EXCAVATION OF A MEDIEVAL SETTLEMENT, LATE SAXON FEATURES AND A BRONZE AGE CREMATION CEMETERY AT LOUGHTON, MILTON KEYNES

JO PINE

with contributions by Barbara Precious, Paul Cannon, Steve Ford, Matthew Gleave, Sheila Hamilton-Dyer, John Letts, Tessa Machling, Nicola Powell, Chris Salter, Andy Smith, Mouli Start, Alan Vince and David Williams

An earthwork survey at Loughton, Milton Keynes, suggested the presence of house platforms, ridge and furrow and a hollow way, in addition to other features. The subsequent evaluation confirmed the archaeological significance of the earthworks and revealed numerous deposits. As a result, nine excavation trenches were dug prior to the development of the site for housing. Several phases of activity were identified, the earliest of which was a small middle Bronze Age cremation cemetery. Roman and early Saxon evidence was restricted to small numbers of pottery sherds residual in later features. Ditched field boundaries, pits and postholes of late Saxon and early medieval date, and elements of medieval settlement, including remains of up to six buildings, are described. Specialist reports are included on the prehistoric, Saxon, medieval and post-medieval pottery, and cremated human remains, with shorter notes on metalwork, worked stone, iron slag and hearth lining, animal bones and charred plant remains.

INTRODUCTION

An archaeological excavation was carried out at Loughton, Milton Keynes (SP 839379) (Fig 1) on behalf of Westbury Homes (Holdings) Ltd, as part of their scheme to develop the site for housing. The excavation was required as part of a programme of archaeological investigation approved by Mr Brian Giggins, Archaeological Officer for Milton Keynes Council. It followed the results of an earlier earthwork survey and field evaluation, carried out with the approval of Ms Julia Wise of Buckinghamshire County Council. The site code is LMK 97/56 and the finds have been deposited with Buckinghamshire County Museum Service (Acc. nos AYBCM 1998.129 and CAS 3630).

The site lies north-east of the village of Loughton, north of Pitcher Lane, and relatively close to All Saints Church (Fig 2). It lies on sloping land at a height of 85m above Ordnance Datum and, according to the British Geological Survey (BGS 1992), is located on the boundary between Oxford Clay and glacial till. Prior to the fieldwork described below, the western side of the site was rough grassland with a number of well-preserved earthworks. The eastern side of the site had clearly been levelled in recent times, perhaps as a result of construction of the nearby A5 trunk road.

Loughton (*Lochintone*) is first mentioned in Domesday Book (VCH 1905, 395). Present day Loughton has two components, Great and Little Loughton, which in 1409 had been amalgamated under a single lord of the manor (*ibid*). The old village of Great Loughton lies immediately to the west and north-west of the excavation trenches. Pottery of 12th to 13th century date was discovered during building works close to All Saints Church, parts of which date from the 13th

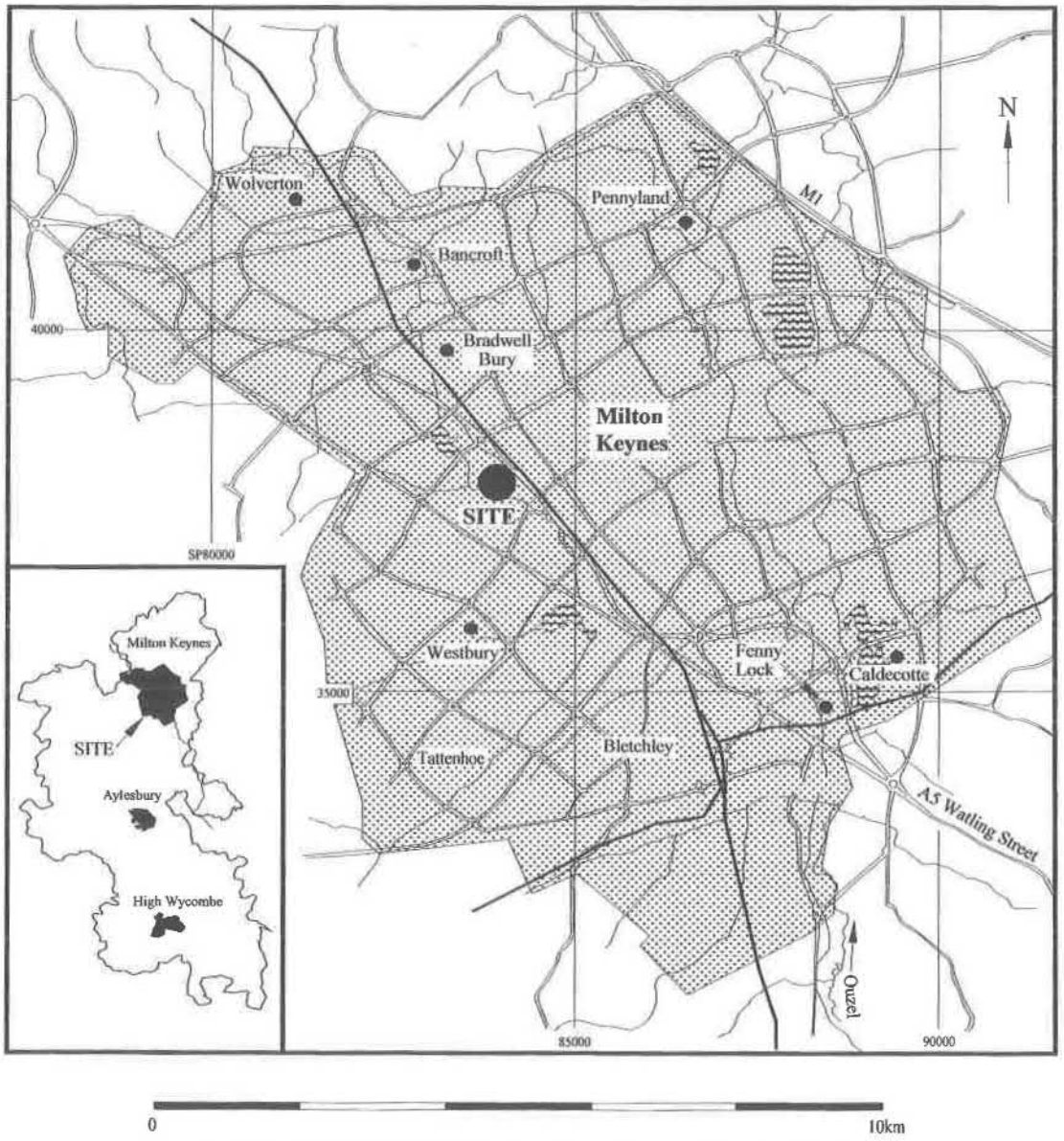

FIGURE 1 Location of site in Milton Keynes, showing other sites mentioned in the text.

century and first mentioned in 1219.

A number of large earthworks survive to the north, north-east and south of modern Loughton (Croft and Mynard 1993, fig 40). The earthworks to the south comprise house platforms, fishponds, a moat, and ridge and furrow, and are probably part of Little Loughton. Rescue excavation of one of the house platforms revealed the remains of the stone foundations of a house of 14th to 15th century date. The earthworks in the area of the site under discussion here inculded a sunken trackway and a large rectangular pit or pond, and elements of a field boundary system (Croft and Mynard, 1993, fig. 40).

The development of the new city of Milton Keynes led to several important excavations of medieval sites, such as at Tattenhoe, Westbury-by-

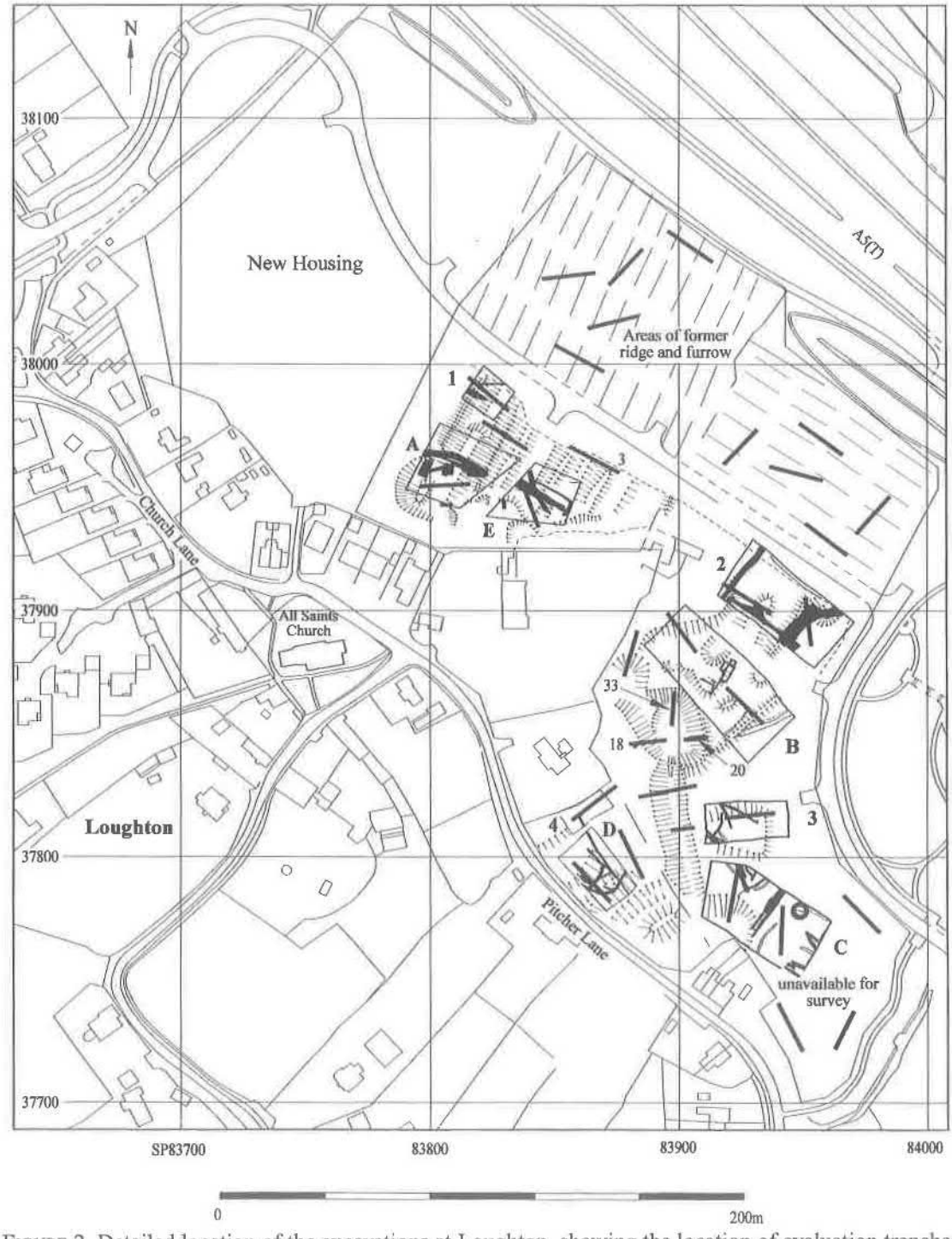

FIGURE 2 Detailed location of the excavations at Loughton, showing the location of evaluation trenches, excavation trenches (A–E and 1–4), and earthworks.

Shenley, and Caldecotte (Ivens *et al.* 1995; Zeepvat *et al.* 1994). These, together with smaller excavations and watching briefs (Mynard 1994) have allowed the nature and chronology of medieval settlement in Milton Keynes to be examined in some detail. In more recent times attention has been paid to the evidence from occupied living villages which, it can be argued, are of more archaeological importance than failed settlements. Loughton is one such village which has continued in use to the present day, although there is clear evidence from the extensive earthworks in surrounding areas to show that it too has shrunk or shifted in location over time.

Evaluation

The evaluation had two components: a survey of the upstanding earthworks, enhancing the previous, less detailed survey (Croft and Mynard, 1993, fig 40); and 32 trenches located, in part, relative to major features identified in the earthwork survey (Fig 2). The earthwork survey suggested the presence of house platforms and ridge and furrow, in addition to the previously recorded boundary, hollow way and pond (Pine 1997). The trenching confirmed the archaeological significance of these earthworks and revealed numerous deposits, including late Saxon and medieval demolition debris, walls, pits, gullies, ditches, and postholes, together with post-medieval walls and garden features. As a result, eight areas of potential were defined and targeted for full excavation.

Excavation

Nine trenches (A–E and 1–4) totalling 6319sq m were dug, corresponding to the areas of potential identified in the evaluation (Fig 2; trenches A and E being essentially one area with a baulk between for a footpath and power line). All trenches were stripped of topsoil and subsoil using a 360° mechanical excavator fitted with a toothless bucket. The description of each excavation area uses the following chronological scheme:

Phase 1	Prehistoric (middle Bronze Age)
Phase 2	Roman
Phase 3A	Early Saxon
Phase 3B	Mid–late Saxon
Phase 3C	Late Sax./early med. (10th–12th cent.)
Phase 4A	Medieval (late 12th–early 13th cent.)
Phase 4B	Medieval (mid 13th–late 15th cent.)
Phase 5	Post-medieval (16th century+)

These phases have been defined principally on the basis of pottery typology; allowance needs to be made for the longevity of some pottery types in this rural area of the Midlands. Stratigraphic relationships allow further sub-division of some phases into sub-phases in some trenches. However, the sub-phases of one area or trench cannot necessarily be equated with those of another.

Description of Excavations

The nine excavated areas can be conveniently combined into five groups: Area 1: Areas A and E: Areas B and 2: Areas C and 3: and Areas D and 4.

Area 1 (Fig 3)

Only a few features were recorded in this area. Gully 301 may date to the Saxon period (phase 3A/B) and pit 300, ditch 302, and postholes 304 and 309 date to the late Saxon/early medieval period (phase 3C). Two postholes (308 and 310) and a gully (311) are undated. A few sherds of Roman pottery were residual finds from these features.

Areas A and E (Figs 4–6)

Phase 1: Prehistoric

Cremation cemetery

The discovery of a small cremation cemetery was unexpected. Five burials were found within four features (1000, 1001, 1005 and 1015 – with two), small quantities of cremated bone/pyre material were found in a further six features (1004, 1008, 1016, 1019, 1028 and 1038) (see Table 2). Pit 1015 contained the lower part of a middle Bronze Age urn, which had been placed upright. Pit 1038 contained a vessel lying on its side, although only a section of the wall survived. This vessel appears to be of early/middle Bronze Age date. Two other features (1005 and 1016, one certainly with cremated bone, the other with a few fragments) contained fragmentary middle Bronze Age pottery. It is possible that this cemetery extended beyond the excavation area to the east and north, although it was not observed in the previous evaluation trench 3.

The cremation burials and pyre remains had been placed in shallow circular or oval pits,

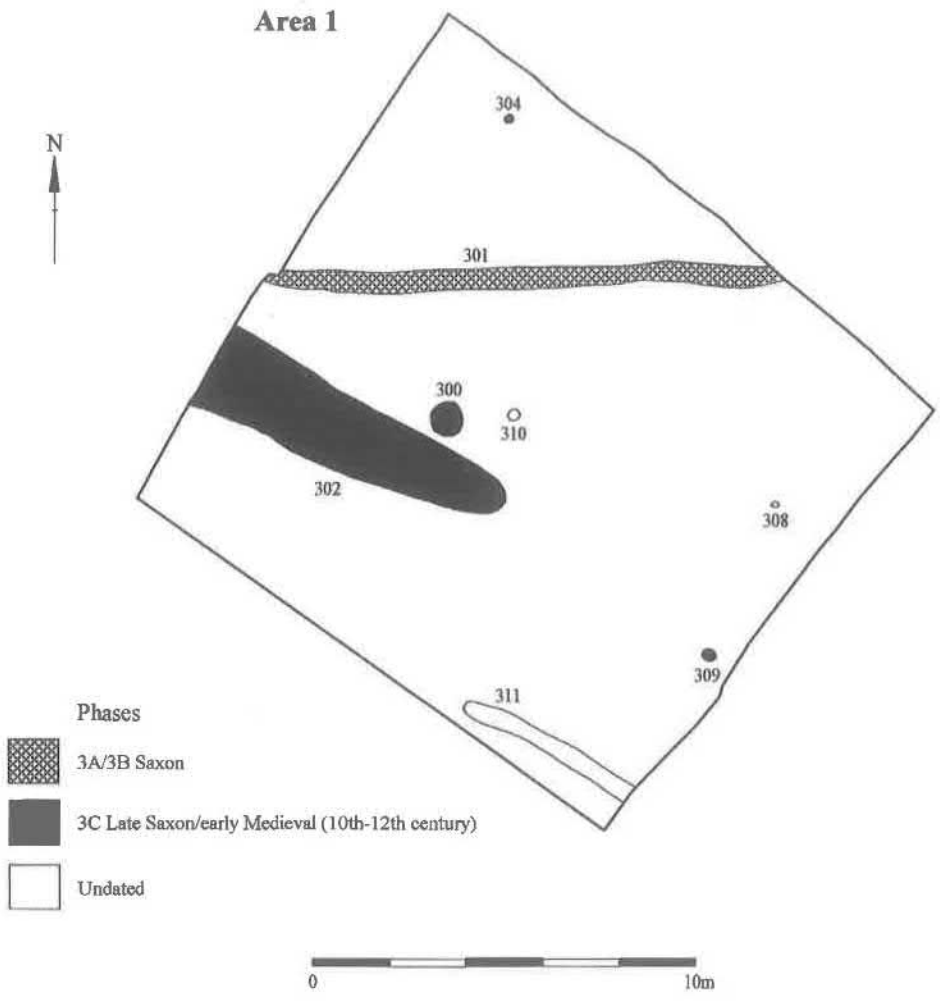

FIGURE 3 Plan of Area 1.

between 0.08m and 0.22m deep, and 0.28m to 1.1m across, which had evidently been truncated by later ploughing. There was no indication of a pyre site nearby.

Two small undated features, 1002 and 1007, which did not contain cremated material, were also present. Feature 1006 is likely to be a root hole.

Phase 2: Roman

A few sherds of Roman pottery were recovered as residual material from later features in Area E; a coin of Claudius II, AD 268–270 from Area A.

Phase 3C: Late Saxon/early medieval (10th–12th century) (Fig 4)

A few features in areas A and E can be attributed to this period: linear features 521, 628, 638, 1003 and 1045; postholes 1035 and 1036; and pit 1047. An undated posthole 1037, cut by 1036, and the shallow pit 2006 may also belong to this phase. The linear features do not form a coherent ground plan and probably represent boundary features or paddocks.

Boundary ditch

Ditch 638 appears to be a boundary between

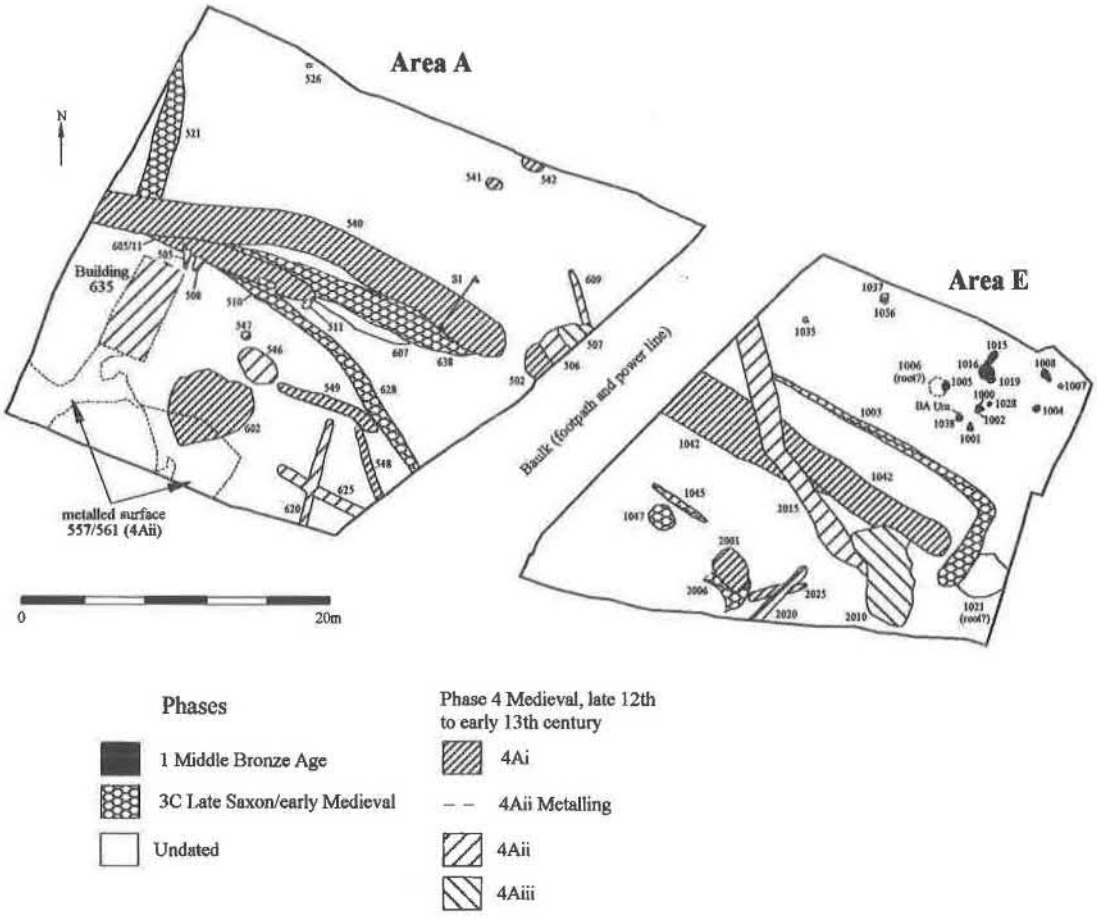

FIGURE 4 Plan of Areas A and E, phases 1, 3 and 4A (Bronze Age, Saxon, earlier medieval).

occupied areas to the south, and farmland, indicated by ridge and furrow, to the north. It may have been redefined on two occasions in later periods (540 and 632) and later extended eastwards (1042).

