

# The investigation of an early-middle Iron Age settlement and field system at Topler's Hill

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## SUMMARY

*Between 1998 and 2000 Bedfordshire County Archaeology Service (now known as Albion Archaeology) undertook archaeological investigations, in line with PPG16, in advance of substantial junction improvements on the A1 at Topler's Hill, Bedfordshire. These revealed evidence for an early-middle Iron Age settlement and contemporary field system.*

*Although only a small part of the settlement was subject to open area excavation, a considerable amount of information on its origins, extent, layout and internal morphology was recovered. It comprised at least eight interlinked enclosures, possibly representing different family units, each defined by substantial ditches. Only a few Iron Age settlements with a similar layout are known from southern England. Although the southern limit of the settlement was outside the Study Area, its likely extent was at least 0.8ha. Within the enclosure interiors there was evidence for roundhouses and areas of pitting. Although there was only limited evidence, it is possible that some activity associated with the settlement also took place outside the enclosures.*

*The evidence for cereal cultivation and animal husbandry are in keeping with other Iron Age sites in southern England. However, two cattle bones may indicate the presence of a larger breed than normally expected for this period. The nature of the pottery is suggestive of a reliance on local manufacture. Cropmarks suggest an arable field system extending over c. 10ha was located to the west of the settlement. A small quantity of domestic debris was recovered from the field boundaries nearest the settlement, suggesting that, at some point, these were also the site of domestic activity.*

*Although the evaluation stage of this project utilised a range of archaeological techniques, it is now clear that if undertaken individually they would have provided a very misleading impression of the date and nature of the archaeological remains within the Study Area. Therefore, this article concludes with a critical review of the methodologies and techniques used during the investigations.*

## INTRODUCTION

In 1998 a decision was taken by the Highways Agency to improve two dangerous road junctions on the A1 at Topler's Hill, Bedfordshire. The junctions were c. 500m apart leading to the villages of Langford and Edworth.

During the preliminary design stage of the junction improvement scheme the County Archaeological Officer (CAO) of Bedfordshire County Council (BCC) advised that the area under consideration was likely to contain archaeological remains. On the basis of these discussions and following the guidelines in the Department of the Environment's *Planning Policy Guidance Note 16: Archaeology and Planning* (PPG16) a programme of archaeological works was implemented. An evaluation in September 1999 located significant archaeological remains. Subsequent open area archaeological excavation was undertaken during September 2000 within those areas where remains would be unavoidably destroyed by the road scheme. Bedfordshire County Archaeology Service (renamed Albion Archaeology during the preparation of this report) undertook all archaeological investigations. This report brings together the evidence from all stages of investigation: non-intrusive evaluation, intrusive evaluation and open area excavation.

## SITE LOCATION AND CONDITIONS

Topler's Hill is located c. 3.5km S of Biggleswade and 0.5km W of the village of Edworth in E Bedfordshire (Fig 1). The Study Area, centred on TL 21644035, is bisected by the A1 dual carriageway and is located on a low ridge (75m OD) overlooking a dry valley to the NE containing the village of Edworth. The geology is Boulder Clay overlying Lower Cretaceous Upper Greensand and Gault Clay.

The land was under arable cultivation up until the time it was brought into the road scheme.

## ARCHAEOLOGICAL BACKGROUND

The Historic Environment Record (HER) of BCC contains records of all known archaeological sites in Bedfordshire. Prior to the investigations the Study

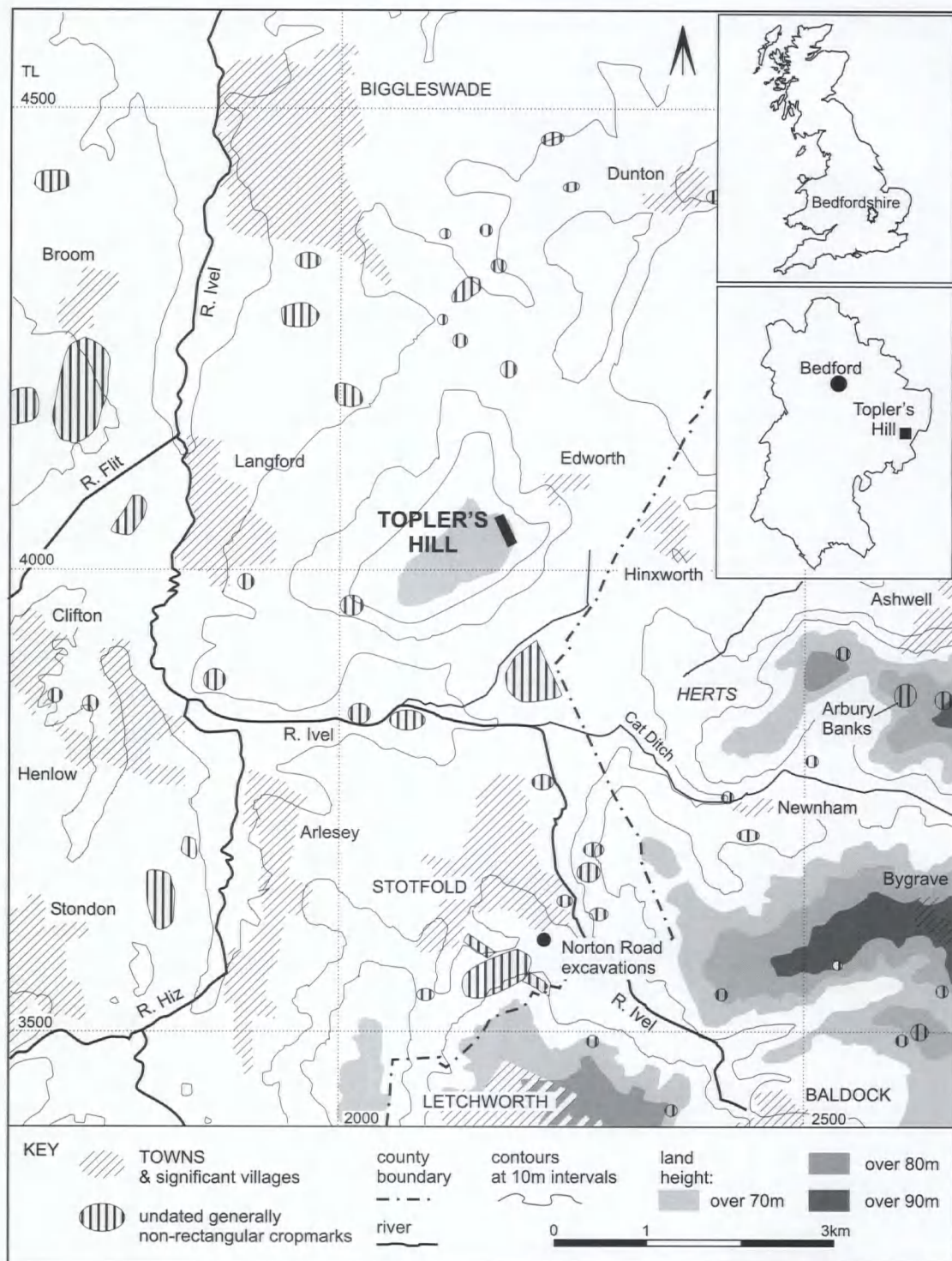


Figure 1 Site location



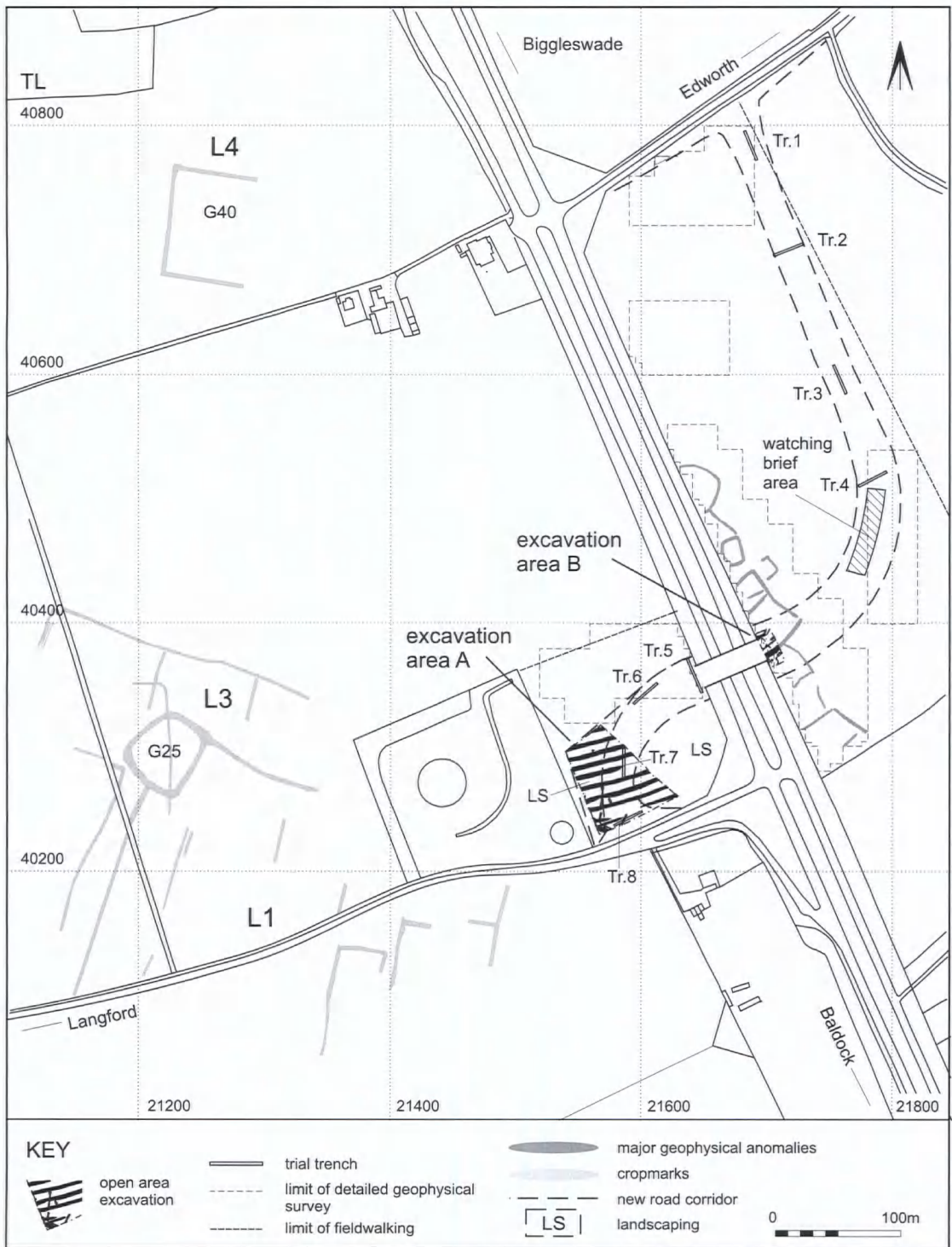


Figure 2 Areas of different types of archaeological investigations, with peripheral cropmarks only

Area was known to contain undated cropmarks (HER 524) to the E of the A1 which itself marked the line of a Roman road (HER 505). Presumed Roman artefacts were discovered in the vicinity during construction work on the Great North Road in the 19th century, although no precise location is known.

Numerous cropmarks have been identified in the vicinity of the Study Area within Bedfordshire and Hertfordshire suggestive of enclosed settlements (Fig 1). Although a few of these have been dated to the Roman period on the basis of pottery recovered from the ploughsoil, the majority are undated. The only proven early-middle Iron Age sites in the vicinity are located 1km to the SW, 4km to the S at Norton Road, Stotfold, Beds. (Albion in prep.) and at Blackhorse Road, Letchworth, Herts. (Moss-Eccardt 1988, 67). Three hillforts occur within 10km of Topley's Hill: Arbury Banks (Beldam 1859) 5km to the SE in Hertfordshire and Caesars Camp and Sandy Lodge (Dyer 1971) both of which lie at Sandy to the N of Biggleswade and are also presumed to have been established by the early Iron Age.

### THE ARCHAEOLOGICAL INVESTIGATIONS

A staged programme of archaeological investigations was undertaken with the results of the earlier stages determining the nature of the next stage (Fig 2). The overall results are presented together as the main section of this report. However, it is worth summarising the variety of archaeological techniques that were used during the evaluation, as the effectiveness of these is explored in greater detail later in the Discussion.

A Brief was issued by the CAO for each stage of investigation, stipulating the methods and extent of the archaeological works. These, along with the BCAS Project Design and report for each stage of the investigation are in the project archive.

### NON-INTRUSIVE EVALUATION

This was deliberately undertaken over a larger area than would ultimately be required for the junction improvements to provide an opportunity to minimise the destruction of archaeological remains. A summary of the results is presented below but full details are contained in the Stage 1 Evaluation Report (BCAS 1998).

### Aerial Photographic Analysis

All aerial photographs held by BCC HER, Cambridge University Collection of Aerial Photographs and the National Library of Air Photographs were examined. Those taken in 1996

(verticals) proved to be the most productive (Aerofilms 96C/565/1775 and 1776). All aerial photographs revealing cropmarks were rectified, if necessary, and converted to a digital format. Visible cropmarks, whatever their perceived origin, were then drawn. The resulting plot was compared to modern and historic maps to determine those features of recent origin.

Immediately E of the A1 cropmarks were visible suggesting the presence of three ditched enclosures. In the subsequent analysis these are designated L5, L6 and L14. Approximately 450m to the W of the A1 two additional enclosures, designated L3 and L4, and a probable ditched field system were identified (Fig 2).

Cropmarks were interpreted as being of geological origin if they exhibited an irregular pattern and were generally lighter in appearance. Unfortunately these shared the same SW-NE alignment as those considered to be part of the early-middle Iron Age field system L1 (*see below*).

### Geophysical Survey

GSB Prospection carried out a magnetometry survey during early August 1998 (GSB Prospection 1998). The entire Study Area was scanned along traverses spaced at intervals of *c.* 10m. Following discussion of the results between GSB, BCAS and the CAO detailed survey was undertaken in five blocks totalling *c.* 4ha.

The geophysical survey confirmed the location of ditched enclosures to the E of the A1. However, rather than the three enclosures suggested by the cropmarks, up to eight interlinked enclosures were identified. In addition pit- and ditch-type anomalies suggestive of evidence for settlement activity were identified within many of the enclosures (Fig 3).

### Field Artefact Collection

Approximately 11ha were subject to field artefact collection. This was undertaken during September 1998, two weeks after ploughing (W of A1) and after harrowing (E of A1). Experienced archaeologists walking 20m apart collected all artefacts within a 1m strip.

The recovered assemblage comprised 86 sherds of pottery and 628 fragments of brick/tile (mainly medieval and post-medieval in date), along with 32 pieces of worked flint and a fragment of rotary quern. The small quantity of pre-medieval artefacts makes any perceived concentrations unreliable. However, all but one of the 11 Roman pottery sherds derived from the field to the E of the A1.



