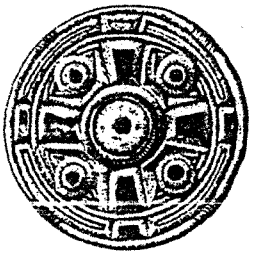

Archaeological Field Unit

Post-excavation assessment of archaeological work at Black Horse Lane, Swavesey

Judith Roberts

2001

Cambridgeshire County Council

Report No. PXA31

Commissioned by MacLean Homes (East Anglia) Ltd

Post-excavation assessment of archaeological work at Black Horse Lane, Swavesey, 1999

(incorporating an assessment of the 1997 excavation and 1998 evaluation)

Judith Roberts
April 2001

Editor: Paul Spoerry

with contributions by H. Duncan, S. Kemp, J. Rackham, D. Schlee, P. Spoerry and S. Willis

Report no. PXA 31

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Post-excavation assessment of archaeological work at Black Horse Lane, Swavesey, 1997-1999
(TL360/688)

This document assesses the potential for post-excavation analysis of the site archive from archaeological investigations carried out between 1997 and 1999.

1 INTRODUCTION

The final phases of work at Black Horse Lane were completed in advance of development on the western edge of Swavesey by McLean Homes (East Anglia). Much of the area investigated had been covered by agricultural or industrial buildings since the mid-nineteenth century. Building, demolition and removal of foundations has caused considerable disturbance. Evaluations and excavations on the site in 1997 and 1998 identified the survival of prehistoric and medieval remains.

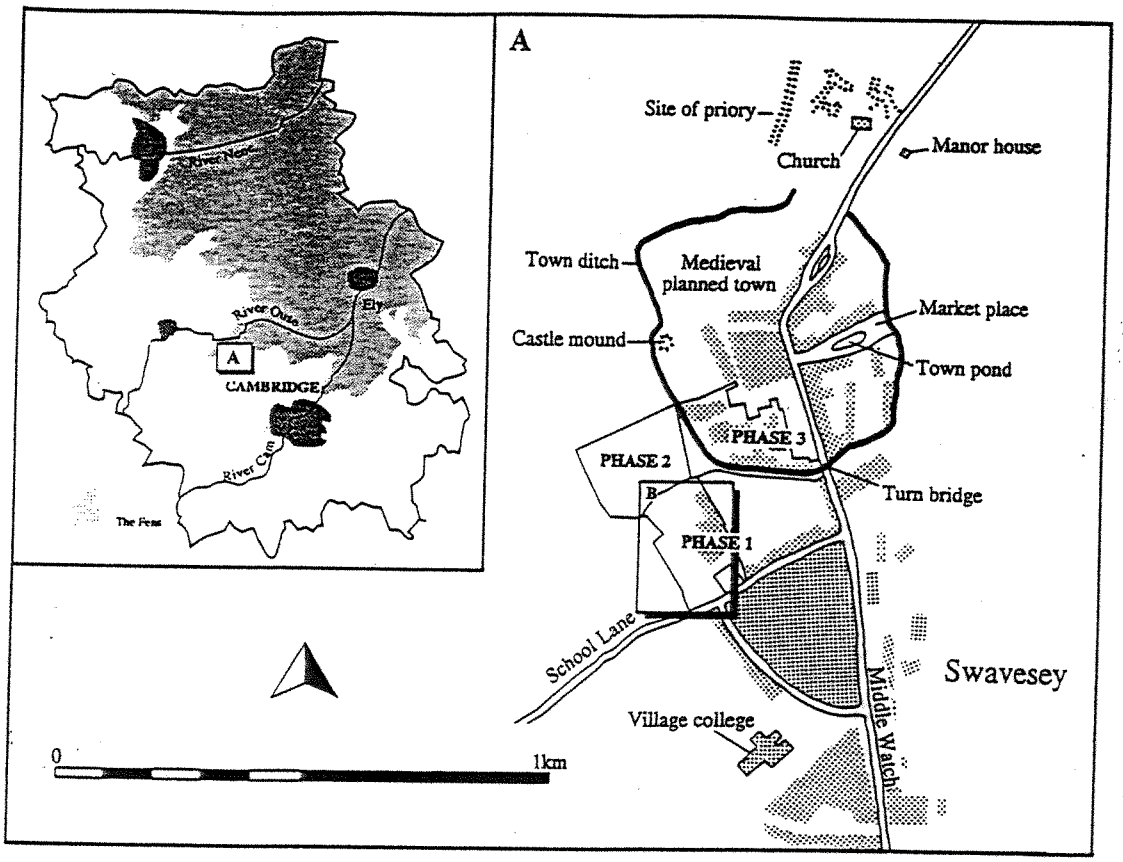
2 GEOLOGY AND TOPOGRAPHY

The site lies on the junction between first and second terrace gravels and Ampthill clay (British Geological Survey 1985). The gravels on which the present settlement lies form an 'island' at the end of a spur leading out into the Ouse valley the edge of the fen, where there is a covering of alluvium. The gravels overlie Ampthill clay which constitutes the main part of the spur of higher ground.