Phase 4: Medieval (Fig 4)
The majority of the deposits in these areas belong to this phase.

Phase 4A: Medieval (late 12th to early 13th century)

Phase 4Ai
The earliest features belonging to this phase include the large ditch 540 (Fig 4) which may be a continuation of ditch 1042, interrupted by a causeway. Feature 502, west of the baulk, is perhaps the terminal of ditch 1042. Also of this phase are: gully 2025; two pits (542 and 2001); and a hollow (602). A large oval-shaped hollow (602) contained spreads of charcoal-rich soil (654/677) and a burnt lens (694). It lay beneath gravel surfaces associated with the adjacent building 635.

Pit 541 and gullies 548, 549 and 605/11 did not contain any dating evidence, however, they appeared to be sealed by demolition rubble from building 635 and probably date to phase 4A or earlier.

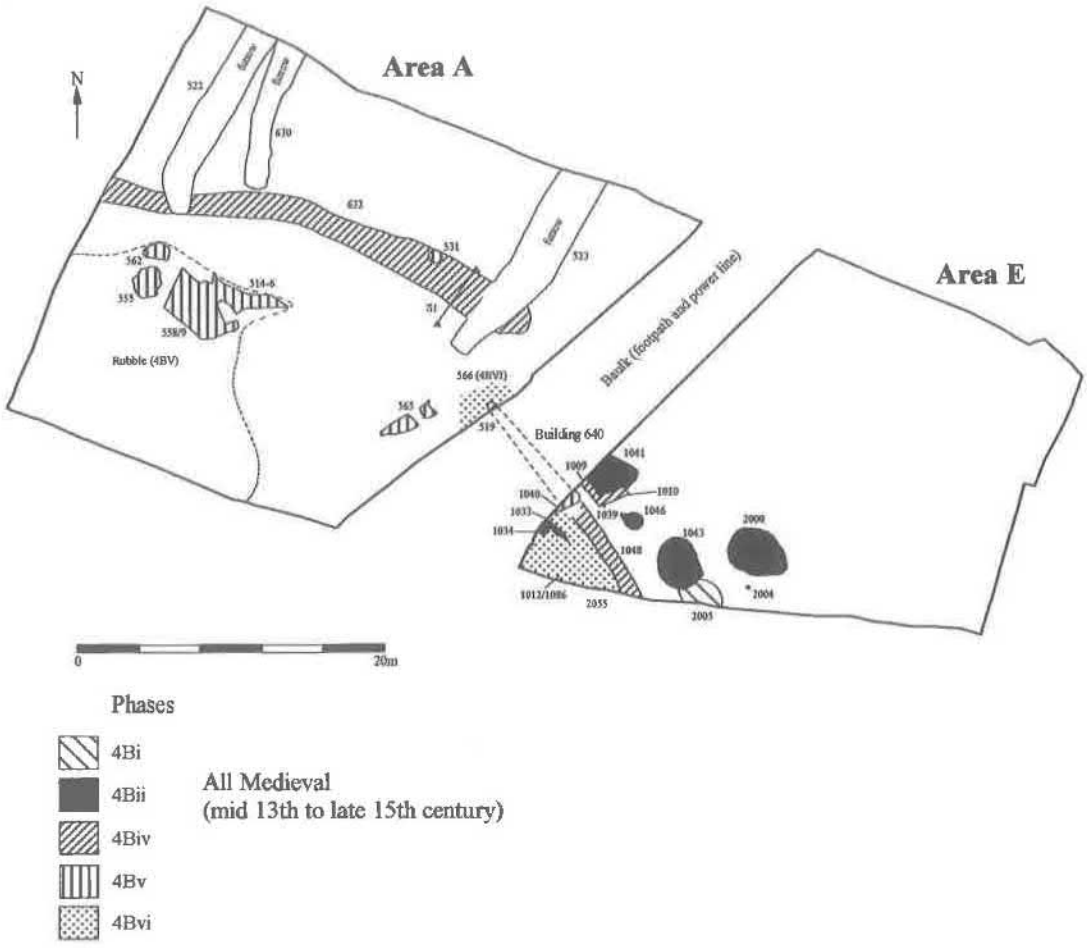

FIGURE 5 Plan of Areas A and E, phase 4B (later medieval).

Phase 4Aii

This phase saw major construction activity. Ditch 1042 and gully 2025 had gone out of use and were cut by ditches 2015 and 2020 respectively. Similarly, ditch terminal 502 was cut by ditch/pit 506. Also attributed to this sub-phase are pit 546, posthole 547, and gullies 609, 620 and 625; the last two cut across each other.

Building 635

Building 635 and ancillary structures were constructed in this sub-phase (Figs 4 and 6). The building comprised a rectangular surface of tightly-set gravel (556), 6.5m × 3m, resting on a make-up layer of large limestone fragments (573) (Fig 6). The rectangular surface was defined by a wall foundation (or basal course) made from unmortared limestone blocks (560 and 577), best preserved on the south-eastern side. The limestone blocks were unshaped and were of various sizes up to 0.2 × 0.1 × 0.08m. An area of burning at the northern end of the structure (563) defined the site of a hearth.

An area to the east of the building may have been occupied by an annex. Three clusters of stone *c.* 0.88–1.15m long and 0.44–0.80m wide, which are thought to be post-pads (Fig 6, 508, 510 and 511) formed a line which may represent the northern wall of this annex. No post-pads corresponding to this row were found to the south, although subsequent deposition of demolished stone may have

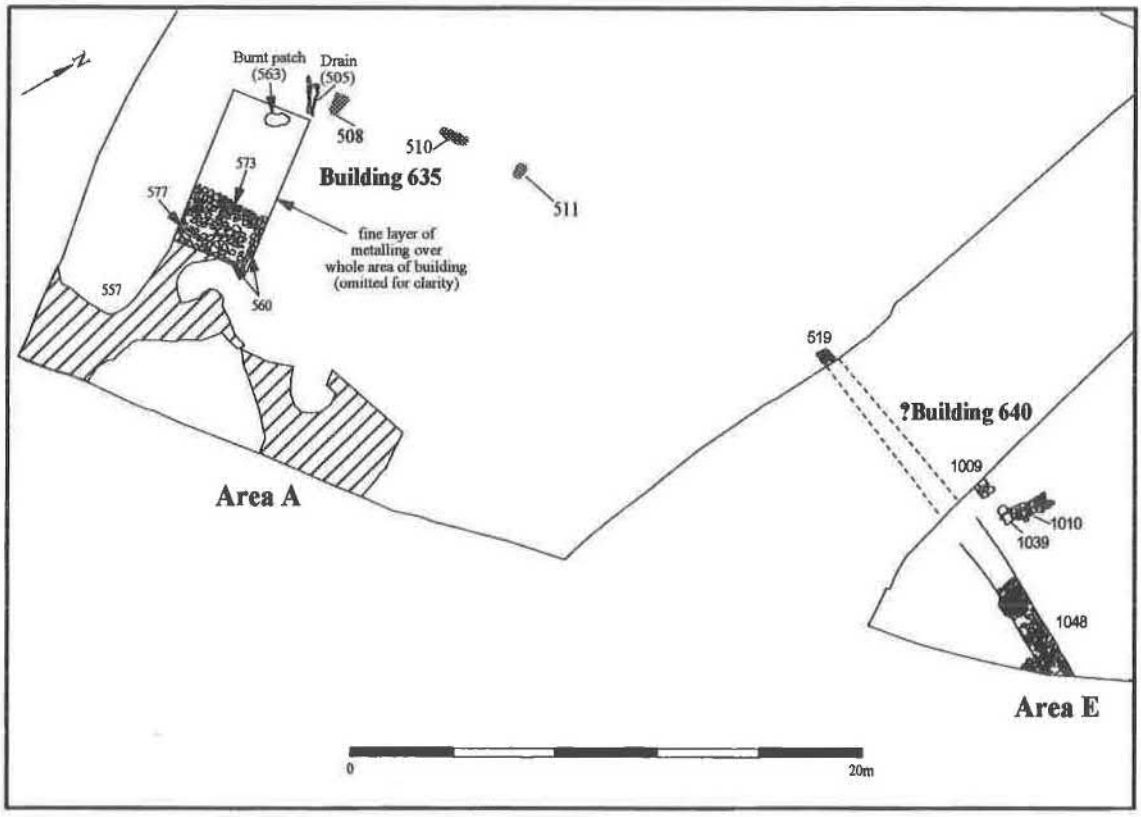

FIGURE 6 Detailed plan of (medieval) buildings 635 (Area A) and 640 (Area E).

made these impossible to recognise. The post-pads were set into the underlying natural clay; if there was a covered building present it may have had an earthen floor.

At the north-eastern corner of the rectangular stone building (635), where it met the annex, was a stone drain (Fig 6, 505), constructed of limestone slabs placed vertically in a funnel shape (Fig 6). This was 0.9m long and terminated in the almost-completely infilled phase 4Ai ditch (605/11).

Two areas of gravel, 557 and 561 (Fig 6), set into a silty clay matrix, lay south and east of the building (Fig 4). These may be yard surfaces.

Phase 4Aiii

The latest features relating to this sub-phase are a large hollow (2010) and pit (507) (Fig 4).

Phase 4B: Medieval (mid 13th to late 15th century)

Phases 4Bi–iii (Fig 5)

A large pit (2005) belongs to the earliest subdivision of this phase (4Bi). The next subdivision, Phase 4Bii, is represented by a further four large pits (1041, 1043, 1046 and 2000), two postholes (1034 and 2004) and a gully (1033). All of these deposits are sealed by a soil horizon (2052/1094) (phase 4Biii), which indicates a period of inactivity.

Phase 4Biv

Renewed activity took place in phase 4Biv with the construction of building 640 at the western end of trench E (and part of trench A).

Possible building 640 (Fig 5)
Stone walls 519, 1009, 1010, 1039, 1048 (Fig 6) indicate this building. They had been badly robbed and the ground plan is far from complete. All were constructed from unshaped, unmortared limestone blocks. The best preserved section (1048) consisted of two crudely-faced outer skins surrounding a rubble core; only a single course survived in most places. A proportion of the building must lie under the baulk retained for the footpath. Features 1009/1039 and 1010 seem to represent a wall and its return. Walls 519 and 1048 were both placed within construction cuts (518 and 1022) and are more properly regarded as foundations. Wall 519 may be the end of wall 1048. Wall 1009 appears to have been repaired at some time with a limestone and soil infill (1070).

Boundary ditch
The main Phase 4A boundary ditch in area A (Fig 4, 540) appears to have been redefined slightly to the north of its predecessors in phase 4B (Fig 5, 632), perpetuating the boundary already established as early as Phase 3C (Fig 4, 638).

Phase 4Bv
This sub-phase relates principally to the abandonment of building 640. The existence of layers 1044, 1049, 1069, 1070, 1073 and 2056 suggest that it was demolished and the area landscaped or levelled. A silver penny of Henry III (1247–1248) and a silver half-penny of Henry III (1248–1250) were recovered from demolition material 1044, suggesting that the building was abandoned sometime in the latter part of the 13th century. A pit (1040) dug at this time, truncated the building remains.

Building 635 to the west in Area A had gone out of use some time during phase 4B. Demolition debris and tumble in this area (558/9, 514–516, 555, 565 and 562) contained large quantities of medieval pottery. It appears that the building was deliberately dismantled, as piles of stone which could not have resulted from the natural collapse of the structure were encountered. It is possible, but not proven, that the abandonment and demolition of both buildings 635 and 640 took place at the same time.

Finally, boundary ditch 632 had fallen into disuse by this phase; its fill was cut by pit 531.

Phase 4Bvi
Re-levelling of the area took place during this sub-phase, evidenced by layers 2054 and 2055 (not illustrated), and the construction of a stone surface (Fig 5, 1012/1086 and 566). An area of stone rubble 1013 (not illustrated) to the east of 1012, may be an element of this surface, although it was not as well constructed and could be demolition debris from building 640. It is possible that stone from buildings 640 and 635 was used to construct these surfaces.

Ridge and furrow
The remains of ridge and furrow were observed as earthworks prior to the excavation and as subsoil features once the area was stripped. Two furrows, 522 and 523 (Fig 5), cut the infilled boundary ditch 632 but terminated here. Furrow 630, between the two, contained phase 3B pottery but it seems doubtful that it belongs to this phase.

Phase 5: Post-medieval
Post-medieval pottery and glass were retrieved from a single feature, 517. It was not visible in plan and its true character is not known as it was partly beneath the western baulk. A layer of burning (1055), from which a clay pipe and 19th-century pottery were recovered, sealed stone surface 1012/1086. Post-medieval pottery was also recovered from cleaning layers/subsoil patches, which sealed surface 1012.

Areas B and 2 (Fig 7)

Several features in these trenches contained no datable finds. Some lay beneath surfaces belonging to phase 4B (mid 13th to late 15th century) and, in the absence of extensive evidence for middle Saxon or earlier activity on site, most of these features probably belong to phases 3C or 4A. They comprise: postholes 404–5, 407–8, 418–9, 435, 448–9, 2517, 3001 and 3004; pits 433, 439, 441, 2523 and 2524; and gully 443 (435 and 3001 not on plan).

Phases 1 and 2
A flint flake, a sherd of Roman pottery, and a very worn late 1st or 2nd century sestertius were the only finds of these phases found.

Phase 3C
Postholes 402–3, 414, 421 and 3006; pits/scoops 406 and 2519; and scoops/gullies 2527 and 2529 belong to this phase. The posthole pattern does not produce recognisable structures. A number of other

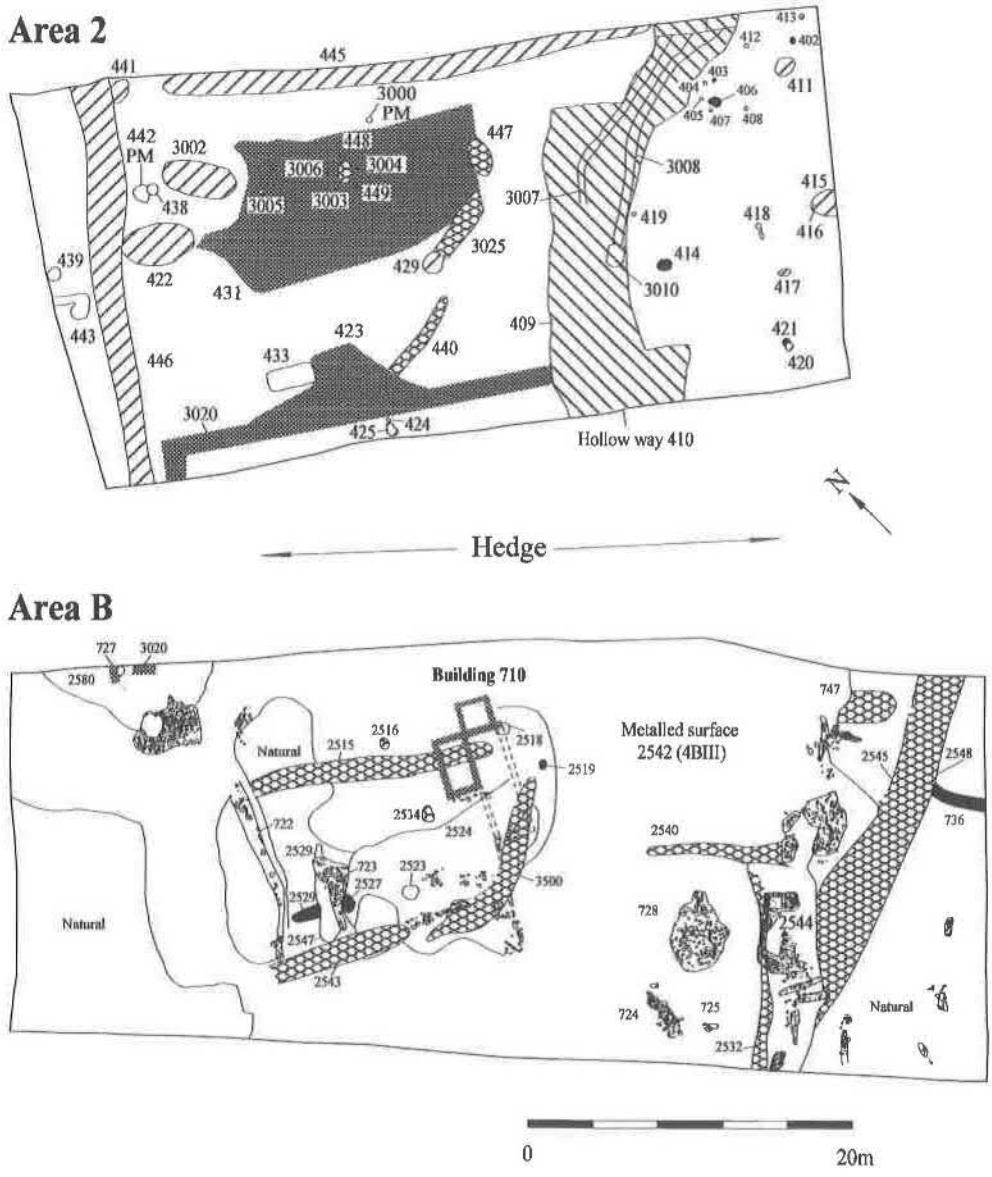

FIGURE 7 Plan of Areas B and 2, phases 3 and 4 (Saxon–medieval).

features in this area contained large quantities of residual Saxo-Norman pottery.

Gully 736 was cut by the phase 4B ditch 2548. Also, pits 2523 and 2524, and posthole 2517, were beneath building complex 710. Although no dating evidence was recovered from these features they are tentatively assigned to this phase.

Phase 4: Medieval

Phase 4B: Medieval (mid 13th– late 15th century) (not otherwise phased)

Two ditches (445 and 446), eight pits and scoops (411, 415, 417, 422, 425, 429 and 3002) and four postholes (413, 420, 424 and 438) are assigned to this general phase. Ditch 445 is at right-angles to

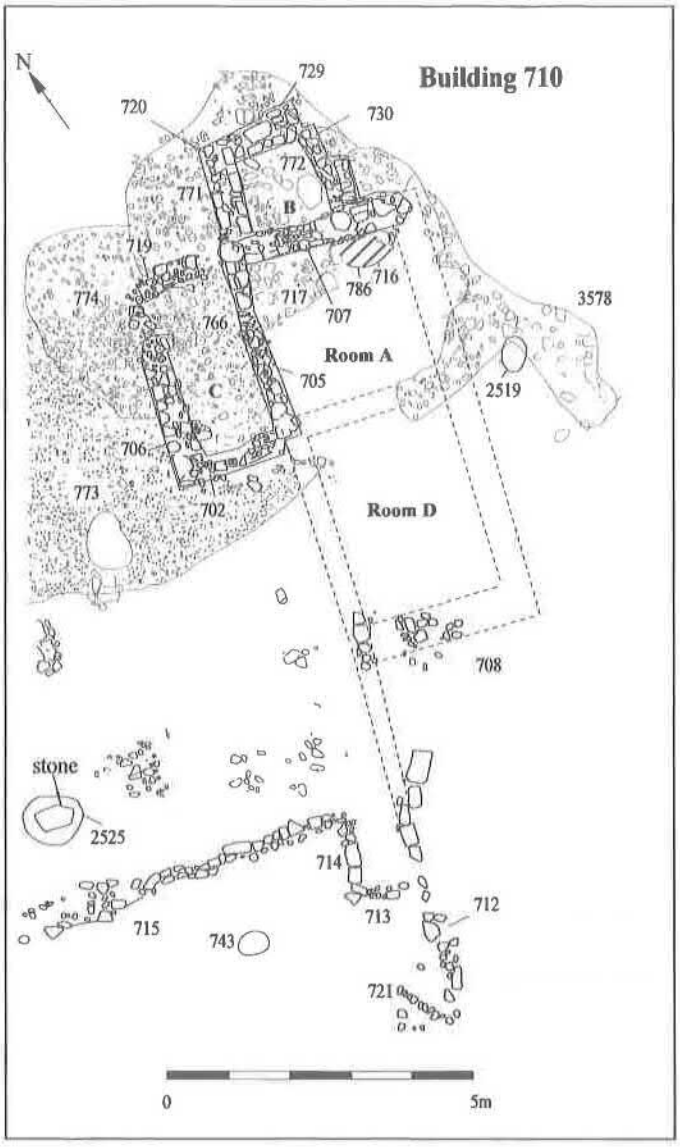

FIGURE 8 Detailed plan of medieval building 710 (Area B).

ditch 446 and they may represent the northern and western parts of an enclosure (Fig 7). The east end of ditch 445 terminates at the edge of hollow way 410 and the west 3.5m short of ditch 446. Undated pit 441 lay on the lip of ditch 446, opposite the terminal of 445, and may have been a gatepost. Pit/scoop 425 contained a large number of pottery sherds; 83 in total. The pits and postholes are spread across the site and do not form any clear pattern.