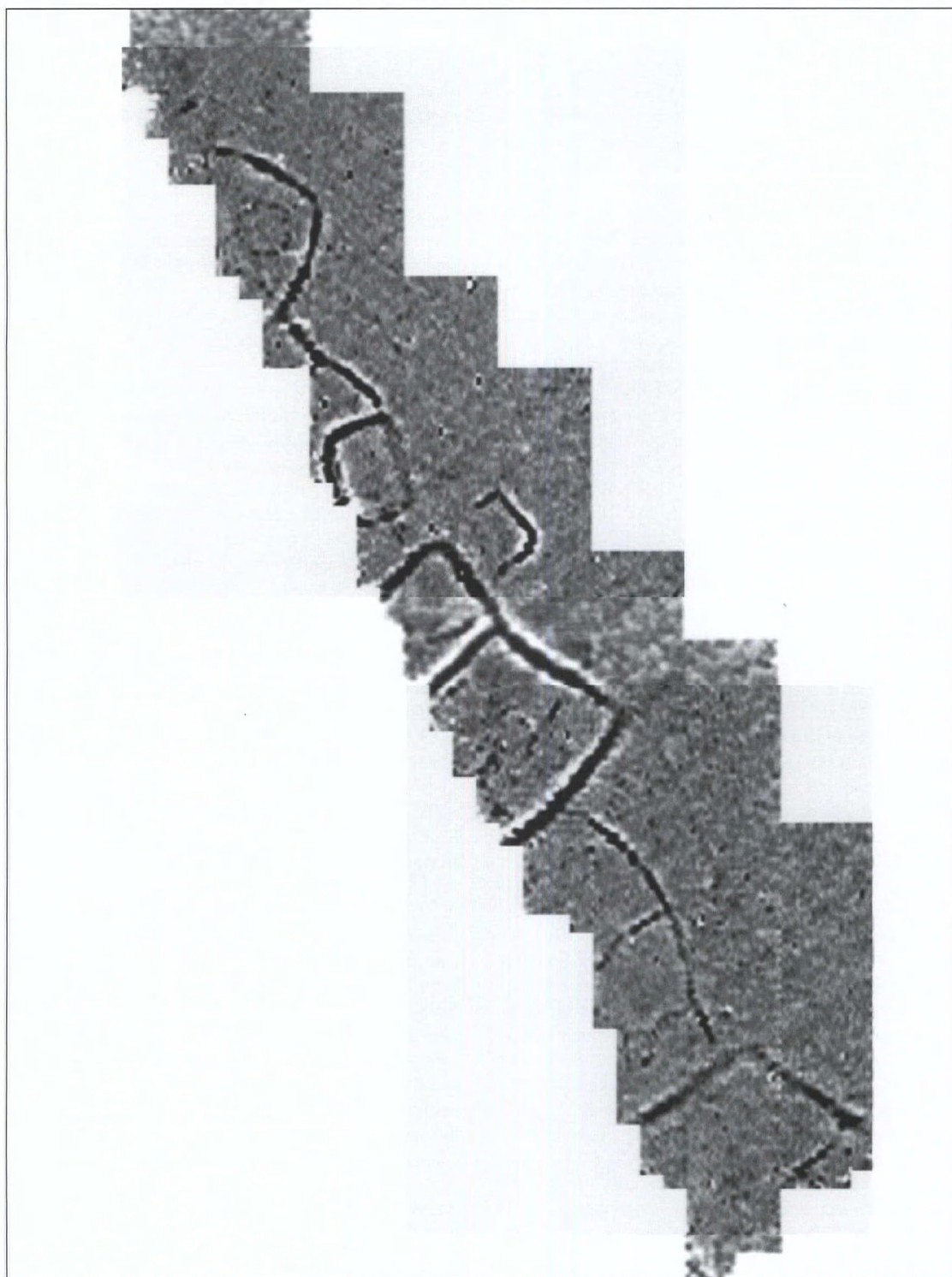


Figure 3 Geophysical survey greyscale image: settlement enclosure

### INTRUSIVE EVALUATION

Following discussions between the Highways Agency, the design engineers URS Corporation Ltd and the CAO, the route of the road and construction method were amended to avoid, where possible, extensive destruction of the archaeological remains located by non-intrusive evaluation. The CAO stipulated that trial trenching was only required within the road corridor where topsoil was to be removed prior to construction (Fig 2). As a result eight trial trenches (25m or 30m in length) were dug in September 1999 (BCAS 1999).

Only a small number of archaeological features were located. Trial trench 8, adjacent to the Langford Road on the W side of the A1, contained evidence for late Bronze/early Iron Age activity in the form of features and pottery. Trenches 5, 6 and 7, also W of the A1, contained medieval furrows, but no finds. No features or finds were identified in Trenches 1, 2, 3 and 4 to the E of the A1.

### MITIGATION STRATEGY

#### Preservation in situ

The evaluation had identified two areas of archaeological significance: undated enclosures believed to be part of a Roman roadside settlement E of the A1 (BCAS 1999, 18) and late Bronze Age/early-middle Iron Age activity adjacent to the Langford road (BCAS 1999, 17). Where feasible, the impact of the road scheme was minimised. For example, the width of the new road to the E of the A1 was restricted. Its low embankment was designed in such a way that it was not necessary to remove topsoil. Where no engineering solution was possible open area excavations were undertaken.

#### Open area excavations

Open area excavations took place during September 2000 in two areas. Area A was c.0.4ha in extent and located to the W of the A1. In this area the new road was to be constructed in a cutting with substantial landscaping on either side. Area B was much smaller (30m x 13m). It was located adjacent to the E side of the A1 on the site of the eastern bridge abutment for the new road.

All hand excavation and recording were carried out in accordance with the BCAS *Procedures Manual* (BCAS 2000a). The site recording sequences started during the evaluation were continued. All isolated archaeological features were half-sectioned. Ditches were subject to segment excavation; those directly associated with settlement were more intensively investigated.

### Watching brief

Topsoil stripping was permitted away from known archaeological remains. A 70m stretch of the new road was examined but no features or artefacts were identified.

### Assessment

On completion of the fieldwork, a MAP 2 style assessment of the potential of the site archive for further analysis was produced and submitted in December 2000 (BCAS 2000b). This included an Updated Project Design, which was approved by the CAO and The Highways Agency in March 2001, after which post-excavation analysis commenced.

### POST-EXCAVATION METHODOLOGY

To maximise the information obtainable from the site, all cropmarks and geophysical anomalies likely to be of archaeological origin were assigned context numbers and incorporated into the structural analysis. A structural hierarchy was then defined. This comprised:

- sub-groups (indivisible unit of interpretation, e.g. the primary fills of the same ditch);
- groups (more interpretative entities, e.g. a building or concentration of pits or boundary ditch);
- landscapes (a collection of broadly contemporary and spatially coherent groups, e.g. an enclosure and the activity it contains, or a field system);
- phases (broad, chronological divisions, e.g. early-middle Iron Age).

### STRUCTURE AND TERMINOLOGY IN THIS REPORT

After this introductory section, this report presents the results of the investigations within a chronological framework. The site narrative is arranged by Landscape (L prefix) and Group (G prefix), and where necessary a feature number is provided and labelled on the illustrations (see above). Along with describing the archaeological features the site narrative integrates a summary of the artefactual and eco-factual information, which is presented in more detail within individual sections for the various specialisms. The final section of this report discusses the results of the investigations and the techniques used during the evaluation stage of the project.

### RESULTS OF THE INVESTIGATIONS

Rob Edwards and Mike Luke

Two major elements of the landscape were identified during the investigations: a settlement and a field



system. The restricted nature of the trial excavation and open area excavation makes it impossible to present a detailed phasing sequence. However, early-middle Iron Age pottery was recovered from the excavated parts of both the settlement and field system, suggesting that they were broadly contemporary. Due to the small percentage of the settlement and field system excavated it is always possible that the full chronological complexity is understated in this report.

The results are presented under two main headings: the settlement (E of the A1) and the field system (W of the A1). Any references to pottery refer to early-middle Iron Age pottery, although four groups also contained small quantities of residual late Bronze Age/early Iron Age material (see below).

#### THE SETTLEMENT (Fig 4)

This comprised eight interlinked enclosures, the majority of which contained some evidence for settlement-type activity. The overall alignment of the settlement was NW-SE and it was positioned at the top of land sloping down to the NE. Assuming that the settlement was restricted to the area of the ditched enclosures its N and E limits were identified. However, its W limit had been destroyed by the A1 and therefore the full extent of the enclosures is unknown. To the S the enclosures appear to continue beyond the limit of the Study Area. The known extent of the settlement is *c.* 0.8ha.

The layout of the enclosures suggests that they can, broadly speaking, be divided into four units, three to the south (L14, L13 and L6) which are rectangular and one to north (L5) which is circular. No obvious gaps or entrances in the ditched boundaries were detected within the geophysical survey, possibly indicating that they were located on the destroyed W side. Many of the enclosures exhibited evidence for internal sub-divisions.

Although the open area excavation was tiny (5%) when compared to the rest of the known settlement, it provided valuable information. A number of typical settlement elements (buildings, pits, postholes and boundaries) were identified. This suggested that the geophysical anomalies within the enclosures were also likely to be settlement-type features. In addition, one of the major enclosure ditches was investigated. This and the other excavated features contained occupation debris including pottery, fired clay, worked flint and animal bone. Over 90% of the pottery dates to the early-middle Iron Age. A similar date is likely for the other enclosures given their interlinked arrangement. The pottery assemblage

cannot be closely dated, but it is clear from the intercutting nature of some features that occupation was not confined to a single episode.

The enclosures are described below from S to N.

#### The southernmost enclosure L14

This sub-rectangular enclosure clearly continued beyond the Study Area. It was defined by a substantial ditch-like geophysical anomaly G72, which also showed up as a cropmark. An additional ditch-type anomaly G71 may represent an internal sub-division. No settlement-type anomalies were identified within the enclosure.

##### *Enclosure ditch G72*

The ditch-type geophysical anomaly was up to *c.* 2.3m wide with no obvious breaks to suggest the location of entrance-ways.

##### *Internal ditch G71*

A NE to SW aligned ditch-type anomaly parallel to the N boundary of the enclosure was *c.* 15m long and up to *c.* 1.5m wide. It did not appear to continue across the entirety of the enclosure. Unfortunately it was located at the limit of the geophysical survey making further interpretation unreliable.

**Additional southern enclosures L13 (Figs 4 and 5)**  
Ditch-type anomaly G75 is linked with enclosures L6 to the N and L14 to the S. The enclosure appears to have been divided in half by ditch-type anomaly G76.

A small part of the interior of this enclosure, adjacent to its N boundary G50, was subject to open area excavation. Minor ditch G48 was parallel to G50 but *c.* 1.7m to the S. In one place its alignment made a dramatic kink to the SW, presumably to avoid a structure or some other activity. Posthole G64 may be the only evidence for this activity. Between minor ditch G48 and the enclosure ditch G50 was an alignment of five pits G66 (two of which intercut). Evidence for settlement-type anomalies elsewhere within the enclosure was restricted to a single pit-type anomaly assigned to G77 and two possible penannular ditch-type anomalies G73 and G74. The latter may indicate the location of two roundhouses.

The fills of the excavated features yielded 10 sherds of pottery (from five vessels weighing 45g). Functional attributes are restricted to a single externally sooted sherd, indicative of vessel use in a domestic capacity.

##### *Enclosure ditch G75*

G75 comprised a NW to SE aligned geophysical ditch-type anomaly, extending for *c.* 62m and *c.* 1m wide. A number of breaks were visible but the significance of these is uncertain.

