively (see Appendix 5).

The tree that provided the middle timber planks would have been 0.35m in diameter, with a trunk length of 8.3m. The trunk length and absence of side branches indicate that this tree had grown in a wood, not a hedgerow. It had been split down its length into two halves, then cut into approximately 2.5m lengths with the sapwood hewn off to form 0.1m thick planks. These timbers had been cross-cut with a narrow-bladed axe which had a curved edge. The faces of the timbers were roughly dressed with a wide-bladed straight-edge axe hewing across the grain. On some of these surfaces the wood had been weakened by a series of steep, deep cuts made with the narrow-bladed axe before the surface was hewn flat with the broad axe.

One timber (2061) (Fig 28) also had its outer surface split off tangentially. It is unclear whether this piece was split off to reduce the amount of hewing required on this surface, or to produce a piece of wood which was used elsewhere, as this outer tangential split was not found in the timber structure.

Timber tanks made from cleft boards lapped together at the corners date from the Neolithic, but also occur in the medieval period (cf. the 11th/12th

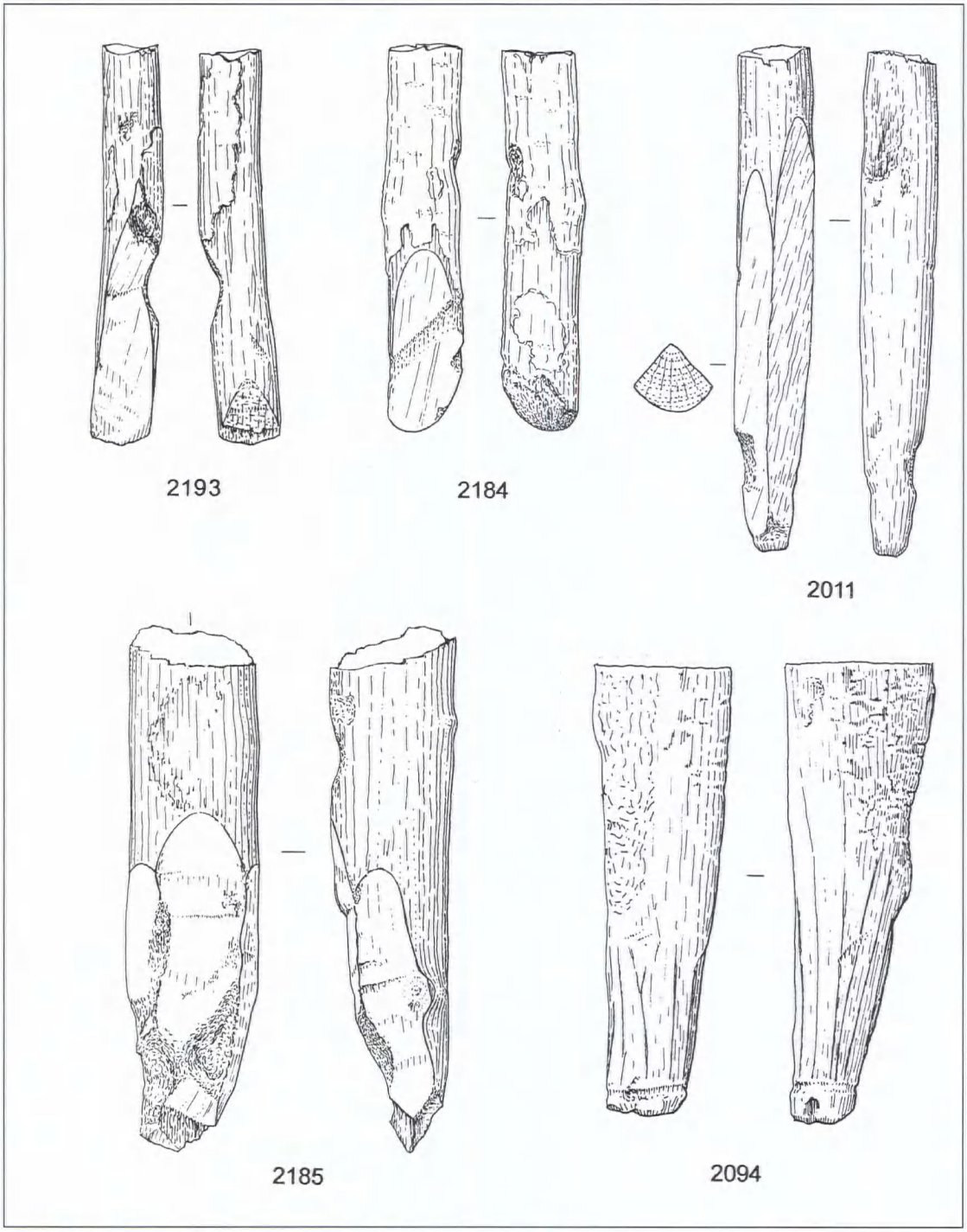


Figure 23 Rod, sail and stakes associated with hurdle G125, and packing from tank G132 (scale 1:4)

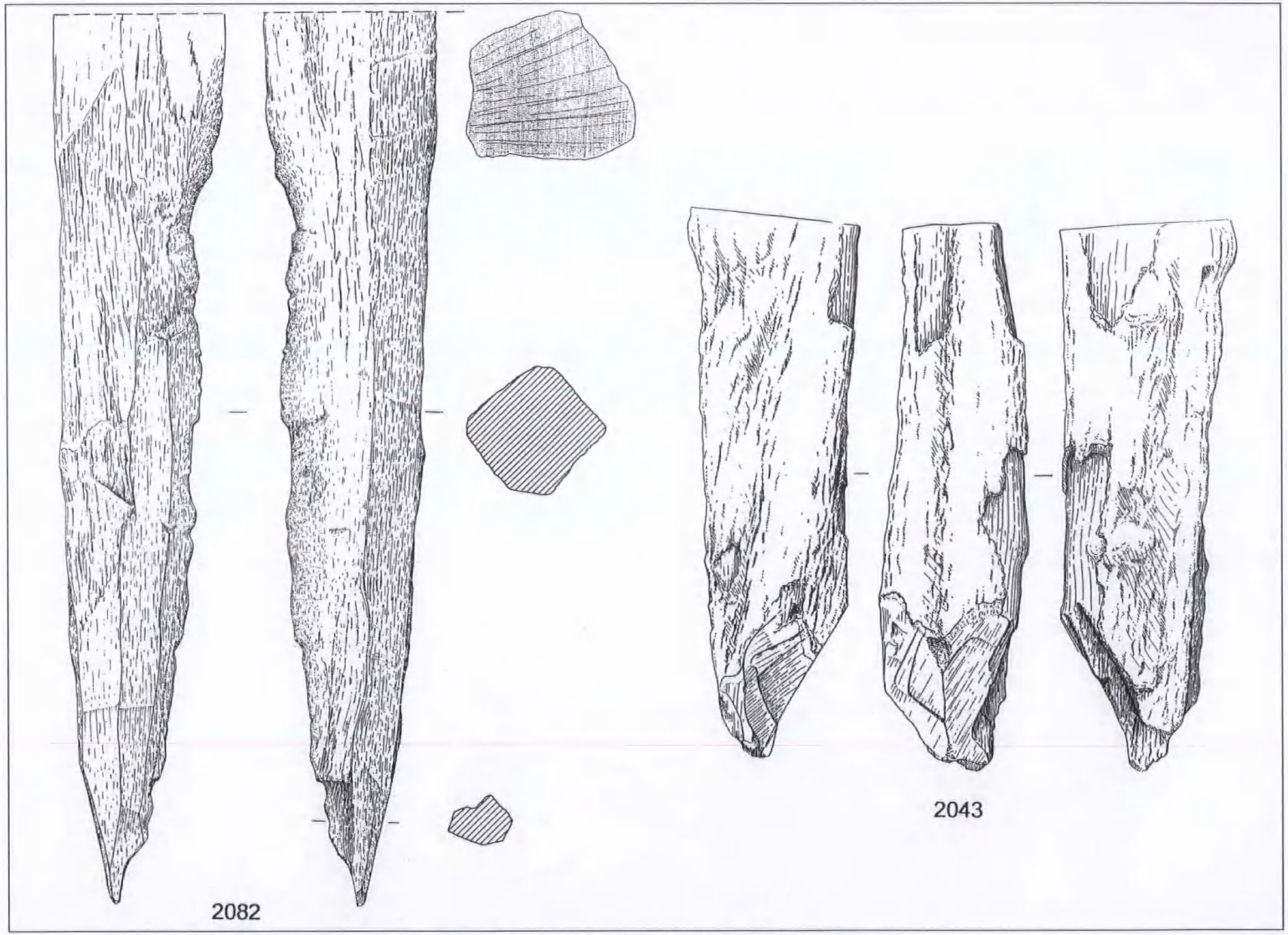


Figure 24 Post and stake from tank G132 (scale 1:4)

century bridge pier bases at Hemington Fields, Leicestershire (Cooper and Ripper 1994, 153). However, it is the use of broad-axes hewing across the faces of the timbers, narrow curved-edges cross-cutting, and felling axes which indicate a Saxon or Saxo-Norman date. This has been confirmed by dendrochronological analysis which indicates a felling date of AD1081 (see Appendix 5).

**Resources**

Several types of wood were available at the site and used to varying degrees. Some of the species may have grown as coppice woodland, the most evident being hazel (*Corylus*). The morphology and structure of the stems used for hurdle-making strongly suggested they were coppice rods, gathered for uniformity of size rather than on a strict rotational

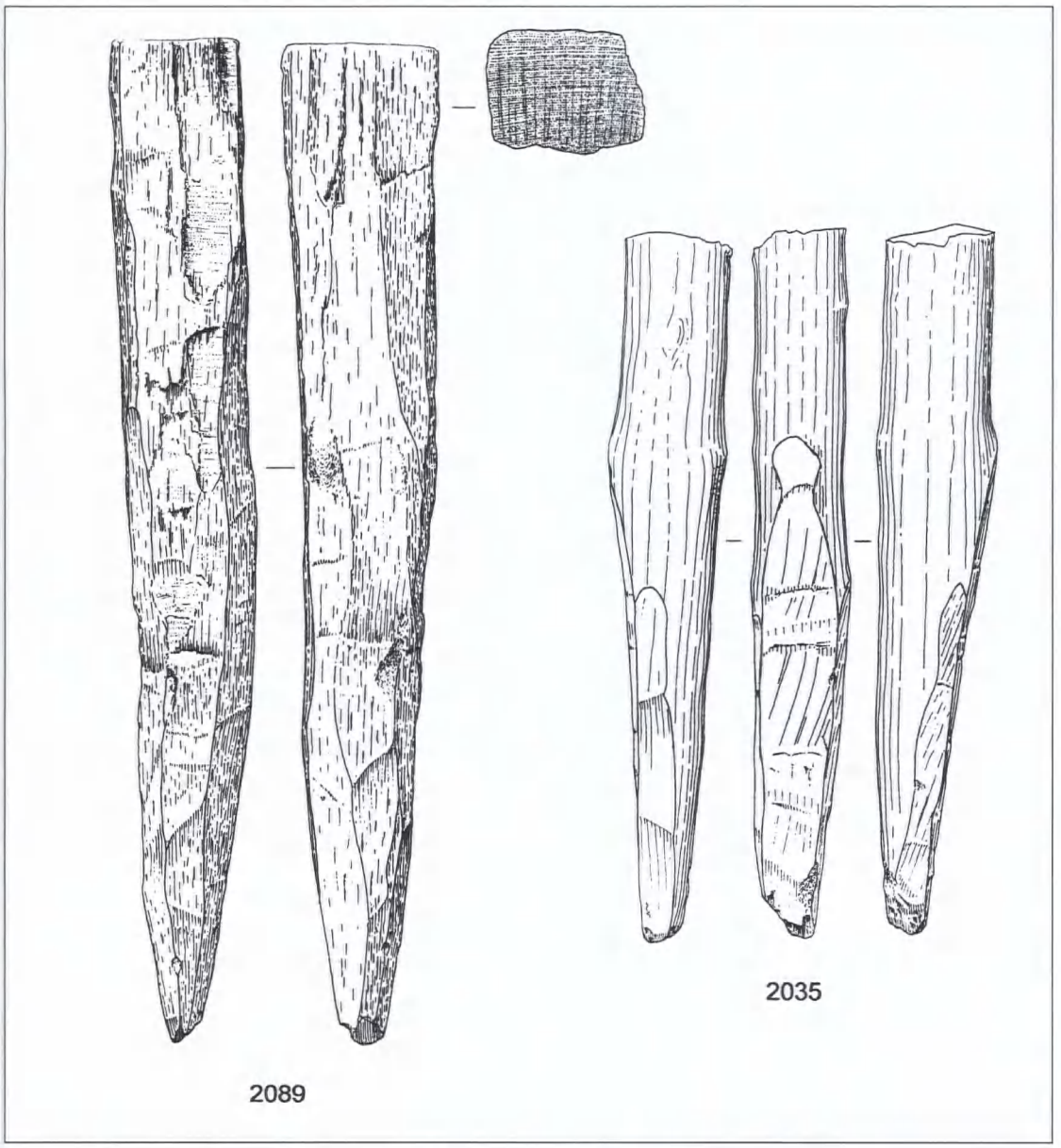


Figure 25 Stakes from tank G132 and the northern spring hollow (scale 1:4)