Phase 4Bi

Features attributed to the earliest phase as a result of their stratigraphic relationships are: pits 447, 2516, 2518, 2534, 2547 and 3003; posthole 3005; gullies 440, 2532 and 2540; and ditches 747, 2515,

2543, 2545, 2548, 3025 and 3500. Two of the ditches (2545 and 2548) represent a recut feature but the sequence could not be discerned from the sections.

Phase 4Bii

Building 710 (Figs 7 and 8)

A building must have been constructed in this sub-phase, although most of the evidence for it involves extrapolating backwards from phase 4Biv (see below). The position of rooms B and C implies the prior existence of room A and perhaps also room D (Fig 8). Furthermore, two sides of room A and part of room D were respected by the later metalled surface (Fig 7, 2542, Phase 4Biii, below), which was beneath the later stone foundations. Room A probably measured approximately 2.6m by 2.6m if it is assumed that the later stone wall of room C on its north-west side, 702, was positioned on the same alignment as an earlier western limit of room A. If room D is included, and the evidence for this is limited to fragmentary wall 708 and the fact that surface 2542 avoids it, the full structure was approximately 7.5m long, with the second room being roughly 2.6m by 3.5m. The southern side of the structure is very poorly defined, even in the later (4Biv), stone phase. The gravel surface 3578 may have provided a threshold for a doorway on the southern side of the building.

Other features

Beneath the gravel yard surface (2542) in Area B, towards the southern end of the site, were areas of limestone blocks (Fig 7, 2544). Unfortunately, these were too fragmented and damaged by ploughing for a clear interpretation to be made but it remains a possibility that they were part of another structure.

Hollow way (410)

A hollow way aligned north-east to south-west, with three wheel ruts (3007–3009), was recorded in the south-eastern part of Area 2 (Fig 7). Eleven sherds of 13th–15th century pottery and a silver long-cross penny of indeterminate type but of similar date, were recovered from the infill of this feature. There are no good stratigraphic relationships to place the hollow way securely within this phase, but it is possible that it provided access to the first phase of building 710.

Phase 4Biii

Hollow way (410)

During this phase the hollow way was filled in and resurfaced with gravel (409); an event which appears to have been connected to resurfacing over a wider area during this phase (423, 431 and 2542, below).

Metalled surfaces

Three gravel surfaces (423, 431 in Area 2 and and 2542 in Area B) were constructed during this phase, each 0.05m thick, set in a clay-silt matrix. Surface 423 was only partially exposed within Area 2 but was 18m long and at least 4.5m wide. Surface 431 consisted of a roughly rectangular area, 17m × 8m, parallel to ditch 445 but separated from it by a gap of 2.5m. It is possible that this gap was occupied by a hedge, although no subsoil traces of this were encountered. Surface 2542 covered an area of 50 × 25m, with some stone-free patches. It was overlain by the later (BIV) phases of building 710.

Phase 4Biv

Boundary Wall (3020)

This wall (Fig 7, Area 2) was made of unmortared limestone blocks of various shapes and sizes and constructed on top of gravel surface 423. It ran north-west from the edge of the refurbished hollow way (410) for 24m, before turning south-west through a right-angle, one metre short of ditch 446, for a further two metres. The end of this wall may have protruded just beyond the baulk in Area B to the south.

Hearth 727

A patch of burnt earth (hearth 727) set against a short length of limestone wall and surrounded by a silty clay patch (2580), was recorded in Area B (Fig 7). There is no evidence that this was associated with a building.

Building 710 (Figs 7 and 8)

The more durable, stone elements of building 710 (originally constructed as two rooms in phase 4Bii as discussed previously) were constructed during this sub-phase, now consisting of all of rooms A to D. The main evidence comprised limestone footings that clearly overlay the metalled surface, 2542 (Fig 8). The best-preserved walls were of unmortared limestone blocks and slabs, at the eastern

end; unfortunately the western extent can only be guessed at. The metalling (2542), which predated the stone walls, terminated beneath wall 705 (see above).

Only two walls (705 and 707) of room A survived to be excavated (Fig 8). Within it, two hearths (716 and 717) had been built into wall 707. Hearth 716 was the better-preserved of the two, with two projecting supports at right angles to wall 707, which also had horizontal firebricks built into it. Hearth 717 consisted of a semi-circular arrangement of fire-scorched limestone blocks, enclosing an area in the north-eastern corner of the room.

Rooms A and D are thought to be the site of the original building (see Phase 4Bii above). The location of the southern wall of room A may be indicated by the limit of a possible earthen floor (777). Its western limit may have been in line with wall 702 of room C. The western extent of room D may have been wall 708, although little of this remained.

Room C measured 2.6 by 1.4m and was bounded by walls 702, 705, 706 and 719. An apparent gravel floor (766) was more probably part of the wider metalled surface 2542 and seems an unlikely choice of flooring for a domestic building, so this room may have had a raised floor. No entrances to Room C, or any of the rooms, could be identified. Room B was approximately 1.3m square and was defined by walls 707, 720, 729 and 730. It too had a gravel floor (772). A large amount of peg tile was recovered from the tumble on the eastern side of rooms A and B, perhaps indicating that this part of the building had a tiled roof.

Walls 712–715 and 721, to the west, may have been associated with this structure. These were only one course high and patches of mortar were evident. The main wall, 715, ran in a north-westerly direction for 5.5m but is unlikely to have been part of a building, unless it had been heavily robbed out. No return wall or corresponding eastern side was observed; there were neither stone, postholes, post-pads or soil discoloration. It is therefore possible that it was a boundary wall, similar to wall 3020. Walls 712–4 made up a small alcove or another minor structure. The north-western limit of the building complex was apparently the north–south, stone-lined drain (722) (Fig 7).

Phase 5: Post-medieval

Pit 442 (Area 2) contained two sherds of medieval and one sherd of post-medieval pottery. Posthole 3000 contained one sherd of post-medieval pot. These, and most other deposits in Areas B and 2, lay beneath a thick yellow clay layer. This post-medieval dumping may be the upcast from the construction of the large late post-medieval landscape/garden feature which lay to the south-west and which was examined during the evaluation (Pine 1997, trenches 18, 20 and 33) (Fig 2).

Areas C and 3 (Figs 9 and 10)

The unphased features in these trenches probably belong to phase 3C or 4B.

Phases 1 and 2

A single flint flake and a single sherd of Roman pottery were recovered.

Phase 3C: Late Saxon/early medieval (10th to 12th century)

There are a few stratigraphic relationships in these areas with which to subdivide phase 3C: ditch 2227 (phase 3Ci) was cut by linear 2206 (3Cii); spread 872 (3Ci) was cut by linear 2243 (3Cii); and spread 2261 (3Ci) was cut by linear 2208 (3Cii). Also, gully 802 was probably cut by gully 810. Other features which belong to phase 3C are: linear features 833 and 1111; spread 2204; pits 832 and 2228; and postholes 811 and 2221. A further five postholes (2222–2225) form a fenceline together with posthole 2221 and probably belong to this phase. Linear features 810, 821, 844, 2206, 2208, 2243, and by association 2244, are assigned to phase 3Cii.

Linear features 2206 and 2208, together with undated features 2212 and 2209, regularly spaced along the eastern edge of the excavation and are probably the bases of plough furrows. If so, they suggest a levelled ridge-and-furrow system not observed during the earthwork survey.

Linear features 844, 2243 and 2244 are 2m apart and define a narrow trackway that ends within the excavated area but continues northwards beyond the baulk. A gap along one side may be an entrance.

Phase 4

The phasing in Areas 3 and C, using pottery evidence, appears to indicate that there is a break in the sequence of development as no phase 4A deposits were identified here. It is not clear if this

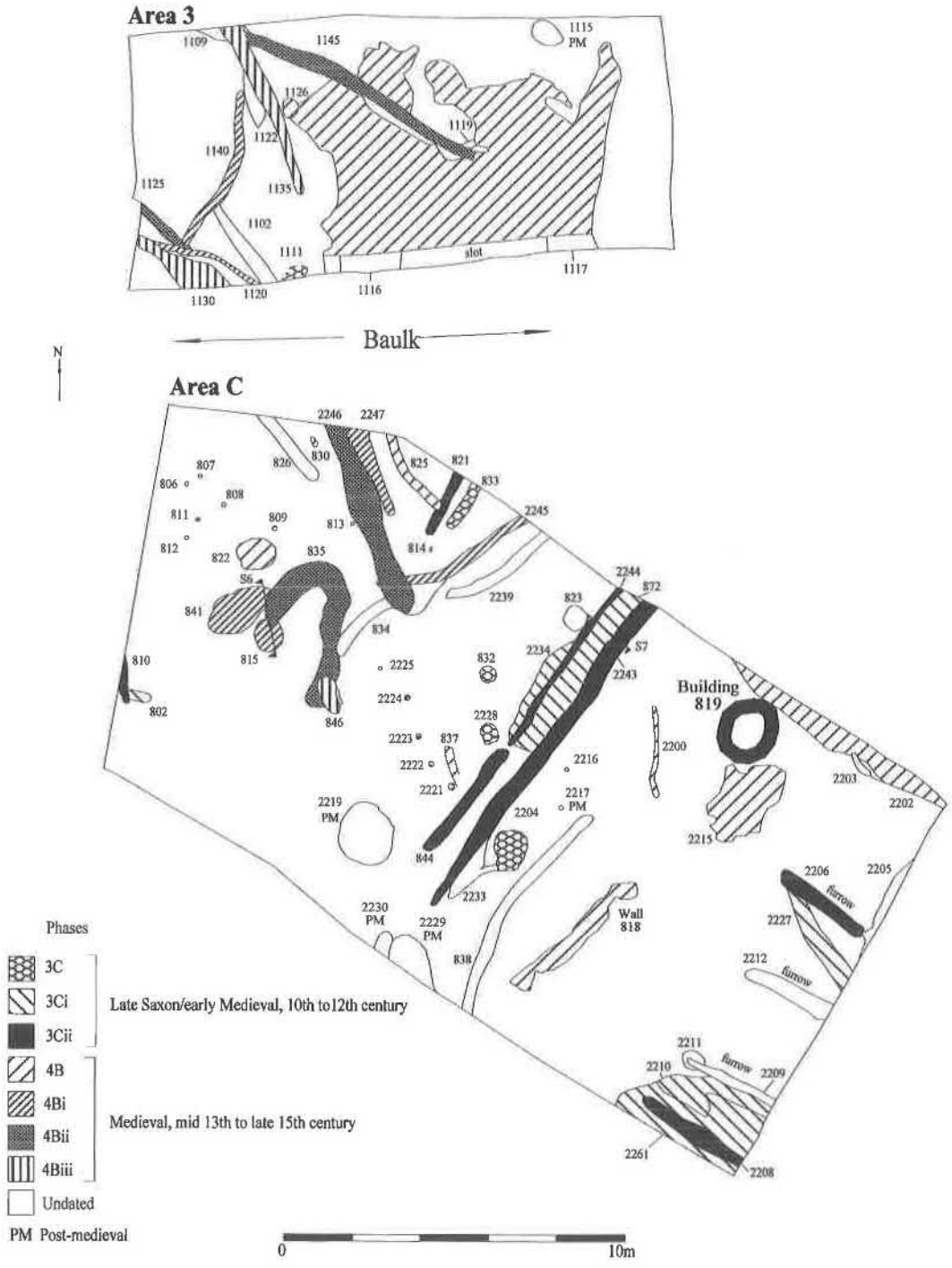

FIGURE 9 Plan of Areas C and 3.

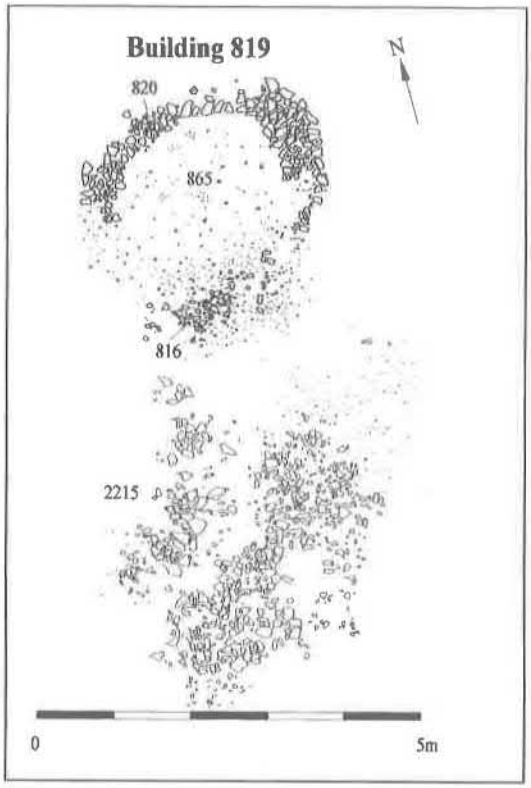

FIGURE 10 Detailed plan of medieval building 819 (Area C).

represents a short period of abandonment or is a product of the ambiguities of the pottery chronology.

Phase 4B: Medieval (mid 13th to late 15th century)

As with the earlier phases in these areas, sub-phases are indicated by some stratigraphic relationships but other features are assigned only broadly to phase 4B. The first sub-phase (4Bi) includes ditches 1120, 1140, 2245 and 2247, and two large pits 815 and 841. Sub-phase 4Bii consists of linear features 835, 1125, 1145 and 2246. These features reflect continued activity in this area, perhaps related to the handling of stock. Of particular interest is the U-shaped ditch 835 (Area C), which appears to represent a small enclosure or pen. There were no features within the enclosed area and no trace of associated features, such as gateposts. (A residual silver half-penny of Edward the Confessor was recovered from the surface of this ditch.) Sub-phase 4Biii includes ditches 1130, 1135 and pit 846.

Several of the more interesting structures in Areas 3 and C are broadly dated to phase 4B: linear features 825, 837, 1116, 1117, 2200 and 2202; pits 809, 822 and 1126; spread 1164/1165, perhaps caused by animal trample; and stone structures 818, 819 and 2215 (see below).

Circular building 819

A circular stone building, 819, with a possible opening to the south-west, was recorded in the south-eastern part of the site (Figs 9 and 10). This consisted of a single course of walling of limestone blocks and slabs, the southern part of which was poorly preserved. The internal diameter was 2m and the walls were 0.60m thick. Within, was a possible floor surface (865) of compacted yellow silty clay. Five sherds of 13th to 15th century pottery were retrieved from the walling (816/819).

To the south was a quantity of rubble (2215), which probably represents demolition debris from the structure. From this came nine sherds of medieval pottery. Discussion of the function of this building can be found below.

Wall 818

An isolated stretch of dry-stone wall, 818, was initially found during the evaluation in Trench 23 (context 45). It lay to the south-west of circular structure 819. It was set in a construction trench (2231 and 2232) which produced six sherds of phase 4B pottery. There were no obvious returns to this wall, either in the form of robbed out foundation trenches or as postholes/post-pads, and it is not clear if it was part of a building or had some other purpose.

Phase 5: Post-medieval

Four pits (1115, 2219, 2229 and 2230) and a posthole (2217) were dated to this period.

Areas D and 4 (Fig 11)

Phase 2

A small assemblage of Roman pottery was found as residual material within features in Areas D and 4.

Phase 3

A posthole (914), three scoops (920, 921 and 1303), and a linear feature (2124), cannot be attributed to a particular phase but are likely, by association, to belong to phase 3.

The earliest features in Areas 4 and D are three intercutting pits, 928, 931 and 932, which may date as early as the late 9th century (phase 3B). An undated spread 992, which was cut by ditch 944, may also belong to phase 3B. The absence of Potterspury ware from the later features suggests, but does not prove, that their use ceased before *c.* AD 1200.

Three linear features (925, 944 and 2122) are dated to phase 3Ci. The arrangement of these is such that they may have operated as a gateway for dividing stock (Pryor 1996). These linear features had gone out of use in phase 3Cii when six more linear features were dug; 900, 924, 930, 2100, 2120 and 2115. These form a less coherent pattern but their location over the earlier examples may indicate that they performed a similar function. To the south of ditch 2115 were a further five, roughly parallel, linear features (935, 2115, 2125, 2130 and 2140). The close proximity and alignment of these ditches, both to each other and to ditch 2215, indicates that they were successive redefinitions of a boundary.

Ditch 1304 and possibly ditch 918 are the latest phase 3Ciii features on the site. One linear feature (1301) is dated only broadly to phase 3C.

Situated on the surface of the fill of linear feature 2140 were a series of phase 3Ciii hearths (2111). The earliest of these (937) consisted of a roughly rectangular arrangement of scorched cobbles, flint nodules and limestone pieces. Overlying this was a second hearth (936) of similar composition. Areas of scorched natural and burning layers with large quantities of fired clay (982, 983, 2152 and 2153) sealed the hearths.

Phase 4A and Phase 5

A single pit (1302) in Area 4 dates to phase 4A. Phase 5 features include walls 901 and 19. Wall 901 consisted of large limestone slabs and pebbles set loosely in a silty clay matrix. A short length of heavily-robbed limestone wall (19) was beneath a layer (64) which contained a large quantity of 16th to 18th century pottery.

The Finds

Struck flint by Steve Ford

A small collection of 23 struck flints was recovered during the evaluation and excavation: 13 flakes; one blade; four spalls; two cores; one scraper; and two retouched flakes (one possible). A complete catalogue is to be found in the site archive.

This collection is not chronologically distinctive, apart from one blade, which is likely to be of Mesolithic or earlier-Neolithic date. One flake is patinated and this suggests the presence of material of several periods. The majority of the flint could easily be contemporary with the early/middle Bronze Age cremation burials.

Prehistoric pottery by Tessa Machling

Introduction

The prehistoric pottery came from approximately three cremation vessels from Area E. The assemblage consists of 260 sherds, weighing 1674gm (Table 1)

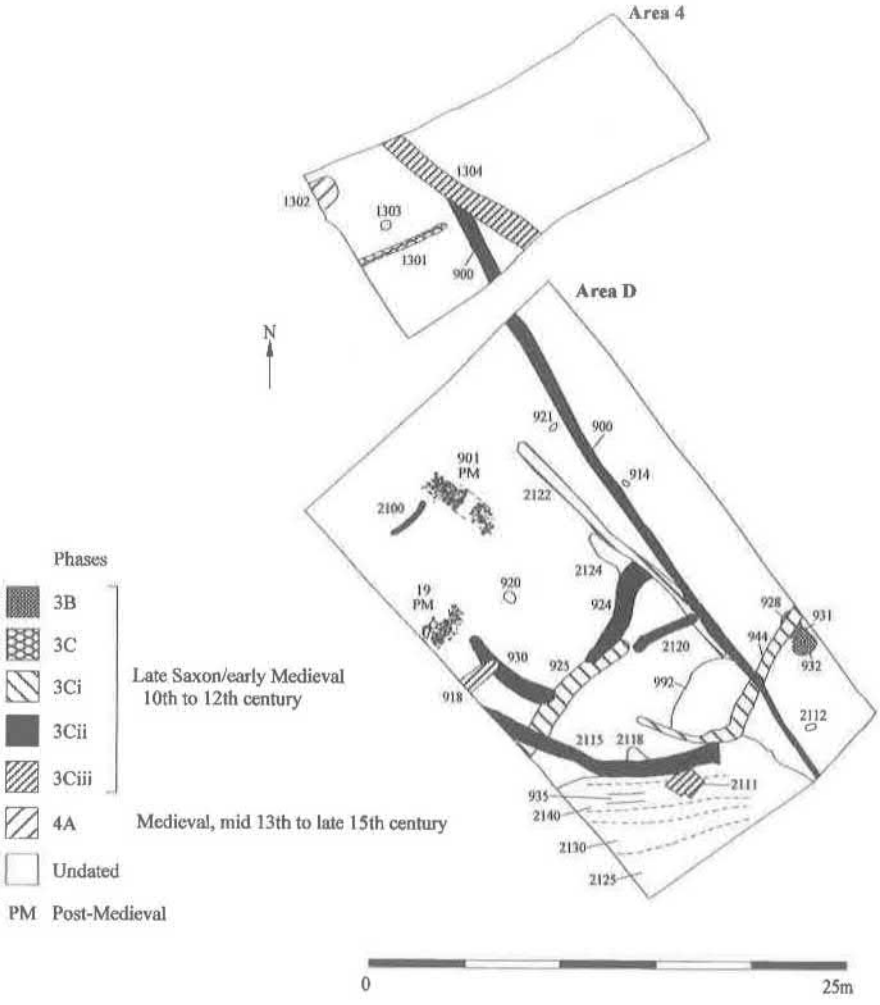

FIGURE 11 Plan of Areas D and 4.

The vessel from 1015 was found in an upright position within a shallow cut, but all of the upper section has been lost. The vessel from 1038 appears to have been lying on its side within a shallow feature and only one section of the vessel wall survived. The third vessel (from 1005) is only partially represented and no information regarding its position can be obtained. All vessels contained burnt material, including cremated bone.

Only 20 sherds indicating vessel form were present: 19 bases, 17 from 1015 (Fig 15, 1) and two from 1005; and one small possible rim sherd from 1015. Due to the incomplete nature of the vessels it is difficult to assign definite forms and dates. However, as there has been little published material from this area of England the assemblage is important in a regional and national context.

The assemblage was analysed and recorded following recommended guidelines for the analysis of prehistoric pottery (PCRG 1992). All sherds were assigned a fabric type after macroscopic examination and the use of a hand lens (x10 and x20 power), and were then counted and weighed to the nearest gram. Surface treatment, evidence of manufacturing technology, decoration, etc., were also noted.