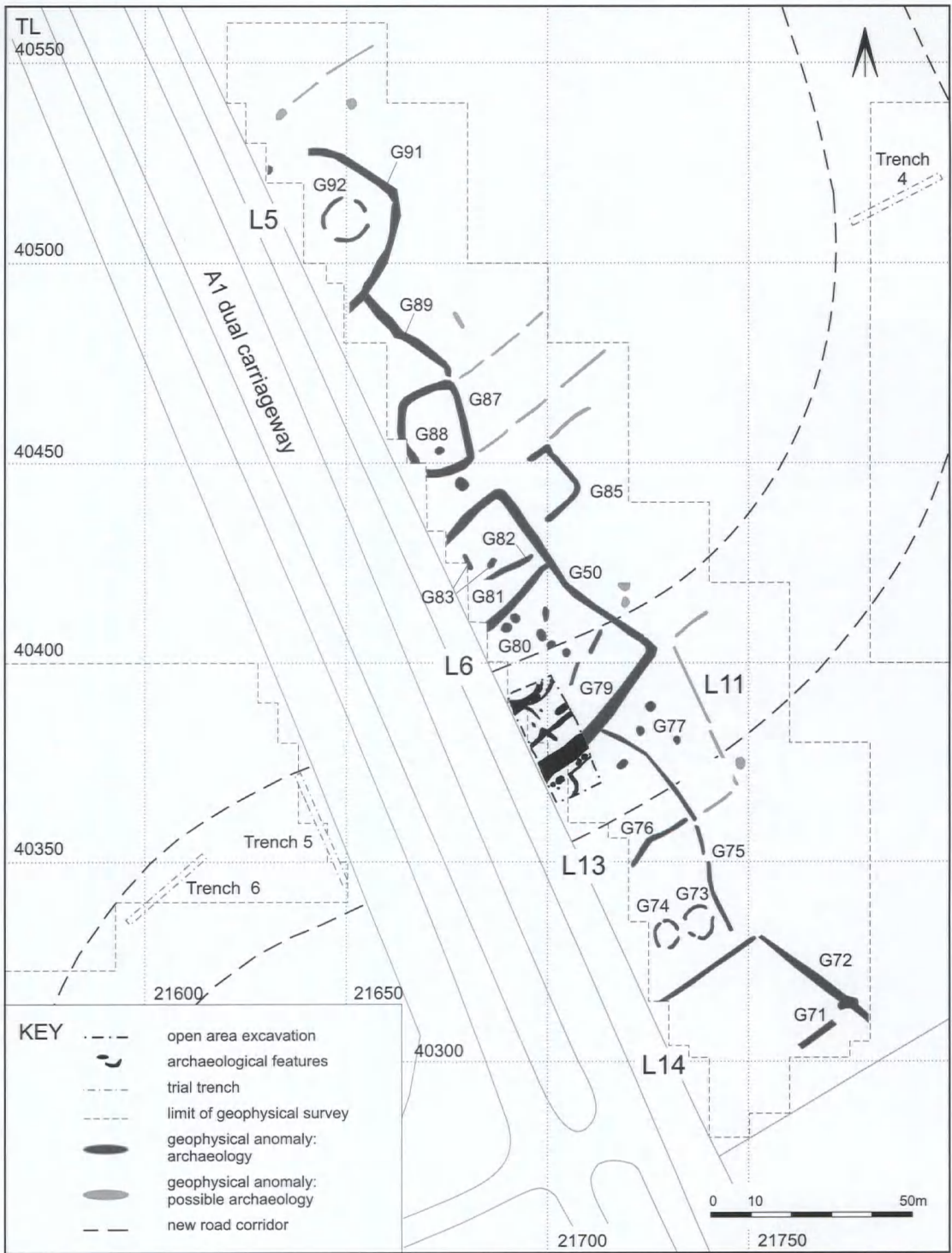


Figure 4 Plan of the settlement



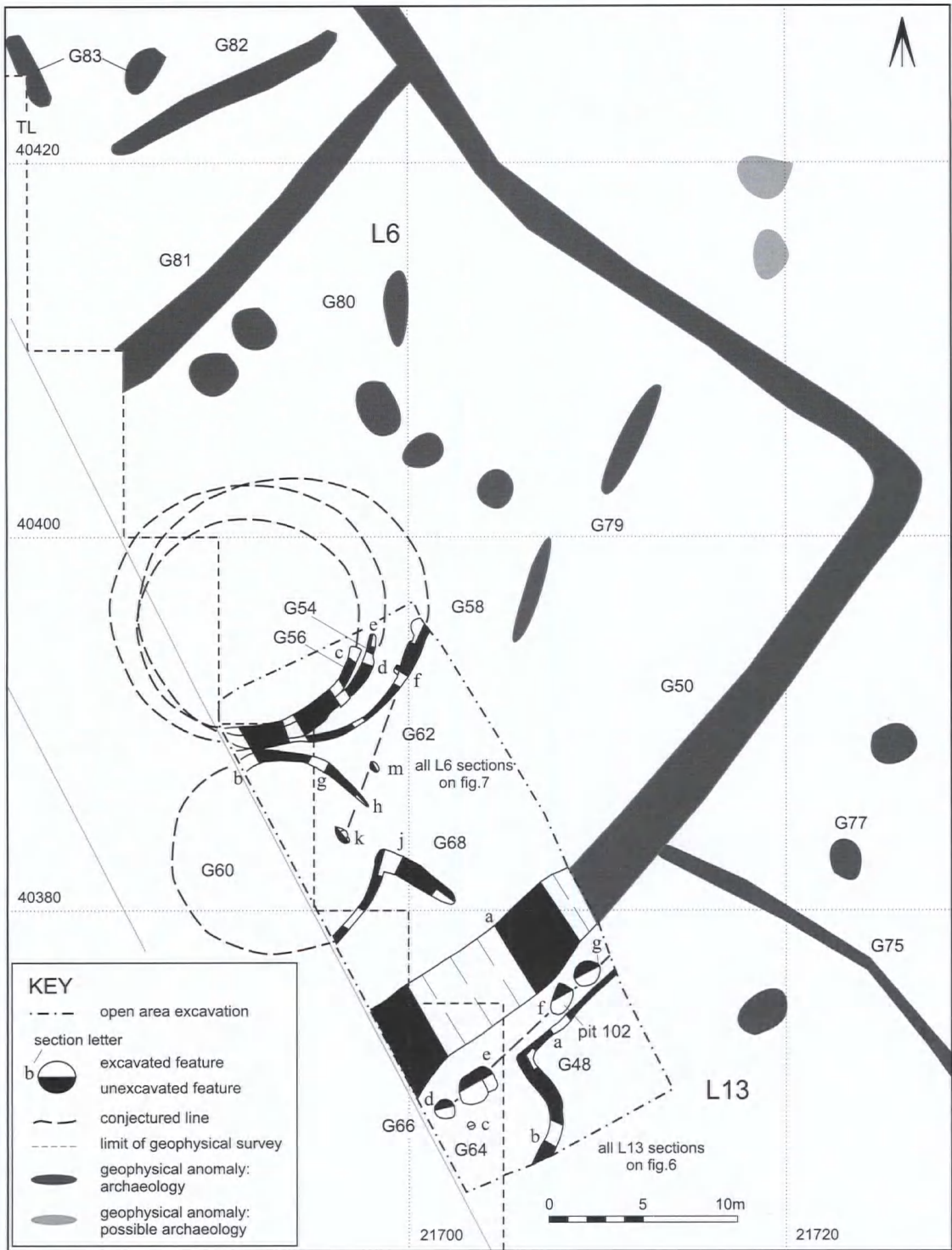


Figure 5 Detail of enclosures L6 and L13 (including detail of excavation area B)

*Internal ditch G76*

G76 comprised a NE to SW aligned ditch-type anomaly, curving slightly but broadly parallel with the enclosure ditches to the N and S. It was c. 19m long and c. 1m wide. A very weak linear anomaly to the E of the enclosure may be a continuation of this feature.

*Internal boundary G48*

G48 was a minor ditch, identified within the open area excavation and continuing beyond its limits. It was aligned NE to SW, initially parallel to enclosure ditch G50 before kinking to the S. It was up to c. 0.5 wide and c. 0.2m deep, generally becoming wider and deeper within the kink to the S (contrast Fig 6a with Fig 6b).

It contained two fills (G49) probably derived from natural processes, but containing three sherds of pottery from the same vessel (weighing only 7g) and 17 fragments of animal bone. Environmental sample 10 contained occasional charcoal and molluscs.

*Posthole G64*

G64 was an isolated, circular, concave posthole c. 0.4m in diameter and c. 0.2m deep. Its fill G65 contained medium sized stones which may have originally been used as packing around the post (Figure 6c).

*Pit group G66*

G66 comprised five sub-circular pits with concave sides and flat, irregular or concave bases. They were all under c. 1.6m in length, between c. 0.45m and c. 1.5m in width and under c. 0.3m deep (Figure 6d-g). Two of the pits inter-cut (Figure 6e) but the others were spaced fairly evenly. A sterile primary fill was identified within only one pit. Their main fills G67 contained seven sherds of pottery (from four vessels, weighing 38g) and eleven fragments of animal bone. Two small fragments of human bone were recovered from pit 102, which also contained two of the seven pottery sherds. Environmental sample 11 from this pit produced occasional charred cereal grain, chaff and charcoal.

*Roundhouses G73 and 74*

Two interrupted penannular geophysical ditch-type anomalies, c. 7m in diameter, c. 0.6m wide, were located to the S of the enclosure only c. 1.5m apart. They may represent gullies associated with roundhouses. Although gaps in the anomalies to the N, E and SW were visible they cannot be reliably interpreted as entrances.

**The central enclosures L6 (Fig 5)**

This sub-rectangular enclosure was defined by a ditch-type geophysical anomaly G50. No obvious breaks were visible to suggest the location of entranceways. The interior of the enclosure was subdivided by a ditch-type geophysical anomaly G81. Less pronounced linear anomalies G79 and G82 might represent additional internal boundaries.

A small part of the enclosure adjacent to the S boundary ditch G50 was subject to open area excavation. Penannular drainage gullies suggest the presence of two roundhouses G56 and G60. The gully around the former was recut at least twice G54 and

G58. The other was associated with a short deep gully, which may have functioned as a soakaway. Three postholes G62 were located, one of which was truncated by one of the drainage gullies. It is clear, therefore, that settlement in this area lasted more than a single episode. To the N of the excavated area pit-type geophysical anomalies G80 and G83 suggest activity took place elsewhere in the enclosure.

Fills of the excavated features yielded 132 sherds of pottery from 62 vessels (weighing 930g) representing 50% of the overall assemblage. The majority of this was derived from ditch G50 and its fills.

*Enclosure ditch G50*

The southern boundary ditch G50 was investigated within the open area excavation. It was c. 4.3m wide and c. 1.5m deep, with a U shaped profile, convex sides and a convex base (Fig 7a). The latter was suggestive of recutting although no clear evidence for this was detected in the filling sequence.

Its primary fills comprised yellow brown silty clay with rare small sized stones probably derived from slumping of the sides. This contained six pottery sherds from six vessels (weighing 36g) and two fragments of animal bone. Environmental sample 12 produced occasional charred cereal grain, chaff, weeds and charcoal. The secondary fills G51 and G52 were both brown grey silty clays with occasional charcoal flecks and small stones (Fig 7a). Fill G51 contained included 12 pottery sherds from the same vessel (weighing 71g) and seven fragments of animal bone. Environmental sample 13 produced occasional charred cereal grain, weeds, charcoal and molluscs. Fill G52 contained nine pottery sherds from two vessels (weighing 84g), along with three fragments of animal bone and a small quantity of fired clay.

The tertiary fills G53 were compact grey brown silty clay with frequent small to medium sized stones and occasional large stones (Figure 7a). They contained significant amounts of domestic refuse (pottery, a core, 5 flint flakes, 54 fragments of animal bone, shell and struck flint) suggesting they may have been deliberately dumped. The pottery comprised 44 sherds from 14 vessels (weighing 242g). The occurrence of three cross-matches in the pottery recovered from secondary and tertiary fills supports the suggestion of deliberate infilling of the ditch, which may have been fairly rapid.

The nature and location of the fills gave no indication of the position, or even presence of a bank. However, the digging of the ditch would have produced a large quantity of material making it very likely that a bank was constructed. Due to the close proximity of pits G66 on the S side of the ditch, it is perhaps more likely that a bank would have been located on the N side.

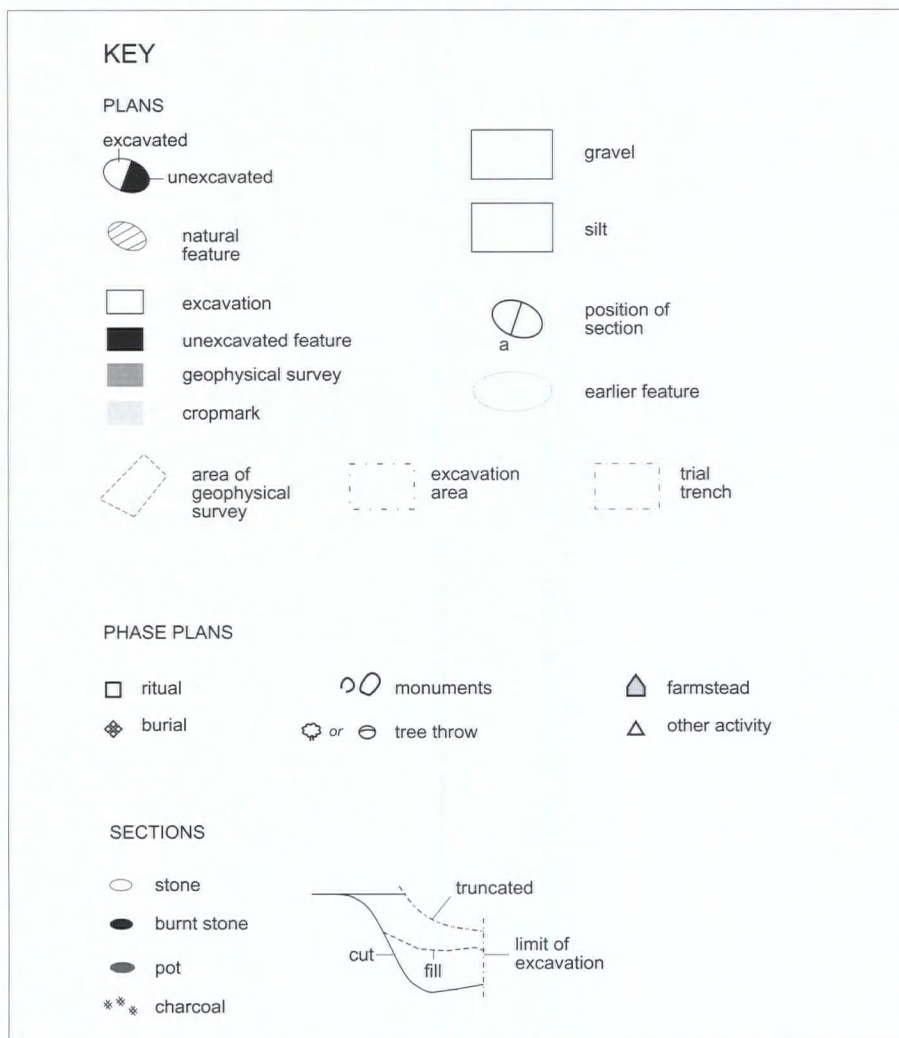
*Internal divisions G79, G81 and G82*

Geophysical linear anomaly G81 probably represents a major sub-division of the enclosure. The function of two intermittent geophysical anomalies G79 and G82 is less clear, although they may indicate further sub-divisions.

*Roundhouse G56*

Penannular ditch G56 in the NW corner of the open area excavation continued beyond the limit of excavation. It had a U shaped profile with a concave base, was between c. 0.45m and c.