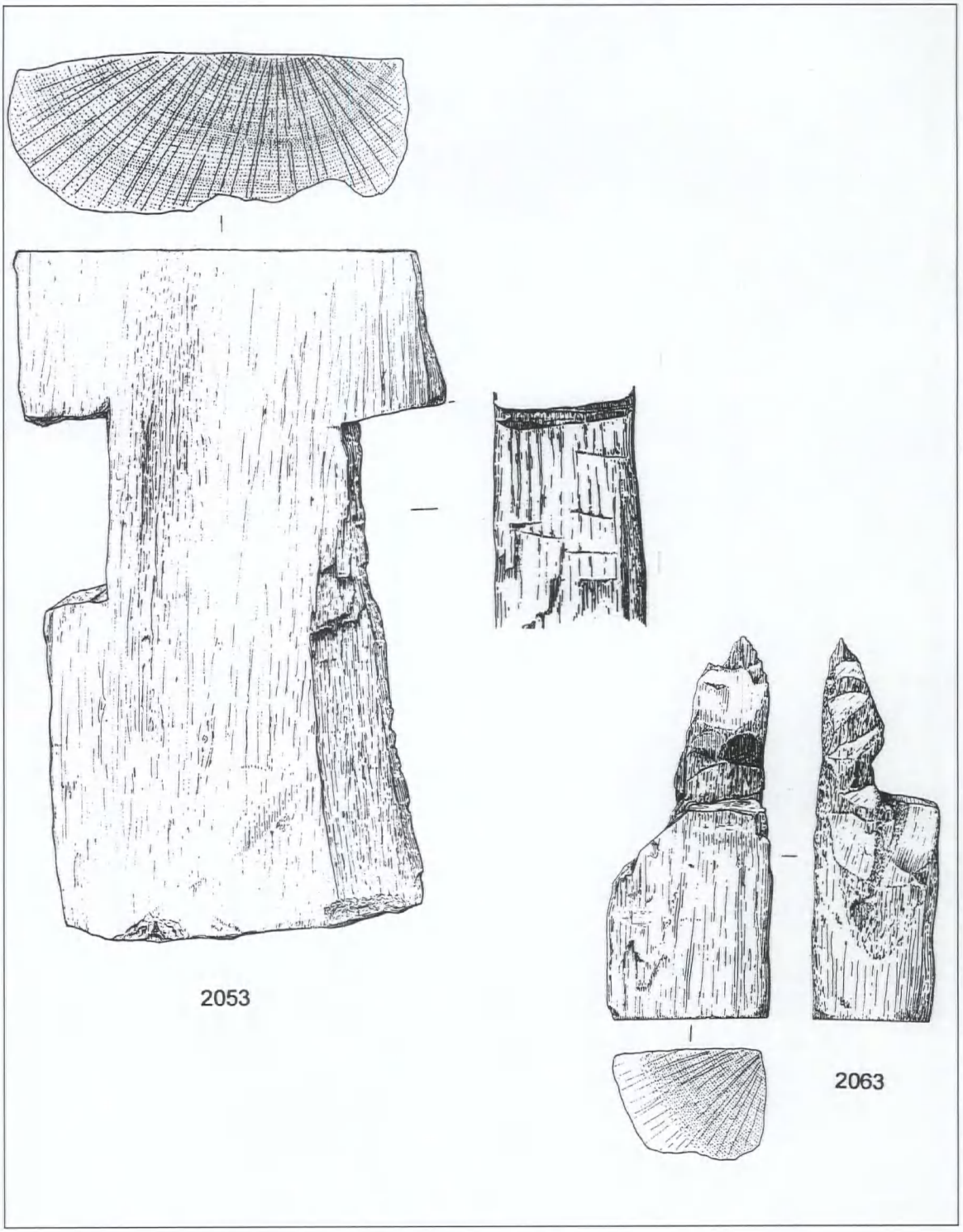


Figure 26 Lap and half lap joints from tank G132 (scale 1:4)

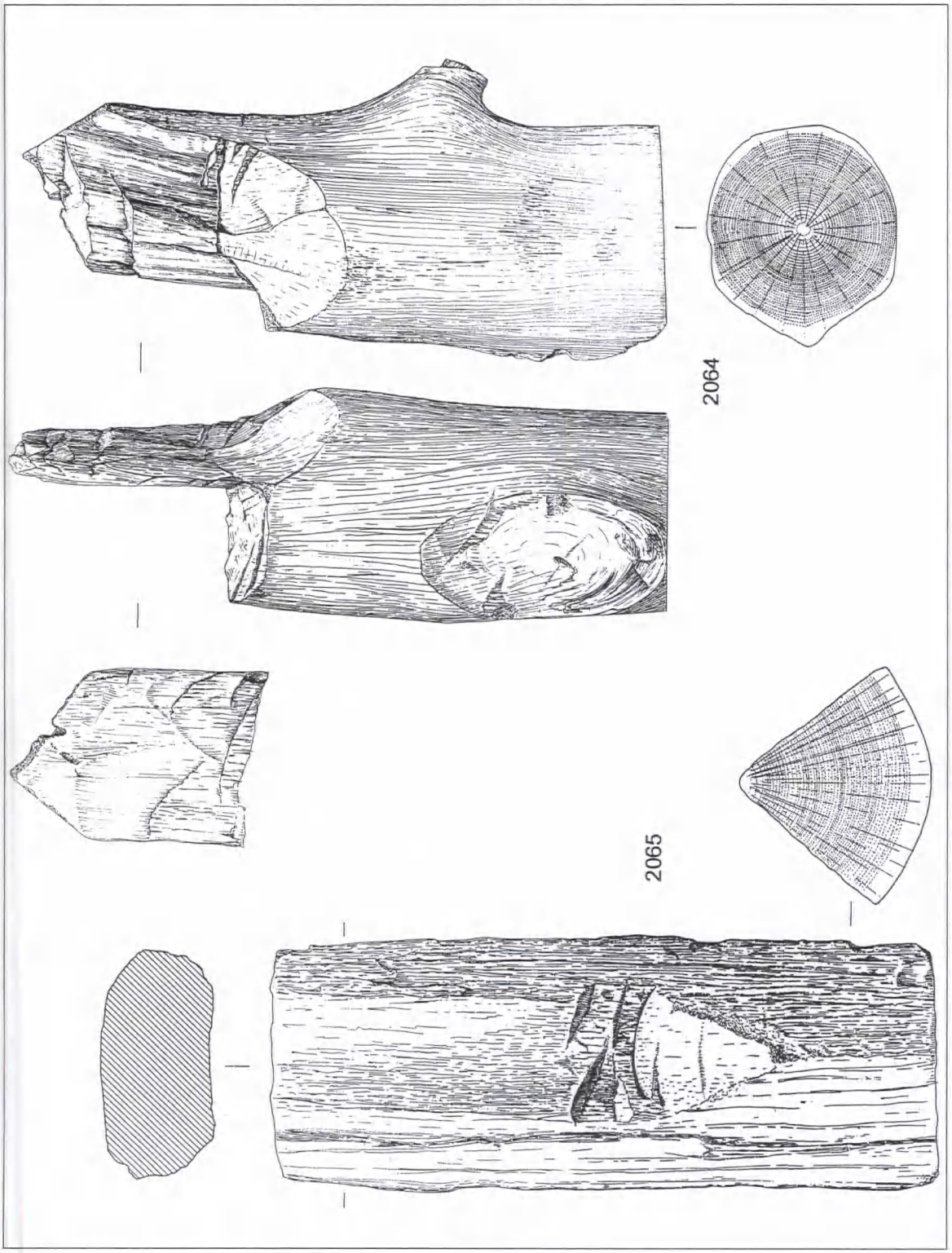


Figure 27 Half lap joints from tank G132 (scale 1:4)

harvesting based on age. Some stakes measured as much as 65mm in diameter indicating that poles were deliberately grown. The widely differing time-span taken for some stakes/sails to achieve similar diameters is of interest, since those used in the same structure were presumably felled or cut at a similar time and, therefore, growing in comparable climatic conditions. In roundwood samples from hurdle G125, the number of annual rings, measurements of stem diameter and the season of felling was noted. The rods ranged from 4-6 years and the sails from 9 to 33 years. Perhaps these differentials could be attributed to very localized environmental pressures such as vegetational competition and variations in soil.

With the notable exception of the timber tank G132, oak was rarely identified from the waterlogged wood samples (however, see 0 for charred plant evidence). The main portion of the tank consisted of parts of three oak (*Quercus*) trees and one field maple (*Acer*), all of which had been summer felled. The common felling time of the trees and the use of six major pieces of one oak trunk suggest that they were felled specifically for the construction of the structure. Despite distinctions in building techniques, the two parts of the structure are contemporary as both sets of timber were felled in the summer of AD1081. It would have taken three or four person days to fell, split, shape and cut the joints in all the timbers used for this structure (Fig 26-28).

Maple (*Acer*) was not only used in the construction of the timber tank G132 but also as whole young poles or trunks for staves and stakes (Fig 24, no. 2043, and Fig 25, no. 2035). Ash (*Fraxinus*) appears to have been sparsely used, although this may reflect its lack of durability when used outside. Poplar and/or willow also appear to have been used relatively infrequently, but the presence of wood chips from widish branches or trunks suggests uses not identified on site. The sporadic use of holly (*Ilex*), bramble or rose (Rosiodeae), elder (*Sambucus*), *Prunus* and Pomoideae was also noted. Elm (*Ulmus*) wood was also present but may represent later occupation of the site.

**Methods**

Facet type indicates the form of point produced and, indirectly, the style of working and level of effort invested in each piece. The recording of these on stakes and sails shows a preference for multi-variant points, which occur in both the hurdle and tank, and for chisel points, which are restricted to the hurdle. Although cutting angles were not recorded in detail, most appear to be reasonably shallow *c.* 0-45° (Table 13).

None of the woodworking techniques used in the timber tank were complex, and no timbers had been carefully shaped or finished. Three specific woodworking techniques were noted on the larger cleft timbers: splitting in half, use of a narrow-bladed axe and a wider bladed axe. One of the difficulties in identifying cleft timber is that timber may decay back to a surface that looks similar to a cleft surface. However, it was possible to confirm the use of cleft timber as the six timbers could be reassembled into the tree trunk from which they had been split. A narrow-bladed axe with a curved edge 67.5mm wide was used for cross-cutting the timbers, and had been used for cutting one of the halved joints on 2056 (one of the lower timbers in the tank). A wider bladed axe with a straight edge had been used for hewing across the grain. Although no complete tool marks were identified from this axe, its blade width was greater than 165mm as apparent on 2077 (one of the middle timbers of the tank).