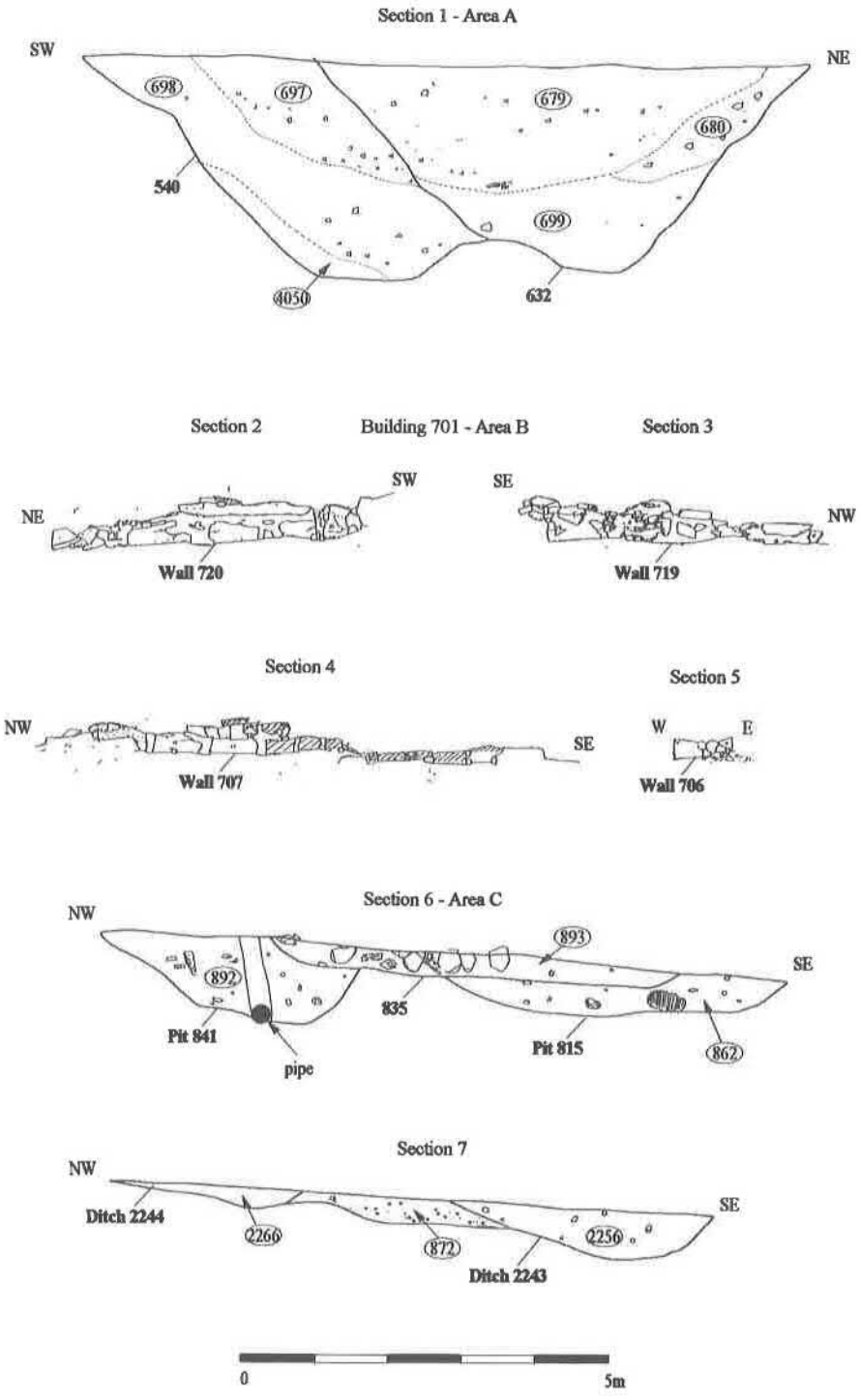

FIGURE 12 Selected sections.

TABLE 1

Cut	Deposit	Sherds	Weight (gm)
1005	1058	31	100
1015	1064	186	1444
1016	1065	4	28
1038	1093	39	102

Description of pottery fabrics

Three fabric-types were identified, two flint fabrics (F1–F2) and one grog (G1), each representing an individual vessel. Fabric F2 also includes four stray sherds from 1016 (1065). In the descriptions below, the terms used to describe the size of inclusions are defined as follows: very fine (<0.1mm), fine (0.1–0.25mm), medium (0.25–0.5mm), coarse (0.5–1mm), very coarse (1mm+). Terms used to describe the frequency of inclusions are based on the density charts devised by Terry and Chilingar (1955): rare (1–3%), sparse (3–10%), moderate (10–20%), common (20–30%), very common (30–40%), abundant (40%+). A full description of the fabric series has been included below.

Fabric F1: A soft, irregularly-fired fabric with moderate amounts of poorly-sorted, fine to very coarse (3mm) grade, calcined flint. Rare to sparse amounts of fine-grade quartz sand and mica are also present. The sherds in this fabric are reasonably thick-walled (8mm). This fabric was present only in the vessel from 1015 (1064). This fabric would seem to date to the middle Bronze Age.

Fabric F2: A hard, irregularly-fired fabric with moderate amounts of fine to very coarse grade (4mm) calcined flint. Sparse amounts of fine to medium-grade quartz sand and mica are also present. This fabric was present in the vessel from 1005 (1058) and also in the four sherds from 1016 (1065). This fabric is associated with thin-walled sherds (5mm) and the sherds often show evidence of burnishing on the exterior surface. The fabric would seem to represent a possible globular urn of the Deverel-Rimbury middle Bronze Age tradition.

Fabric G1: A soft, irregularly-fired fabric with sparse amounts of poorly-sorted, fine to very coarse (3mm) grade grog. Sparse to moderate amounts of fine to medium-grade, quartz sand are also present. This fabric also shows sparse to moderate amounts of platy voids, possibly created by the leaching out of organic material. Sparse to moderate amounts of very fine mica can also be seen. This fabric was present only in the vessel from context 1038. This fabric does not have a secure date, but would seem to suggest an early/middle Bronze Age date.

Discussion of fabrics

The fabrics found probably belong to the earlier/middle Bronze Age, but there are few sites in the region with which to provide close comparisons and many of those have little activity during the early and middle Bronze Age. Prehistoric sites in Milton Keynes are rare, and those which have been excavated have very little pottery from the earlier/middle Bronze Age. Much of the early and middle Bronze Age pottery occurs either in isolated features (e.g., cremations) or as a few sherds in unrelated features. Late Bronze Age/early Iron Age material dominates the local assemblages. The late Bronze Age/early Iron Age assemblage is dominated by shelly and sandy fabrics. It would appear that the earlier/middle Bronze Age pottery in northern and eastern Milton Keynes may follow this pattern also. For example, a middle Bronze Age cremation urn from Pennyland, Milton Keynes, is of a shell-tempered fabric (Knight 1993) and at Bancroft Roman villa (Knight 1994) the pottery shows a grog fabric, dated to the early Bronze Age, but only shell and sand fabrics in the late Bronze Age/early Iron Age phase.

Sites to the south of Milton Keynes have produced a range of fabrics which are more comparable to those from Loughton. Fenny Lock, Milton Keynes (Ford and Taylor 2001), which lies to the south of Loughton, has grog and calcined flint fabrics, including a collared biconical-urn with twisted-cord decoration dating from the early Bronze Age. Walton, Aylesbury (Evans 1989) has produce two comparable fabrics. Fabric P16, a grog fabric, is thought to be early Bronze Age. Fabric P1, a coarse flint fabric, is suggested as being middle Bronze Age. Recently excavated material from the Aylesbury to Steppingley gas pipeline (Machling, forthcoming) has a similar flint fabric (F2) to fabric F1 at Loughton, which is here dated to the middle Bronze Age. Interestingly, this assemblage, which includes early, middle and late Bronze Age/early Iron Age sherds, shows a dominance of flint and sand fabrics, with only two shell fabrics representing *c.* 2% of the total number of sherds. This pattern is echoed at Walton, Aylesbury (Evans 1989) where flint fabrics dominate the middle

Bronze Age assemblage. No parallels for fabric F2 could be located, although it is comparable to many fabrics of this date found in other parts of southern England.

It would therefore appear that during the Bronze Age/Iron Age, the southern Milton Keynes potters were using a very different potting resource, more akin to the southern Buckinghamshire tradition, (a dominance of flint fabrics) to those in the north (a dominance of shelly fabrics), and it could be seen that this variation has its foundation in the earlier Bronze Age. Loughton appears, from the presence of such flint fabrics and the absence of any shell fabrics, to have an affinity with the southern material rather than with the material found in the northern and eastern Milton Keynes area. This is supported by the Fenny Lock assemblage, which also does not include shell fabrics. The marked difference between the assemblages of the south-west and north-east Milton Keynes area may suggest different community areas, drawing influence from either the south or the north-east respectively. However, this may be explained by the highly localised use of resources in the area, or may be a false pattern produced by lack of evidence. Further work in the area will be needed to establish a clearer picture.

Resources for the pottery

It is generally accepted that if suitable resources can be found within 7–10km of a site, the pottery is said to be of local production (Arnold 1985). Clays that derive from outside this area can be treated as non-local. The presence of common inclusion types, such as flint and quartz sand, could suggest both a local or non-local source. The absence of any diagnostic, non-local inclusions and the presence of flint gravels and suitable clay resources close to the site makes a local resource likely; from fabric evidence, from an area to the south-west.

Vessel forms

The section of the vessel from 1038 (1093) is impossible to reconstruct with accuracy, but would seem to be a jar or urn. Sherds from 1005 (1058) judging from the fine nature of the fabric and the thinness and burnished treatment of the vessel sherds, would appear to be a globular urn. However, the lack of diagnostic sherds makes this a tentative identification.

The vessel from 1015 (1064; Fig 15, 1) would seem to be an ungritted, flat-based, bag-shaped or ovoid urn, with one possible rim sherd suggesting a slightly everted rim. The form and fabric of the vessel would suggest a middle Bronze Age date. The relatively thin wall (compared to typical middle Bronze Age vessels) and apparent form of the vessel does not rule out a late Bronze Age origin, but definite conclusions are difficult due to the lack of surviving diagnostic sherds.

Surface treatments, decoration and residues

No decorated sherds were found in the assemblage. Surface treatment, in the form of burnishing, was seen on only 31 sherds, from 1005 (1058). Seventeen of the base sherds from vessel 1015 showed evidence of a burnt residue on the interior of the base, and it is possible that this was caused by the presence of the cremation in the vessel.

Discussion

The pottery from Loughton was found in the context of an apparent urnfield cemetery, some coming from cremation burials proper, some associated with un-urned cremations and deposits of pyre debris. The presence of both earlier and middle Bronze Age vessels within the cemetery is not surprising, indeed it is a feature common in many burial grounds of this period (Ellison 1980). Although the assemblage from this site is small, the paucity of Bronze Age pottery from this part of England makes it important in both a regional and national context. The apparent similarity of the Loughton fabrics to the fabrics found to the south of the Milton Keynes area, and the difference from the fabrics from the northern Milton Keynes sites has also added to the interest of the assemblage.

Cremated remains by Mouli Start

A total of ten contexts contained cremated human remains (Table 2). Two of these were probably urned cremations (1015 and 1038) of middle and early/middle Bronze Age date respectively (see above). Pottery from another cremation burial (1005) and a pit with cremated bone (1016), is of middle Bronze Age date. All of this pottery forms the basis for dating the cremated remains (including those which had no associated pottery) as a group. Five or six of the deposits with human bone seem to represent pyre debris.

The urn from 1015 was nearly complete, and was therefore excavated under laboratory condi-

TABLE 2 Summary of contexts with cremation deposits

Individual/ feature	Deposit	Wt of bone (g)	Findings
1000	1052	562	Cremation burial; juvenile; highly fragmented and not complete; under-representation of axial skeleton; body fleshed when burnt and placed centrally or on top of pyre; high temperatures and prolonged burning time; pyre debris included.
1001	1053	318	Cremation burial; prime – mature adult of unknown sex; highly fragmented and not complete; over-representation of skull; body fleshed when burnt and placed centrally or on top of pyre; high temperatures and prolonged burning time; pyre debris included
1004	1056	21	Uncertain cremation burial/possible pyre debris deposit; sub-adult, unknown age and sex; small amount of pyre debris
1005	1058	1025	Cremation burial; young adult female?; highly fragmented and nearly complete; over-representation of skull; body fleshed when burnt and placed centrally or on top of pyre; high temperatures and prolonged burning time; pyre debris included. Possibly originally urned.
1008	1061	<1	Probable pyre debris; one fragment of bone; 283gms burnt flint
1015a	urn fills 2072–5	1236	Urned cremation burial; young adult male?; highly fragmented and nearly complete; axial skeleton under-represented; body fleshed when burnt and placed centrally or on top of pyre; high temperatures and prolonged burning time; small amount of pyre debris included
1015b	pit fill 1064	91	Probable disturbed cremation burial, in same cut as 1015a but not the same individual; very incomplete; over-representation of lower limb; body fleshed when burnt and placed centrally or on top of pyre; high temperatures and prolonged burning time; large amount of pyre debris (305gms of burnt flint)
1016 and 1019	1065, 1068	17 (1065); 18 (1068)	Uncertain relationship (inter-cutting); uncertain cremation burial/possible pyre debris deposit; 330gms of burnt flint and four sherds of pottery from 1016
1028	1081	19	Probable pyre debris deposit; 448gms burnt flint; unusual cut dimensions
1038	1093	3	Uncertain cremation burial including urn fragment; 936gms of burnt flint

tions in spits, with each spit being given a separate context number (2072–5). The urn, present as sherds in 1038, was severely degraded and incomplete, and the cremated human remains were therefore treated in the same way as the un-urned remains. All contexts containing cremated bone were subject to 100% sample recovery during excavation, wet sieved, the residue dried and the cremated remains retrieved. The backfill of pit 1015 (1064, outside the urn) was subject to the same procedure. Further cremated remains were discovered in this backfill and these are referred to below as 1015b, while the cremation within the urn is referred to as 1015a.

Material other than human cremated bone was recovered from some of the contexts under study. Extraneous material was removed from the cremated human bone and where possible bagged and weighed separately. This included burnt flint, charcoal, cremation slag and fired clay.

In all cases there was a minimum of one person represented by the cremated human remains in each cremation context. No pathological manifestations were observed in any of the remains, although the absence of evidence cannot be taken to infer their absence due to the fragmentary and incomplete nature of the remains.

Four definite cremation burials were identified among the contexts under study; 1000, 1001, 1005, and 1015a. Two probable cremation burials were

also identified; 1015b and 1038. The recovery of two cremations, 1015a and 1015b, within the same cut is interesting and unique in this series. It is possible that these cremations were deliberately interred together. It seems unlikely that 1015b is a deposit of pyre debris. However, it could be an earlier burial disturbed by 1015a included as its significance as an earlier burial was recognised.

The urned burial 1015a was different from the others in this series, in its being within a pottery vessel, its level of preservation, completeness of bone recovery, inclusion of less pyre debris, and body part representation which was closer to a modern complete cremation. Many of these factors could be, at least in part, due to the extra protection accorded the burial by inclusion within a vessel. 1038 also contained sherds, and was probably an urned cremation burial.

Two contexts (1008 and 1028) are considered to be deposits of pyre debris, i.e., the post-cremation remains of all that was part of the pyre, including bone and artefacts and incorporating, on occasion, material from immediately below, and therefore affected by, the pyre (McKinley 1997, 137). No evidence of pyre sites was found in the excavated area and these could be located elsewhere, or have been ploughed out in medieval times.

The contents of three contexts, 1004, 1016 and 1019, were not easily classified. They could represent disturbed cremation burials, but are more likely to be deposits of pyre debris, or deposits of disturbed material. All of the certain and probable cremations included pyre debris, which could support the conclusion that the pyre remains themselves had a ritual connotation, although this could equally be due to collection techniques.

The burials for which it was possible to reach age-at-death determinations and sex estimations include a juvenile (1000), two young adults – one possibly male (1015a), one possibly female (1005) – and one prime-mature adult (1001). It would seem that age and sex did not determine entitlement to burial, though the complete urned burial (1015a) was possibly male.

All contexts in the series were highly fragmented. The high degree of fragmentation of the urned cremation 1015a, which was excavated in the laboratory, implies that pre-depositional factors played a role in fragmenting bone. These would include movement or handling of hot brittle bone between starting the cremation pyre and deposition.

The bodies were fleshed, and therefore fairly recently dead, when cremated, so excarnation did not play a role in ritual. They were placed either centrally within, or on top of pyres, and not directly onto the ground surface. Pyre temperatures above 940° C were reached regularly, evenly, and for long periods of time, for all individuals and contexts. This is evidenced by the presence of cremation slag as well as the changed colour of the cremated bone. Tending a pyre and the addition of more fuel as it burnt were necessary to maintain these temperatures and the evenness of calcination. This implies an extended cremation-tending of a minimum of seven to eight hours, involving the investment of considerable time and fuel resources. Collection of bone from the pyre was very thorough with small hand and feet bones recovered from all of the definite cremation burials. The inclusion of at least some pyre debris with these burials suggests some method involving 'scooping' up and sorting pyre material, rather than hand picking each piece of bone from the pyre.

Bones from all areas of the body had been collected from the pyre and selected for inclusion in cremation burials at Loughton. There are indications that more importance was placed on the skull, and less on the axial skeleton, though this could be due to loss of bone, non-identification of skeletal elements or the incompleteness of individuals. No pyre or grave goods were recovered from any of the contexts. A full report, including tables, is held in the site archive.

Roman pottery by Barbara Precious

Only four sherds of abraded Roman pottery were found, three of which were of 2nd–4th century date. Details of these are available in the archive.

Saxon, medieval and post-medieval pottery
by Alan Vince

Summary

The pottery from Loughton includes a few Roman sherds and a small number of early Anglo-Saxon date, but otherwise the sequence starts in the late Saxon period, and probably late within this period. Most of the pottery found dates to the 12th, 13th and 14th centuries but occupation in most areas extended into the late- and post-medieval periods. The majority of the pottery was obtained from local sources. In the earlier part of the occupation shell-tempered wares, probably including some from

Olney Hyde, were the most common, followed by sand-tempered wares of unknown but local origin. From the 13th century onwards Potterspury was the main supplier. A handful of regional imports was present, including vessels from Brill, the London area, and Stamford, but no continental imports were used in the settlement until the 16th century. The range of forms used in the medieval period was limited to cooking and storage vessels and jugs, whilst drinking vessels first appeared in the 16th century.

Archive

The pottery examined was catalogued using MS Access and an Excel spreadsheet is in the site archive. The fabric classification used is a site-based system, augmented with codes used by the Milton Keynes Archaeology Unit and Museum of London where positive identifications of wares could be made. Within each excavated assemblage the pottery has been divided into fabric groups, and within these into forms. Featured sherds were bagged separately and are marked with the fabric code and form. Rim forms, base forms, handle types, spout types and decoration were all classified using a site-specific coding system. Where possible, estimated vessel equivalent (EVE) calculations were made based on both rim and base sherds.

Early Anglo-Saxon?

There is no definite evidence for early Anglo-Saxon activity on the Loughton site, but a number of sherds come from vessels of similar form and surface treatment to early Anglo-Saxon vessels. They are of three different fabrics, assigned the codes S01 to S03 here.

S01 Chaff-tempered ware

A single scrap of chaff-tempered clay might be part of a vessel, or a loomweight, or less likely, a fragment of daub. The fabric contains moderate fragments of chaff and sparse, rounded quartz in a fine, micaceous matrix. Chaff-tempering is a common trait in Anglo-Saxon pottery but especially in the later part of the early Anglo-Saxon period and during the mid-Saxon period. The technique was also used in the pre-Roman Iron Age.

S02 Sandstone sand tempered

Two sherds of pottery with sandstone sand-temper were found. The sandstone is relatively coarse with overgrown quartz grains giving a sugary-appearance to the larger fragments under the binocular microscope. The sherds have dark, carbon-rich cores and oxidised surfaces. This fabric is widely distributed in the Midlands and appears to have been distributed alongside granite-tempered wares from the Charnwood Forest area of north-east Leicestershire. It appears to have been used throughout the early and mid Saxon periods and the two sherds from Loughton have no features which might allow a closer date to be assigned.

S03 Grog/clay pellet tempered

Fragments of about seven vessels were found, containing abundant fragments of ?grog or relict clay up to 0.5mm across and sparse calcareous inclusions (unidentified) and rounded quartz. The quartz grains include polished and red-coated grains typical of Cretaceous deposits (e.g., the Woburn Sands of central Bedfordshire). All vessels had a carbon-rich core and blackened surfaces, usually over oxidised margins. The vessels' surfaces are very smooth, and may have once been burnished. Surface decoration consists of a raised, angular cordon, probably marking the neck of a globular jar (Fig 17, 76) and an everted rim (Fig 17, 75). These features can be paralleled on early Anglo-Saxon vessels and the fabric probably dates to this period.

Late Saxon

Occupation at Loughton seems to have begun in earnest in the late Saxon period. The majority of the sherds assigned to this period were shelly vessels of St Neots-type ware. The use of this term, and the definition of this ware, has been discussed by several authors, most recently Dennis Mynard (1992, 249; 251), whose conclusions and usage are followed here. St Neots-type ware was probably produced at a number of sites using visually and petrologically indistinguishable clays.

Some, at least, of the industries producing St Neots-type ware continued to produce pottery in the medieval period, but these later products are usually distinguishable through the use of a different range of forms and a higher firing temperature. The later products are usually oxidised, or oxidised with a reduced, grey core, whereas St Neots-type ware is often dark in colour, due prob-

ably to the incomplete removal of naturally-occurring carbon during firing. Mynard (1992) gives the code SN1 to St Neots-type ware and MC1 to the medieval products.