Key to Plans and Sections

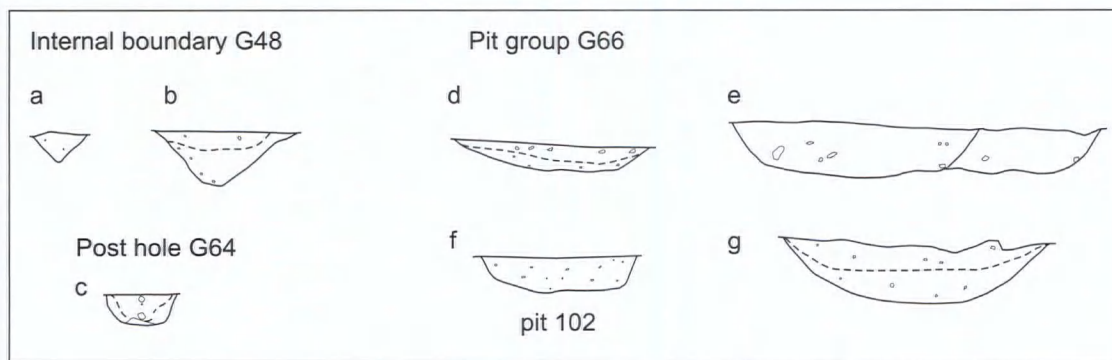


Figure 6 Enclosure L13 selected sections

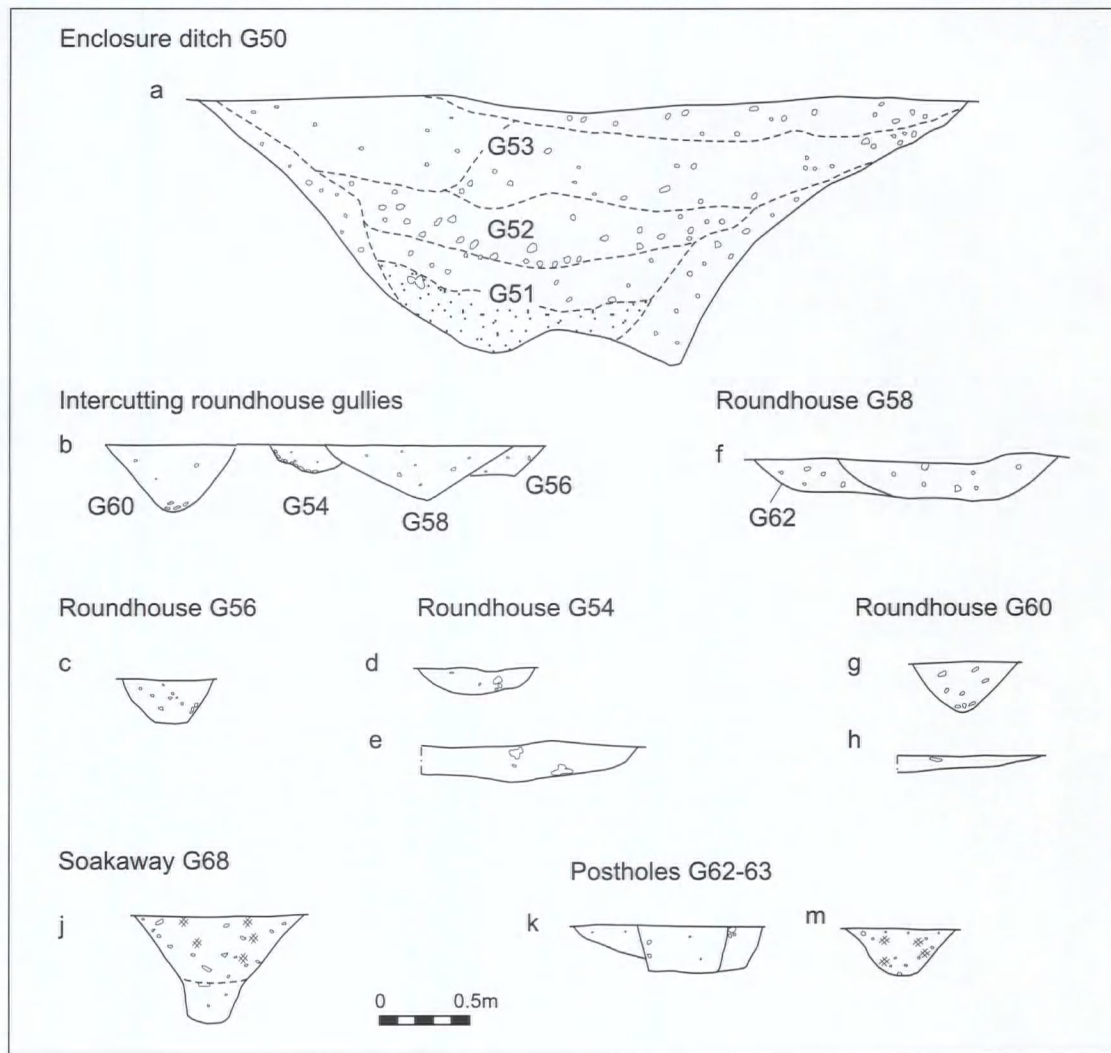


Figure 7 Enclosure L6 selected sections

0.8m wide and under *c.* 0.3m deep (Figure 7b and c). It is believed to represent a drainage gully defining a roundhouse with a maximum projected diameter of *c.* 13m. It had a square terminal to the NE suggesting an E facing entrance. A primary fill comprising yellow brown silty clay with occasional charcoal flecks was identified in only one excavated segment.

The main deposit G57 within the gully was dark grey brown clay silt, with occasional small to medium stones (some burnt) and occasional charcoal and chalk flecks. Domestic debris (pottery and 24 fragments of animal bone) was predominantly derived from the two segments closest to the terminal. For example eight of the ten pottery sherds, all from different vessels (weighing 125g), and 21 of the animal bone fragments were derived from the terminal, despite the hand excavation of three other similarly sized segments along this ditch. Environmental sample 9 produced occasional charred cereal grain, weeds and molluscs, but abundant charred cereal chaff and charcoal.

#### *Redigging of roundhouse drainage gully G54 and G58*

It appears the drainage gully surrounding roundhouse G56 was redug on two occasions, initially as G54 and then G58. These were dug slightly to the S, but on a similar curving alignment. They had concave profiles, occasionally with a flat base, and were under *c.* 0.3m deep (Fig 7b, d, e and f). Both were more variable in width than the original gully. G54 was mainly *c.* 0.3m wide but widened to *c.* 1.2m at the NE while G58 was between *c.* 0.4m and *c.* 0.9m wide, also getting narrower to the NE. If the roundhouse had been rebuilt along with the recutting of the drainage gully, its diameter could have been increased up to a projected maximum of *c.* 18m. Both gullies appear to have terminated to the NE (Figure 7e) suggesting the retention of the original E-facing roundhouse entrance.

Within both gullies the yellow brown silty clay primary fills contained charcoal and burnt clay flecks, but only G54 contained pottery (two sherds from one vessel weighing 43g).



Again, a primary fill was not identifiable in every excavated segment. The upper fills G55 and G59 comprised a dark grey brown silty clay, with occasional small to medium stones, along with flecks of charcoal, chalk and burnt clay. However, there was more domestic debris (pottery and seven fragments of animal bone) within gully G58 than G54. Of the seven recovered pottery sherds (from six vessels and weighing 43g) all but one were from the terminal segments, despite the hand excavation of three other segments. A core fragment was recovered from G54.

*Roundhouse G60 with soakaway G68*

Penannular gully G60 continued beyond the excavation area to the W and had a projected diameter of c. 10.5m. It was under c. 0.3m deep with a U shaped profile, c. 0.5m wide (Figure 7g and h) and therefore comparable to the drainage gullies surrounding roundhouse G56. The two ditch terminals on the E side, one with a distinct taper in plan, created an entranceway c. 3m wide. The S terminal incorporated a sub rectangular pit G68, c. 4.85m long and under c. 1.1m wide, which narrowed and deepened to c. 0.6m at the SE.

A grey brown silty clay primary fill was only identified in one of the five excavated gully segments. It contained two sherds from one vessel (weighing 19g). The main fill G61 was a dark brown grey sandy clay with occasional small stones and domestic debris (pottery, 7 fragments of fired clay and 13 fragments of animal bone). The distribution of the 13 sherds (from eight vessels weighing 79g) did not appear to concentrate near the terminals. The filling sequence within pit G68 was similar. The secondary fills G69 and G70 contained a relatively large quantity of domestic debris (pottery, 11 fragments of animal bone and fired clay). The pottery comprised 26 sherds from 12 vessels (weighing 174g).

*Postholes G62*

Three postholes G62, c.4m to c.5m apart, were identified within the excavation area. They were sub-oval to sub-rectangular, with concave or steep sides and flat or concave bases, with diameters between c. 0.25m and c. 1.1m. They were under c. 0.25m deep (Figure 7f, k and m). Posthole 235, situated in the vicinity of the entranceway into roundhouse G60, contained a suggestion of a postpipe comprised of soft dark silty clay surrounded by compact lighter silty clay (Figure 7k). Posthole 246 is truncated by drainage ditch G58 (Fig 7f) clearly demonstrating that these cannot be contemporary. The function of the three postholes is uncertain. They could be unrelated although they do form an approximate SW to NE alignment.

*Pit Groups G80 and G83*

Two groups of geophysical pit type anomalies were identified. Adjacent to possible internal subdivision G81 was a group of six anomalies G80, between c. 1.8m and c. 3m in diameter. The second group G83 was located to the N of the possible internal subdivision G81 and comprised just two anomalies, between c. 2.7m and c. 4.2m in diameter.

**The northern enclosures L5 (Fig 4)**

Three interlinked enclosures are indicated by ditch-type geophysical anomalies. The northern one G91 is sub-circular in plan and represents the N extent of the enclosed settlement. Within the interior a penannular geophysical ditch-type anomaly G92 probably

defined a roundhouse. Approximately 28m to the S a small sub-rectangular enclosure G87, c. 20 by 15m, was revealed as a geophysical ditch-type anomaly. It contained one pit-type geophysical anomaly G88. Geophysical ditch-type anomaly G89 connected these two creating another enclosure. No evidence for activity was identified within this enclosure.

*Enclosure ditch G91*

The geophysical ditch-type anomaly G91 was up to c. 2.2m wide and continued beyond the limit of the geophysical survey.

*Roundhouse G92*

An interrupted penannular ditch-type geophysical anomaly, c. 1m wide, is interpreted as a drainage gully surrounding a roundhouse. Its projected diameter is less than c. 10m. The gaps visible in the anomaly may suggest doorways to the N, E or SW.

*Enclosure ditch G87*

The geophysical ditch-type anomaly G87 was c. 1.7m wide and defined a sub rectangular enclosure with no obvious breaks that could represent entranceways.

*Pit G88*

Within enclosure G87 was a geophysical pit-type anomaly G88 c. 2.2m by c. 1.7m.

*Enclosure ditch G88*

Geophysical ditch-type anomaly G88 connected ditches G87 and G91. It was up to c. 2.5m wide with no obvious breaks.

**Peripheral activity L11**

The geophysical survey identified a small number of ditch- and pit-type anomalies to the E of the enclosures. Ditch-type anomaly G85, to the NE of L6, is likely to have defined another small enclosure comparable to G87. Of the other strong responses only pit-type anomalies G77 were convincing as archaeological features. There is probably sufficient evidence to suggest some human activity took place to the E of the settlement, but its nature and date are unknown.

*Enclosure ditch G85*

This ditch-type geophysical anomaly c. 1.1m wide defined a sub-rectangular enclosure. It was situated to the NE of L6 and shared a similar alignment. There appeared to be gaps in both the SE and NW arms adjacent to enclosure L6. While these could represent genuine entranceways they may be due to the very high readings generated by enclosure ditch G50. No internal anomalies were identified.

*Pit group G77*

Three of the four geophysical pit-type anomalies G77 were situated to the E of enclosure ditch G75. They were c. 2.5m in diameter and were located within 9m of each other suggesting they may represent a cluster of pits.

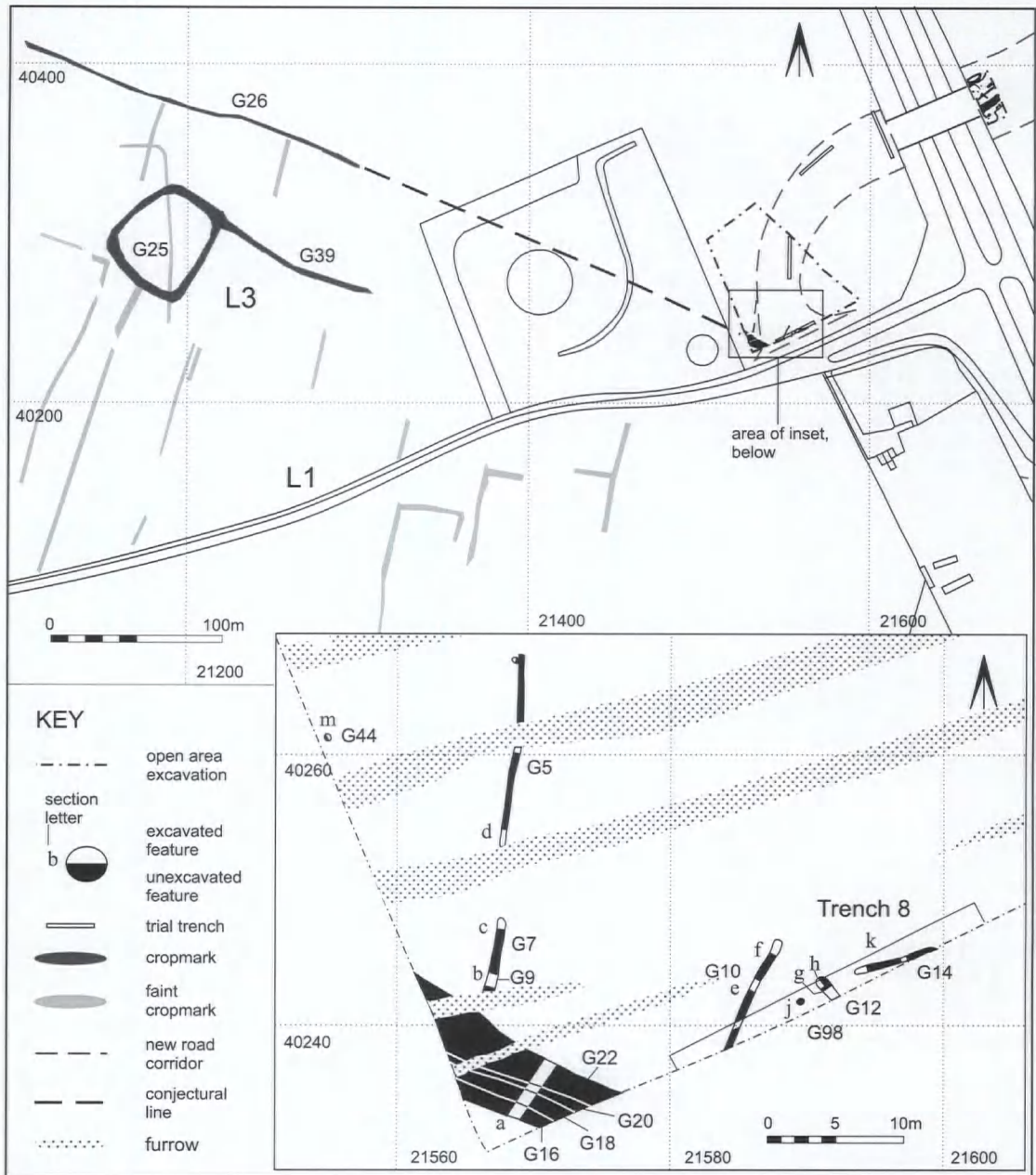


Figure 8 Field system L1 (including detail of excavation area A)

#### Other ditches

Weak ditch-type geophysical anomalies occurred to the SE of L6. None were convincing but one could represent the continuation of G76 beyond the enclosure system.