The two distinct types of axes identified from their tool marks on the timbers had been used in conjunction in the hewing of the flat faces of the timbers. The narrow curved-edged axe was used for making weakening cuts at a steep angle to the surface. The wood was then hewn away with a wider blade axe with an almost straight-edge cutting parallel to the surface. Tool marks from the combination of narrow-bladed curved-edged cross-cutting axes and wide straight-edged hewing axes are known from the mid-Saxon and Saxo-Norman periods. In this structure both the narrow bladed axe and the hewing axe were used for cutting the lap joints near the ends of the timbers (Figs 26-28).

| **Facet type** | **Hurdle G125** | | **Hurdle disuse G126** | | **Tank G132** | | **Total** |
|---|---|---|---|---|---|---|---|
| | Stake | Sail | Stake | Sail | Stake | Post | |
| Chisel (one facet) | 3 | 4 | | 2 | | | **9** |
| Wedge (two opposing facets) | | | | 1 | | | **1** |
| Variant (two facets with a common edge) | | 1 | 3 | 1 | | | **5** |
| Multi-variant (more than two facets) | 2 | 7 | 1 | 2 | 1 | 4 | **17** |
| **Total** | **5** | **12** | **4** | **6** | **1** | **4** | **32** |

Table 13 Facet type on stakes and sails

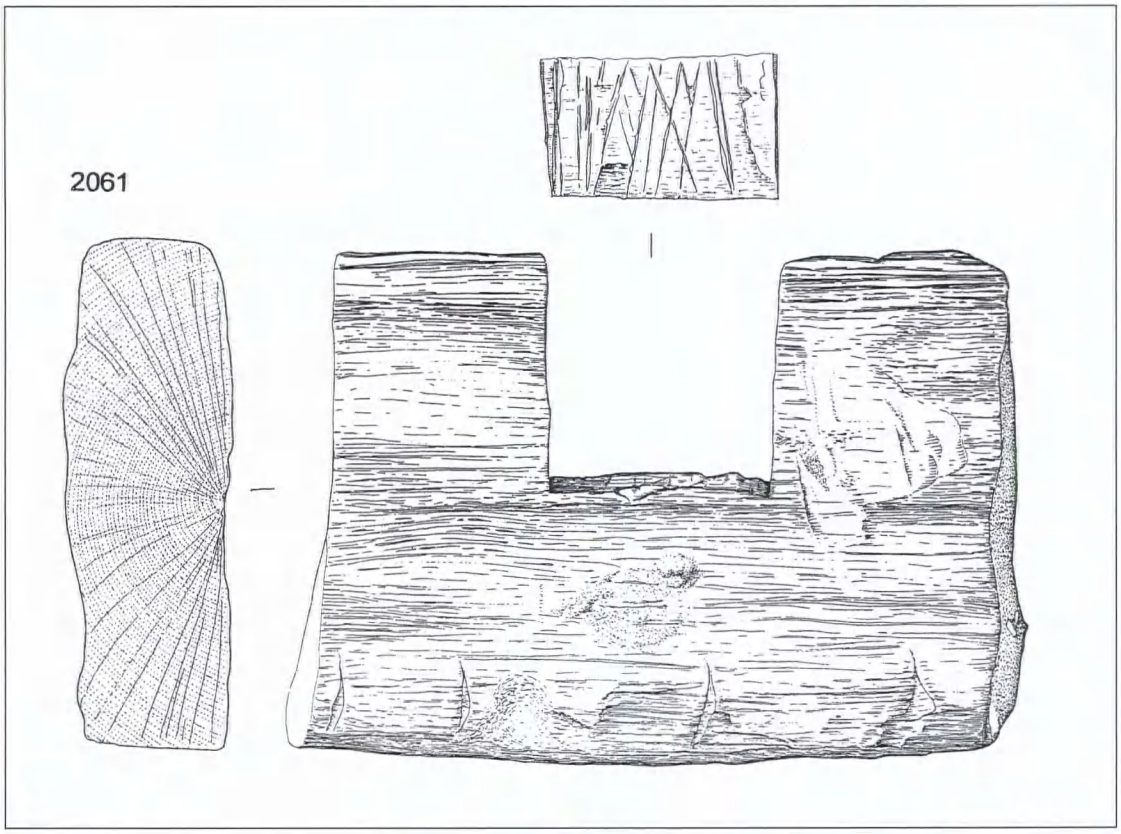


Figure 28 Lap joint from tank G132 (scale 1:4)

| Fig | Timber No. | Description |
|---|---|---|
| 23 | 2193 | Willow/poplar rod from hurdle G125 |
| 23 | 2184 | Hazel stake from hurdle G125 |
| 23 | 2011 | Hazel stake from disuse G126 of hurdle G125 |
| 23 | 2185 | Hazel sail from hurdle G125 |
| 23 | 2094 | Willow/poplar packing from tank G132 |
| 24 | 2082 | Oak post from tank G132 |
| 24 | 2043 | Maple stake from disuse G118 of tank G132 |
| 25 | 2089 | Oak stake from tank G132 |
| 25 | 2035 | Maple stake from upper fills G127 of N spring hollow |
| 26 | 2053 | Oak lap joint from tank G132 |
| 26 | 2063 | Oak half lap joint from tank G132 |
| 27 | 2065 | Oak half lap joint from tank G132 |
| 27 | 2064 | Oak half lap joint from tank G132 |
| 28 | 2061 | Oak lap joint from tank G132 |

Table 14 Catalogue of illustrated timber

## LAND-USE HISTORY (ROMAN TO EARLY MEDIEVAL PERIODS)

Richard Macphail, Mike Luke, and Drew Shotliff

### Introduction

The following section summarises the results of a multi-disciplinary study into evidence for land-use history at the site. The study combined the three independent scientific disciplines of soil micromorphology, soil chemistry and palynology. The full, technical report (Macphail et al. 1997) forms part of the site archive.

The study focused on three areas of the site: the soil lying directly beneath the Phase 5 Roman drying oven (L12, G108), the build-up of colluvial deposits downslope of the oven, and the fills of the Phase 7 Saxo-Norman spring hollow (L17, G121). Nineteen undisturbed soil blocks and columns were collected. Associated bulk soil samples were also taken. Subsamples for chemical and pollen analysis were removed prior to large format (6 x 7.5cm) thin section manufacture, allowing these data to be considered within the context of a known soil microstratigraphy.

### The Roman landscape and soils

When the drying oven (L12, G108) was built at some point in the mid-1st to mid-2nd century AD, the local soils were already unstable and subject to truncation and colluviation. The soil micromorphology suggested that ploughing may have been a major factor in this process. Further evidence for cultivation was provided by the soil chemistry which indicated that dung had been used to enrich the soils. The pollen evidence was complementary to this picture of an open, occupied landscape. Tree and shrub pollen types were virtually absent. Similarly, no features that could be interpreted as tree throw holes were observed on the site.

The charred plant remains from the drying oven and other features indicate that cereals were being grown in the area. However, in addition to arable communities, pollen derived from grassland or fallow ground was also present. It seems likely that land was periodically taken out of cultivation to try to alleviate the soil erosion.

The effects of ploughing were still being felt immediately after the destruction of the drying oven. Arable cultivation appears to have been the major mechanism in continuing downslope soil movement and the spread of debris from the abandoned structure. Manuring remained a major source of soil phosphate enrichment, although there was little evidence of *in situ* animal stocking.

During the 3rd/4th century there are strong indications that a marked change in land-use took place. The later colluvial deposits are typically dark with significantly enhanced phosphate levels and could have been affected by increased stocking levels. Although periodic ploughing continued to play a major role in destabilising local soils, land may have been left fallow for longer periods than before. It is believed that the sandy soils of the East Anglian Brecklands have a long history of alternating grassland and cultivation for crops and hay, and that such "shifting cultivation" may have been an integral part of the landscape for many centuries (Rodwell 1992, 306). Such a model, of mixed farming with heavy stocking levels during periods of fallow/grassland, may well be appropriate for Haynes Park, particularly for the later Roman period and possibly into the post-Roman period (see below).

### Late Saxon / Saxo-Norman to early medieval

Evidence from the northern spring hollow G121 and overlying colluvial deposits suggests that mixed farming practices continued into the post-Roman period. With the exception of some low tree and shrub pollen frequencies, the pollen data show no major contrasts to the available Roman data. Arboreal taxa are too few to suggest widespread woodland development during the late Saxon period, which is consistent with the Saxon period in general (Rackham 1994).

The lower fills of the spring hollow built up rapidly, with the material derived from both dumping and continuing downslope soil movement. Again, the colluviation is likely to be the result of arable cultivation, as evidenced by charred plant remains and regular occurrences of cereal type pollen. It may be speculated that the presence of calcareous materials is indicative of marling in an attempt to improve the fertility of the acidic Greensand soils.

In contrast to the basal fills, dung is a relatively more important constituent of the deposits in the upper levels of the spring hollow. It is more difficult to specify whether this material is derived from dumping or from the *in situ* presence of animals at a watering hole. However, on balance the evidence does seem to be consistent with the latter hypothesis. Pollen grains from the dung give strong indications that the animals were fed from a variety of sources, including herb-rich grassland, short grassy sward, hedgerows and seasonally flooded land.

The upper levels of the spring hollow also con-

tained far more clay. This may well be an indication that erosion of upslope subsoils was taking place during this period.

## DISCUSSION

Despite the relatively limited extent of the study area, evidence for five periods of activity, beginning in the early-middle Iron Age (Period I) and extending through to the medieval (Period V), was recovered. The following section is divided into the different chronological periods with sub-headings for the discussion of particularly significant aspects of the evidence.

### EARLY-MIDDLE IRON AGE (PERIOD I)

#### Summary

The earliest firm evidence for human activity within the study area comprised at least two post-built structures associated with hearths, along with an isolated hearth and a group of pits. The total absence of boundaries suggests that the settlement can be classed as "open" or unenclosed. At the time of Knight's survey this class (Group 4) was considered to be relatively uncommon (1984, 223). Where they do occur, *e.g.* Hinksley Road, Flitwick (Luke 1999, 81) and Bancroft, Milton Keynes (Williams and Zeepvat 1994, 55), they are often situated on high ground. It has been assumed that livestock were stalled nearer the valley bottom, closer to the supply of water, thus preventing the need for ditched enclosures within the settlement (*ibid*).

Although the dating evidence is based on a small pottery assemblage (from a single feature), the stratigraphic relationships demonstrate that several of the features are the earliest in terms of the overall site sequence. The sparse pottery assemblage includes several sandy fabrics which correlate to the second chronological subdivision (5th-1st century BC) established by Knight (1984).

The limited nature of the artefactual and ecofactual evidence for this period means little can be inferred regarding settlement economy. It can, however, be noted that no four-post structures or storage pits were present.

#### Components of the settlement

The structures do not form "classic" roundhouses and only the postholes of G73 give an impression of a circular arrangement. They lack the drainage gulley which is common feature of buildings of this period. For example, all five buildings at Hinksley Road, Flitwick were defined by drainage gullies and few contained postholes (Luke 1999, Figs 3 and Fig 5). Although it is probable that only part of the Haynes Park structures survived, they share similar dimensions and form to those at Bromham, Beds. (Tilson 1975, Fig 1) and elsewhere (Knight 1984, Fig 28). The presence of hearths, also suggested for Bromham, may indicate that they served a domestic function.

Little can be said of pit group G55. The absence of significant quantities of domestic debris is more a feature of late Bronze Age/early Iron Age pits than those of this period.

### 'BELGIC' IRON AGE/EARLY ROMAN (PERIOD II)

#### Introduction

Firm evidence for this period of activity is restricted to the S limit of the study area (the higher ground). It comprised a trackway (indicated by a holloway and patches of gravel), ditches, pits and postholes (some possibly part of structures). It probably represents activity at the N limits of a settlement located beyond the limit of excavation. The exact nature and extent of occupation is, therefore, impossible to determine.

The sizeable 'Belgic' pottery assemblage is characterised by wheel thrown vessels in fabrics with grog and/or sand or shell inclusions. No pre-'Belgic' pottery was present, indicating that this was a new settlement in a previously unoccupied area. Stratigraphic relationships between features allow the identification of two phases of occupation activity, although their pottery assemblages are indistinguishable. It is interesting to note that in Area B residual 'Belgic' material was found in later (mainly Period V) features. It is unclear whether this derived from the settlement near Area A, or if it indicates the presence of a second settlement focus nearer to Area B.

#### Components of the settlement

The restricted distribution of features strongly suggests that ditch G5/7 represents the northern boundary of the settlement. It truncated a number of pits and, therefore, was not the primary feature in the area, although it may have completely truncated evidence for an earlier boundary. Despite being disturbed by later activity, it is clear that an entranceway existed providing access from the N.