St Neots-type ware (SN1)

About 656 sherds were identified as St Neots-type ware (Table 3). Of these, almost two-thirds were featureless body sherds that could not be identified to form. In all 8.25 EVEs were present, calculated from rim sherds, but only 3.60 EVEs calculated from bases. The main reason for this discrepancy is probably that the bases break at the base angles and cannot be recognised and measured.

Cooking pots or jars form the main vessel type, and in most cases sooting demonstrates that they

TABLE 3 St Neots-type ware

Form	Sherds	Weight	Rim EVEs	Base EVEs	Illustrations (Figs 13–17)
?NK	60%	32%	0%	0%	
CP	21%	27%	45%	36%	36, 45, 46, 48, 51
Bowl	9%	19%	32%	28%	4, 23, 24, 32, 33, 52
Dish/bowl	6%	10%	4%	18%	31
CP/Jar	2%	2%	11%	0%	47
Jar	1%	5%	1%	13%	
Jug	1%	1%	5%	0%	49
Curf?	1%	3%	0%	0%	67, 70
Dish	0%	1%	1%	6%	
N	656	6052	8.25	3.60	

TABLE 4 St Neots-type ware and rim form

Rim	Description	Figs 13–17	Rim EVEs ×100
B01	Inturned rim bowl. Typical of St Neots-type ware.	4	25
B02	Thickened rim bowl. Typical of St Neots-type ware	31, 33	40
B03	Straight-sided bowl with simple rounded rim		55
B04	Straight-sided bowl with beaded rim	23	55
B05	Conical bowl with short vertical rim		10
B07	Straight-sided bowl with thickened rim (but not a distinct bead)		30
B08	Straight-sided bowl with flanged rim and groove on top of flange		10
B11	Straight-sided bowl with simple rounded rim and carination	32	20
C01	Cooking pot/jar with beaded rim		105
C02	Cooking pot/jar with simple rolled-out rim, slight lid-seating	45, 46	125
C03	Cooking pot/jar with vertical neck and simple rounded/slightly-beaded rim	48	70
C04	Cooking pot/jar with everted rim and sharp neck. Simple squared-off rim		10
C05	Cooking pot/jar with everted rim and sharp neck. Flat-topped rim		20
C07	Cooking pot/jar with everted rim with sharp inside angle and rounded external neck. Beaded rim		20
C08	Cooking pot/jar with everted rim with rounded neck. Squared rim		15
C10	Cooking pot/jar with everted inturned rim with sharp neck ('top hat' form). Simple rounded rim	47, 51	95
C11	Cooking pot/jar with no neck and squared rim with hollow outer edge		5
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge		5
C16	Vertical neck with flat top, thickened and rounded		20
C18		36	20
J01	Jug rim with slightly flaring rim, rounded neck and slight beading of rim		35
J03	Jug rim with squared top	10	10
J04	Jug rim with rounded rim		10

were used as cooking vessels. Bowls, dishes, and vessels which might be either form, were the next most common class and when grouped together form a third of rim EVEs. A small quantity of jug sherds, all rims, may have been underfired medieval vessels, or transitional from St Neots ware to the medieval shelly types.

A variety of rim forms are found on SN1 vessels although, as Mynard (1992) has noted, there is a wide variation in detail, even within a rim form (Table 4).

Sand and shell-tempered ware (M1)

Thirty-one sherds with a mixed shell and sand temper were noted (Table 5). These were often associated with SN1 sherds, forming the only other common ware in assemblages identified as being of late Saxon date. Few sherds could be identified to form, but all those which could be identified were cooking pots. One vessel classed as M1 has a rim form more typical of high medieval cooking pots (C12) and is either misidentified (a harsh version of MC1 perhaps?) or evidence for the longevity of this fabric.

TABLE 5 Sand and shell-tempered ware (M1) and rim forms

Rim	Description	Fig 15	Rim EVEs ×100
C03	Cooking pot/jar with vertical neck and simple rounded/slightly beaded rim	44	5
C08	Cooking pot/jar with everted rim with rounded neck. Squared rim		10
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge		10

Stamford ware (STAM)

A single sherd of unglazed Stamford ware, probably from a cooking pot or jar, was present. Although possibly of late-Saxon date this type continued in use into the later 11th and 12th centuries and this sherd may be either pre- or post-Conquest (and was, in any case, found in the same deposit as post-medieval wares).

Saxo-Norman

It is quite clear that SN1 continued to be used in the later 11th and 12th centuries but there was an increasing use of other fabrics, principally a sand-tempered ware (M4) and a coarse gravel-tempered ware (M3). A few assemblages of reasonable size contained a few sherds of SN1 and were composed mostly of sherds of M4 (for example, cut 1020, with 57 sherds, all but one of M4). These are likely to be dated to the later part of this period and, indeed, were sometimes found to include sherds of reduced, wheel-thrown greywares (M17), which probably date to the mid/late 12th century at the earliest.

Sand-tempered ware (M4)

This ware was tempered with a well-sorted rounded quartzose sand with grains between 0.5mm and 1.0mm. A distinctive feature of the ware was its colour and firing: most vessels were oxidised and had a dark brown or reddish-brown colour, indicative of a medium/high iron content. Similar sherds have been found at Great Brickhill, although not on known kiln sites, and the ware may have been produced there. In addition, the

TABLE 6 Sand-tempered ware (M4)

Form	Sherds	Weight	Rim EVEs	Figs 13–17
?NK	23%	13%	0%	
Bowl	1%	1%	8%	
CP	76%	84%	78%	5, 41, 43, 50, 53, 58
CP/Jar	0%	1%	4%	
Dish/bowl	0%	0%	2%	
Jug	0%	1%	7%	
SPP	0%	1%	0%	10
N	950	12532	4.88	

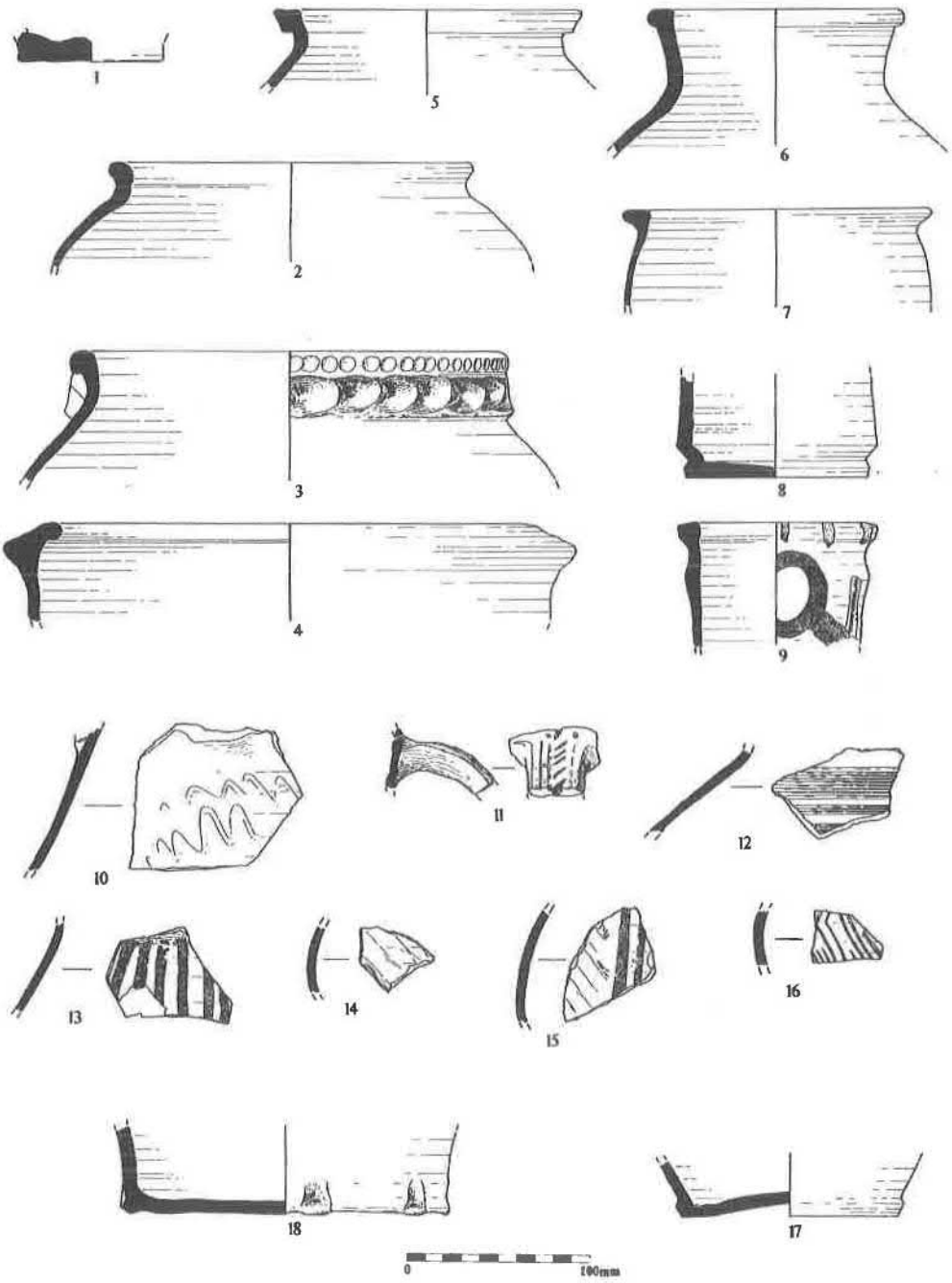

FIGURE 13 Prehistoric (1) and medieval pottery (2–18).

TABLE 7 Sand-tempered ware (M4) and rim forms

Rim	Description	Figs 13–17	Rim EVEs ×100
B04	Straight-sided bowl with beaded rim		10
B05	Conical bowl with short vertical rim		5
B08	Straight-sided bowl with flanged rim and groove on top of flange		5
B09	Straight-sided bowl with flanged rim		20
C02	Cooking pot/jar with simple rolled-out rim, slight lid-seating		98
C03	Cooking pot/jar with vertical neck and simple rounded/slightly-beaded rim	5	25
C04	Cooking pot/jar with everted rim and sharp neck. Simple squared-off rim		15
C05	Cooking pot/jar with everted rim and sharp neck. Flat-topped rim	41, 50	55
C06	Cooking pot/jar with everted rim and rounded neck. Simple rounded rim	53	35
C07	Cooking pot/jar with everted rim with sharp inside angle and rounded external neck. Beaded rim	58	40
C08	Cooking pot/jar with everted rim with rounded neck. Squared rim		25
C09	Cooking pot/jar with everted rim with rounded neck. Squared rim with hollow top		90
C10	Cooking pot/jar with everted inturned rim with sharp neck ('top hat' form). Simple rounded rim		5
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge		10
C16	Vertical neck with flat top, thickened and rounded	43	5
J01	Jug rim with slightly flaring rim, rounded neck and slight beading of rim		10
J02	Jug rim with simple squared-off top		25

written description of the sand-tempered wares produced at Olney Hyde suggests that this site too is a potential supplier of this ware. The Loughton vessels were mainly handmade cooking pots, very few other forms being recognised. Those forms were bowls and possibly dishes, spouted pitchers and jugs.

Most of the rim forms were variations on the everted rim, probably added as a separate coil to the globular body. Here too, a few sherds, the jugs and cooking pots with rim form C12, are typologically later in date than the majority and may be either misidentified examples of other wares or possible evidence for the continuity of this fabric into the later 12th or 13th centuries.

Coarse gravel-tempered ware (M3)

Thirty-six sherds were tempered with a coarse gravel, consisting of rounded grains of quartz up to 2mm across, and moderate angular fragments of flint/chert up to 5mm across. The sherds, in the main, seem to have come from handmade cooking pots, although a single jug rim was present (form J01). Similar coarse fabrics have been found at Great Brickhill and may have been amongst the products of the pottery industry there (pers. comm. B Hurman).

TABLE 8 Coarse gravel-tempered ware (M3)

Form	Sherds	Weight	Rim EVEs ×100
?NK	*29*	*176*	
CP	*6*	*78*	
Jug	*1*	*13*	*10*

Early medieval chalky ware (M15)

Five sherds with large pockmarks, due to the original presence of rounded calcareous inclusions, were present. These sherds appear in the hand specimen to be identical to London EMCH, for which a source in the Chilterns was postulated (Vince and Jenner 1991, 70–2). However, the only identifiable form was a dish or bowl rim (Rim Type B03), a form not found in London, where this fabric was current in the mid 11th to mid 12th centuries.

TABLE 9 Early Medieval chalky ware (M15)

Form	Sherds	Weight	Rim EVEs
-	*1*		
?NK	*3*	*52*	
Dish/bowl	*1*	*9*	*5*

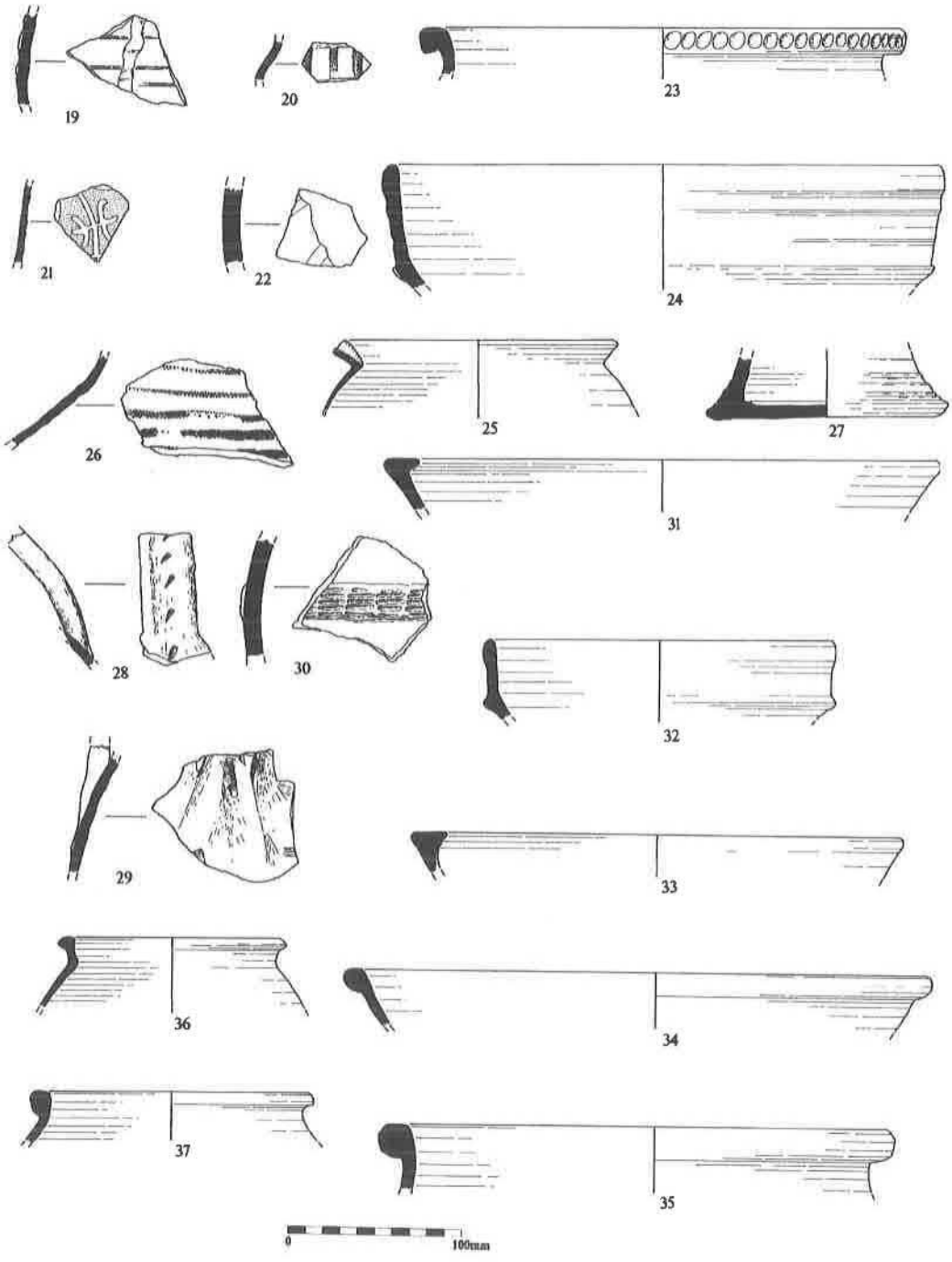

FIGURE 14 Medieval pottery.

Medieval (late 12th to mid 14th century) shelly ware (MC1)

Four hundred and eighty-one sherds of medieval shelly ware were present at Loughton. The range of forms found is very similar to that found in St Neots ware. Comparing rim EVEs, MC1 has fewer bowls/dishes, a similar proportion of cooking pots/jars (one of which had a pulled lip, and is therefore classifiable as a pipkin) and more jugs. However, the difference between the two groups is a lot less extreme than might have been predicted.

The range of rim forms found suggests a high degree of overlap between this ware and SN1.

Potterspury wares (M5, M18, M19)

Potterspury wares form the largest group of medieval pottery from Loughton. There is a wide variation in colour and texture although most sherds have a relatively low iron content and sparse calcareous inclusions, or the pockmarks where these inclusions have leached out. Amongst other traits, the abundant use of knife trimming on the bases and lower parts of vessels is another distinguishing feature of these wares. Over two-thirds of sherds could not be identified to form level. Body sherds of cooking pots were sometimes identifiable through their curvature and external sooting, but the remaining forms were often only identifiable

TABLE 10 Medieval shelly ware (MC1)

Form	Sherds	Weight	Rim EVEs	Figs 13–15,17
?NK	64%	45%	0%	
Bowl	2%	10%	22%	38
CP	25%	27%	28%	3
CP/jar	1%	2%	16%	37
Dish	0%	0%	1%	
Dish/bowl	4%	7%	6%	
Jar	0%	2%	3%	2
Jug	2%	5%	13%	26, 73
Pipkin	0%	1%	10%	
SJ	0%	1%	0%	30
N	481	4366	3.40	

TABLE 11 Medieval shelly ware (MC1)

Rim	Description	Figs 13–15	Rim EVEs
B03	Straight-sided bowl with simple rounded rim		30
B04	Straight-sided bowl with beaded rim		35
B05	Conical bowl with short vertical rim		10
B07	Straight-sided bowl with thickened rim (but not a distinct bead)	38	15
C01	Cooking pot/jar with beaded rim	2, 37	40
C03	Cooking pot/jar with vertical neck and simple rounded/slightly-beaded rim		20
C04	Cooking pot/jar with everted rim and sharp neck. Simple squared-off rim		35
C05	Cooking pot/jar with everted rim and sharp neck. Flat-topped rim		15
C08	Cooking pot/jar with everted rim with rounded neck. Squared rim		10
C09	Cooking pot/jar with everted rim with rounded neck. Squared rim with hollow top		5
C10	Cooking pot/jar with everted inturned rim with sharp neck ('top hat' form). Simple rounded rim		30
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge		15
C15		3	20
C16	Vertical neck with flat top, thickened and rounded		5
J01	Jug rim with slightly flaring rim, rounded neck and slight beading of rim		20
J06	(* no description)		35

when rims or other featured sherds were present. There is thus a sharp contrast between the apparent form-breakdown by sherd count or weight, in which the majority of identifiable sherds come from cooking pots/jars, and the composition by form as demonstrated by rim EVEs, which show that in fact bowls appear to have been almost as common as cooking pots, with jugs (only 2% by sherd count) a close third with 21% of rim EVEs. Unusual forms found were dripping dishes and lids.