#### THE FIELD SYSTEM AND ENCLOSURES (Fig 8)

A field system, mainly identified from aerial photographs, extended over at least 10ha to the W of the settlement. In addition a number of discrete enclosures were identified within it, although these may



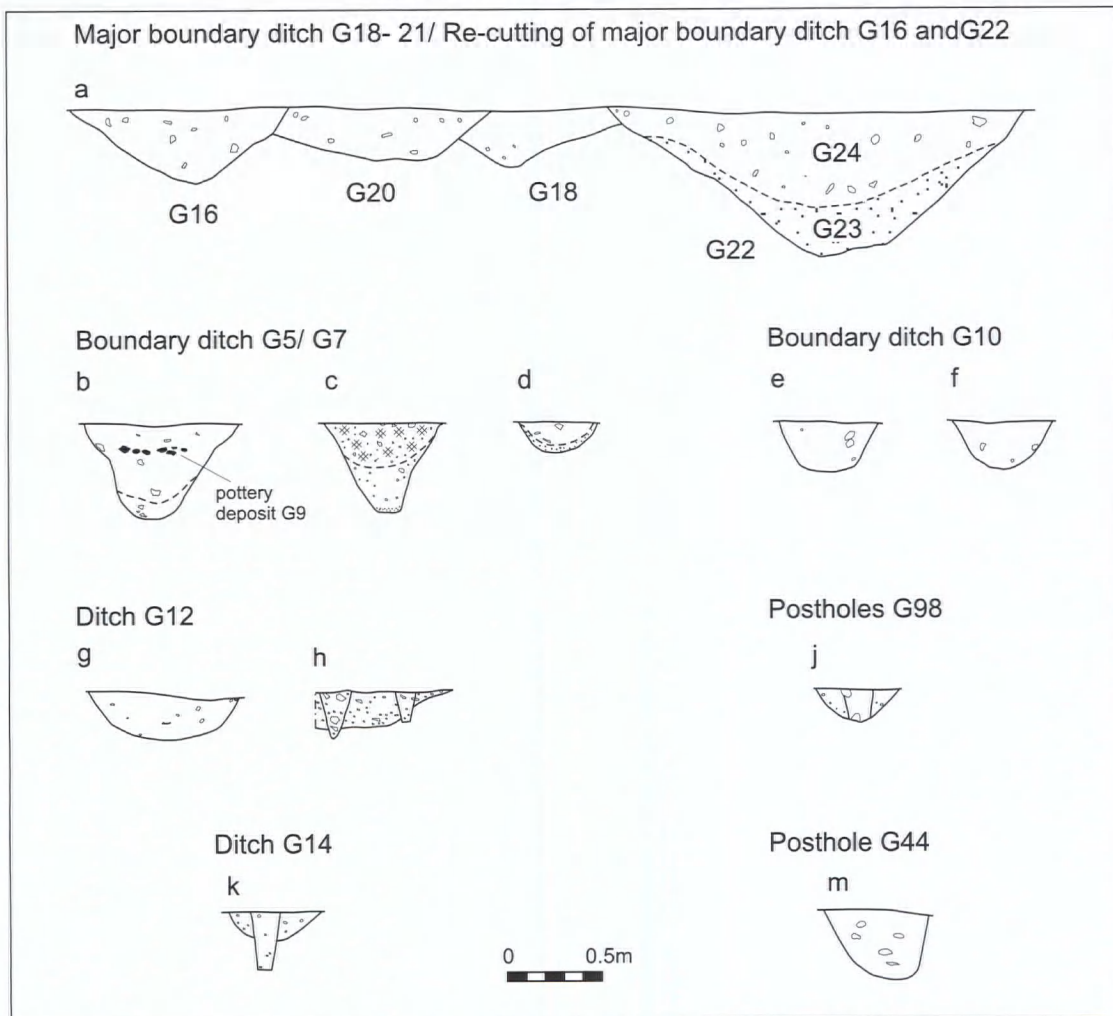


Figure 9 Field system L1 selected sections

not be contemporary. While it is obviously impossible to date the cropmarks, the excavated field boundaries within open area excavation A suggest that these, at least, are contemporary with the settlement.

#### Field system L1 near settlement

A series of ditches were located *c.* 170m from the settlement (within open area excavation A). Their layout and relationship with the more extensive cropmarks to the SW suggest they were part of the field system rather than being associated with a settlement.

A major boundary is indicated by a NW-SE ditch G18 which was recut on at least three occasions as G20, G16 and G22. The two latest re-cuts could have

been contemporary and formed a double ditched boundary. Perpendicular to the recut boundary were two alignments of N-S ditches (G5/7 and G10). Towards the S end of the former was a deposit G9 which contained a significant quantity of pottery. Three isolated postholes were also located.

Features associated with the field system L1 yielded 82 pottery sherds from 24 vessels weighing 416g, nearly half from deposit G9. The ditches G16/18/20/22 of the major boundary only produced 8 pottery sherds from 5 vessels (weighing only 15g), nearly all from environmental samples. The highly fragmented and abraded nature of the assemblage is consistent with a process of natural erosion and gradual infilling. Functional attributes are restricted

to a single sherd with external sooting, indicative of domestic vessel use.

#### *Original major boundary ditch G20*

The earliest major boundary ditch was truncated by the later recuts and was therefore only partially observed (Fig 9a). However, it appears to have been at least 1.1m wide and over 0.3m deep with a concave profile.

#### *Recut G18 of major boundary*

This recut was also truncated by a later recut but appeared very similar in dimensions and profile to the original ditch G20 (Fig 9a). It contained a single fill G19 which appeared to derive from gradual silting. Only two minute fragments of pottery were recovered. Environmental sample 7 from this produced occasional charred cereal grain and chaff, along with molluscs.

#### *Recut G16 of major boundary*

The southern ditch G16 in the sequence was 1.2m wide and 0.4m deep with a concave profile (Fig 9a). The fills G17 contained a single sherd of pottery and two fragments of animal bone. Environmental sample 6 produced occasional charcoal and molluscs.

#### *Late recut G22 of major boundary*

The northern ditch G22 in the sequence stratigraphically could have been contemporary with G16 or G18. It was larger at 2.2m wide and 0.75m deep, but again had a concave profile (Fig 9a). Its primary fill G23 contained a single tiny sherd and its main fill G24 five tiny sherds from one vessel. Environmental sample 5 from the latter contained occasional charred cereal grain, charcoal and molluscs.

#### *Boundary ditch G5/G7*

Two lengths of ditch on the same N-S alignment were situated to the N of the major boundary ditch. A gap of 5.2m existed between the two lengths with distinct terminals. The relationship with the ditch was uncertain due to disturbance by a furrow and the edge of excavation. Both had U-shaped profiles, G5 to the N was c. 0.5m wide and up to c. 0.2m deep, in contrast to G7 which was c. 0.8m wide and c. 0.5m deep (Figure 9b, c and d).

The fills G6 and G8 of both ditches contained occasional stones and charcoal flecks. Environmental samples 4 and 3 were taken from the ditch fills respectively, both containing charcoal but only the latter occasional charred cereal grains. A single fragment of animal bone was recovered from G8 but no pottery. The charcoal flecks became more evident within the fills to the S of both ditch lengths.

The only pottery recovered from this ditch length occurred in deposit G9 close to where ditch G7 would have joined the major boundary ditch (obscured by a furrow). Due to the quantity of pottery (32 sherds, weighing 243g) it was initially believed, during hand-excavation, to be part of a single vessel. However, subsequent examination of the assemblage clearly demonstrated that fragments from three separate vessels were present. The deposit also contained a single fragment of animal bone.

#### *Boundary ditch G10*

Approximately 17m SE of ditch G5/7 was a NE-SW ditch G10, which may have been associated. The ditch clearly terminated to the N within the excavation area and continued beyond the limit of excavation to the S. It had a U shaped pro-

file was c. 0.5m wide, and between c. 0.25m and c. 0.45m deep, generally becoming wider and shallower to the NE (Fig 9f and e). The main fill G11 contained occasional burnt stones, 10 fragments of animal bone, pottery and burnt clay. Twenty sherds of pottery from eight vessels (weighing 88g) were recovered but not from the terminal segment. Environmental sample 2 taken from this deposit produced occasional charred cereal grain and charcoal.

#### *Ditches G12 and G14*

Two additional features G12 and G14, situated on the S limit of excavation, are likely to be ditches. Both terminated within 4m of the terminal of ditch G10 suggesting an entranceway existed in this area (possibly into a small enclosure attached to the major boundary ditch). They had similar concave profiles, but differed in dimensions. Both had been damaged by recent agricultural activity. The NW-SE ditch G12 was 0.8m wide and 0.2m deep (Fig 9g and h), whereas SW-NE ditch G14 was 0.45m wide and only 0.1m deep (Fig 9k). Both were filled by deposits (G13 and G15), containing flecks of charcoal and burnt clay (15 fragments in ditch G14). Only fill G13 of G12 contained pottery, 13 sherds from 5 vessels weighing 36g. Environmental sample 8 from this produced occasional charred cereal grain and molluscs.

#### *Postholes G42, G44 and G98*

The only evidence for activity within the field system other than boundaries were three isolated postholes over 40m apart. Postholes G42 and G44 were located to the N of the excavation area and comprised sub-circular holes c. 0.55m in diameter and 0.1 and 0.4m in depth respectively. Both had U-shaped profiles and no evidence for a postpipe, although G44 did contain medium sized stones which may have originally been utilised as packing (Fig 9m). Their fills contained charcoal flecks and environmental sample 1 from fill G43 (of G42) produced abundant charcoal and occasional charred cereal grain. Fill G45 (of G44) contained five pottery sherds from one vessel (weighing 28g).

Posthole G98 was located adjacent to ditch G12. It was oval in shape with a diameter of c. 0.5m and had steep sides with a flat base at a depth of 0.15m (Fig 9j). Packing material comprised small stones and three sherds of pottery from two vessels (weighing 6g) defining a circular postpipe 0.2m in diameter.

#### **Field system L1 to south-west**

A series of faint linear cropmarks was visible on aerial photographs (Aerofilms 96C/565/1775 and 1776). Most were usually aligned SW-NE, but a small number ran NW-SE.

An integral part of the field system was a NW-SE ditch G26. Although all the perpendicular linear cropmarks appear to occur to the S, a small number of boundaries were located to the N within the excavation area. Ditch G26 would appear to correspond to the major ditched boundary G16/18/20/22 within the excavation area and although there is a c. 250m gap between the two, they are presumed to be part of the same boundary.

The plan of the field system gives the appearance



of "strip" fields, although the boundaries varied between *c.* 22m and *c.* 95m apart and possibly *c.* 100m in length.

A small number of the NE-SW boundaries are parallel and relatively close. While some may be double boundaries or recuts, others for example where the gap is only *c.* 6.5m may be trackways between fields.

#### Enclosures G25 (L3) and G40 (L4)

Two ditched enclosures, both *c.* 400m from the settlement, are indicated by cropmarks on aerial photographs (Aerofilms 96C/565/1775 and 1776).

Enclosure G25 was sub-rectangular in shape enclosing an area of 2,788 m<sup>2</sup> (Fig 8). No obvious breaks were identified to suggest an entranceway. Extending from the E side was a linear NW-SE aligned ditch-like cropmark G39 *c.* 130m in length. The position of the enclosure and associated ditch in relation to the field system suggests they are not contemporary. However, they share similar alignments, suggesting remnants of the former system may have influenced the layout of the enclosure.

Only three sides of enclosure G40 were clearly visible (Fig 2) and no entranceways were identified. It was probably rectangular in plan enclosing an area of *c.* 6,016 m<sup>2</sup>.

#### LATER ACTIVITY

##### Late Iron Age and Roman

Five sherds of late Iron Age pottery, eleven sherds of Roman pottery and a fragment of rotary quernstone, which may be Roman in date, were found during field artefact collection. The distribution of this material was not significant and was not related to the location of buried archaeological remains.

#### Medieval and post-medieval

A regular pattern of furrows, *c.* 2.5m wide and *c.* 9m apart, was identified in both excavation areas (see Fig 2). These, and the 23 sherds of medieval pottery recovered during field artefact collection, suggest the Study Area was part of the open field system of Edworth during the medieval period.

#### THE ARTEFACT ASSEMBLAGE

Jackie Wells

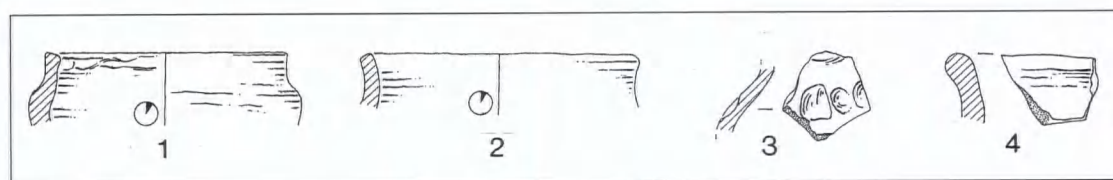
The artefact assemblage recovered from field artefact collection, trial excavation and open area excavation is described in this section. Although not related to the settlement and field system, the post-Iron Age material is briefly summarised, as it has relevance to the review of methodologies and techniques.

#### POTTERY

##### Introduction

The open area excavation produced 242 sherds of pottery representing 103 hand-made vessels, weighing 1.5kg. Of these, 22 sherds (43g) derived from the residues of environmental samples. Ninety-one percent of the excavated assemblage dates to the early-middle Iron Age period, and five percent to the late Bronze Age/early Iron Age. The remainder is of post-Iron Age date, and derived from furrows G3 and modern features G96. This material has not been fully discussed.

Field artefact collection produced a further 86 sherds, (751g), ranging in date from the late "Belgic" Iron Age to the post-medieval periods (BCAS 1998, 19). A summary of this material is provided below, although it is not included in the tables or Type Series.



Illust. No.	Fabric Type	Description	Group	Landscape
1	F19	Round shouldered vessel	69	9
2	F35	Vessel rim	69	9
3	F19	Sherd decorated with finger tip impressions	67	12
4	F35	Open vessel	52	6

Figure 10 Illustrated pottery (1:4)



The proportions and types of fabrics recovered from excavated features are detailed in Table 1, which provides the structure for the ceramic discussion.

### Methodology

Pottery fabric types were recorded using type codes and common names in accordance with the Bedfordshire Ceramic Type Series held by Albion Archaeology. Detailed descriptions are provided below only for the Iron Age fabrics. Quantification included minimum vessel and sherd count, and weight. Sherds deriving from the same vessel but from separate contexts (three such cross-contexts were noted) were counted as a single vessel.

The limited nature of the assemblage in terms of identifiable forms and decoration means that only four vessels have been illustrated (Fig 10). Standard drawing conventions have been used, with vessels shown at one quarter size, external view on the right and a section and internal view on the left. The pie diagram accompanying illustrations 1 and 2 indicates the proportion of the vessel recovered.

### Type Series

Fabrics are summarised below in approximate chronological order. Full fabric descriptions are given only for those types not previously published. Bracketed figures after each fabric type denote a percentage of the total excavated assemblage.

#### *F01B Fine Flint (5%)*

Fabric - hard fired, rough fabric with variable orange-brown to grey surfaces and core. Occasionally reduced throughout. Contains abundant, well-sorted angular flint 0.5-1.5mm, sparse well-sorted fine sub-rounded quartz and red and black iron ore.

Forms - undiagnostic hand made vessels, one with fingernail impressions

#### *F03 Grog and sand (1%)*

Fabric - described by Slowikowski (2000, 61)

Forms - large jar or storage jar

#### *F04 Organic (2%)*

Fabric - described by Slowikowski (2000, 62)

Forms - undiagnostic hand made vessels

#### *F16 Coarse Shell (2%)*

Fabric - described by Slowikowski (2000, 63)

Forms - undiagnostic hand made vessels, one with fingertip impressions

#### *F19 Sand and organic (22%)*

Fabric - described by Slowikowski (2000, 63)

Forms - round shouldered, flat rimmed burnished vessels, with fingertip impressions and vertical or horizontal incised parallel lines

Illustration - Fig 10, nos. 1 and 3.