The arrangement of postholes in the vicinity of the entranceway is suggestive of two structures: one four-post G11 and one rectangular G10. The former is more in keeping with so-called granaries prevalent

on early-middle Iron Age sites. However, the latter has been tentatively interpreted as a rectangular building. If correct, it would fit the general trend from circular to rectangular buildings without drainage gullies during this period (Rodwell 1978).

The function of pits G1/G146 and G4 is uncertain, but it is possible that they served as periodic quarries for clay to be used in buildings and other structures. It may therefore be significant that daub and fired clay, mainly in fabric A, were recovered from primary and secondary fills of contemporary features. The pits appear to be deliberately positioned in a linear band alongside ditch G5/7, possibly in an area of "dead" ground within the settlement.

The juxtaposition of a holloway and a number of gravel patches suggests that both are elements of a trackway. This post-dates the pitting activity but also runs parallel to ditch G5/7, probably demonstrating an association.

**Economy**

There are insufficient charred plant or faunal remains to comment on the economy of the farmstead. However, the small quantities of ferrous slag suggest that small scale metal working was being undertaken.

**'Belgic' settlement shift and settlement patterns**

Regionally there is considerable evidence for increasing settlement density during the late Iron Age. However, much of the Bedfordshire evidence derives from modern developments, which are concentrated in the river valleys (Dawson 2000a, 107 and 121). The investigations at Haynes Park, when combined with recent cropmark evidence, demonstrate that the Greensand Ridge, at least in this area, was quite densely occupied by the 'Belgic' Iron Age/early Roman period.

The 'Belgic' Iron Age/early Roman and early-middle Iron Age settlements at Haynes Park lay nearly 200m apart. This fits a general trend whereby surprisingly few early-middle Iron Age settlements are overlain by 'Belgic' replacements. For example, at Hinksley Road, Flitwick, *c.* 3km to the SW, despite evidence for early-middle Iron Age and Roman activity, no 'Belgic' activity was identified (Luke 1999, 83). In the 1970s Simco (1973, Fig 1) demonstrated that 'Belgic' sites were usually rarely found in the same locations as early-middle Iron Age material. She suggested two possible explanations for this phenomenon: the arrival of new peoples (the "immigrant or invasion" theories were popular at this time) or growth of the indigenous population resulting in increased settlement density (*ibid*). At Haynes Park the shift in settlement location is fairly small, comparable to that at the Biddenham Loop (Albion in prep. a). The restrictive nature of most excavations makes it unlikely that even a small shift would be detectable within the investigated area.

The identification of boundary ditches of this date raises the possibility that many of the undated cropmark enclosures visible on aerial photographs in the vicinity may be contemporary (see Fig 1). Several, *e.g.* HER 16657 and 16703, occur in similar topographical positions on the other side of the stream. Although these generally appear to occur on the higher ground, there does not seem to be an obvious preference for the S- or N-facing slope. However, the dangers of making too many assumptions concerning undated cropmarks, even when subject to non-intrusive investigation, have been highlighted elsewhere in this volume (Luke 2004).

ROMAN (PERIOD III)

**Introduction**

Activity during this period was more extensive than in the earlier periods, occurring over both excavation areas. It comprised a rectilinear, ditched field/enclosure system, containing three discrete activity foci: pitting L7 (Area A), post-built buildings L10 (Area B) and a drying oven L12 (Area B). The distribution of features and contemporary domestic debris in Area A suggest that settlement continued beyond the limit of excavation. A similar arrangement of activity foci within a field system was observed at Hinksley Road, Flitwick (Luke 1999, Fig 9).

The quantity of Roman domestic debris recovered from the Saxo-Norman spring hollows suggests the presence of another settlement focus just beyond the E limit of Area B. This would be comparable with sites like Wavendon Gate, Milton Keynes (Williams et al. 1996, 85), where the settlement was removed from the smoky and smelly activity associated with a drying oven. Although buildings L10 were associated with hearths and are, therefore, presumed to be domestic in nature, it is surprising that no other features appeared to be associated with them. Trial trench 6 was devoid of features suggesting that the apparently isolated position of the buildings is genuine.

The proximity of the two ditches in Area B and intercutting of some of the features in Area A suggest a prolonged period of occupation. The large 'Belgic' pottery assemblage, occurring alongside early Roman fabrics, attests the longevity of this tradition. The presence of a largely residual assemblage of 3rd-4th century pottery indicates activity during the

later Roman period and therefore it is unlikely that the Haynes Park settlement fits the pattern of rural decline at the end of the 2nd century observed at Bancroft, Milton Keynes (Williams and Zeepvat 1994).

**Nature of the field/enclosure system and settlement**

The full extent of the field/enclosure system is unknown. However, it was observed within both excavation areas and clearly extends over at least 3ha. Williams et al. (1996, 83) have suggested that the creation of large enclosed areas was common practice in the second half of the 1st century AD and this would be broadly compatible with the dating of field/enclosure systems at nearby Hinksley Road, Flitwick (Luke 1999, 83) and Ruxox, near Maulden (Albion in prep. c).

At 3.2m wide and 1.3m deep, ditch G42 was clearly important and probably remained open as a boundary throughout the Roman period. Similar substantial ditches at Wavendon Gate, Milton Keynes formed the boundary of one field/enclosure system (Williams et al. 1996, 83). It is, therefore, possible that the land to the W (including buildings L10 and activity L7) and to the E (including the drying oven L12) was under different ownership. This interpretation is possibly supported by the proximity of parallel ditch G43.

Too few features were identified in Area A to determine the precise nature of activity there. However, it was probably peripheral to a more substantial settlement to the S. Large pit G17 is presumed to have been a clay quarry and this may have been the original purpose of pit G18. However, the latter was backfilled with oven/furnace debris (large quantities of fired clay, burnt stone and charcoal flecks) suggesting such a structure was situated in the vicinity.

Post-built buildings G35 and G37 were situated adjacent to major boundary ditch G42. Both buildings were rectangular and at least *c.* 7m long and *c.* 4.5m wide. Although the plan of building G35 was incomplete, it was unusual in that it included a structural slot at the SW corner. The plan of G37 was more complete and included an oval area of burnt subsoil within the interior, presumably indicating the location of a hearth. To the N of G37 lay a second possible hearth within what appears to have been a post-built extension or "lean-to". Evidence for post-built rectangular timber buildings is rare on Roman sites in the region, with none identified at, for example, Hinksley Road (Luke 1999), Wavendon Gate (Williams et al. 1996) or Bancroft (Williams and Zeepvat, 1994). This is not particularly surprising given that timber-framed structures rarely require deep foundations (Williams et al. 1996, 86). Unfortunately, neither areas of burnt subsoil associated with the Haynes Park buildings were suitable for archaeomagnetic dating. Therefore, the assignment of the buildings to this period is based on stratigraphic relationships with other features, their apparent association with ditches G42/43 and the presence of one sherd of Roman pottery.

**Discussion of drying oven G108**

*Introduction*

Ovens/dryers similar to G108 have been discovered on numerous Roman sites in Britain (Morris 1979, 5-22). Despite the considerable variety of flue design, they have traditionally been interpreted as corn dryers (Cocks 1921). More recently several authors, *e.g.* Reynolds (1979) and Williams and Zeepvat (1994, 148), have suggested this class of structure may have served more than one function. The more neutral term, drying oven, is, therefore, preferred in this article.

*Nature/construction*

The major characteristic of drying ovens is the long main flue, typically 3-4m long and often lined with clay or stones. The vast majority are T-shaped in plan (Goodchild 1943) and published nearby examples occur at Manor Way, Flitwick (Fadden 1976) and Bancroft structure 200, Bucks. (Williams and Zeepvat 1994, Fig 45). The minority of non T-shaped forms show a wide range of alternative plans, including V-shaped at Kettering, Northants. (Wilson 1974), H-shaped at Catsgore F421, Somerset (Leech 1982, Fig 58), Y-shaped at Odell G187, Beds. (Simco 1984, Fig 19), key-shaped at Foxholes Farm corndryer 5, Herts. (Partridge 1989, Fig 18), and circular, *e.g.* Great Casterton, Leics. (Morris 1979 Fig 19). The Haynes Park oven comprised a T-shaped main flue, but unusually was surrounded on three sides by an outer chamber. The only comparable structure in Britain was found at the beginning of the 20th century at Hambleden, Bucks. (Morris 1979 Fig 13e).

The Haynes Park drying oven was built within a square construction pit terraced into the hillside. The substructure (base and lower walls) and superstructure appear to have been constructed with slightly different clay fabrics. For example, organic tempering was added to the clay used to build the superstructure, presumably to increase its binding and adherence qualities while reducing its weight. The undulations noted in the upper part of the inner walls at the end of the

main flue probably indicate the location of cross flues, designed to allow hot air to circulate into the outer chamber (cf. Foxholes Farm (Partridge 1989, Fig 18 and 19)). Elsewhere, the upper parts of the internal walls appear to be fairly even and horizontal, suggesting their surviving height (0.35m) also represents their original height. It is quite normal for the floor of the drying chamber to be at or slightly above ground level (Morris 1979, 10). The large brick fragment from the main flue may have originally acted as a cheek or cap associated with the flue arch (*ibid.*). The heavy burning in this area, indicated by blackened clay indicates the location of the fire place although no obvious stokehole was identified.

In stone areas of Britain, the floor of the drying chamber is usually constructed of stone slabs forming a rectangular shape, *e.g.* Catsgore (Leech 1982). Timber planking could also have made an adequate floor (Partridge 1989, 39) but may have required clay lining to prevent it catching fire. Such a feature may have been the source of the iron nails found within both the main flue and outer chamber at Haynes Park. As with the stone floors, strategically positioned gaps may have drawn the hot air either into the upper chamber or directly out of the oven *via* a chimney, as suggested for the drying oven at Bromham, Beds. (Tilson 1973, Fig 6). Such a feature may account for the undulation in the back wall of the outer chamber at Haynes Park.

The larger daub fragments from the destruction debris within the Haynes Park oven retained circular and/or squared impressions of wattles demonstrating that its superstructure was constructed of wattle and daub. At Manor Way, Flitwick (Fadden 1976, plate 4) small stakeholes appeared to represent the position of the wattled walls. With a postulated floor area of 3m by 2.8m, the Haynes Park drying oven is similar in size to that at Manor Way (*ibid.*) and many others in the country, for example Foxholes Farm, Leics. (Partridge 1989, Fig. 18).

*Date*

An archaeomagnetic date of AD60-160 (95% confidence) was obtained from the Haynes Park drying oven. The nearby drying ovens at Manor Way, Flitwick and Bromham were dated to the mid-second century (Fadden 1976, 31). Morris (1979, 20) has argued that T- shaped drying ovens had their origins in the 2nd century AD with more complex forms appearing in the 3rd or 4th centuries AD. The vast majority of dated drying ovens known from Britain belong to the latter period (*ibid.*), making the Haynes Park oven one of the earlier known examples.

*Evidence of use*

As is the case in other ovens (Morris 1979, 9), the Haynes Park structure contained charred wheat grains within the primary fill of the inner chamber and the destruction layers in the outer chamber. Although grains outnumbered glumes, the better preserved grains had glume impressions along their length. This could suggest that spelt spikelets (clusters of grains in their glumes) were being parched in the oven. However, Reynolds and Langley suggested there were alternative explanations for the occurrence of grain in ovens, such as the use of dry straw to start a fire in the stokehole (1979, 28). They felt it was much more likely that the structures were used as malting floors (ibid., 41). Another possible explanation for the presence of charred grain is that it was derived from the burning of a thatched roof, although this was clearly not the case where charred grain was found in ovens constructed under stone or clay roofs. The accidental charring of grain being dried on the chamber floor, and the loss of grain through the floor or openings still provide the best explanation. Clearly, however, this does not imply that this was the sole function of such structures.

At Farmoor, Oxon., botanical evidence suggests that drying ovens were used for de-husking spelt wheat as much as for drying it (Lambrick and Robinson 1979, 75 and 103-104). Experiments, using a reconstruction of the Foxholes Farm drying oven, suggested they would be unacceptably inefficient if the entire harvest was to be dried (Reynolds and Langley 1979, 38). Other experiments demonstrated that the ovens were effective in roasting seeds sufficiently to stop seed germination, an important stage within the malting process.