Brill/Boarstall ware (M6)

Brill/Boarstall ware shares many superficial similarities to Potterspury wares, especially in its colour and texture. However, under the binocular micro-

TABLE 12 Potterspury ware (M5, M18, M19)

Form	Sherds	Weight	Rim EVEs	Figs 13–17
NK?	68%	58%	0%	19
Bowl	4%	8%	36%	39
CP	24%	20%	23%	42, 68
CP/Jar	1%	2%	17%	55, 59
Dish/bowl	0%	0%	1%	
Dripping dish	0%	0%	1%	57
Jar	1%	3%	1%	
Jug	2%	8%	21%	6, 12, 18, 28, 29, 69, 72
Lid	0%	0%	0%	
N	1308	14290	8.50	

TABLE 13 Potterspury ware (M5, M18, M19 and rim forms)

Rim	Description	Figs 13,15 and 16	Rim EVEs ×100
B02	Thickened rim bowl. Typical of St Neots-type ware		10
B03	Straight-sided bowl with simple rounded rim		15
B04	Straight-sided bowl with beaded rim		100
B06	Conical bowl with wide thin flange		10
B07	Straight-sided bowl with thickened rim (but not a distinct bead)		15
B08	Straight-sided bowl with flanged rim and groove on top of flange		10
B09	Straight-sided bowl with flanged rim		50
B10	Conical bowl with simple squared-off rim		10
B12	Conical bowl with everted rim, thickened at neck		15
B15		39	
C01	Cooking pot/jar with beaded rim		10
C02	Cooking pot/jar with simple rolled-out rim, slight lid-seating		25
C03	Cooking pot/jar with vertical neck and simple rounded/slightly beaded rim	6	20
C05	Cooking pot/jar with everted rim and sharp neck. Flat-topped rim		10
C07	Cooking pot/jar with everted rim with sharp inside angle and rounded external neck. Beaded rim		5
C09	Cooking pot/jar with everted rim with rounded neck. Squared rim with hollow top		100
C11	Cooking pot/jar with no neck and squared rim with hollow outer edge		15
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge	5	85
C16	Vertical neck with flat top, thickened and rounded		15
C17		55	15
C21		59	15
J01	Jug rim with slightly flaring rim, rounded neck and slight beading of rim.		5
J02	Jug rim with simple squared-off top		25
J03	Jug rim with squared top		15

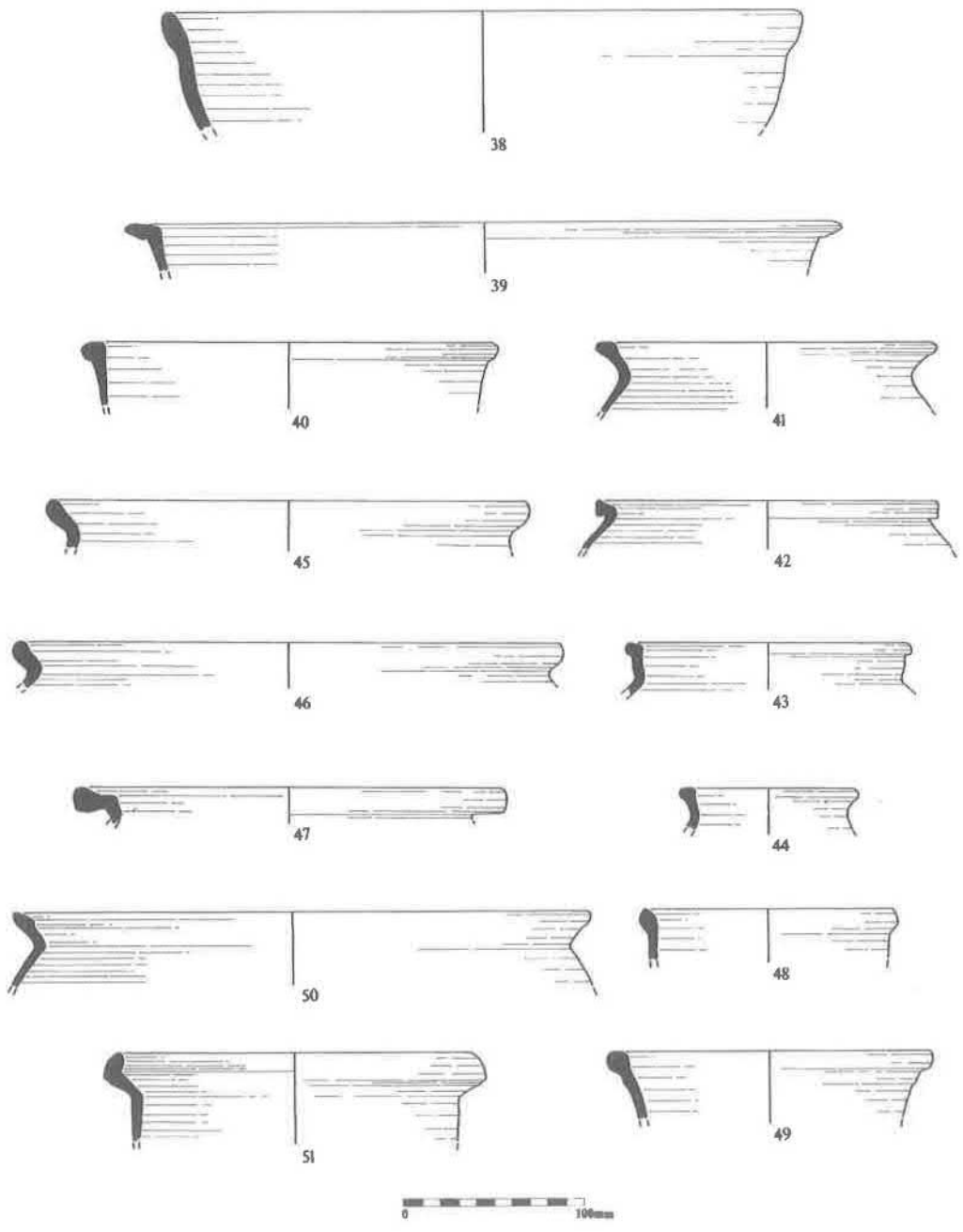

FIGURE 15 Medieval pottery.

TABLE 14 Brill/Boarstall ware (M6)

Form	Sherds	Weight	Rim EVEs ×100	Figs 13, 14 and 17
?NK	52	356		
Bowl	1	12	5	
Jar	3	110	20	
Jug	36	505	10	11, 13, 14, 15, 16, 17, 20, 22, 27, 65, 66, 74

scope the two wares are clearly distinguishable since Brill/Boarstall ware was tempered with abundant fine sand, with grains *c.* 0.3 mm across. The majority of sherds were probably from jugs decorated with applied-strips and roller stamping.

Wheelthrown Greywares (M17)
Wheelthrown, unglazed greyware vessels with quartzose sand temper, were present at Loughton. Cooking pots were by far the most common form found, although over-represented by sherd count because of the ease of identifying body sherds. A single jug was present (Area E, 1085).

London-type wares (M21, SSW)
Sherds of London-type ware (M21) and London shelly-sandy ware (SSW) were present (two sherds of each type). These vessels were produced in the late 12th/early 13th century in the London area (Pearce and Jenner 1985). All were featureless bodysherds except for a SSW cooking pot rim (Rim form C12).

Developed Stamford ware (M11)
A single developed Stamford-ware body sherd was found. This ware was produced in the late 12th and early 13th centuries and widely distributed over midland England, and beyond.

TABLE 15 Wheelthrown Greywares (M17)

Form	Sherds	Weight	Rim EVEs	Figs 14 and 16
?NK	38%	21%	0%	
Bowl	2%	6%	28%	34
CP	56%	70%	58%	54
CP/jar	1%	1%	13%	
Dish/bowl	0%	1%	3%	
Jug	2%	1%	0%	
N	245	3405	2.00	

TABLE 16 Wheelthrown Greywares (M17) and rim forms

Rim	Description	Figs 14 and 16	Rim EVEs
B03	Straight-sided bowl with simple rounded rim		10
B04	Straight-sided bowl with beaded rim	34	20
B05	Conical bowl with short vertical rim		5
B06	Conical bowl with wide thin flange		5
B09	Straight-sided bowl with flanged rim		20
C02	Cooking pot/jar with simple rolled-out rim, slight lid-seating		15
C08	Cooking pot/jar with everted rim with rounded neck. Squared rim		25
C09	Cooking pot/jar with everted rim with rounded neck. Squared rim with hollow top	54	75
C12	Cooking pot/jar with no neck and squared rim with hollow upper edge		15

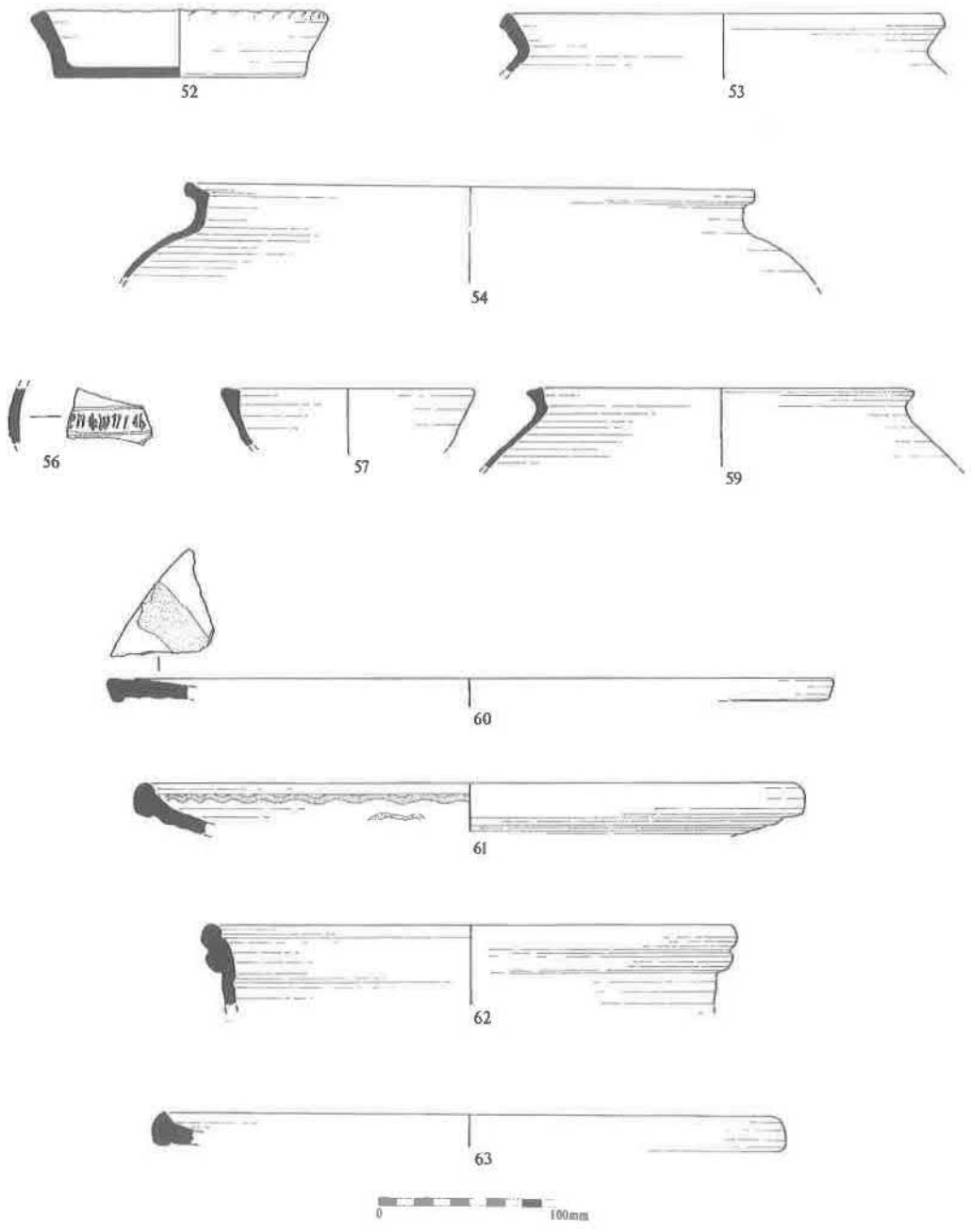

FIGURE 16 Medieval pottery.

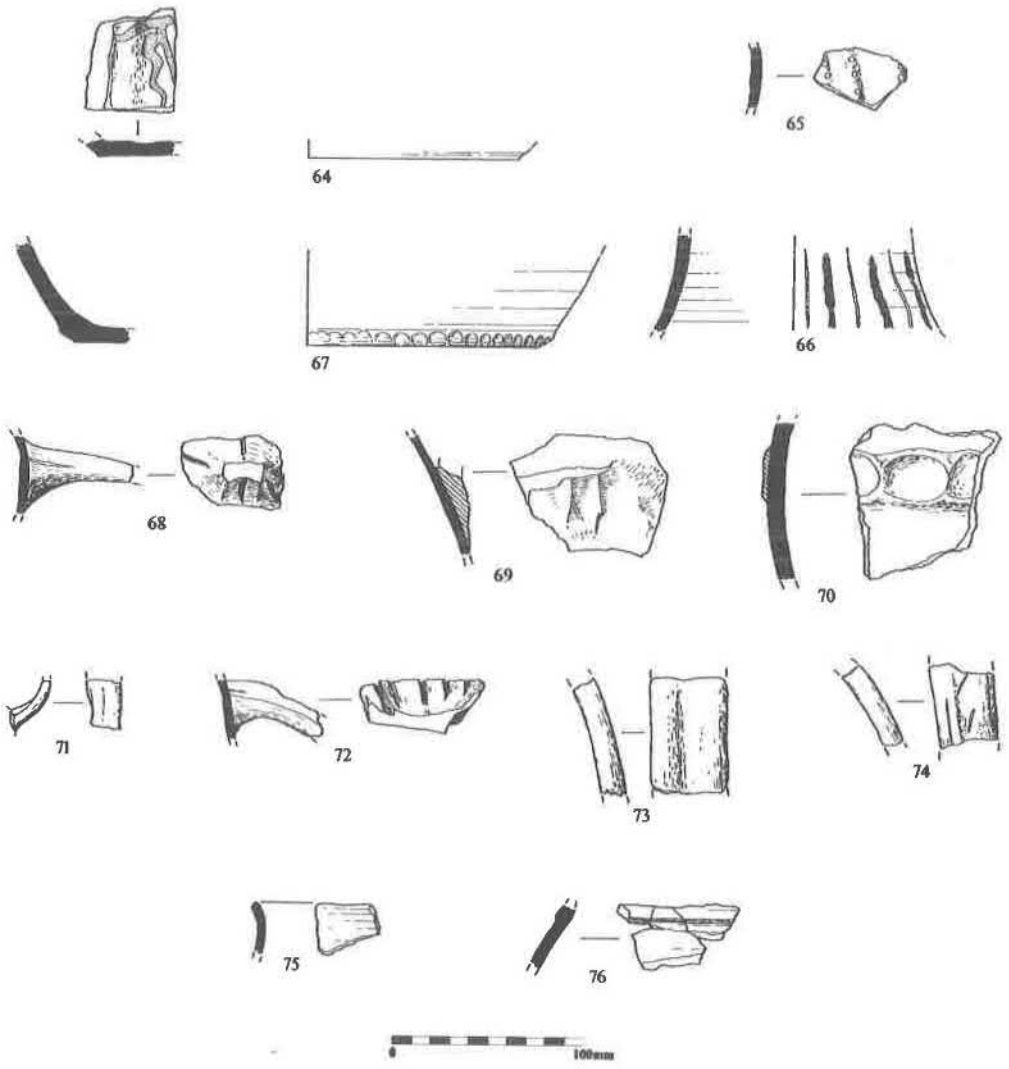

FIGURE 17 Medieval pottery.

Sand-tempered glazed wares (M13, M14)
Two unprovenanced sand-tempered glazed wares were found (M13 and M14, two sherds and one sherd respectively).

Late medieval
Potterspury wares and Brill/Boarstall wares probably continued to be used at Loughton into the late 14th and 15th centuries. The majority of the sherds, however, show no distinctive late medieval forms or treatments and could only be dated by their context. However, two variant Potterspury fabrics, both red-firing (one silty fabric, M23, and one a micaceous fabric, M24), were identified by B Hurman. Only six sherds of M23 and four of M24 were noted. The M23 sherds included one jug rim (Rim form J02) and the M24 sherds included a glazed bowl rim (Rim form B08). All these late medieval sherds came from Area B.

Post-medieval
Small quantities of post-medieval pottery were recovered from Areas 2, 3, B, C, D and E. The main sources of coarseware were Potterspury (PM3?,

PM9) and Brill (M27). Staffordshire black-glazed coarseware was also present (PM1).

TABLE 17 Post-medieval pottery

Fabric	Form	Figs 13–17	Rim
FREC	DJ	56	
FREC	DJ	71	
PM9	Jar	8	
PM9	Bowl	61	B18
PM9	Bowl	63	B18
PM9	Jar	62	C02
PM9	Bowl	60	B08
PM9	Bowl/plate	64	
STSL	Poss	21	

Fineware black-glazed cups (CNTN) were present in all but two areas, together with sherds of Frechen stoneware (FREC). Staffordshire finewares were rare, being represented only by a vessel from Area D (STSL).

The post-medieval pottery dates from the mid 16th to the early 18th centuries but there is insufficient material to provide a close date for the occupation in any one area, except to say that 16th/17th century material is most common on Areas 2, 3, B and C and 17th/18th century material is present in Areas D and E.

The Frechen stoneware included a sherd from a Motto jug, dating to the late 16th century (Fig 16, 56), but the remainder might be from jugs or belarmine bottles and are not closely datable. A small number of the Potterspury wares were slip-trailed (Fig 16, 60, 61 and Fig 17, 64) and probably of later 17th or 18th century date. These include one vessel from Area B.

TABLE 18 Post-medieval pottery by area

Area	CSTN	FREC	M27	PM1	PM3	PM9	STSL
Area 2	1		1				
Area 3	1						
Area B	1	6	3		1	7	
Area C	6	1	26			8	
Area D				1		4	4
Area E			3	2		18	

Chronology

As usual with medieval rural excavations in Buckinghamshire, the Loughton site provided no externally-dated deposits and, because pottery fabrics and forms seem to have been long-lived in the Milton Keynes area, it has not proved possible to date individual deposits with any accuracy. Using the broad dating of the wares described above, a summary of the dating evidence from each context was produced, in the form of the number of sherds of each date range in the assemblage. As might have been predicted, the pottery assemblages from horizontal deposits tended to include the bulk of the finds but have broad date ranges. This information is presented in detail in the site archive.

Very little pottery was stratified in deposits of the 10th/12th centuries (i.e. the late Saxon and Saxo-Norman periods) and in many cases where features of this date were present they produced few sherds. In fact, the highest quantity of sherds in a deposit of this period was 58 (Area E, 1020, 57 in fabric M4 and 1 in SN1), and the next largest contained only 18 sherds. Given the size of some of the features of this period, it may be that there was relatively little pottery in use. In most excavated areas it was not possible to phase these early features, although they clearly belong to more than one phase. In Area D, however, there was a long stratigraphic sequence, which allowed four groups of pottery to be defined and demonstrates that fabrics M4 and M1 occur at the end of the sequence and fabric MC1 occurs in the middle (thus confirming that, as identified at Loughton, the changeover between poorly fired SN1 and oxidised MC1 was gradual and started in the late Saxon period).

There is little evidence for any difference in date

between the late Saxon/Saxo-Norman occupation between the excavated areas.

Later 12th/early 13th century deposits, recognised through the preponderance of sherds of fabric M4, some wheelthrown greywares of fabric M17, but few or no sherds of Potterspury wares (M5), were rare and only certainly occurred at Area E. In addition to the high frequency of fabric M4 the ratio of MC1 to SN1 is higher than in the earlier deposits.

The distribution of pottery stratified in medieval deposits emphasises that medieval settlement was non-existent in some of the excavated areas. There are no medieval features in Area 1 and only a single pit (containing one sherd) in Area 4. Much of the pottery found in medieval deposits is of the same fabric types as in the earlier deposits, and in most cases is likely to be residual from earlier occupation. The wheelthrown greywares, M17, on the other hand, may be contemporary, since their equivalent types in the south-east of England (such as Hertfordshire Reduced and Limpsfield wares) were used into the 14th century. In several of the excavated areas the medieval shelly ware, MC1 is more common than ?residual SN1, indicating that this ware too was contemporary with the other medieval wares (mainly Potterspury wares, M5, and Brill/Boarstall ware, M6). There is a possibly significant difference in the relative proportions of major medieval wares from Area to Area. M17 is present in similar quantities in all areas but M5 and M6 are both present as a higher proportion of possibly contemporary wares in areas with a low frequency of medieval shelly ware. This probably indicates that the medieval shelly ware fell out of use within the medieval period at the expense of Potterspury and Brill wares. On these criteria, the medieval settlement in Areas A and E would be later than that in the remaining areas. However, whether this should be interpreted to mean that it started later, or continued later is not clear. Furthermore, the entire pattern might be due to the presence of earlier medieval material residual in the medieval deposits in some areas.

The medieval deposits in Area 3 were sub-divisible into two phases on stratigraphic evidence but there is no obvious distinction between the pottery assemblages from these two phases.

Loughton's pottery supply

The precise source of much of Loughton's medieval pottery is not known. Nevertheless, there is no doubt that the majority of pottery used was obtained from sources within 30km of the settlement. In fact, Olney Hyde, one of the potential sources of MC1 and M4, is only 20km from Loughton; Great Brickhill, potentially a source for M3 and M4, is 14km from Loughton, whilst Potterspury is only 8km away.

The only other medieval wares to form more than a small percentage of the Loughton assemblage were M6, Brill/Boarstall ware, approximately 26km from Loughton, and M17 wheelthrown greywares. If the latter are indeed Hertfordshire products, rather than more local versions, then they were probably carried over 50km to Loughton.

All other medieval wares occur in very small quantities. Only three can be approximately provenanced: Stamford wares (70km); London-type ware (80km); and London shelly-sandy ware (80km). All are types marketed extensively and were quite probably obtained from a local market.

Activity and status at Loughton

The range of pottery vessels used at Loughton reflects the activities which were carried out there and the social customs of the settlement's inhabitants. Because of the difficulty in assigning body sherds to forms, only rims can be used for statistical analysis, quantified as EVEs. All stratified rims were therefore assigned to a form and their frequency by broad period using rim EVEs was calculated:

As expected, cooking pots and jars formed the main component of Saxo-Norman/early medieval assemblages but, unexpectedly, actually increased in frequency in the late 12th/early 13th century and then again in the medieval period. This may, however, be due to the presence of residual pottery in the later deposits. Nevertheless, a similar pattern is found if the major wares are arranged in chronological order, ignoring stratification: (see Table 19)

Here the proportion of cooking pots declines between the use of M17 and M5. However, it has been argued that these wares are likely to have been contemporary during the later 13th and 14th centuries. Clearly, the Loughton pottery suggests that ceramic cooking pots were used throughout the occupation of the settlement, with no evidence for their replacement by metal vessels, as is often found in urban ceramic sequences.