#### *F28 Fine Sand (21%)*

Fabric - Hard-medium fired, sandy or occasionally harsh to feel with even fracture. Colour varies; can be dark-grey throughout, or have mid brown or reddish brown surfaces. Contains abundant, well-sorted, rounded or sub-rounded, clear or milky-white quartz 0.1-0.4mm (occasionally up to 0.8mm); sparse, well-sorted, rounded, black and red iron ore 0.2-0.5mm. Additionally matrix may contain sparse, greenish glauconite inclusions 0.1-0.2mm

Forms - flat rimmed vessel, lugged or handled vessel, vertical or horizontal incised parallel linear decoration and burnishing.

#### *F29 Coarse sand (1%)*

Fabric - Hard-medium fired, harsh to feel with uneven fracture. Colour variable; may be dark grey throughout, or may have mid-brown or reddish brown surfaces. Contains abundant, moderate-poorly-sorted, rounded or sub-rounded, clear or milky-white quartz 0.5-1mm (occasionally very coarse-up to 3.5mm); sparse, well-sorted, rounded, black and red iron ore 0.2-0.5mm. Additionally matrix may contain sparse, greenish glauconite inclusions 0.1-0.2mm

Forms - undiagnostic hand made vessels

#### *F30 Sand and calcareous inclusions (9%)*

Fabric - Medium-hard fired, sandy to feel with even fracture. Typically reddish-brown surfaces and dark grey core, although may be dark grey or brown throughout. Contains abundant, well-sorted, rounded or sub-rounded, clear or milky-white quartz 0.2-0.4mm; well-sorted rounded calcareous inclusions 0.4-0.7mm. May also contain sparse quantities of fine black or red iron ore.

Forms - undiagnostic hand made vessels

#### *F35 Micaceous (25%)*

Fabric - fairly hard fired with smooth surfaces, reduced dark grey-black throughout. Characterised by the presence of abundant fine white mica, particularly visible on the external surface. Contains abundant, well-sorted sub-rounded fine quartz, 0.1-0.5mm, and rare elongated voids, up to 1.5mm in size, where organic matter has burnt out.

Forms - round shouldered, open, flat and rounded rim vessels, flat base, burnished and incised vertical linear decoration  
Illustration - Fig 10, nos. 2 and 4.

### Condition

The pottery survives in poor to moderate condition. Soil conditions have had a damaging effect on most fabric types, particularly those containing organic material, which are heavily leached. The incidence of abrasion is high, and in many cases, vessel surfaces are totally degraded. In addition, a small quantity of pottery visible within deposits on site proved unrecoverable due to its fragmentary and poor condition.

Differences in terms of abrasion, average sherd weight and vessel:sherd ratio between the settlement and field system assemblages were only slight. For example average sherd weight was 7g for settlement and 5g for field system, and vessel:sherd ratio was 1:2 for settlement and 1:3.5 for field system. The fig-



Group	Group description	Fabric Type										Total
		F01B	F03	F04	F16	F19	F28	F29	F30	F35	F	vess:sh:wt
49	Internal boundary G48						1:3					1:3:7
50	Enclosure ditch G50					1:1	1:1		1:1	3:3		6:6:36
51	Enclosure ditch G50									1*:12		1:12:71
52	Enclosure ditch G50				1:1		1:1			0*:7		2:9:84
53	Enclosure ditch G50	1:2			1:1	1:2	4:5		4:4	3*:30		14:44:242
54	Roundhouse G54					1:2						1:2:43
55	Roundhouse G54					1:1						1:1:1
57	Roundhouse G56		1:1			2:2				1:1	6:6	10:10:138
59	Roundhouse G58					2:3	2:2			2:2		6:7:43
61	Roundhouse G60					2:3	3:4			3:6		8:13:79
67	Pits G66	1:2				1:1	1:2			1:2		4:7:38
68	Soakaway G68									1:2		1:2:19
69	Soakaway G68					2:6	1:2			3:9		6:17:94
70	Soakaway G68					3:4	2:2			1:3		6:9:80
9	Deposit in ditch G5/7						3:32					3:32:243
11	Boundary ditch G10			2:6			2:4	1:1	2:3	1:6		8:20:88
13	Boundary ditch G12	2:4				1:2				2:7		5:13:36
17	Ditch G16 recut major boundary									1:1		1:1:7
19	Ditch G18 recut of major boundary										2:2	2:2:1
23	Ditch G22 recut of major boundary								1:1			1:1:5
24	Ditch G22 recut of major boundary										1:5	1:5:2
45	Posthole G44									1:5		1:5:28
99	Posthole G98	1:2							1:1			2:3:6
4	Furrows G3											3:3:44**
1	Topsoil					1:2			2:4			3:6:27
97	Ungrouped features					4:5				1:3		5:8:48
96	Modern intrusions											1:1:7***
	<b>Total</b>	<b>5:10</b>	<b>1:1</b>	<b>2:6</b>	<b>2:2</b>	<b>22:34</b>	<b>21:58</b>	<b>1:1</b>	<b>11:14</b>	<b>25:99</b>	<b>9:13</b>	<b>103:242:1517</b>

\* cross-contexts counted only once, \*\* all med/post-med, \*\*\* all unid.

Table 1 Pottery assemblage from the excavations, with settlement and field system Groups separated (sherd:vessel count)

ures suggest the assemblage had been subject to extensive disturbance prior to final burial. This may have resulted from the dumping of pottery in middens, the spreading of manure on the fields or even the use of pottery to provide areas of hardstanding within the settlement.

None of the pottery shows evidence for repair or modification, and very few sherds bear attributes relating to use, in the form of sooting, residues or wear marks.

#### Sizeable assemblages and cross-contexts

Three features yielded in excess of 100g of pottery; two from the settlement and one from the field system. Given the size of ditch G50 it is perhaps not surprising that its secondary and tertiary fills yielded 71 sherds from 23 vessels (weighing 433g), although it is noticeable the majority of this materi-

al derived from the upper tertiary fill G53 (Table 1). The pottery from the terminal fill of roundhouse ditch G56 is perhaps slightly more unusual when compared to the other three excavated segments which yielded only two sherds in total (weighing 13g). It comprised eight sizeable pottery sherds, all from different vessels in three different fabrics (weighing 125g) (Table 2).

Fabric Type	Vess:sh:wt
F	6:6:4
F03	1:1:114
F19	1:1:7
<b>Total</b>	<b>8:8:125</b>

Table 2 Pottery assemblage from the terminal of ditch G56

Deposit G9 within field system ditch G5/7 is perhaps the most unusual. It yielded 32 sherds from three vessels (weighing 243g) representing 40% by sherd and 60% by weight of all the pottery from the field system. The pottery was all in the same fabric (type F28), but three different vessels were present indicated by variation in sherd thickness, colour and inclusion quantity.

The incidence of cross-contexts was restricted to enclosure ditch G50, which contained 36 sherds from the same vessel spread across all fills. This may indicate the episodic infilling of the feature with material from a midden in the vicinity of the ditch.

### Chronological discussion

The dating of the pottery assemblage is based on changes in form, decoration and to some extent fabric type. The transition from late Bronze Age/early Iron Age to early-middle Iron Age is marked regionally by three main changes that are reflected in the Topler's Hill pottery assemblage (Bryant 1997, 26). There was a change from the widespread use of flint as a tempering material to the use of sand and shell, along with the adoption of more rounded vessel profiles. In addition, external decoration becomes rare and where present comprises irregular scoring or fingernail/tip impressions.

*Late Bronze Age/early Iron Age* (5% of assemblage)  
Five undiagnostic flint tempered vessels (type F01B) constitute the earliest fabrics identified. One of these was recovered from ditch G12 and two from post-hole G98 W of the A1. The remainder derived from enclosure ditch G50 and pits G66 E of the A1.

*Early-middle Iron Age* (91% of assemblage)

#### Fabric

This group comprises a consistent assemblage of mainly quartz-rich fabrics. The predominance of the latter may, in part, indicate the greater suitability of these types for the manufacture of an increasing range of Iron Age vessel forms. It also, however, attests the influence of local geology upon pottery manufacture. The fabric types are broadly consistent with those recovered from nearby contemporary settlements at Stotfold, Beds. (c. 4km to the south), and Holwell Quarry, Herts. (c. 7km to the south-west) (Albion in prep.). However, manufacture is likely to have been highly localised. For example the largest fabric group recovered from Topler's Hill is micaceous type (F35). Although constituting over 27% of the assemblage (25 vessels), the type is poorly attested from the two

nearby contemporary settlements.

Fabrics are generally hard fired and uniformly reduced. A few examples have oxidised exterior and reduced interior surfaces, which may have been a deliberate effect, suggesting well controlled firing conditions. No firing faults, in the form of spalling, distortion or cracking were noted.

#### Form and Decoration

Diagnostic forms constitute seven percent of the assemblage and comprise round-shouldered vessels (Fig 10, no. 1) with either flat or rounded rims (Fig 10, no. 2). One open vessel was also noted (Fig 10, no. 4). Bases are generally flat and occasionally pinched out at the circumference. Single examples of a vessel with a lug or handle, and a sherd deriving from a possible storage jar were also recorded. Decoration is restricted to rare examples of fingernail and fingertip ornament (Fig 10, no. 3) burnishing and incised horizontal or vertical lines, conforming to the regional pattern (Knight 1984; Bryant 1995, 21).

#### *Late Iron Age*

Five sherds (weighing 83g) were recovered during field artefact collection but none from excavated deposits. These were in undiagnostic grog (F06), grog and sand (F09) and shell tempered (F07) fabric types. All are highly abraded and the shelly vessels were leached.

#### *Roman*

Eleven sherds (weighing 88g) were recovered during field artefact collection but none from excavated deposits. They comprised early Roman greywares (R06), samian (R01), oxidised sand tempered wares (R05) and shell tempered wares (R13). No diagnostic forms were present.

#### *Medieval*

Twenty-three sherds (weighing 241g) were recovered during field artefact collection and two sherds (weighing 20g) from excavated deposits. They comprise early medieval sand tempered fabrics (C01, C05 and C59A) and a single shell tempered sherd of developed St Neots-type (B07). Later medieval fabrics comprise oxidised wares (E03). Diagnostic forms include jars with everted rims, bowls, and jugs with strap handles.

#### *Post-medieval*

Forty sherds (weighing 399g) were recovered during field artefact collection and a single sherd (weighing



24g) from excavated deposits. Fabric types represented are principally glazed earthenwares (P01), with single sherds of Blackware (P14) and salt-glazed stoneware (P37).

**CERAMIC BUILDING MATERIAL**

All the ceramic building material (521 pieces) was recovered during field artefact collection. The majority of fragments derive from oxidised sand tempered flat roof tiles of peg type, and are of late medieval/post-medieval date. The fragments are generally small and abraded.

**FIRED/BURNT CLAY**

Twenty amorphous fired and burnt clay fragments weighing 107g were recovered (Table 3). All are sand tempered, and survive in variable condition. The majority are hard fired and robust, while a small quantity are friable and powdery. Although none bear diagnostic features, their presence suggests they may derive from features such as roundhouses, or smaller structural elements such as ovens or hearths.

Group	Description	Quantity
52	Enclosure ditch G50	1:21
61	Roundhouse G60	7:51
70	Roundhouse pit G68	1:2
15	Ditch G14	11:33
		<b>20:107</b>

Table 3 Incidence of fired and burnt clay (fragment:weight)

**QUERNSTONE**

A single fragment (weighing 44g) of continental lava stone, likely to derive from a rotary quern was recovered during field artefact collection. The use of this material throughout both the Roman and medieval periods is well attested.

**STRUCK FLINT**

Thirty-two struck flints were recovered during field artefact collection and seven from the open area excavation (total weight 496g). The flints from excavated deposits comprise four waste flakes, two core fragments and an end-and-side scraper. Two of these occurred in features containing early-middle Iron Age pottery (Table 4). However, given the small size and nature of the flint assemblage, it cannot contribute to the debate on the use of flint in the Iron Age (Young and Humphrey 1999).

The majority of the struck flint recovered from field artefact collection comprised debitage. Core products include flakes, retouched and possible core rejuvenation flakes. The presence of multi-platform flake cores and waste flakes struck with a hard hammer suggest a late Neolithic /early Bronze Age date for the assemblage. Tools were restricted to a probable scraper and piercer. A single blade suggests an earlier component.

**THE ECOFACTS**

**ANIMAL BONE**  
Ellen Hambleton

**Introduction**

All animal bones recovered from the excavation were examined as part of the assessment process. The small size of the assemblage severely limits the potential for meaningful and reliable conclusions concerning the role of animal species at the site. The fragmentation and surface erosion of the bone has undoubtedly resulted in loss of ageing, metrical, butchery and gnawing data as well as resulting in a high proportion of unidentifiable material. This has further reduced the analytical potential of this small assemblage. The following discussion is based on

Group	Description	Quantity	Description	Pottery
55	Roundhouse G54	1:19	Core fragment	✓
53	Enclosure ditch G50	5:39	Flakes and core fragment	✓
1	Ploughsoil	1:38	Scraper	
		<b>7:96</b>		

Table 4 Incidence of flint (fragment:weight)

the assessment report which is stored with the project archive and includes a text report, database and spreadsheet.

### Species

A total of 165 animal bone fragments were recovered, 37% of which were identified to species. A further 45 small fragments of bone were recovered from sieved environmental samples, only two of which (sheep/goat tooth fragments) were identified to species.

Species present include cattle, sheep/goat, horse and pig (Table 5). The assemblage is too small to provide reliable information concerning the relative economic importance of different species at the site and any conclusions drawn must be treated with caution. However, the lack of wild species and the predominance of cattle and sheep/goat, which are present in relatively equal numbers, is a pattern that falls within the range of variation seen in other Iron Age settlement assemblages from the East Midlands and Eastern England (Hambleton 1999). A broadly similar pattern of abundance among the main domestic species can be seen in the Iron Age assemblage from Wilby Way, Wellingborough (Maltby pers comm.). However, assemblages from several other Iron Age sites in the region such as Pennyland (Holmes 1993), Hartigans (Burnett 1993) and Wavendon (Dobney and Jaques 1996), both Milton Keynes, exhibit considerably higher percentages of cattle than were found at Topley's Hill.

Species	Total no. fragments	%
Cattle	30	49%
Sheep/Goat	28	46%
Horse	2	3%
Pig	1	2%
Unidentified	104	
<b>Total</b>	<b>165</b>	

Table 5 Animal bone count by species

The largest assemblage derived, perhaps not surprisingly, from the largest feature, enclosure ditch G50. The total assemblage from this feature included sheep/goat (17 fragments), cattle (7 fragments) and horse (1 fragment). The higher proportion of sheep/goat compared to cattle remains is in contrast to the pattern seen in the overall assemblage, however this need not be significant as such small samples are subject to bias. It should be noted that these fragment counts include seven loose teeth of sheep/goat from tertiary fill G53, which would account for the appar-

ent high abundance of sheep/goat from this feature.

The availability of additional information in the form of measurements and epiphyseal fusion and toothwear ageing data (Table 6) was severely limited due to the small size and fragmentary nature of the sample.