Circumstantial evidence for the use of drying ovens to prepare grain not just for storage but also for milling is provided by the frequency with which quernstones occur in their vicinity (Morris 1979, 18). At Haynes Park four quern or mill stones occur within 20m of the oven. However, two of these were found in later features, although it is possible that they were residual. At West Blatchington, Sussex the nine fragments of rotary querns from the site all derived from drying ovens (Norris and Burstow 1951). At Catsgore oven structure F421 was situated immediately adjacent to an *in situ* quernstone (Leech 1982, Fig 58).

*Location*

The majority of the drying ovens described by Morris were located within houses or agricultural buildings (1979, 18-20). The latter were usually

aisled structures which are often assumed to contain grain storage lofts. However, drying ovens like the one at Haynes Park are also found in more isolated locations away from the nearest domestic occupation, for example at Manor Way, Flitwick (Fadden 1976) or at the edges of fields, for example at Farmoor (Lambrick and Robinson 1979, 75).

Drying ovens are frequently associated with sunken areas interpreted as threshing-floors, e.g. Welton Wold, Yorks. (Wilson 1973) and wells or water containers, e.g. Catsgore. No such structure was identified at Haynes Park, although the charred material downslope from the oven probably derives from the burning of cereal glumes, a waste product of the threshing process.

**Economy**

Evidence for the processing of spelt wheat came not only from the drying oven but also from features in Area A. As on other Roman rural settlements in the region, wheat would certainly have been a major crop. Six-row hulled barley would also have been important, although only minor quantities were present in the particular samples taken at Haynes Park. A range of typical arable weed seeds was also recovered. On Area A there was a rather high proportion of small grass and common mallow seeds. This material could have had a grassland / wayside origin or may have derived from crops grown on ploughed-up grassland.

The presence of slag and hearth linings on Area A suggests iron smelting or smithing was taking place, albeit on a small scale. No metal artefacts associated with either cultivation or animal rearing were recovered from Roman features. However, single fragments of four separate rotary querns (three in later features) and a millstone were found. Clearly, these types of artefacts are long-lived and the recovered examples are not, therefore, all necessarily Roman. Despite the paucity of the animal bone assemblage, it must be assumed that, overall, the settlement's economy was based on a mixed arable / pastoral farming regime. The results of the study into land-use history at the site complement this conclusion and, for the later Roman period, hint at the possibility of increased stocking levels with agricultural land left fallow for longer periods in response to continuing soil erosion.

**Status**

Artefacts recovered from the settlement included small quantities of imported finewares, a Langton Down-type brooch, two leather shoes and two Roman coins. Overall the assemblage is not of particularly high quality, confirming the site's status as a fairly typical rural settlement. However, small quantities of Roman brick and *tegulae* may indicate the presence of a more substantial building in the vicinity.

## SAXO-NORMAN/EARLY MEDIEVAL (PERIODS IV AND V)

**Introduction**

Periods IV and V clearly represent distinct, stratigraphically defined phases of activity. However, they are discussed together because it has only been possible to date them broadly to the Saxo-Norman/early medieval period (see below). Boundary ditches, buildings and wooden structures associated with water management were identified. The nature and disposition of the evidence, together with the proximity of Haynes Church End, suggest the remains represent part of a dispersed settlement. A number of comparable settlements are known within the county and some are believed to be quite extensive, for example, Marston Moretaine (Edmondson and Steadman 2001, 54) and Stratton, Biggleswade, Beds. (Albion in prep. d).

The majority of the colluvial deposits, both within and beyond the spring hollows, have been assigned to Period V. It is believed they were accumulating rapidly during this period due to the unstable nature of the soil.

**The dispersed settlement**

The Manor of Haynes was recorded in Domesday Book, confirming late Saxon occupation of the area. It is likely that the Period IV buildings were part of a settlement associated with Haynes Church End. If so, and accepting the fact that the investigation area was inevitably restricted in extent, the results could suggest that this settlement was dispersed over a large area. Dispersed settlements rather than nucleated villages appear to be the norm at this time (Astill 1988, 37) and were certainly likely to be more common on the high ground of the Greensand Ridge.

Although the Period IV buildings are convincing as domestic dwellings, due to the presence of hearths, it is possible that building G61 (Period V) was an isolated agricultural structure located towards the edge of a field.

*Dating evidence and settlement shift/migration*

Although a considerable quantity of domestic debris was recovered, especially from the spring hollows,

the majority of it is residual 'Belgic' and Roman pottery. A small quantity of St Neots-type ware, notably from boundary ditches G64 and its recuts G62 (Period IV), and Stamford ware of 10th-12th century date was recovered. In addition, a single iron horseshoe of mid/late 11th-12th century date (RA 22) was found.

The waterlogged spring hollows preserved several organic objects, including three leather shoes and a wooden spade/shovel handle, which on typological grounds would date to this period. The distinguishing characteristics of the leather shoes are the large circular stitch holes and the use of fine thonging to sew a side seam. Scientific dating was undertaken on a hearth within building G51 (archaeomagnetic dating), the wooden hurdles (radiocarbon dating) and the timber tank (dendrochronology) confirming their Saxo-Norman date. The absence of hulled wheat (which might be expected in Roman deposits) from the environmental samples from buildings G44 and G51 (Period IV) also confirms their assignment to this period.

The end of domestic occupation within the study area and its replacement by arable cultivation appears to have taken place by the end of the 12th century. A similar date for settlement abandonment or shift was suggested at Marston Moretaine, Beds. (Crick 1999, 133; Edmondson and Steadman 2001, 52). Nationally, the absence of pre-12th century material from deserted medieval villages has in the past been used to argue for the "late" appearance of villages (Astill 1988, 37). However, it is always difficult within the confines of restricted excavation areas to determine whether the results are representative. For example, were parts of settlements abandoned or did they simply shift location slightly? The evidence from large scale excavations at Stratton, Beds. suggest that the extensive, but dispersed, late Saxon settlement was re-planned around this time to create a more regularly laid out village (Albion in prep. d).

Within Haynes Park stone roofing tiles and 12th-15th century pottery have been located during field-walking N of the church, suggesting that the settlement extended in this direction. If the trends identified elsewhere within the county (Lewis et al 1997) are paralleled, settlement density within the ends of Haynes parish could have been increasing during the 12th-13th century.

*The field/enclosure systems*

The ditches in both periods are parallel to many of the present-day boundaries within Haynes Church End. However, this may not be particularly significant, as the Roman boundaries were also on the same alignment, following the slope of the ground.

The Period IV boundary ditch G64 was recut on at least two occasions (G62). It divided the post-built buildings L16 from the contemporary activity within the spring hollows L17/18. In Period V the earlier boundary was again re-dug (G60) and was respected by a new perpendicular ditch, itself re-dug on many occasions (G90/88/86). Later in Period V ditch G60 was replaced by ditch G80 *c.*18m to the E. Building G61 was constructed over ditch G60, which may have been deliberately infilled, its associated hedge burnt and removed. Both the building and pit group G76 lay immediately to the W of the new boundary. No evidence was recovered for activity to the E, possibly reflecting different land ownership. The location of the buildings adjacent to the boundary ditches in both periods suggests that they were positioned to avoid taking up too much space. This is especially clear with buildings G44 and G51, where an L-shaped arrangement would appear to have been more logical.

*The buildings*

Evidence was recovered for four rectangular buildings G44, G48, G51 (Period IV) and G61 (Period V). They were all post-built usually within holes/pits, but occasionally within intermittent slots. A similar variety of techniques was observed at St Neots, Cambs. (Addyman 1973, 73). The narrow slots associated with G61 may have held vertical timber planks as part of the wall. The intermittent use of postholes and slots was evident in building 7 at Caldecotte, Milton Keynes (Zeepvat et al. 1994, Fig 38). Although the full length of the buildings was difficult to determine, they were all in excess of 6.7m. In the case of building G44, if the postholes to the S do represent an extension, its total length would be at least 17m, comparable to the Goltho "long hall" (Beresford 1987, 38-52). In three cases their widths could be determined: 5m (G44), 5.5m (G51) and 6m (G61). Comparable dimensions have been recorded for contemporary buildings at Stratton (Albion in prep. d).

It is possible that the Period IV buildings continued to function into Period V, although there is no evidence for rebuilding or repair. The size of the post-pits within building G61 and their stratigraphic relationship with the slot suggest they may be associated with the removal of the posts.

Evidence for doorways was restricted to the W wall line of building G44 where there was a gap of 1.4m between posts, twice that of the regular spac-

ing. The postholes on either side of this gap exhibited no difference to those in the rest of the wall line.

Although the buildings were not particularly well preserved, they did contain some evidence for internal structures. Two slots associated with the central hearth in building G51 may represent the position of a screen. A more substantial slot, presumably serving a similar purpose, was located within building G538 at Stratton (Albion in prep. d). The extension to G44 was the only other building with internal hearths (two centrally located and adjacent to each other). An arrangement of postholes adjacent to the N wall of G51 may represent the foundations for a substantial internal structure. A similar configuration of postholes was identified within building 56 at Gorhambury, Herts. (Neal et al. 1990, Fig 107). On the E side of G44, a slot partly inside and partly outside the building may be associated with a doorway, or perhaps more likely a drain.

Internally, building G61 was sub-divided by a substantial slot. A comparable feature was located within a building at Marston Moretaine where it was interpreted as a partition rather than a drain (Edmondson and Steadman 2001, 50). A layer adjacent to the slot, comprising tiny fragments of fired clay, may represent remnants of floor make-up. It also contained seven fragments of quernstone (RA 44).

Ditch G53 to the E of buildings G44 and G51 may represent the site of a small clay quarry. Alternatively, it may have functioned as a drain. Similar features have been identified on buildings at Westbury, Milton Keynes, *e.g.* 55870, (Ivens et al. 1995, 112) and Stratton G538 (Albion in prep. d), where they have been interpreted as drains.

Very few finds were recovered from these buildings. This is not an uncommon occurrence and has been observed at Marston Moretaine, Beds. (Edmondson and Steadman 2001, 54), Barton Blount and Goltho, Lincs. (Beresford 1975, 21).

*Water management structures in the spring hollows*

Two large hollows appear to have developed naturally in the hillside due to the presence of springs at the junction of the Lower Greensand and the overlying Boulder Clay deposits. Locally, springs and ponds still occur today in comparable positions, e.g. the one *c.*200m to the W (see Fig 2). It is uncertain whether or not these features existed in the Roman period. However, from an early stage they are likely to have been exploited as a source of water for the Saxo-Norman settlement.

An early attempt to keep the N spring hollow open for water collection took the form of a rectangular arrangement of hurdles G125 in the base. Modelling of radiocarbon determinations suggests a late 10th / early 11th century construction date. The hurdles were made with predominantly hazel sails and rods, derived from coppiced stools. Most, but not all, had been gathered in the winter. Hazel is a commonly used wood in hurdle-type structures of this period, e.g. context 261 in the Severn Estuary, near Caldicot, Gwent (Johnson 1994, 37) and in the well linings at Stratton (Albion in prep. d). A series of shallow, adjacent slots G129 in the W side of the N spring hollow give the appearance of foundation trenches, possibly for additional revetments or perhaps more likely for wooden steps leading down to the water.

The layers sealing the hurdles contained many fragments of rods and sails, possibly suggesting the structure had been partially dismantled for re-use. In addition, a quantity of woodworking waste was also recovered.

Following the abandonment and partial robbing of the hurdle structure, a series of deposits, some colluvial in origin, filled both spring hollows. Into these a large pit was dug for the construction of a timber tank G132. The lower and upper parts of the tank were built in quite different ways. The lower part comprised unworked roundwood laid horizontally, butting at the corners and held in place by stakes. However, the middle part comprised at least two levels of cleft and axe-cut timbers with half lapped corner joints. The gap between the edge of the tank and the side of the construction pit was filled with fairly pure clay, which also contained some timber offcuts.

Dendrochronological analysis demonstrated that the majority of the timbers (from the lower and middle parts of the tank) were felled in the summer of AD1081. The common felling date and the fact that six timbers from the middle part of the tank came from a single oak suggest that selected trees were felled specifically for the construction of the tank. The single tree was 8.3m long and had no side branches, indicating that it had grown in woodland rather than in a hedgerow.