Bowls and dishes were the next most common

TABLE 19 Pottery forms by phase

Form	Phase 3C	Phase 4A	Phase 4B	Phase 5	Total
Bowl	27%	21%	18%	22%	435
Dish/bowl	7%	0%	2%	0%	50
Pancheon	0%	0%	0%	6%	25
Bowl/jar	0%	0%	0%	3%	15
Dish	3%	0%	0%	0%	15
Bowl/dish total	*37%*	*21%*	*20%*	*31%*	*540*
Cooking pot	58%	72%	55%	21%	1,065
Cooking pot/jar	5%	0%	13%	8%	215
Jar	0%	0%	4%	2%	55
Pipkin	0%	0%	0%	8%	35
Cooking pot/jar total	*63%*	*72%*	*71%*	*39%*	*1,370*
Dripping dish	0%	0%	0%	0%	5
Jug	0%	7%	8%	30%	250
Total	*295*	*145*	*1,275*	*450*	*2,165*

form, throughout the medieval period. The stratified assemblages indicate a drop in frequency in the late 12th/early 13th century but the frequency of bowl rims in fabrics M17 and M5 makes it clear that they continued to be produced and used at a significant level. Many of these vessels show signs of being used in cooking and the deep, conical bowls or pancheons, used in dairying, seem to have been unimportant in the medieval settlement, although forming half of all rim EVEs in the post-medieval period. The high proportion of bowls/dishes is therefore more likely to be a reflection of cooking habits than an indication of any other activity.

The proportion of jugs is consistently low – there are no rims in stratified Saxo-Norman/early medieval deposits and only 7–8% by rim EVEs in late 12th/early 13th century and later medieval deposits. By contrast, jugs form a higher proportion of most of the major wares, forming 21% of rim EVEs in Potterspury ware (M5). The explanation for this discrepancy may be that where jug rims survive they tend to form a higher rim percentage than cooking pot rims so that a very few instances (mostly unstratified) give rise to a significant rim EVE count. Even so, the overall frequency of jugs is undoubtedly low: many high

TABLE 20 Pottery forms by ware category

Form	SN1	MC1	M4	M17	M5	Post-Med	Total
Bowl	32%	22%	8%	28%	36%	30%	27%
Dish	1%	1%	0%	0%	0%	0%	1%
Dish/bowl	4%	6%	2%	3%	1%	0%	3%
Pancheon	0%	0%	0%	0%	0%	50%	1%
Bowl/dish total	*38%*	*29%*	*10%*	*30%*	*37%*	*80%*	*32%*
Cooking pot	45%	28%	78%	58%	23%	0%	42%
Cooking pot/jar	11%	16%	4%	13%	17%	0%	12%
Jar	1%	3%	0%	0%	1%	20%	2%
Pipkin	0%	10%	0%	0%	0%	0%	1%
Cooking pot/jar total	*57%*	*57%*	*83%*	*70%*	*41%*	*20%*	*57%*
Dripping dish	0%	0%	0%	0%	1%	0%	0%
Jug	5%	13%	7%	0%	21%	0%	11%
Total	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*

medieval pottery industries, like Potterspury, seem to have concentrated on the production of jugs, as is shown both by the frequency of jugs in these fabrics on consumer sites and by the composition of waster dumps and failed kiln firings.

Other forms were rare, only dripping dishes were represented by rim sherds (which, given the oval form of the dripping dish, are difficult to obtain rim EVEs from). Storage jars occurred in Saxo-Norman/early medieval, late 12th/early 13th century and medieval deposits and lids were present in medieval deposits. Spouted pitchers are likely to date to the Saxo-Norman/early medieval period and only one sherd of such a vessel was found, stratified in a medieval deposit.

In total, the pottery forms found at Loughton reveal a community which used pottery mainly for cooking and food preparation. A few of these vessels, classified as jars, have no evidence for being used in cooking and were possibly used in food storage, as were the few storage jars. Serving vessels (spouted pitchers and jugs) were rare, increasing in quantity in the medieval period. Nevertheless, there must have been a much lower use of ceramic serving vessels at Loughton than in south-east Midlands towns, such as Bedford, Aylesbury or Oxford. It is unlikely that the Loughton villagers used metal vessels instead and it seems therefore that they had fewer occasions on which to use serving vessels (which, to judge by manuscript illustrations and their shape and decoration were usually used to serve alcoholic drinks at formal feasts). Loughton, therefore, fits the general impression of medieval village life.

Stone by David Williams

Thirty-three fragments of stone not available in the immediate locality of the site were submitted for analysis and the results are presented in Table 21. Over half the samples (18 fragments) were of Mayen lava, a dark grey vesicular stone originating from the Eiffel Hills region of Germany and imported in some quantity into Britain during the

TABLE 21 Objects of stone

Area	Context	Material	Comment
Tr13	10–15m	Sarsen	Part of a large broken whetstone. 32mm thick; 34mm wide; 71mm long (164gms)
Tr30	32	Mayen lava	Two moderate-sized fragments of quern. One of them shows part of the flange of an upper stone (518gms)
2	422 (474)	Millstone grit	Part of a large, shaped block (1192gms)
2	3003 (3052)	Mayen lava	Large segment of lower quernstone displaying one flat worn surface (1496gms)
B	723	Sandstone (sarsen?)	Roughly half of an upper stone, including part of the food-shoot, from a large quern (4440gms)
B	723	Millstone grit	Large complete ?rubber with one flat surface (4020gms)
B	734 (2551)	Mayen lava	Large segment of quern displaying one flat worn surface (830gms)
B	752	Sandy limestone	Small fragment (30gms)
B	752	Altered melanocratic igneous rock	Small irregular fragment (34gms)
B	756	Jurassic limestone	Irregular fragment (340gms)
C	790	Oolitic limestone	Large architectural fragment (2840gms)
C	837 (888)	Mayen lava	Small fragment (86gms)
C	833 (886)	Mayen lava	Eight very small fragments (140gms)
C	872	Mayen lava	Four very small fragments (70gms)
C	841 (892)	Mayen lava	Small fragment displaying one flat worn surface (286gms)
C	815 (862)	Lower Greensand	Large fragment, possibly part of a quern or perhaps a rubber (2232gms)
E	1025 (1078)	Micaceous flagstone	Fragment with a curved edge and therefore possibly from a quern (688gms)
E	1051	Sandy limestone	Very small irregular fragment (8gms)
E	1051	Chalk	Small fragment (12gms)
E	1023 (1076)	Chalk	Three irregular fragments (513gms)

Roman, Saxon and medieval periods for use as quernstones. Other identified sources include sarsen and greensand from the nearby Upper Cretaceous outcrops and Millstone grit from the Pennine region of northern Britain.

Burnt flint
In all 307 pieces of burnt flint (2.6kg) were recovered during the excavation and evaluation. A catalogue is to be found in the site archive.

Clay pipe by Andy Smith
Twenty-two fragments of clay pipe were retrieved, including five bowls, from both the evaluation and excavation. A full description is presented in the archive.

Metalwork by Nicola Powell
A total of 295 pieces of metalwork were recovered from the excavation and 40 from the evaluation. Of these 54 were of copper alloy, 86 of lead or lead alloy (pewter), and the remainder of iron. The diagnostic or datable finds are described in detail below (Figs 18 and 19) and the remainder in the archive.

Lead and pewter objects
Thirty identifiable objects were recovered, mostly from unstratified contexts on Area B. Six small cast lead weights were found, all but one fully perforated and all roughly circular (Fig 18, 3–7). Similar weights were used for fishing or in the trapping of birds (Zeepvat *et al.* 1994, 144, 158). However, all the weights fall between 34gms and 62gms and this is well within the weight range for lead spindle-whorls found in Winchester (Woodland 1990). This would have made them suitable for spinning some of the heavier weights of wool. Three spoons and two spoon handles in poor condition were also found, all probably 15th century. The remaining pieces comprised eleven cast pistol-balls, a small rim fragment of a pewter cup or bowl from context 780, and ten badly-misshapen lengths of lead calmes for windows, one of which came from Area C.

Fig 18, 1; Area B; unstratified; a spoon with a fig-shaped bowl, round-sectioned stem and a squarish and damaged knop (15th century).

Fig 18, 2; Area B; context 767 surface; a handle with a decorative diamond-shaped knop, LMC 1940, type 6, 14th to 15th century.

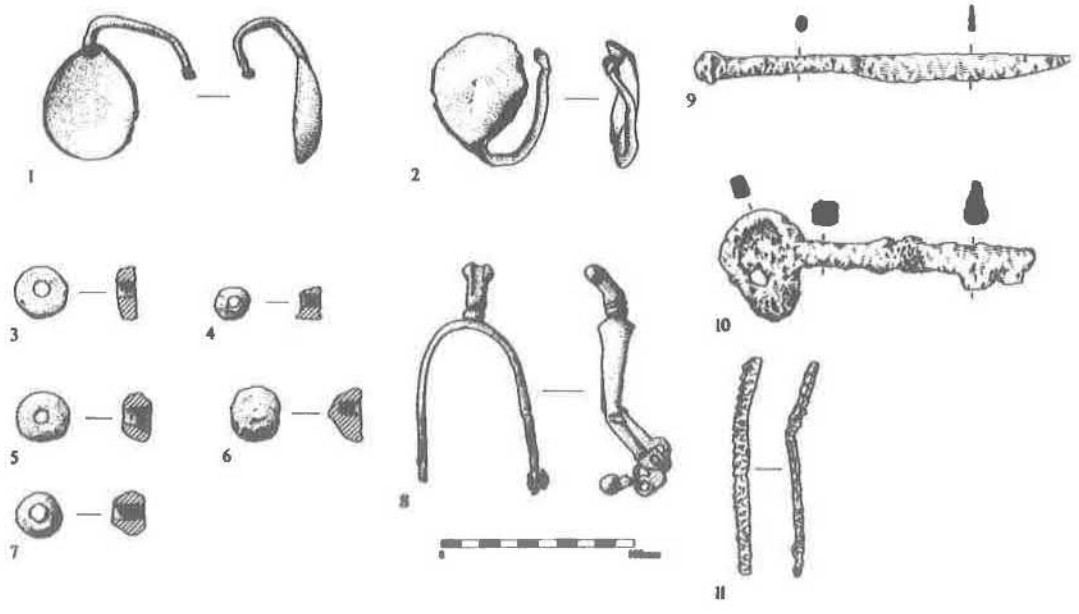

FIGURE 18 Metalwork.

Buckles, buckle frames and buckle plates
Thirteen buckles and buckle frames and three buckle plates made of copper alloy or iron were recovered. Some, particularly those of iron, are in poor condition and subject to a large amount of corrosion, hindering their identification and dating. There is no clear distinction between the various types used for horse equipment or for personal use, but buckles that formed part of horse equipment were generally more likely to have been made of iron (Egan and Pritchard 1991, 50).

Fig 18.8; Area B; context (780) 63.6E/64.1N; Short rowel spur, sides D-section and tapering forwards, ending in elaborate figure-eight terminals. Sides bend at about 45 degrees under ankle. One terminal has *in situ* bottom ring looped through. Neck is short and projects downwards and is encircled by a plain moulded ridge at the point of its attachment to the sides. 14th–late 15th century

Fig 19.12; Area B; surface find, 60E/80N; Cu alloy. Round simple frame with central bar. 15th century

Fig 19.13; Area B; surface find 93E/69N; Cu alloy. Double oval frame which appears coated with black (?tin). Bar projects at both sides. late 14th/early 15th century

Fig 19.14; Area A; surface find 50E/70N; Fe. D-shaped frame with pin corroded into position. late 14th–early 15th

Fig 19.15; Area E; surface find 60E/70N; Cu alloy. Small oval-shaped with narrow offset bar. late 14th–early 15th century

Fig 19.16; Area 2; context 409 82E/87N; Round object, cruciform pattern cut into surface, four rivets underside. May be a mount for armorial, furniture, horse harness, casket or book-cover decoration.

Fig 19.17; Area A; surface find 50E/70N; Cu alloy. Buckle plate. Made of a single sheet, folded widthways. Five rivet holes with two pairs of rivets on top and bottom edge. Faint zig zag pattern along long sides of top. 14th–15th century

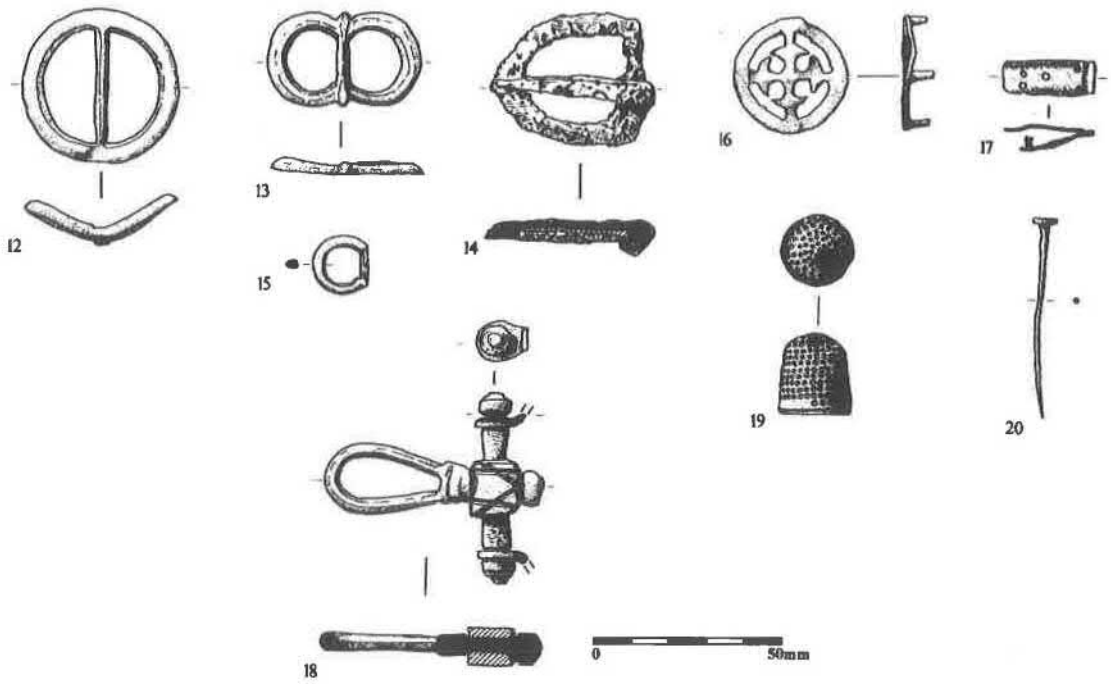

FIGURE 19 Metalwork.

Fig 19.18; Area B; context (793); Purse frame; LMC type B1, with a short bar, single V-shape incised on each side of centre block. The London Museum states that this is a common type of purse frame, but interestingly, at the time of compiling the medieval Catalogue (LMC 1940), there was not a purse frame of this type amongst the collection (168). late 15th–early 16th century

Fig 19.19; Area B; context (780); Thimble; plain band at base with eight rows of regularly spaced round punches on body and four rows on slightly domed head. In very good condition. probably post-medieval

Fig 19.20; Area B; context (761); Pin; flat, solid head, complete stem. Similar found in late 14th century deposits in London (Egan and Pritchard 1991, 301–303). late 14th century

Iron objects

Iron objects, the majority of which are nails, make up most of the metalwork from the site. The most notable are two keys, two knives and a saw blade. There are several pieces of iron which could be the remains of knives but only a few can be securely identified.

Fig 18, 9; Area B; wall 702 (750); a broken but almost complete piece with a round-sectioned handle and a knop at the end, possibly a knife-dagger.

Fig 18, 11; Area B; layer 754; a small saw-blade with several sharply-angled teeth visible but with much of the blade worn and corroded.

Fig 18, 10; Area C; pit 2229 (2279); a key with a kidney-shaped bow, appears to be made of solid iron. The stem appears restricted above the ward and the bit is broken just beyond the ward. The wards are heavily corroded and damaged, although it does appear that there are two surrounding a central opening, suggesting the key is of LMC type VIIB. The shape of the bow suggests the key is 15th century in date (LMC 1940, 141).

A second key (not illustrated) was found during the evaluation (trench 37, context 120). Although of a slightly different type, it is a common form with a solid stem with the bit set back from the end of the shaft. The ward runs perpendicular to the stem which suggests that it belongs to type VIIA (Ward-Perkins 1967, 141) and the bow is a slightly flattened kidney shape. This key can also be dated to the 15th century.

Coins by Paul Cannon

Nine coins and a jeton were identified, some as surface finds, some residual and three in secure contexts:

1 An extremely worn AE sestertius of the late 1st or 2nd century. The reverse is a possible Victory type. Area B.
2 AE Antoninianus of Claudius II, AD 268–270. Obv: IMP C CLAVDIVS AVG. Rev: CONCORD( ). Iron stained. Area A, 60E/50N.
3 AE2 of Constantius II, AD 351–354 (small fragment only). Obv: ( ) CON(STANTIVS PF AVG). Rev: FEL (TEMP REPARATIO) – Constantius standing on a galley. Area D.
4 Possible AE coin in form of a small dumpy-shaped pellet with rounded edges. Dia. 7mm, thickness 2mm. It is not certain what, if anything, is depicted on either face. During the late Roman period extensive unofficial copying of the official bronze coinage took place. These imitations became progressively more barbarous and the designs on them hardly recognisable. At the same time the flans used became smaller and smaller. This appears to be one of these diminutive and degenerative 'coins', generally known as minims or minimissimi. The exact dating of these is problematical. Most are believed to be late Roman in date but some may belong to the 5th century.
5 Cut silver half-penny of Edward the Confessor (Hammer cross type; BMC xi, AD 1059–1062). Obv: (RED) RE; Rev: +PVLFPI)(N BEDEFO). Wulfwi is recorded primarily as a moneyer for Edward the Confessor. Identification of the mint as Bedford is confirmed by a complete coin in Gunstone (1992). This coin has the same additional line in the fourth quarter together with other minor identical features clearly indicating the obverses of both coins to be from the same die. Area C, surface of 835.
6 Silver penny of Henry III (Void long cross, Class 1b, AD 1247–1248). Obv: HENRICVS REX ANG. The coin has been folded over in the past and so the reverse is unreadable. Area E, 1044, 53.8E/54.1N.

7 Cut silver half-penny of Henry III (Void long-cross, Class 3, AD 1248–1250). Obv: HE(NRICVS R)EX:III. Rev: ON LVND. By an uncertain London moneyer. Area E, 1044, 56.2E/53.7N.
8 Silver long cross penny of indeterminate type. This coin has been extensively clipped and is heavily corroded and worn. The long-cross was introduced in 1279 and formed the pattern of English coinage for the next two centuries. The lack of any distinguishing features means that the coin can only be placed within this broad date range. Area 2, 410, 79E/60N.
9 AE jeton, 16th century. Although heavily corroded enough detail survives to identify this as a Nuremberg jeton with an 'orb' type reverse. The obverse however is too badly corroded to be recognised. Area E, surface find, 50E/ 50N.
10 Silver long cross penny of Edward I (AD 1303–1305). Obv: Ed?/ ANGL hyB. Rev: CIVI TAS LON DON. Minted in London 10ab5. Evaluation trench 5, U/S.

Iron slag/hearth lining by Chris Salter
A total of 1.8kg of material was examined and classified on the basis of its exterior morphology and physical characteristics. The majority of the material was iron-smithing slag. The number of pieces is greater than it should be, as it is clear that the material from some contexts is the result of one or two near-complete smithing hearth bottoms, fragmented due to internal corrosion. Most of the hearth-lining material and the undiagnostic slag is likely to have been generated by metal-working processes. However, there was one fragment of fuel ash from pit 832 (885) in Area C that could have been generated by a number of other high temperature processes including cremation, wood, grass, or dung fires, as well as metalworking. Both the hearth lining and the non-diagnostic slags could have been generated by either ferrous or non-ferrous metal-working activity.

In summary, the vast majority of the material was the result of small scale iron-working activity; that is simple forging and a limited amount of welding. No evidence of iron-smelting was recovered. The hearth lining and non-diagnostic slag may be the result of working of other metals. The small amount of material recovered, the extended periods of the contexts from which is was recovered, and the nature of the iron-working itself, suggests the material is no more than a background distribution as might be found in the vicinity of a small settlement.

Shell
Sixty-eight fragments of oyster shell (*Ostrea edulis*), some complete, were recovered from 12 contexts. Notches were identified on the margins of a small number of valves, which are thought to result from their opening procedures. These are catalogued in the site archive.

Glass by Matthew Gleave
A small collection of 17 fragments, (277gms), was recovered from the excavation The glass is mostly typical post-medieval glass types. One wine-bottle body fragment came from a phase 4 context, (surface 1044, area E). It is yellowish-green and very bubbly and highly weathered, which could suggest a medieval date for this piece. A full description of the assemblage is in the site archive.

Tile and brick
A large quantify of tile and brick was recovered, 397 pieces weighing 28kg. The assemblage is dominated by roof tile, the majority being recovered from Area B, suggesting that building 710 probably had a tiled roof. A complete catalogue is in the site archive.

Fired clay
A small assemblage of fired clay was recovered, none of which appears to be daub. A large quantity was recovered from the burning layers sealing hearth 2211 in Area D. This suggests that the hearth was probably used for an industrial rather than domestic purpose. A partially-fired brick was recovered from ditch 2140 in Area D. A catalogue of fired clay is in the site archive.