Species	No. fragments with fusion data	No. mandibles with teeth	No. measurable fragments
Cattle	12	1	4
Sheep/goat	2	4	1
Horse	1		1
<b>Totals</b>	<b>15</b>	<b>5</b>	<b>6</b>

Table 6 Abundance of available ageing and metrical data

### Provenance

The majority of the animal bone derived from settlement features E of the A1, with only 16 fragments from the field system to the W (Table 7). Very little faunal material was recovered from pits and the bulk of material came from ditch fills, in particular large enclosure ditch G50. Secondary and tertiary fills contained the majority of the bone. Two cattle limb bones from the drainage gully around roundhouse G56 are noticeably larger than the otherwise small sized Iron Age cattle from the rest of the assemblage and may be intrusive.

### HUMAN BONE

Ellen Hambleton

Two fragments of human bone were recovered from a fill G67 of pit 102, one of the pits G66 adjacent to major enclosure ditch G50. Preservation was very poor with considerable erosion and loss of surface detail. The bones were identified as shaft fragments from a left humerus. Although the fragments did not join they almost certainly come from the same bone. The bone provided no reliable ageing information but the size is comparable to that of an adult or late adolescent individual. It is not uncommon to find occasional fragments of disarticulated human remains within pits and ditches on British Iron Age settlement sites (Cunliffe 1991, 505).

### CHARRED PLANT REMAINS

Ruth Pelling

### Introduction

On site very few deposits exhibited evidence of



Group	Description	Cow	Sheep/goat	Pig	Horse	Unid.	Total
8	Boundary ditch G7	1	0	0	0	0	1
9	Deposit in ditch G5/7	1	0	0	0	0	1
11	Boundary ditch G10	2	0	0	0	8	10
17	Ditch G17 recut of major boundary	1	0	0	0	1	2
23	Ditch G23 recut of major boundary	2	0	0	0	0	2
49	Internal boundary G48	4	2	0	0	11	17
50	Enclosure ditch G50	0	2	0	0	0	2
51	Enclosure ditch G50	2	0	0	1	4	7
52	Enclosure ditch G50	1	0	0	0	2	3
53	Enclosure ditch G50	4	15	0	0	35	54
57	Roundhouse G56	8	3	1	0	12	24
59	Roundhouse G58	1	1	0	0	5	7
61	Roundhouse G60	0	3	0	1	9	13
67	Pits G66	2	1	0	0	8	11
69	Soakaway G68 assoc. with roundhouse G60	1	0	0	0	1	2
70	Soakaway G68 assoc. with roundhouse G60	0	1	0	0	8	9
							165

Table 7 Animal species by Group (number of fragments)

potential to preserve charred plant remains. However, 14 samples were taken from a range of feature types and spatial locations. Any charred seeds or chaff were provisionally identified and an approximation of abundance was made as part of the assessment stage of the project. Detailed analysis was not carried out, as it was not likely to extend the species list.

### Methodology

The volume of deposits processed was small, ranging from 6 to 10 litres for each sample. Samples were processed by bulk water flotation and flots collected onto 0.5mm mesh sieves. Dried flots were then scanned under a binocular microscope at magnification of x10 to x20.

### Results

The samples all produced small flots, generally around 5ml in volume, but up to 20ml. Many contained moderate quantities of modern rootlets.

Charred cereal grain was recorded in 11 samples, while chaff and weed seeds were noted in three. In most cases the number of items estimated is low (less than 10 for each category). Sample 9 (roundhouse drainage gully fill G57) produced a slightly greater amount of chaff with up to 20 *Triticum spelta* (spelt wheat) glume bases. Cereal grains noted included *Triticum spelta* and *Hordeum vulgare* (barley). Occasional asymmetric *Hordeum vulgare* grains indicate the presence of six-row variety. The weed category included *Rumex* sp. (docks) seeds, small seeded Gramineae (grass) and a single

*Arrhenatherum elatius* (false oat-grass) tuber in sample 9. *Triticum spelta* and *Hordeum vulgare* were the principal cereal species recorded from Iron Age samples at Biddenham Loop, Beds. (Albion in prep.) and also form the basis of the cereal economy for much of southern and central England during this period.

Charcoal was present, usually in small quantities in 11 samples. *Quercus* sp. (oak) was most commonly identified while occasional fragments of Pomoideae (apple, hawthorn etc) were also provisionally identified.

### MOLLUSCS

Mark Robinson

Mollusc shells, mostly of dry ground open country species, are present in seven samples. *Trichia hispida* gp., *Vallonia costata* and *V. excentrica* are very numerous in sample 13 (settlement enclosure ditch G50), suggesting dry open conditions. However, there is also a slight presence of *Anisus leucostoma* and *Lymnaea truncatula*, which were perhaps associated with temporary puddles of stagnant water in the ditch bottom. Sample 5 (major field boundary ditch G22) contains a somewhat different dry ground open country fauna in which *Pupilla muscorum* and *Vallonia excentrica* predominate. Molluscs of shaded habitats are sparse in all the samples.

### DISCUSSION

The open area excavations were very limited in extent. Nevertheless, when combined with the



results of the non-intrusive evaluation they make a useful contribution to the debate on the origins and nature of the early-middle Iron Age landscape. The chronological discussion below is followed by a critical review of the methodologies used during the investigations.

#### LIMITATIONS OF THE CHRONOLOGICAL FRAMEWORK

The chronological framework for Toppler's Hill is based on an established pottery sequence reflected in the Bedfordshire Type Series. As is the case nationally, the framework for the pre-Roman Iron Age is only understood in outline terms (Bryant 1995, 1997 and 1999, 25; IARS 2001, 2-7). The pottery chronology at Toppler's Hill is divided into late Bronze Age/early Iron Age (800-400/300BC) and early-middle Iron Age (600-400/300). The transition is marked by changes in pottery forms and fabrics (Bryant 1997, 26). The lack of diagnostic pottery forms, stratigraphic relationships and radiocarbon determination (*see below*) precludes a more refined dating than early-middle Iron Age for the settlement and field system.

#### EARLIER ACTIVITY

Many of flints recovered from field artefact collection and excavation had been struck by a hard hammer, which is suggestive of a late Neolithic/early Bronze Age date. Other pieces are associated with Iron Age pottery from settlement features. However, the small quantity prevents any contribution to the debate on the use of flint during this period (Gardiner 1993, 458; Pollard 1996, 108-109; Robins 1996, 269-70; Young and Humphrey 1999).

A small quantity of flint tempered pottery was recovered from both the settlement and the field system. This fabric is characteristic of the late Bronze Age/early Iron Age in the region (Bryant 1995, 17 and 21). At Toppler's Hill it was found in association with later pottery fabrics and, although exhibiting no signs of abrasion, is presumed to be residual. It does, however, suggest that a late Bronze Age/early Iron Age settlement may have existed in the vicinity. Settlements of this period are still relatively rare within the region. This is in part because they are difficult to detect, often being unenclosed, dispersed over a large area and lacking large quantities of domestic debris, for example Yarl's Wood (this volume).

#### EARLY-MIDDLE IRON AGE SETTLEMENT

A previously unknown early-middle Iron Age settle-

ment and field system has been located. Settlements during this period are believed to be concentrated on lighter soils and along river valleys (Bryant 1997, 25). The site can be added to a small, but increasing, number of settlements of this period situated on clay soils (*ibid.* 1995, 22-4).

#### Origins

The origins of the settlement are difficult to determine, in part due to the restrictive nature of the investigations. It is possible, given the presence of earlier pottery, that the settlement developed from earlier, probably unenclosed, occupation of the hill-top.

#### Nature

Geophysical survey has identified a series of eight inter-linked ditched enclosures extending over at least *c.* 0.8ha. Many of the enclosures contained buildings and pits suggestive of domestic activity and, therefore, presumably, they were occupied by individual households.

In contrast to Toppler's Hill the majority of settlements from the region for this period are unenclosed (Bryant 1997, 25). Nationally, as well as regionally, where enclosed settlements do occur they usually comprise a single or occasionally double enclosures (*see* Cunliffe 1991, Fig 12.11 and Fig 12.14; Hunn 1996, Fig 3-8). No exact parallels could be found for the arrangement of interlinked enclosures (*see* Hunn 1996, Fig 3-8). Perhaps the closest parallel comprises an arrangement of seven interlinked enclosures at Hinksley Road, Flitwick, Beds. (Luke 1999, Fig 5). However, this settlement was different in that it comprised one main (larger) enclosure containing round-houses with attached smaller enclosures, which contained no evidence for domestic occupation (*ibid.* 82). At Toppler's Hill no "main" enclosure could be identified, although L6 would appear to be the largest.

Although we cannot be sure that the different enclosure units at Toppler's Hill were contemporary their arrangement suggests this is possible. Broadly speaking the enclosures can be divided into four units L5, L6, L13 and L14 based on their different shapes and layouts. The agglomerations of family/households units that this suggests are relatively rare, although Hill believes they occur more frequently after *c.* 300BC, for example Catswater, Cambs. (1995a, 58-9).

Activity at enclosed settlements is believed not to have been restricted solely to enclosures, for example Pennyland, Milton Keynes (Williams 1993, Fig



5) and Twywell, Northants. (Jackson 1975, Fig 3). However, it is often difficult to demonstrate that activity outside enclosures is contemporary with that inside. All that can be said for Topler's Hill is that a small number of geophysical ditch- and pit-type anomalies were detected adjacent to the enclosures.

#### **The enclosures ditches**

The geophysical survey suggested that the enclosure boundaries comprised wide ditches and this was confirmed by the excavation of ditch G50. At c. 4.3m wide and c. 1.5m deep it was slightly bigger than the settlement enclosure ditch at Hinksley Road, Flitwick (Luke 1999, Fig 6). It would seem inevitable that the large quantity of material produced by the digging of this and other ditches would have been utilised to construct a bank. Unfortunately the ditch fills contained no evidence for bank material. However, on the N side there is a gap of c. 2.3m, between the enclosure ditch G50 and the soakaway pit G68, suggesting that this space could have been utilised for a bank. This would explain why the soakaway did not run into the enclosure ditch. If the pits adjacent to the S side of the ditch were contemporary, there is no room for a bank on this side.

It was not possible to establish the location of entrances or even the full extent of any enclosures. The entrances may have been located on the destroyed western side, although Hill believes that settlements like houses would normally be entered from the direction of the rising sun i.e. E to SE (1995a, 54). It is possible that relatively small entrance gaps may not have been detected by geophysical survey. Many of the enclosures appear to have been sub-divided given the identification of ditch-type geophysical anomalies within their interiors.

The absence within the excavated ditch fills of any evidence for the removal of the bank and the way most geophysical and excavated features appear to respect the enclosure ditches, suggests that the enclosures, once established, were retained throughout the life of the settlement.

#### **Internal activity**

Evidence for activity within the enclosures comprised roundhouses and pits (from geophysical survey and excavation), and postholes (only from excavation).

#### *Roundhouses*

Evidence for five roundhouses, in the form of penannular ditches, was located in three enclosures.

Two of these were subject to hand excavation and are therefore known in greater detail. The ditches are presumed to have served a drainage function around the outside of roundhouses. They had projected diameters of between c. 13m and 18m, and are comparable to the sizes of roundhouses G105 and G109 at Hinksley Road, Flitwick (Luke 1999, 51). No structural evidence for walls survived at Topler's Hill. Both ditches had gaps on the E side suggesting this was the location of the entrance, a common feature of Iron Age roundhouses (Oswald 1997).

The ditch surrounding one roundhouse had been redug on at least two occasions. Although this does not necessarily mean the entire house was rebuilt, each new ditch provided a greater amount of room in the interior. Roundhouse G60 had an elongated, deep pit at one of the ditch terminals. This may have functioned as a soakaway leading water away from the house. Elsewhere pits in similar proximity to roundhouses have been interpreted as water tanks, quarries and even latrines. The latter was suggested for House 3 at Mingies Ditch, Oxon. (Allen and Robinson 1993, 49).

#### *Pits*

Clusters of large pit-like geophysical anomalies occurred within three enclosures. Based on the size of the anomalies these are large enough to have been storage pits (Cunliffe 1991, 375-376). Within the excavation area five shallow pits G66 were located in an alignment parallel to but adjacent to enclosure boundary ditch G50. Although their function is uncertain their profile and shallow depth would suggest they were not suitable for storage. Given their peripheral location within the enclosure they may have been dug as quarries in an area where no other activity was taking place. However, their fills contained only a relatively small quantity of domestic debris, surprising given that if they had been dug as quarries they are likely to have been left open, thus allowing domestic debris to accumulate.

#### *Ritual and rubbish*

Domestic debris recovered from the settlement-type features mainly comprised small quantities of pottery, fired and burnt clay, animal bones and charred plant remains. The majority of the pottery derived from three deposits: substantial enclosure ditch G50, the terminal of roundhouse ditch G56 and ditch G5/7.

The limited extent of the investigations precludes a significant discussion on ritual and rubbish (Hill 1995b). However, a number of aspects can be high-



lighted. Of the five terminals of roundhouse drainage ditches only one contained a significant quantity of pottery. This was part of the earliest roundhouse which may have been rebuilt, larger, on two occasions. Deposit G9 contained one of the largest assemblages of pottery from the investigations. This was particularly significant because it derived from a fairly small ditch within the field system (not the settlement). Although it does not fit into Hill's suggestion of the significance that can be attached to the distribution of decorated, fine or uncommon fabrics (1995b, 109), it is an unusual occurrence presumably associated with deliberate smashing, 'killing' of pottery.

Pit 102 (within alignment G66 adjacent to enclosure ditch G50) contained two fragments of a human left humerus. Settlements of this period often produce human bone fragments, most commonly skulls, which superficially appear to indicate the 'casual' treatment of dead bodies (Wilson 1981, 130-131; Bryant 1997, 26). However, Hill and others have argued that individual bones usually occur in peripheral locations within settlements, suggesting their deposition may have been deliberate (1995b, 105-108). The human bone from the Topler's Hill would, therefore, fit this pattern.

#### The field system

Weak cropmarks on aerial photographs suggest that a field system, on different alignments, extended over c. 10ha to the W of the settlement. In places the cropmarks are ambiguous and confused by similar trends which appear to be associated with the underlying geology. It was not possible to establish a direct relationship between the settlement and the field system, although the recovered pottery suggests they were contemporary.

An integral part of the field system is a NW-SE ditch. This was clearly an important boundary because it had been redug on a number of occasions and the majority of the perpendicular cropmarks only occur to the S of it. Overall, in plan, the fields comprise long axes, orientated SW-NE, with a smaller number of perpendicular boundaries. These are the hallmark characteristics of a coaxial field system (Williamson 1993, 24-25), which elsewhere in the country have been shown to be Bronze Age, for example the Dartmoor Reaves (Fleming 1988) and Iron Age or later, for example in East Anglia (Williamson 1987). The apparently systematic layout, often ignoring local topography, suggests that they were consciously planned rather than allowed to develop organically. At Topler's Hill they may have

been associated with expansion onto previously unsettled areas of clay upland.