## Economy

The Domesday record for the Manor of Haynes indicates that there was sufficient woodland for 500 pigs (Morris 1977 (23,15)). Based on these numbers, it is possible that the extensive areas of woodland suggested by Darby and Campbell (1962) between Woburn, Flitwick and Clophill extended onto this part of the Greensand Ridge. Ample evidence for the management of woodland resources was certainly

recovered from the study area. This includes not only the coppiced hazel used in the hurdle structure and the woodland oak felled for the timber tank but also the preponderance of oak in the charred wood assemblage. This suggests the settlement had a woodland source of fuel and did not just have to rely on hedgerows and scrub for its firewood. In the vicinity there was undoubtedly some kind of mixed, managed woodland with standard trees and coppice. Interestingly, however, the pollen study did not produce any evidence for widespread woodland development during the late Saxon period. The open, managed landscape was not dissimilar to that of the Roman period. Wood was probably one of the most valuable raw materials available to the inhabitants and the waterlogged evidence demonstrates its widespread use, not just as fuel and in buildings, but for a wide range of other activities.

The charred plant remains include most of the crops that might be expected for a settlement of this period. They also include a single grain of free-threshing tetraploid wheat, a species only recently shown to have been cultivated at this time (Moffett 1991). Ditch G60 (Period V) contained the highest concentration of grain from any of the post-Roman samples. It probably represents the accidental charring of clean grain (rivet or bread wheat) that was being parched to harden it prior to milling. However, the overall assemblage is too small to comment on the relative importance of the different cereals over time. The association of charred grain and arable weed seeds, and quern fragments with the buildings is consistent with small-scale, domestic cereal processing.

Although the animal bone assemblage for this period was the largest from the investigations, the majority of it derived from the fills of the spring hollows, which also contained large quantities of residual Roman material. It is, therefore, unclear how much of it derives from the settlement itself. Cattle and to a lesser extent pig and horse may have been the dominant species. The presence of the former is indicated by the recovery of a possible wooden cattle switch or goad, which had been reused in the hurdle.

### LATER MEDIEVAL (PERIOD VI)

Evidence was recovered from the excavation areas and watching brief for a field system, presumably associated with the settlement located near St Mary's Church. Ditch G32 represents a major new boundary, although it was on the same alignment as the earlier boundaries. Perpendicular to this were two ditches: G33 within excavation Area B, and G119 located within the watching brief.

The first evidence for ploughing in the form of sub-surface furrows (L8) only occurred to the W of major boundary G32. It is interesting to note that subdivisions only occurred to the E of this boundary, adjacent to the settlement and in the area where there had been problems with erosion. It is, therefore, possible that the divided land to the E was used for pasture and that to the W was an open arable field.

The field system may not have been in use for long, if the 14th century references to a park at Haynes do indeed refer to what later became the present-day Haynes Park.

## AFTERWORD

A number of methodological issues, not unique to this project, arose from the investigations at Haynes Park. Because of their wider relevance it was thought useful to consider them briefly here. Perhaps the most important relate to the outcome of the evaluation and the ability to date key elements of the site.

The aim of the evaluation was to determine the nature, extent and date of any archaeological remains in the study area. It was reasonably successful with the last of these aims but less so with the others. However, it should be remembered that it was undertaken in 1993 when evaluations were in their infancy. As is so often the case with single episode trial trenching, unenclosed pre-'Belgic' settlement, in this case of early-middle Iron Age date, was not identified (Hey and Lacey 2001, viii). In part, this was because the period produced little domestic debris, although the significance of two postholes located in Trench 8 was not appreciated (see Fig 4). Had the trench been widened around the two postholes, it should have been possible to identify additional features of this period.

Trial trenches frequently locate archaeological features such as pits and ditches, as they did at Haynes Park. More uncommonly, Trench 8 located post-built building G61 (see Fig 15) and Trench 5 located the drying oven (see Fig 8). However, trenches often do seem to have an uncanny ability to "just miss" significant archaeological features. At Haynes Park this can be seen in the way in which Trench 7 runs parallel and adjacent to ditches G5/7 (see Fig 5), how Trench 5 just misses building G37 (see Fig 9), or how Trench 5 stops a matter of metres short of the waterlogged spring hollow G120 (see Fig 10).

Perhaps most significantly, the evaluation failed to locate the waterlogged deposits. If it had done so, it is likely that minor changes to the road design could

have guaranteed their preservation. Although the waterlogged deposits have proved to be an important discovery, the complexity of their on-site investigation, together with the necessary post-fieldwork conservation and analysis, greatly increased the cost of the project.

One other significant aspect of the investigations relates to the dating of key elements of the site. Buildings are frequently dated by the artefacts that their constituent features contain. Such artefactual assemblages are often quite limited, as was the case at Haynes Park. If buildings G44, G48 and G51, which had no stratigraphic relationships, had been dated in this way, they would have been assigned to the Roman period. It was only the archaeomagnetic determination on the central hearth in building G51 which suggested that they belonged to the Saxo-Norman tradition of timber halls.

Interestingly, the relatively large artefactual assemblage from the waterlogged spring hollows illustrates the converse of this situation. The pottery assemblage was dominated by Roman material, only some of which showed signs of abrasion. Two Roman coins and diagnostically Roman leather shoes were also present. However, tree ring and radiocarbon dating demonstrated that all the timber structures were actually Saxo-Norman. Similarly, without scientific techniques, the dating of the drying oven would probably have been misrepresented. The structure was sealed by a deposit containing late Roman pottery, which provided a *terminus ante quem* for its use. However, without archaeomagnetic dating, it is inconceivable that its date could have been pushed back as far as the late 1st/early 2nd century AD. Its significance as an early example would, thus, have gone unrecognised. Clearly, absolute dating techniques are not always either appropriate or indeed possible. Nevertheless, as at Haynes Park, they can make a significant contribution to the overall phasing and interpretation of sites.

## APPENDIX 1: POTTERY TYPE SERIES

Jackie Wells

Fabrics are summarised below within chronological periods, using type codes and common names in accordance with the Bedfordshire Ceramic Type Series, held by Albion Archaeology. Full fabric descriptions are given only for those types not previously published. Bracketed figures after each fabric type denote a percentage of the total excavated assemblage. Percentages are noted for fabric types constituting over 1% of the total assemblage.

**Iron Age**

*Type F Non-specific Iron Age (4 vessels)*
Described in the site archive.

**Early-middle Iron Age**

*Type F16 Coarse Shell tempered*
Fabric: Slowikowski (2000, 63)
Forms: hand-made jar.

*Type F19 Organic and sand tempered*
Fabric: McSloy (1996, 24).
Forms: hand-made but otherwise indistinguishable.

*Type F28 Fine sand tempered*
Fabric: La Niece (1999, 22)
Forms: hand-made strap-handled vessel

**Belgic Iron Age**

*Type F03 Grog and sand*
Fabric : described by Slowikowski (2000, 61)
Forms: hand-made jar or bowl.
Illustration: Fig 17, no. 1.

*Type F05 Grog and shell tempered (6%)*
Fabric: Slowikowski (2000, 62).
Forms: storage jars, lid-seated jars with horizontal scoring, and a plain-rim bowl. One lid-seated jar has a post-firing hole drilled directly below the rim.
Illustrations: Fig 17, nos. 2 & 8.

*Type F06 Grog tempered (13%)*
Fabric: Stead and Rigby (1986); fully discussed by Thompson (1982). Three sub-divisions of this type have been defined, based on the size and frequency of the grog inclusions. All are present at Haynes.
Forms: storage jars, lid-seated jars, cordoned and narrow-necked jars, and jars with everted rims. Predominantly wheel-made, although hand-made examples are known. Surface finish and decorative elements include horizontal and vertical scoring, burnishing and impressed motifs.
Illustrations: Fig 17, nos. 3, 5, & 7.

*Type F07 Shell tempered (2%)*
Fabric: Slowikowski (2000, 62).
Forms: lid-seated jars.
Illustration: Fig 17, no. 4.

*Type F09 Grog and sand tempered (30%)*
Fabric: La Niece (1999, 24)
Forms: burnished cordoned jars, lid-seated jars with horizontal and vertical combing, neckless jars and jars with simple everted rims.
Illustrations: Fig 17, no. 6, Fig 18, nos. 9 & 10.

*Type F34 Sand tempered*
Fabric: Fine, hard-fired fabric with buff-orange surfaces and variable grey core. Contains sparse, well-sorted, sub-rounded quartz 0.1-0.5mm, and occasional mica.
Forms: butt beaker.
Illustration: Fig 18, no. 11.

**Roman**

*Type R Non-specific Roman (2 vessels)*
Described in the site archive.

*Type R02 Mica gilded wares*
Fabric: Marney (1989, 185: fabric 34c).
Forms: wheel-made but otherwise indistinguishable.
Date: late 1st-2nd century.

*Type R01A Samian - Central Gaulish: Lezoux (1%)*
Fabric: Tomber and Dore (1998, 31-32).
Forms: moulded dish/bowls (Dr 18/31), bowl (Dr 31) and conical cups (Dr 33), one bearing the potter's stamp 'TITURO' (AD 160-190).
Date: early 2nd-3rd century.

*Type R01C Samian - East Gaulish: La Madeleine*
Fabric: Tomber and Dore (1998, 38)
Forms :moulded dish/bowl (Dr 18/31 R) and conical cup (Dr 33).
Date: late 2nd-early 3rd century.

*Type R01D Samian - Romano-British*
Fabric: Webster (1975, 163-4).
Forms: moulded Dr 33 variant, identified as a product of the Aldgate-Pulborough potter.
Date: *c.* 2nd century.

*Type R03A Fine white ware (Verulamium region)*
Fabric: Marney (1989, 182: fabric 18g).
Forms: wheel-made body sherd, possibly deriving from a flagon.
Date: late 1st-2nd century.

*Type R03B Gritty white ware*
Fabric: Marney (1989, 186: fabric 39).
Forms: wheel-made jar with a reeded rim.
Date: 2nd century+

*Type R03C Smooth white ware*
Fabric: Hard fired smooth fabric, cream-buff throughout. Contains common, well-sorted, sub-rounded clear or opaque quartz, 0.1-0.5mm, and occasional red iron ore.
Forms: wheel-made but otherwise indistinguishable.
Date: late 1st-2nd century.

*Type R06B Coarse grey ware (9%)*
Fabric: Harsh gritty fabric, with variable reduced core and surfaces, the latter often smoothed and/or burnished. Contains abundant, ill-sorted, sub-rounded quartz, 0.5-1.0mm.
Forms: wheel-made bowls and plain rim 'dog' dishes, a single platter, storage jars and jars with everted rims.
Date: 2nd-4th century.

*Type R06C Fine grey ware (5%)*
Fabric: Hard fired, smooth fabric with variable reduced surfaces and paler core. Contains frequent, well-sorted fine quartz, 0.1-0.5mm.
Forms: poppyhead beakers, plain-rim bowls and plain-rim 'dog' dishes, a single platter, narrow-necked jars, neckless jars and jars with everted rims. All are wheel-made. Some examples are burnished and two jars bear wavy incised decoration.
Date: 2nd-4th century.

*Type R06D Micaceous grey ware*
Fabric: Soft fired fabric with mid-grey surfaces and paler core. Contains common, well-sorted, sub-rounded fine quartz, 0.1-0.5mm, and sparse inclusions of larger grains. Also rare red iron ore.
Forms: wheel-made jars with everted rims, some of which are rouletted.
Date: 2nd-4th century.

*Type R06E Calcareous grey ware*
Fabric: Hard fired fabric with variable reduced surfaces and core, characterised by a vesicular appearance resulting from the leaching or burning out of calcareous inclusions, up to 0.5mm in size. Also contains abundant clear or opaque white quartz, 0.1-0.5mm.
Forms: wheel-made but otherwise indistinguishable.
Date: 2nd-4th century.

*Type R06F Grog and sand grey ware*
Fabric: Hard fired, dense fabric, smooth to the touch, with variable grey-brown surfaces and core. Contains frequent well-sorted subangular quartz, 0.1-0.3mm, powdery buff grog particles, 0.5-1.0mm, and sparse black iron ore.
Forms: wheel-made jars with lid-seated and everted rims. One of the latter has a post-firing hole drilled directly below the rim.
Date: ?2nd-4th century.

*Type R13 Shell tempered (13%)*
Fabric: Brown (1994).
Forms: range from the first century, with lid-seated, narrow-necked and square rim jars, to the fourth century, represented by jars with everted, triangular and undercut rims, large storage jars, small and large bowl forms, with flanged and rectangular rims, and dishes. All are wheel-made. Surface finishes range from simple smoothing or wiping, to combing or rilling, the latter being more common on vessels of later date. Decoration is rare, and is largely restricted to incised linear motifs around bowl rims.
Date: 1st-4th century.
Illustrations: Fig 18, nos. 12-14, Fig 19, no. 15.