Animal bone by Sheila Hamilton-Dyer
A total of 1,147 individual bones were recorded. The preservation of the bone is variable but mainly good with some slight surface damage. Fragmentation is at a high level and few bones are complete. This in part is due to butchery and dog gnawing, and there is also some excavation damage. Identifications were made using the author's

modern comparative collections. The fragments have been recorded to species and anatomy where possible; undiagnostic fragments have been classified as horse/cattle-sized (LAR) and sheep/pig-sized (SAR). Some small fragments could not be ascribed to any group and are recorded only as mammalian (MAM). Just under half of the bones (561) were identified to taxon. Most of the unidentified fragments are likely to be of cattle and sheep. Several bones are measurable, including some for which wither height estimations can be made. Measurements were taken using a vernier calliper and are in mm. In general, these follow the methods of von den Driesch (1976). Withers heights of the domestic ungulates are based on the factors recommended by von den Driesch and Boessneck (1974). Dog shoulder heights are calculated using the factors of Harcourt (1974). The archive gives full details of individual bones and identification and includes further information on butchery, ageing measurements, etc.

Mammal species are mainly of the expected large domestic ungulates, cattle, horse, sheep and pig. Other taxa are rare, they include red and roe deer, dog, fox, cat, hare, rabbit, fowl, goose, partridge, pigeon, probable starling and a few fish fragments. The nature of the site has resulted in a very large number of individual contexts, many of which contribute only one or two bones each. As analysis by context is, therefore, clearly inappropriate the bones have been grouped by area and phase for the purpose of this report. Reference to individual features is made where significant bones or large groups have been recovered.

Phase 3: Saxon/early medieval

Bones assigned to this phase amount to just 116 fragments, mostly from ditch and gully contexts in Area D. Overall the identified bones are of those taxa expected for the period; mainly cattle (17), sheep (12), some pig (7) and horse (5), two bones of dog and one of fowl. The dog remains are jaws of different individuals (915, 917). In addition to the dog bones themselves several of the other bones are dog gnawed.

Phase 4: Medieval late 12th century to late 15th century

The bulk of the bone, 864 fragments, is from contexts assigned to this phase. Areas 2, A and B offer the largest sample. Again, the domestic ungulates, cattle and sheep, dominate the assemblage at 130 and 111 bones respectively. Horse and pig bones are frequent at 69 and 55, bones of dog and fowl are also present. The fowl bones are more frequent in this phase (19 bones) and there are also a large number of other bird remains (37). Most of these are unidentifiable fragments of fowl size, but also include nine of goose, two of mallard/domestic duck (756 Area B), one of domestic pigeon/stock dove (546 Area 4), one of partridge (146 Area E), and one of passerine (probably starling, 756 Area B). One of the goose bones is a carpometacarpus and had been cut across, evidence for the removal of the tip of the wing. Similarly, one of the duck bones is also a chopped wing bone, in this case an ulna. A butchered fowl femur contained medullary bone indicating that this was a hen near or in lay at time of death (Driver 1982). This bone came from a bantam-sized bird, typical of medieval material. Other taxa identified are red and roe deer, cat, fox, rabbit, hare and fish. Rabbit bones are not unexpected for medieval contexts but, as these animals burrow, some of the bones may not be contemporary. The same may be true of the fox tooth from the disturbed tumble 744 in Area B. The single hare bone came from pit 502 in Area A. The red deer bone (ditch 2335 Area B) is a calcaneum, a bone from the ankle, and shows evidence of skinning. The roe on the other hand (pit 3003 Area 2) is a shed antler which does not necessarily indicate hunting.

Several of the features with more than a few fragments, contained distinctive groups of material, for example pit 442, Area 2. All seven cat bones are from this feature and almost certainly come from a single, sub-adult animal. This large pit contributed a relatively small total of 79 bones but they include several others of note. At least two sheep are represented amongst the 17 sheep/goat bones, both horned. One skull represents a ram, with large heavy horn cores, the other is probably from a castrate with thinner walled cores. 'Thumb' marks on these indicate a possible nutritional disorder (Hatting 1975). Three of the four horse bones exhibit butchery marks (see below). The 22 cattle bones include fragments of several pelves and jaws from different animals, one of these from a calf. Two bones of dog are present and also indirect evidence for dog in the form of gnawing in several bones. A rabbit bone also came from this

pit. Bodies of cats are frequently found in medieval domestic rubbish pits but much of the rest of the material is not typical of primary domestic disposal.

Pit 3002 in Area 2 contained 17 bones, eight of which are from the lower left hind leg and foot of two separate cattle. Direct butchery was not visible but it is likely that the feet had been removed by rough chopping or breaking of the distal shaft of the tibiae.

Other bones in the pit include a complete cattle metacarpus, part of a humerus, a horse tibia and two bones of sheep. Most of the bones had been dog gnawed. This group does not appear to represent slaughter waste nor kitchen waste, but is perhaps final disposal of general waste.

Layer 467 in Area 2 contributed 72 bones, of which 21 were of horse. Layer 468 also contained several horse bones and it seems likely that these two deposits are related and contain the remains of two horses. Cut marks on a tibia and an astragalus probably indicate skinning of at least one carcass. The scapulae (both left side) in 468 had been chopped. This implies dismemberment of the body, whether for disposal or consumption is unknown. Neither bone had been gnawed, although several in layer 467 had been. A variety of butchery marks were observed on bones in the assemblage, mostly on cattle bones and mainly carried out with a heavy blade or axe. Several of the horse bones exhibited butchery marks. In addition to the bones described above, a tibia from pit 433, Area 2, was chopped distally and three of four horse bones in pit 422, Area 2, had butchery marks. Those on the proximal metatarsus could be interpreted as from skinning, those on the pelvis as from disarticulation, and that on the radius as from stripping meat from the bone. While butchery of horses is not common it is not unknown. Consumption by people or dogs is possible, the pelvis and many of the other bones in this pit show signs of dog gnawing.

Several bones from pit 422 were measurable and include three from which withers heights can be estimated. The horse metatarsus gives a height of 1.412m, a large pony typical of this period. Similarly a sheep metacarpus gives a withers height of 0.54m, very close to the mean value obtained for medieval material in Southampton (Bourdillon 1980; Hamilton-Dyer in prep). The dog bones are slim 'medium' sized animals of about 0.48m at the shoulder.

Other measurements of bones from features in this phase are similar and comparable with material elsewhere. Three cattle withers height estimates are 1.194m, 1.135m and 1.084m (from ditch 2106, Trench 23 and pit 3002), and a further horse withers height of 1.242m was calculated for a metatarsus from gully 1031 in Area E.

Phase 5: Post-medieval

There are 85 bones from this phase. Apart from one of cat all the bones are of cattle, sheep, horse and pig. Three of the cattle bones offer withers heights of 1.312m, 1.255m and 1.035m. These are not large and would be acceptable for Saxon and medieval periods.

Unphased

A similar small collection of 82 bones came from contexts which could not be phased. Identified bones were all of domestic ungulates. The six bones from pit 433 in Area 2 include four of horse, one of which exhibited butchery marks.

Charred plant remains by John Letts

Sixty-nine samples were examined for charcoal and charred seeds. Forty-six contained some evidence of charred cereal and 37 of these contained significant quantities of comminuted charcoal.

Twenty-nine samples contained grain identifiable as wheat (*Triticum* sp.), 14 of which appear to be from a free-threshing wheat (either bread wheat *T. aestivum* or rivet wheat *T. turgidum*). This latter species appears to be a Norman introduction and both these species were widely grown throughout the medieval and post-medieval periods for food, fodder and thatching.

Thirteen samples contained grains of barley (*Hordeum vulgare*), probably from a hulled 6-rowed subspecies (*H. vulgare* sbsp. *hexastichum*), although the grains are not well preserved enough to identify them beyond the level of genus.

Pit 815 (862) in Area C (phase 4B) contained the only securely identified grain of rye (*Secale cereale*), although others may well occur within the large quantities of unidentifiable cereal grains in many of the samples. Rye became a popular food grain only in the Saxon period and was widely grown throughout the medieval and post-medieval periods for both food and thatching.

Seven samples contained seeds or fragments of cultivated pea (*Pisum sativum*), and two contained seeds of the small-seed broad bean (*Vicia faba* sbsp. *minor)*, both of which have been cultivated as a storable source of protein for human and animal consumption since prehistory. A further ten samples contain fragments, or seeds, of a large-seeded legume(s), but these specimens are not well-preserved enough to identify them to genus (or define them as wild or cultivated specimens).

The very few weed specimens recovered are not ecologically significant and do not provide a reliable basis to comment on crop processing activities. The lack of weeds in the samples, however, and the lack of cereal chaff in such a large cereal-dominated assemblage suggests that the grain was derived primarily from a free-threshing species, either bread wheat or rivet wheat, rather than a hulled species such as spelt or emmer wheat (*T. spelta* or *T. dicoccum*) and perhaps that the samples examined are derived from cleaned grain. On the other hand, it is unlikely that grain cleaning could have removed all traces of weed seeds or chaff from a sample, and the poor degree of preservation of most of the specimens in the assemblage suggest that small seeds and chaff would probably have been charred completely to ash when the sample was formed.

Discussion by Jo Pine and Steve Ford

Middle Bronze Age

The discovery of a middle Bronze Age cremation cemetery in Area E was an unexpected bonus of the excavation. A small number of prehistoric struck flints had been found during the evaluation, but too few even to hint at the presence of earlier-prehistoric occupation or funerary activity nearby. The pottery includes a vessel of early Bronze Age date, but this is not an unusual find within a middle Bronze age cemetery (Longworth 1984, 183). The cemetery is important due to the rarity of such finds within the Milton Keynes and south Midlands regions. A number of ring ditches have been excavated within the city (Green 1974) but these have mostly produced individual burials associated with Beaker, collared urn and biconical urn pottery of early Bronze Age date without any secondary cremation-cemetery burials of the middle Bronze Age. Middle Bronze Age cremation urns were, however, found at Pennylands (Knight 1993) and Bancroft (Knight 1994). A single early Bronze Age collared urn without any cremated remains was also found at Fenny Lock (Ford and Taylor 2001). Although it is likely that a contemporary occupation site lay relatively close to the cemetery, apart from small numbers of struck flints from several trenches, there was no evidence for its location. Durable traces of occupation sites of this period are rare countrywide and in Milton Keynes even the best example, comprising circular post-built structures at Wolverton, is only tentatively dated to the earlier Bronze Age (Ford and Durden 1996). Late Bronze Age occupation sites are marginally better represented, for example at Bancroft and Fenny Lock (Knight 1994; Ford and Taylor 2001).

Roman and early Saxon

The evidence for Roman and early Saxon activity is slight and is restricted to three coins, or possibly four, and a small numbers of residual pottery sherds in later features. These finds could have found their way onto the site incorporated in manure spread onto farmland, so there is no clue as to how close any settlement(s) may have been.

Late Saxon and early medieval

Loughton is mentioned in Domesday Book (VCH 1905) and the archaeological evidence from the excavations reported here shows that the main activity in this area of the village commenced during the late Saxon/early medieval period (phase 3C: 10th to 12th century). Croft and Mynard (1993, fig 40) had already surveyed the visible earthworks in the area, and suggested that these represented field boundaries, a hollow way leading to a pond, and several house platforms.

The more detailed earthwork plans made during this project added considerably to this earlier survey and allowed the excavation trenches to be designed to examine several components of the village topography. Assuming that the village centred on the church of All Saints, and that the road network reflects at least a part of the later medieval topography, then the excavation examined areas close to the core of the road network (D, 4, and possibly C and 3), areas at the fringe (B, 2, A and E), and areas beyond occupied by field systems (1).

Traces of early and middle Saxon activity are restricted to a few sherds of pottery. A single gully (301) in Area 1 and three intercutting pits (928, 931 and 932) in Area D are the only features assigned to phase 3A/B (early/middle Saxon). It may be that these are outlying elements of a more extensive settlement in the vicinity. Wherever this may lie, one can be confident that it is not to the north-east as these areas were examined during the evaluation.

Previous observations of foundation trenches dug within the village (recorded in the Sites and Monuments Record) have not revealed pottery earlier than the12th and 13th century. A single penny of Edward the Confessor AD 1059–1062 and the quantity of St Neots-type ware recovered point to occupation in the late Saxon period although no features can be dated definitively to before the Conquest.

Features dated to the 10th to 12th century are widespread; all areas have some evidence. The deposits are characterised by gullies/ditches, pits and postholes, but none of the extensive stonework present on the site belongs to this period. The nature of the features varies between areas. In Areas D and 4 (adjacent to Pitcher Lane, Fig 11) the evidence consists only of linear features that have been redefined and rearranged, and which may have been used for handling livestock. In Area C, the linear features form a trackway with a post-built fence. Plough furrows, which were not extant as earthworks, may also belong to this phase (Fig 10). Deposits in Areas B and 2 (Figs 7 and 8) were few and dispersed, whereas in Areas A and E some of the linear features define the limit of the settled area, a division which is respected and enhanced in later periods. In Area 1 no features later than phase 3C were recorded and the area was subsequently overlain by ridge and furrow.

There was no evidence of inhabited areas (i.e. houses) or a planned or regular layout in this phase. In Area C there was a single line of five postholes [2221–5] which could form one side of a building, but are more likely to be a fence. In Area 2 there was a group of postholes, but these did not form a coherent ground plan. There was good preservation of the stratification in Areas A and E, where the later metalled surfaces would have preserved earlier subsurface features, but the excavations did not reveal traces of stone or earthfast foundations likely to represent structures. It is possible, therefore, that the excavated deposits are peripheral to the main living areas of this period. Williams (1993, 216) has already noted that there is a little evidence that villages in Milton Keynes had earlier Saxon origins and, from a country-wide perspective, Astill (1988a, 37) tentatively concluded that nucleated villages are a 12th century phenomenon, although for some Midlands counties the impetus for this development may have been late Saxon in origin (Roberts 1992, 24).

Only a small assemblage of animal bone and charred seed remains was recovered from Saxon features. These show the presence and utilisation of cattle, sheep, pig, horse and fowl and that wheat (*Triticum* sp.), possibly a free threshing variety (bread wheat or rivet wheat), was being grown and used for food, fodder and thatching.

Medieval

Deposits containing phase 4A (late 12th to early 13th century) pottery are relatively few but it is suspected that some of the apparent gaps in the sequence, such as in Areas C, 3, B and 2, are the result of the limitations of pottery dating. However, in Areas D and 4 only a single phase 4A pit was found, and subsequent activity in this area did not take place until post-medieval times, so a real break can be posited. The main evidence for phase 4A activity is in Areas A and E. The earliest deposits in these two areas are not dissimilar in character to the phase 3C (late Saxon) activity. A large ditch (540, 1042) seems to have redefined the north-eastern limit of the village. Some activity is represented by a small number of pits, postholes and gullies. The similarity with the preceding phase ends with the subsequent extensive use of stone for buildings and yard surfaces. Area A contained a stone-footed building (635) surrounded by a metalled yard. A second possible building, constructed with post-pads, might have stood adjacent to it. In nearby Area E, there is a second possible stone-footed building (640). It is not clear if these two were contemporary, although later medieval farms typically comprise several buildings arranged around a yard (Hurst 1968, 104ff; Dyer 1986). Both buildings were subsequently dismantled during phase 4B, possibly at the same time. The area was then abandoned. The plan of the earthworks prior to excavation (Fig 2) suggests that some of the areas occupied by these dismantled buildings were ploughed over in the medieval period; the excavation showed that

furrows did indeed encroach into Area A (Fig 5).

There is no evidence for phase 4A activity in Areas C and 3, ditches, gullies and pits were dug during phase 4B. The gullies appear to represent small enclosures, presumably for handling and sorting stock. One U-shaped gully was perhaps used as a pen. The more interesting features were of stone, and include a circular structure (819). There are a number of possible interpretations of this, the most obvious being that it was a dovecote, similar to medieval examples excavated at other Milton Keynes sites, such as at Caldecotte (Zeepvat *et al.* 1994, 82, fig 4) and Bradwell Bury (Mynard 1994, 23–24, fig 12). The enclosure map of 1769 shows that this structure stood in a field called Dove House Close (Croft and Mynard 1993, 113).

Analysis of the faunal remains for the medieval period, indicates that a wide range of animals was being kept; cattle, sheep, horse, pig, fowl, hen, cat and dog. Other species present were red and roe deer, rabbit, hare, and perhaps fish (if the lead weights were used for fishing nets), indicating utilisation of wild resources. Domestic ungulates, cattle and sheep, dominate the assemblage, with horse and pig bones frequent. The horse bones show butchery and skinning marks, possibly indicating consumption by people and/or dogs; dog gnawing was identified on a number of these bones. It appears that the geese and ducks were domesticated and a number of bones illustrate removal of the tip of the wing to prevent flying. The charred seed remains show the presence of wheat, a free threshing species (either bread wheat or rivet wheat), barley, rye, pea and broad bean.

The clearest pattern of structures, that may have worked as an integrated unit, perhaps appropriately described as a toft, occurred in Areas B and 2 (Fig 8). The earliest features within phase 4B comprise ditches and a few pits. However, although there are some successive phases of development, evidenced by clear stratigraphic relationships, at some point most of the major elements may have worked together. Building 710, presumably a dwelling, could have formed the focus of activity. It appears to have been accessed by a hollow way to the east; it had a ditched yard to the north-east. Subsequently, extensive areas of metalling were constructed around it and the hollow way was refurbished, stone walls and a stone-lined drain were built, and building 710 was extended, with the addition of two rectangular rooms. Building 710's first phase was not well defined, but may have comprised two rooms occupying an area of 2.6 × 7.5m. This is broadly comparable to the model dimensions for medieval cotts (5 × 3m) described by Hurst (1968, 104ff) and is also similar to the smaller buildings at Westbury by Shenley (e.g. building 58505, Ivens *et al.* 1995, 193). The addition of stone-founded extensions and a tiled roof may reflect the increased prosperity of the occupiers, or the general trend towards the use of stone for building work observed at other local sites (Ivens et al. 1995, 215).

The survival of earthworks and the location of some of the excavated areas at the limits of the modern village have allowed the changing relationship between settled and farmed land to be examined. In Area 1, ridge and furrow overlay late Saxon and early medieval deposits (phases 3A/B and 3C) and respected the line of the boundary (540) in Area A, even though furrows eventually partly overlay the infilled ditch. This boundary between arable and settlement appears to have been important, and well maintained. There was no evidence for settlement overlying ridge and furrow at any time, as at Westbury-by-Shenley (Ivens *et al.* 1995, 214). More importantly, there is a suggestion that some ridge and furrow overlay the demolished structures in Areas A and E (Fig 2), indicating an extension of the arable land after the 13th to 15th centuries (phase 4B). A similar pattern was observed at Caldecotte, where ridge and furrow overlay village deposits abandoned after the 13th to mid 14th century (Zeepvat et al. 1994, 76). In contrast, ridge and furrow was not encountered in Areas B and 2 and the earthwork plan shows that the boundary to the toft area was respected by the arable fields until after both had gone out of use in the post-medieval period.

There is some debate over the origins of the open-field system, which is so characteristic of medieval settlement (Astill 1988b, 68). Thirsk (1964) expressed the opinion that, in the Midlands, ridge and furrow was mainly a 13th-century development, despite examples elsewhere dating from as early as the 9th century, e.g., at Gwithian, Cornwall and Hen Domen, Shropshire (Fowler 1976, 29). The levelled ridge and furrow encountered in Area C respected areas containing late Saxon and early medieval features (3C), and these furrows only

contained sherds of this date. The furrows at Loughton may therefore belong to this period and represent a relatively early phase of ridge and furrow development. This area of ridge and furrow would appear to have been levelled in late post-medieval times, probably when some landscaping of the area took place.

Overall, the evidence from the excavation suggests a short-lived expansion of the village into areas A, E, and C, areas previously, and subsequently, cultivated.

Post-medieval

The medieval elements of the site were abandoned following phase 4B activity, which was dated by 13th to 15th century pottery. Features of 16th to 18th century date were rare, mainly comprising a small number of large isolated pits in Area C and two dumps of stone in Area D. The earlier evaluation examined a large hollow adjacent to Area B (Pine 1997), which is thought to be a post-medieval or early modern landscaping feature. The earthwork survey showed that upstanding ridge and furrow overlay several of the areas which contained the remains of medieval activity and but did not always correspond with the excavated remains of plough furrows. This suggests two phases of ridge and furrow cultivation, and that the area under arable expanded (or, perhaps, merely moved closer to the settlement's centre) in late medieval times to include some areas previously inhabited.

There are several reasons why parts of the settlement may have been abandoned, including the black death, economic decline, a shift to sheep production, and latterly, enforced clearance for the creation of parks. The black death arrived in Britain in 1348 and became endemic in the late 14th and 15th centuries (Hatcher 1977). Overall, this must have led to the demise of many settlements but at Loughton and other sites, such as Caldecotte (Zeepvat *et al.* 1994, 76), the presence of ridge and furrow overlying abandoned settlements suggests a continued need for arable production; a feature which contradicts the notion of a large reduction in population. In fact, a high birth rate would have off-set any long-term decline in population as a result of endemic disease and the issues behind the desertion of a settlement may be individual and complex (Zölitz 1984, 33). The abandonments observed at Loughton may have been caused by the amalgamation of the villages of Little and Great Loughton in 1408, which could have resulted in the shifting of the settlement focus leading to the abandonment of buildings on the periphery of the village. It is clear that, in medieval times, shifting settlement was as common as shrinkage in causing the abandonment of parts of villages (Taylor 1983). It is perhaps not until several decades after the abandonment of the structures at Loughton and subsequent over-ploughing, that a shift in the economic base towards sheep rearing resulted in the fossilisation of the earthwork pattern, which was still in existence until recent times.

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