The status of the low levels of domestic debris recovered from the field system is uncertain (pottery from G9 has been discussed above). It may reflect the partial manuring of the fields with middens containing settlement rubbish. However, there is only a slight difference in the average sherd weight and vessel:sherd ratio between the settlement and field system pottery assemblages. Given the presence of occasional postholes, it is possible that some of the material was deposited during short-term activity, undertaken within the field system.

#### Agriculture

There is sufficient information to demonstrate that mixed farming was undertaken which was the norm for this period (Hill 1995a, 60). However, the charred plant and animal bone assemblages are too small to comment on the relevant importance of plants versus animals, or of particular species.

Although it is presumed that the field system, which is extensive, was utilised for cereal cultivation, the charred plant remains do not suggest large-scale production. However, given the small number, volume and restricted spatial distributions of the samples, the results may be misleading. The remains are likely to have derived from background scatters of cereal processing waste and damaged grain, which has been distributed in deposits across the site.

The predominance of cattle and sheep/goat, which are present in relatively equal numbers, is a pattern that has been seen in other Iron Age settlement assemblages from the East Midlands and Eastern England (Hambleton 1999). Horse and pig bones were also present in small numbers. The grazing of animals during the summer probably took place in the river valleys several kilometres from the settlement but they would presumably have been corralled much nearer during winter months. No wild species were identified, possibly a reflection of taboo and ritual (Hill 1995a, 60).

#### Craft production

As is so often the case with farmstead-type settlements there is no direct evidence for craft production at Topler's Hill. However, there is indirect evidence for localised production of pottery. The commonest pottery fabric types from the site, constituting over a quarter of the assemblage, are micaceous wares. This fabric was not found in quantity at the contemporary settlement at Stotfold, c. 4km to the S (Albion in



prep.) possibly suggesting it was produced at Topler's Hill for local use. It should, however, be noted that no firing faults, in the form of spalling, distortion or cracking were noted on the pottery assemblage.

### The wider Iron Age landscape

Very few sites of this period have been positively identified in the vicinity of Topler's Hill. One exception is at Norton Road, Stotfold, c. 4km to the S, excavated in the late 1990s. Here an enclosed farmstead comprising two roundhouses with associated pits and a post-built structure was identified (Albion in prep.).

There are a large number of undated cropmark enclosures in the vicinity (Fig 1). The majority, unlike Topler's Hill, are located along the valley of the River Ivel, for example near Broom, Stotfold and Newnham (Fig 1). Many of these enclosures, including those in Hertfordshire (Hunn 1996, Fig 2), have been assumed to be late Iron Age or Roman in date (Bryant 1995, 24). However, this was also the case with the Topler's Hill enclosures prior to excavation. It is therefore likely that some of these undated enclosures will also prove to be early-middle Iron Age in date, thus considerably enhancing the distribution of known settlements of this period.

### LATE IRON AGE ACTIVITY

Five sherds of late Iron Age pottery were recovered from field artefact collection. No additional pottery of this period was produced from the open area excavation despite the fact that two of the sherds recovered from field artefact collection were found in the vicinity. Therefore there is no evidence that the settlement continued into this period.

### ROMAN ACTIVITY

Prior to open area excavation the discovery of Roman material (11 pottery sherds and a quernstone) during field artefact collection had led to the conclusion that the enclosures were part of a Roman roadside settlement. However, the hand excavation of features within the open areas has demonstrated this was not the case.

It is still tempting, given Topler's Hill location halfway between the Roman settlements at Baldock, Herts. and Sandy, Beds., to suggest a settlement of this period existed. However, it has been known since the 1950s that low densities of Roman pottery occur in areas well away from settlement (Rhodes 1950, 13). This phenomenon was observed at Maddle Farm, Berks. where pottery occurred 2km

from the nearest settlement and is presumed to be the result of manuring of the fields (Gaffney and Tingle 1989, 210). Its presence at Topler's Hill may equally reflect the proximity of a major Roman settlement, possibly a villa c. 1.5km to the S.

### MEDIEVAL

The 23 medieval pottery sherds were concentrated towards the S of the field E of the A1 within 200m of surviving earthworks (HER 2848). The finds are therefore presumed to be associated with the medieval settlement in this area (Hall 1991, Fig 2).

### CRITICAL REVIEW OF THE METHODOLOGIES USED DURING THE INVESTIGATIONS

Various methods of archaeological investigation were utilised at Topler's Hill. It was observed that if any of the methods had been undertaken in isolation, the conclusions drawn about the site would have been very different. It was therefore proposed in the updated project design that the different methods utilised would be reviewed as part of the post-excavation analysis and the publication would discuss their limitations.

### Aerial photograph analysis

It is well known that aerial photographs can reveal evidence for past human activity in the form of cropmarks (Wilson 2000). Although there had been poorly recorded discoveries of artefacts in the vicinity of Topler's Hill for some time, it was the identification of cropmarks that provided the first accurate locational information for the settlement and field system.

A relatively large number of aerial photographs of the area exist. However, the settlement enclosures and field system were only visible in 1996 when, for the first time, the site was photographed in July. Although late May to early July are considered the best months for cropmarks to be visible (Wilson 2000, 81), the "window" of time within which they occurred at Topler's Hill was clearly extremely narrow.

The fact that only some of the ditched enclosures were visible as cropmarks is interesting. This may be a reflection of the different ditch dimensions (width and depth) or the nature of their filling material.

The field immediately to the W of the A1 has never revealed cropmarks despite the presence of ditches in the excavation area. This may be because this field is in different ownership and therefore the crops are planted within a different agricultural regime to those E of the A1. Wilson states 'in evalu-



ating cropmarks a fundamental rule is not to rely on negative evidence' (2000, 84). This is because when cropmarks are visible the probable causes can be inferred, but when absent no inference can be made without additional information on the nature of the land (including depth and overburden) and crop regime. The small dimensions of many of the underlying ditches would probably make them less likely to affect the growth of a crop. However, one might have expected the major boundary ditch in the SW corner of the excavation to show up, especially as it does further to the W. Its absence is almost certainly a reflection of its position in the corner of the modern field where agricultural practice, particularly machine turning, will have affected crop growth.

Further to the W there were a large number of cropmarks, whose diffuse and irregular edges suggested a possible geological cause. It is unfortunate that these share the same alignment as cropmarks more likely to be of human origin inevitably leading to some confusion in identification. A similar situation at Hinksley Road, Flitwick, prevented the identification of an Iron Age settlement enclosure based on cropmark evidence alone (Luke 1999, 46).

### Geophysical survey

The geophysical survey was undertaken by GSB Prospection and comprised magnetometry. This detects magnetic variations (anomalies) between topsoils, subsoils and the underlying natural strata and thus should make it possible to detect buried ditches and pits (Clark 1990, 78-80). Initially scanning was undertaken, comprising a rapid walkover during which no readings were recorded (*ibid.* 83-89). This was followed by detailed, recorded survey in areas where potential archaeological anomalies had been detected during scanning.

Ditch-type anomalies coincided with the position of the cropmarks on the 1996 aerial photograph. However, the geophysical survey indicated a far more extensive and interlinked enclosure system. In addition ditch- and pit-type anomalies were identified within the interior of the enclosures suggesting many were the focus of domestic activity. A comparable situation was observed at Norse Road, Bedford, where geophysical survey located considerably more potential archaeological features than suggested by aerial photographs (Dawson and Gaffney 1995, 107). At Topley's Hill, where excavated, the anomalies which did not show up as cropmarks proved to be small and shallow which may explain their absence.

Several pennanular arrangements of ditch-type anomalies were identified leading to the suggestion

that these represented drainage ditches surrounding roundhouses. However, the two roundhouses within the excavation area were not clearly visible as geophysical anomalies. This is probably due in part to their location on the edge of the survey area in proximity to the field boundary.

Despite the presence of ditches W of the A1, no significant anomalies were located during scanning. This is probably, in the main, a reflection of their size (shallow and narrow), but the ditches of the major boundary to the SW were more substantial. It is likely that their sterile infilling, along with the presence of a wire fence and overhead cables around the perimeter of the field made these undetectable.

### Field artefact collection

The presence of artefacts within ploughsoil is sometimes indicative of underlying archaeological features (*see* Foard 1978). Where evidence, such as cropmarks and geophysical anomalies, indicate the presence of sites (as at Topley's Hill) the presence of artefact scatters in their proximity is often used to assist in classification and dating (Haselgrove 1985, 7; Gaffney and Tingle 1989).

Interestingly, the field artefact collection at Topley's Hill produced only a small number of late Iron Age/Roman finds (and none of early-middle Iron Age date). It was originally suggested that the Roman finds probably indicated the date of the cropmark and geophysical anomalies (BCAS 1998, 23). After all, it is not uncommon for ploughsoil to produce small quantities of artefacts where subsequent excavation demonstrates the presence of contemporary settlement activity. For example at Maxey East, Cambs. only six Iron Age sherds were recovered from the ploughsoil, although subsequent excavation produced at least 500 sherds (Pryor *et al* 1985, 46).

A total of 238 sherds of Iron Age pottery (weighing *c.* 1.5g) was recovered by hand excavation at Topley's Hill including six sherds recovered during machine excavation of the ploughsoil. It is now clear that the artefact assemblage recovered from the ploughsoil provided a misleading date for the underlying settlement. There may be a number of possible reasons for this.

Haselgrove has described the complex processes which may be involved in the creation of a ploughsoil assemblage over a former settlement (1985, 16). These start with deposition (deliberate, accidental or rubbish), but are complicated by a range of post-depositional processes (scavenging, disturbance by later activity, removal of primary rubbish etc). These issues will not be repeated here as they refer to the



significance of artefact scatters, rather than the possible reasons that a ploughsoil assemblage does not reflect the assemblage from underlying features.

It has often been presumed that certain fabrics, especially those with shell tempering, are more vulnerable to destruction within ploughsoil (Pryor *et al* 1985, 46). However, the presence of shell and grog tempered fabrics of late Iron Age and medieval date within the ploughsoil at Topler's Hill suggests this was not an explanation in this case. In addition the pottery assemblage recovered by excavation was generally hard fired and therefore should have survived in the ploughsoil.

The ground and weather conditions at the time of artefact collection appeared to be nearly ideal for the time of year and had been inspected by the CAO who gave his approval. Four weeks had passed since ploughing, allowing sufficient time for any clods of earth containing artefacts to have been broken down by agricultural activity (the field E of the A1 had been harrowed) and nature (September rain). A 10% sample collection was undertaken by five experienced archaeologists over two days when the light was good with little shadow.

One factor that may have biased the collection was the requirement of the Brief to collect all artefacts including medieval/post-medieval brick/tile. This material was extensive (521 fragments), highly visible (red in colour) although small in size. The identification and collection of so much brick/tile may have obscured other material. In the future it may therefore be more appropriate to undertake two episodes of collection: one concentrating on tile/brick and a second on other material.

It is clear from our experiences at Topler's Hill that 'a site cannot be characterised by field survey [i.e. field artefact collection] alone' (Pryor *et al* 1985, 46).

#### **Trial excavation**

Trial excavation was confined to that part of the road corridor that was to be subject to topsoil removal ahead of construction works. Therefore to the E of the A1 the trial trenching was only undertaken away from the enclosures identified as cropmarks and geophysical anomalies because no topsoil was to be removed from this area. The trenches confirmed the absence of archaeological remains away from the enclosures. On the W side of the A1 they located an area of late Bronze Age/early Iron Age activity, which had not been detected by any of the other methods of investigation. The latter was probably in part due to its location adjacent to the field boundary

making the identification of cropmarks and geophysical anomalies problematic.

#### **Open area excavations**

Although the evaluation had served its purpose in terms of the planning process, if open area excavation had not been undertaken the settlement enclosures would have been classified as a Roman roadside settlement. After all, its location adjacent to a Roman road and the results of field artefact collection had suggested a Roman date was most likely. It was therefore a major surprise when open area excavation demonstrated that the settlement was in fact Iron Age in date.

The limited extent of the open area excavations means we cannot pretend to fully understand the origins, nature and economic framework of the settlement. However, the 'keyhole' that was available for examination has provided a broad understanding of its date, internal organisation and economic basis. The hand excavation strategy (i.e. what, where and how much was dug) was designed to provide sufficient information to address the issues of dating, sequence, nature and infilling. Ditch terminals and changes in alignment were routinely examined while other segments were dug to provide an even coverage. The IARS has recently addressed the issue of the location of sample excavation segments, along with the contentious subject of optimum sample size, i.e. how much of a ditch should be hand-excavated (2001, 9-10). They have suggested that 20% should be regarded as a minimum for drainage gullies around buildings and enclosure ditches. At Topler's Hill the ditches within the settlement were subject to 35% excavation, which appears to have been adequate to provide the required information. For example, only the terminal of the drainage ditch associated with G56 contained significant quantities of domestic debris. It is inevitable with any sampling strategy that some information will be lost, however, although desirable, a larger sampling coverage may not have added significant information in this case.

With regard to the ditches within the field system, the same sampling strategy was implemented although a smaller percentage was excavated. It should be noted that the discovery of 'special' deposit G9 did not occur in one of the segments targeted to locate such a deposit i.e. the terminals.

It was also fortuitous that the ditched boundary which appears to have been an integral part of the system, occurred within the excavation area, even if it was in the corner. Based on the pottery recovered from this ditch it was thus possible to demonstrate the



field system was contemporary with the settlement.

#### Post-excavation

Given the absence of a refined chronology for the Iron Age, both regionally and nationally, it is perhaps unfortunate that no multiple single-entity radiocarbon determinations were undertaken (IARS 2001, 6). Two deposits may have been appropriate for such work because they were relatively uncontaminated, contained significant pottery assemblages and suitable charred plant remains. However, the value of only two determinations from adjacent features within a much larger settlement would have been limited in terms of the chronology of the Topler's Hill. However, as part of a much larger programme of radiocarbon determinations for the Iron Age, it may eventually have made a small contribution to refining the chronology for this period.

#### SUMMARY/CONCLUSIONS

It is clear from the review of the investigative techniques utilised at Topler's Hill that, in the main, the staged evaluation approach was highly effective in determining the nature and extent of archaeological remains within a proposed development. These were two of the requirements needed to assess the impact of the road scheme at the design stage. It is interesting to note that if any of the stages had been undertaken in isolation a very different picture of the site would have been produced.

It is perhaps unfortunate that no trial trenching was undertaken within the settlement area. This may have made a significant contribution to understanding the origins and development of the settlement. However, the other evaluation techniques were highly effective in determining the location and nature of the archaeological remains. Both the evaluation and open area excavations were restricted to what was required for the design, and later, construction of the much needed road improvements. This project was undertaken as a consequence of developer-led archaeology and therefore, at the evaluation stage, inevitably focussed on the impact of the development rather than on archaeological research agendas.

The evaluation provided sufficient information to ensure that the majority of a previously unknown early-middle Iron Age settlement was preserved *in situ*. In addition, our understanding of this type of settlement in this region has been significantly increased.

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