*Type R07B Sandy black ware*
Fabric: Hard fired fabric, with black surfaces and grey-black core, often with red margins. Contains frequent well-sorted, sub-rounded fine quartz, 0.1-0.5mm, and sparse inclusions of larger grains.
Forms: wheel-made bowl.
Date: *c.* 2nd century.

*Type R07C Gritty black ware*
Fabric: Coarse, hard fired fabric with black surfaces and grey-black core. Contains abundant, ill-sorted, sub-rounded quartz, 0.1-1.0mm.
Forms: wheel-made but otherwise indistinguishable.
Date: 2nd-4th century.

*Type R05A Orange sand tempered*
Fabric - hard fired fabric, orange-buff throughout, although surfaces are often slipped white. Contains frequent to abundant subangular quartz inclusions, 0.1-1.0mm.
Forms: wheel-made platter.
Date: 2nd-4th century.

*Type R14 Sand tempered (red-brown harsh)*
Fabric: Harsh, hard fired fabric with variable orange-grey-brown surfaces and core. Contains abundant, fine, clear or opaque quartz, 0.3-1.0mm, and sparse red iron ore.

Forms: wheel-made lid-seated jar.
Date: ?2nd-4th century.

*Type R11 Oxford oxidised ware (3%)*
Fabric: Young (1977, 185).
Forms: wheel-made jars with everted rims, and a flanged rim bowl. Two examples of the former are burnished.
Date: 3rd-4th century.

*Type R11D Oxford colour coat (1%)*
Fabric: Young (1977, 123).
Forms: wheel-made jars with everted and beaded rims, a mortarium, and a bead rim bowl. The latter bears rouletted decoration, while an undiagnostic body sherd has impressed decoration in the form of a circular stamp.
Date: mid 3rd-4th century.
Illustration: Fig 19, nos. 17-18.

*Type R11E Oxford white mortaria*
Fabric: Young (1977, 56).
Forms: wheel-made mortaria.
Date: mid 3rd-4th century.

*Type R11F Oxford red mortaria*
Fabric: Young (1977, 123).
Forms: wheel-made mortaria, one with painted and rouletted decoration.
Date: mid 3rd-4th century.
Illustration: Fig 19, no. 19.

*Type R12A Nene Valley mortaria*
Fabric: Tomber and Dore (1998, 119).
Forms: wheel-made mortaria.
Date: mid 3rd-4th century.
Illustration: Fig 19, no. 21.

*Type R12B Nene Valley colour coat*
Fabric: Tomber and Dore (1998, 118), Marney (1989, 176: fabric 6)
Forms: wheel-made beakers, bowls, 'dog' dishes, flanged bowls and a Castor box lid. Decoration includes rouletting, barbotine and trailed slip.
Date: late 3rd-4th century.
Illustrations: Fig 19, nos. 16 & 20.

*Type R22A Hadham oxidised ware*
Fabric: Tomber and Dore (1998, 151), Marney (1989, 186: fabric 37).
Forms: wheel-made but otherwise indistinguishable.
Date: 4th century.

**Saxo-Norman**
*Type B01 St Neots-type (3%)*
Fabric: Hurst (1956), Hunter (1979) and Denham (1985).
Forms: wheel-made bowls with inturned rims and jars with everted rims.
Date: mid 9th-11th century.
Illustrations: Fig 20, nos. 22-24.

*Type C08 Thetford-type*
Fabric: Hurst (1957, 43).
Forms: wheel-made but otherwise indistinguishable.
Date: 10th-12th century.

*Type C12 Stamford ware*
Fabric: Kilmurry (1980, 8-12).
Forms: wheel-made jug/pitcher.
Date: 10th-12th century.

**Early Medieval**
*Type B07 Shell tempered (developed St Neots-type)*
Fabric: Baker and Hassall (1979, 167).
Forms: wheel-made plain rim bowl.
Date: 12th-13th century.

*Type C60 Hertfordshire-type grey ware*
Fabric: Brine (1988, 43).
Forms: hand-made but otherwise indistinguishable.
Date: 12th-13th century.

## APPENDIX 2: CERAMIC BUILDING MATERIAL TYPE SERIES

Jackie Wells

Fabrics are summarised below using type codes and common names in accordance with the Bedfordshire Ceramic Type Series, held by Albion Archaeology. Full fabric descriptions are given only for those types not previously published. Bracketed figures after each fabric type denote a percentage of the total excavated assemblage.

*Type 1 Sandy (15%)*
Fabric: fine and hard fired, orange throughout, turning to brick-red where over-fired. Generally finely tempered, although some fragments are coarsely made and contain angular quartz of up to 6.0mm in size. Contains frequent, well-sorted, sub-angular multi-coloured quartz *c.* 0.2-0.5mm and dark red and black iron ore *c.* 0.1-0.3mm. Also rare angular flint inclusions of up to 5mm in size.
Forms: *tegulae*, flue tile and brick.
late medieval/post-medieval flat roof tile and brick.
Source: although no production centres are known in the immediate vicinity, it is possible that quartz inclusions found in sandy types derive from the lower Greensand ridge.

*Type 2 Gault Clay (2%)*
Fabric: Wells (1999, 128: type 2)
Forms: late medieval/post medieval flat roof tile.
Source: originates in the Gault Clay area which runs through Bedfordshire from Leighton Buzzard in the SW to Wrestlingworth in the NE.

*Type 3 Sand and Calcareous inclusions (4%)*
Fabric: fairly hard fired, often gritty fabric, with variable orange to light red-brown surfaces and core. Contains frequent, ill-sorted calcareous inclusions of up to 2.0mm, frequent, well-sorted, sub-angular multi-coloured quartz *c.* 0.1-0.3mm and dark red and black iron ore *c.* 0.1-0.3mm. Also rare angular white flint inclusions of up to 5mm. Examples in this type are often characterised by a vesicular surface appear-

ance, caused by the firing or leaching out of calcareous inclusions.
Forms: *tegulae*
late medieval/post medieval flat roof tile.
Source: as Type 1.

*Type 4 Grey cored Sandy (3%)*
Fabric: Hard fired, fairly smooth fabric with bright orange to dark red-brown surfaces, and characterised by a distinctive blue-grey core. Contains variable multi-coloured quartz, 0.1-0.5mm and unevenly sized red iron ore inclusions, 0.5-1.0mm.
Forms: *tegulae*
Source: as Type 1.

*Type 5 Roman Shell tempered (75%)*
Fabric: Brown (1994).
Forms: *tegulae* and brick
Source: Unknown. However, the fabric is comparable to those from kilns at Harrold Lodge, Beds. Although these are *c.* 20km to the NW of Haynes, this kiln complex is known to have exported its shell tempered building material and pottery widely within the Ouse Valley and its tributaries (Brown 1994, 104-5). Shell tempered vessels within the Haynes Park pottery assemblage were also in a fabric comparable to those from the Harrold kilns.

*Type 6 Sand and Grog tempered (1%)*
Fabric: fairly coarse, soft and powdery fabric, dark orange-brown throughout. Characterised by abundant, ill sorted, sub-rounded grog particles, buff in colour, varying on average in size from 1.0-5.0mm, with some ranging up to 8.0mm. Frequent sub-rounded dark red iron ore *c.* 0.4-1.0mm and well sorted sub-rounded multi-coloured quartz *c.* 0.3-0.5mm.
Forms: late medieval/post medieval brick
Source: as Type 1.

## APPENDIX 3: DAUB AND FIRED CLAY TYPE SERIES
Jackie Wells

Four fabric types were identified: all are likely to have derived from locally extracted clay. Bracketed figures after each fabric type denote a percentage of the total excavated assemblage.

*Type A (84%)*
Fabric: coarse, hard, mid to dark orange-red fabric with variable dark grey-black patches where reduced. Inclusions are abundant sub-rounded, sub-angular quartz *c.* 0.1-0.5 mm. Rare patches of powdery buff-white ?grog *c.* 0.5-2.0 mm and rare red iron ore *c.* 0.5 mm. Some larger fragments contain sub-angular/ angular flint or chert pebbles ranging in size between 1-2 cm.

*Type B (2%)*
Fabric: denser, softer and finer matrix than type A. Pale yellow-orange-buff fabric, dark blue-grey where reduced. Inclusions are frequent, well-sorted sub-rounded, sub-angular quartz *c.* 0.1-0.5 mm, occasionally ranging to 1.0 mm, predominantly milky/white in colour. Also frequent red and abundant black iron ore 0.5-1.0 mm and rare angular flint or chert *c.* 1.0mm.

*Type C (1%)*
Fabric: friable, soft, fabric with soapy texture. Buff-yellow in colour with variable blue-grey patches where reduced. Inclusions are abundant buff-white grog , sparse sub-angular quartz 0.2-0.4mm, and rare organic material, or more commonly, elongated voids where the latter has burnt/fired out.

*Type D (13%)*
Fabric: natural clay - extremely dense, hard matrix, pale buff-yellow-green throughout. Few inclusions are visible, and comprise rare, well-sorted, sub-angular quartz 0.1-0.3mm.

## APPENDIX 4: WATERLOGGED WOOD
Rowena Gale

The waterlogged wood is described in some detail below, but for information on individual pieces the site archive should be consulted.

The taxa identified are listed below:
KEY
*Acer* sp. (maple)
*Corylus* sp. (hazel)
*Fraxinus* sp. (ash)
*Ilex* sp. (holly)
Pomoideae, a subfamily of the *Rosaceae*, which includes *Crataegus* sp. (hawthorn); *Malus* sp. (apple); *Pyrus* sp. (pear); *Sorbus* sp. (rowan, whitebeam, wild service).
*Prunus* sp. Native species include *P. spinosa* (blackthorn), *P. padus* (bird cherry) and *P. avium* (cherry)
*Quercus* sp. (oak)
Rosiodeae, a subfamily of the *Rosaceae*, which includes *Rosa* sp. (rose) and *Rubus* sp. (bramble).
Salicaceae which includes *Salix* sp. (willow) and *Populus* sp. (poplar).
*Sambucus* sp. (elder)
*Ulmus* sp. (elm)

**Primary fill G122 of spring hollow G120 (Period IV)**
Samples from these deposits comprised brushwood and rods predominantly hazel (*Corylus*) but also with native species (*Prunus*) and oak (*Quercus*). Several of the samples were abraded pieces of roundwood measuring from 7-30mm in diameter. Tool marks were present on several of the samples identified as hazel.

**Fill G123 of spring hollow G120 (Period IV)**
Two oak (*Quercus*) samples identified as rods and one native species (*Prunus*) offcut were identified. The two rods were very abraded, one showing evidence of charring. Tool marks occurred on two of the samples.

**Hurdle G125, within spring hollow G121 (Period IV)**
The majority of the rods and sails were constructed from hazel (*Corylus*). Native species (*Prunus*), Pomoideae, Salicaceae, maple, ash (*Fraxinus*) and holly (*Ilex*) were also used. With the exception of one rod which was 7mm the others varied between 12mm and 22mm in diameter suggesting they were selected for their similarity of size. The rods ranged from 4-6 years but despite this the stems appear to have grown very fast. A number of rods were extremely long, for example 800mm in length.

The sails and supports were predominantly hazel, with rare holly (*Ilex*), maple (*Acer*) and ash (*Fraxinus*). The hazel sails measured between 30mm and 50mm in diameter, with age ranges from 9 to 33 years. The growth rates of these were far less consistent than those of the rods with one sail taking 33 years to reach a similar width.

Associated fragments of wood included five stakes of maple (*Acer*) and hazel (*Corylus*). The remaining wood is interpreted as offcuts, brushwood or a wedge. The occasional piece exhibited evidence of charring.

**Destruction G126 of hurdle G125 (Period IV)**
Fifty-two samples of rods and sails were examined from deposits stratigraphically later than the *in situ* hurdle. These comprised a similar range of species and types to those identified in the hurdle but also a mix of chips, brushwood, offcuts, planks and artefacts. The majority of the wood from these deposits is presumed to be associated with the destruction of the hurdle, but it could also relate to other hurdles or activity merely used to infill the spring hollow. The rods were mainly cut in the dormant period and like the *in situ* hurdle had been selected for their consistency of diameter. They mainly ranged between 3-10 years, but the widest was 24 years.

The sails were similar in diameter (20mm and 50mm) to the *in situ* hurdle, with age ranges between 6 and 14 years. The growth rates of the hazel varied between fast growth, *e.g.* growing to 30mm diameter in 5 years, and those of much slower growth, *e.g.* 25mm diameter in 10 years.

A number of samples were less regular in shape or/and in comparatively poor condition and superficially abraded. These may have been natural accumulations of debris or, perhaps, brushwood dumped to provide a more stable surface. The use of blackthorn (*P. spinosa*) and/or hawthorn (*Crataegus*) which produce spines up to 60mm or more in length would have provided uncomfortable going for foot traffic. Several wood chips bore tool marks and one was charred. The type and nature of these samples suggest that they may have derived from the deposition of waste material.

**Timber tank G132 (Period IV)**
The majority of the timbers were oak and measured between 140mm and 110mm in length. An exception was 2075 (upper timber) which was identified as maple (*Acer*) and had a diameter of 55mm.

Samples taken from smaller "packing" timbers included a hazel (*Corylus*) roundwood (diameter 30mm); a fragment of oak (*Quercus*) heartwood; a stake measuring 60mm in diameter and a piece of willow or poplar (Salicaceae).

**Deposits G118 filling timber tank G132 (Period V)**
Samples from the filling deposits of the tank comprised chips, brushwood, stakes, rods and offcuts. These were primarily of oak (*Quercus*), but hazel (*Corylus*), maple (*Acer*) and Pomoideae were also present in smaller quantities. A number of samples showed traces of tool marks including one hazel (*Corylus*) roundwood (diameter 25mm) which also bore the characteristic coppice wood 'heel' indicating its severance from the coppice stool. A small number of samples exhibited evidence of charring.

## APPENDIX 5: SCIENTIFIC DATING

Scientific dating was undertaken on suitable material from key structural elements of the site.

| | | | | | |
|---|---|---|---|---|---|
| Timber tank | G132 | L17 | Period IV | dendrochronology | University of Sheffield |
| Drying oven | G108 | L12 | Period III | archaeomagnetic | Clark Consultancy |
| Building | G51 | L16 | Period IV | archaeomagnetic | Clark Consultancy |
| Hurdles | G125 | L17 | Period IV | radiocarbon | Beta Analytic Inc. |

### DENDROCHRONOLOGY
Cathy Groves with Mike Luke

Eleven samples from a range of positions within the timber tank G132 were analysed at the Dendrochronology Laboratory, Sheffield, using standard dendrochronological techniques (Baille 1982). All the samples were of oak (*Quercus*) and in the absence of bark edge, felling dates were calculated using the sapwood estimate of 10-55 rings. This ring number range provides a 95% confidence for the sapwood rings on British oak trees over 30 years old (Hillam et al. 1986).

| Timber | Position/use | Sapwood | No. of rings | Date span of measured rings | Felling date | Comment | Tree |
|---|---|---|---|---|---|---|---|
| 2053 | Middle major | 12 | 74 | AD1007-1080 | AD1081 | felled summer | 1 |
| 2054 | Middle major | 19 | 58 | AD1023-1080 | AD1081 | felled summer | |
| 2056 | Lower major | 3 | 110 | AD940-1049 | AD1059-1104 | | 2 |
| 2062 | Middle major | 17 | 53 | AD1028-1080 | AD1081 | felled summer | 1 |
| 2065 | Lower major | 16 | 66 | AD1080/81 | AD1080/81 | | 3 |
| 2066 | Corner stake | | 123 | AD899-1021 | After AD1031 | | 2 |
| 2069 | Upper major | | *c.* 40 | | | rejected | |
| 2070 | Middle major | 17 | 74 | AD1007-1080 | AD1081 | felled summer | 1 |
| 2073 | Lower major | 15 | 68 | AD1013-1080 | AD1080/81 | | 3 |
| 2074 | Corner stake | 25 | 105 | AD976-1080 | AD1081 | felled summer | 2 |
| 2077 | Middle major | 16 | 16 | AD1024-1080 | AD1081 | felled summer | |

Table 15 Details of the tree-ring dates

The results suggest that the timbers were felled in the summer of AD1081. The relationship between felling date and construction date is not always simple. However, in this case because of the consistency of dates and use of timbers from the same tree it is likely that the timbers were felled as required for almost immediate use and the presence of bark indicates that they were used while green.

ARCHAEOMAGNETIC DATING
Anthony Clark with Mike Luke

**Drying oven G108**

| | |
|---|---|
| Measurement ref. | AJC-132 |
| Drying oven | Context 152, G108, L12, Ph 5, Period III |
| NG | TL 07957/41239 |
| Lat.: 52.05°N | Long: 0.42°W |
| Orientation | Magnetic north (calculated as 3.76°W) |
| Sampling method | Discs |
| No. of samples used/taken | 15/16 |
| Removal of viscous magnetisation | 5 mT AF peak field |
| Sampled: 30/06/1994 | Reported: 09/06/1995 |

Twelve samples were taken from the clay base of the main flue, the most physically stable material available. Four more were taken from the fairly well preserved west wall in the hope these might be usable for correcting magnetic refraction in the oven base samples.

The samples were of average magnetic intensity for fired clay. Stepwise AF demagnetisation showed that the magnetisation of the clay was only moderately stable. The removal of viscous components was therefore attempted at only 5 mT, but this produced a slight deterioration in clustering of results without any significant change in the mean direction. Therefore dating was based on the initial (NRM) measurements.

The mean magnetic direction at the last firing was
Dec= 2.35°W; Inc= 63.4°; alpha –95= 2.33° (12 oven base samples)

This gives a date span of AD90-140 at 68% confidence level or AD60-160 at 95% confidence level.

After rejection of one sample as an outlier, the result from the wall samples was:
Dec= 0.73°E; Inc- 70.30°; alpha- = 5.90° (3 wall samples)

Although it provides broad support for the early Roman date of the base samples, this result is too imprecise to contribute to the refinement of the result. Therefore, the date quoted above is based on the normal assumption that refraction has caused inclination in the oven base samples to be too shallow by about 2.4°.

**Hearth F833 (building G51)**

| | |
|---|---|
| Measurement ref. | AJC-133 |
| Burnt subsoil | Context 833, F833, G51, L16, Ph 7, Period IV |
| NG | TL 07944/41192 |
| Lat.: 52.05°N | Long: 0.42°W |
| Orientation | Magnetic north (calculated as 3.76°W) |
| Sampling method | Discs |
| No. of samples used/taken | 4/13 |
| Removal of viscous magnetisation | 7.5 mT AF peak field |
| Sampled: 30/06/1994 | Reported: 09/06/1995 |

An area of subsoil, *c.* 1.1m in diameter, had been burnt to an intense salmon pink. Although the magnetic intensity and stability of the material were high, most of the 13 samples gave very scattered and unusable magnetic directions. Material of this kind at such a shallow depth tends to be vulnerable to damage and distortion, for instance by ploughing, and especially when wet.

However, four samples formed a distinctly tight grouping, further improved by the partial demagnetisation treatment. These samples were well spread over the burnt area, showing that systematic movement was unlikely to have occurred, and it was concluded that these were the only samples unaffected by disturbance.

The mean magnetic direction at the last firing was
Dec= 24.07°W; Inc= 62.68°; alpha –95= 1.66° (4 samples)

This gives a date span of AD1040-1090 at 68% confidence level or AD1020-1100 at 95% confidence level.

RADIOCARBON DATING

Samples of coppiced, roundwood rods, from each of the two hurdles that made up structure G125, were submitted to Beta Analytic Inc., Florida for radiocarbon dating. Pretreatment, C14 content measurement and age calculation went normally. The calibrated dates were calculated using the computer program OxCal (v2.18) (Bronk Ramsey 1994; 1995) and the data published by Stuiver and Pearson (1986).

| Sample | Context | $^{14}$C Age (BP) | Calibrated date range (95% confidence) |
|---|---|---|---|
| Beta-100077 | 1144 | 1040 ± 60 | cal AD880-1160 |
| Beta-100078 | 1161 | 970 ± 60 | cal AD960-1220 |

The dates were modelled in OxCal (v2.18) on the basis of the following archaeological assumptions and data.

The two sampled hurdles were interpreted as contemporary elements of the same structure. Their radiocarbon dates were, therefore, combined to give an uncalibrated date of 1005 ± 42BP. The results of a chi squared test (df=1 T=0.7(5% 3.8), Ward and Wilson 1978) confirm that this is a statistically valid assumption.

Using the technique known as "Gibbs' sampling" (Gelfand and Smith 1990), this combined date was modified in the light of the following stratigraphic information and assumptions:

- a *terminus ante quem* for the construction of the hurdle lining is provided by the stratigraphically later timber tank G132, which on the basis of dendrochronological dating was constructed from trees felled in AD1081.
- a 2m thick deposit of colluvial hillwash physically separates the hurdle lining and the timber tank. No empirical data exist to indicate how long this material actually took to accumulate. Therefore, for the purposes of modelling the radiocarbon dates a period of 30 years has been assumed.

At 95% confidence the combined probability distribution of the two samples (modified by the *terminus ante quem* provided by the colluviation and the timber tank) is cal AD960-1060. This result is displayed graphically in Fig 29, where the white area beneath the curve represents that part of the probability distribution ruled out by the *terminus ante quem*.

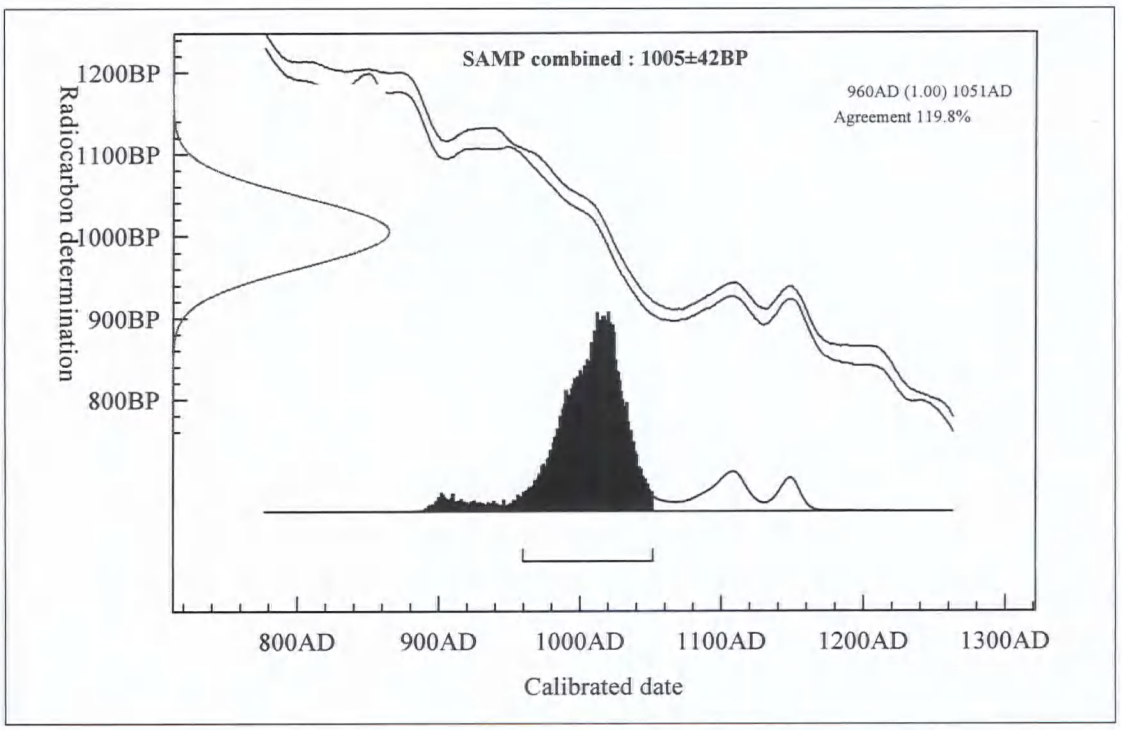


Figure 29 Modelling of radiocarbon dates from hurdle lining G125 of northern spring hollow

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