Swavesey lies 3km to the north-east of the A14 trunk road, 14km to the north-west of Cambridge and 13km south of Huntingdon. The site is generally flat and lies approximately 200m to the west of the village core at a height of 6m OD. Part of the site (to the south of Black Horse Lane) was occupied by cottages and farm buildings from the mid-nineteenth century and by industrial buildings from the 1960s.

3 PROJECT BACKGROUND

Between 1995 and 1998 there have been several phases of evaluation and excavation in advance of the housing development between School Lane and Black Horse Lane and the High Street (Sutherland and Hatton, 1996; Spoerry 1996; Cooper and Spoerry, 1997; and Roberts 1998). This work was carried out in compliance with the recommendations of PPG16 and the conditions outlined within the planning consent.



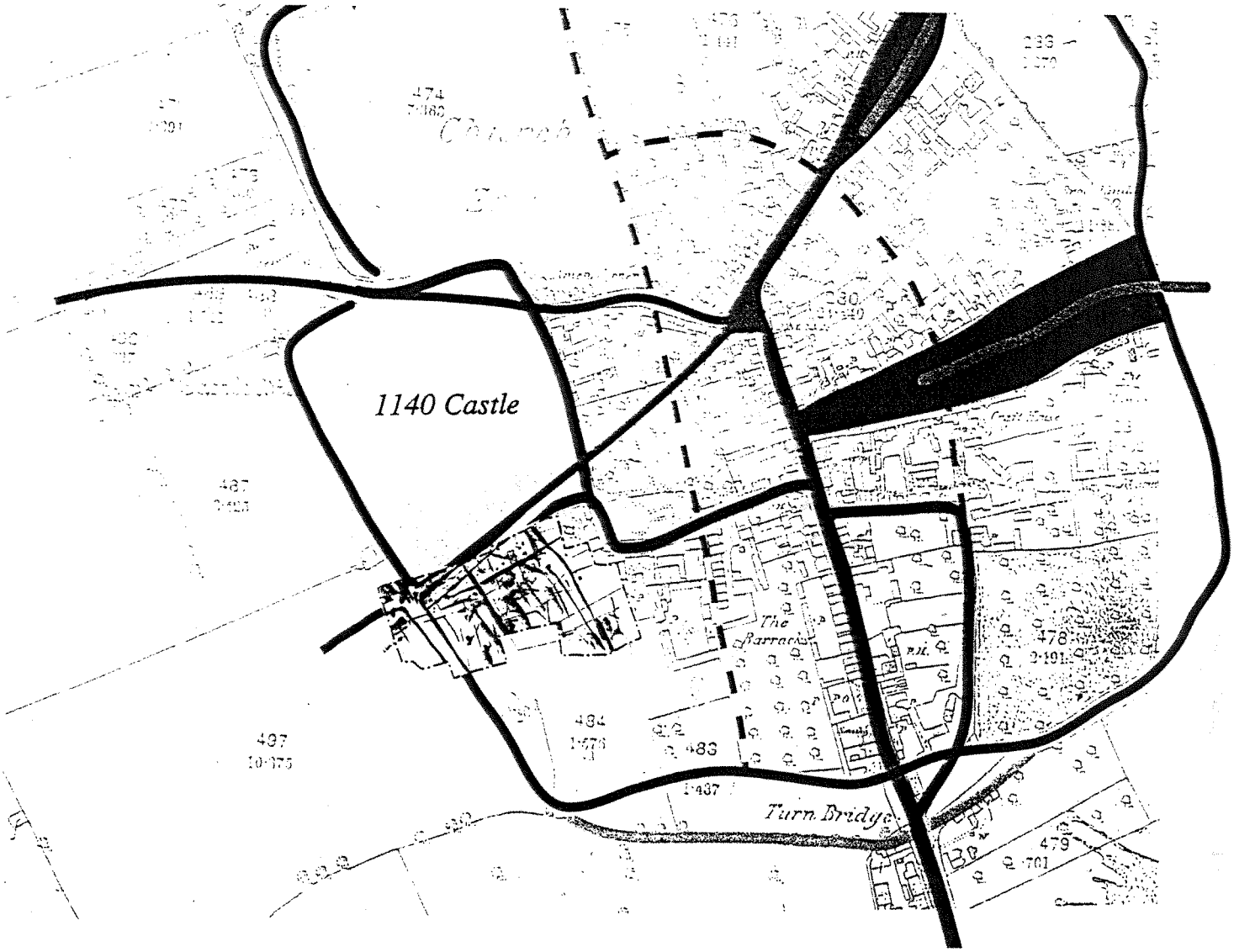


Figure 1 Site Location


268880N
268860N
268840N
268820N
268800N
268780N
535900E
535920E
535940E
535960E
535980E
536000E
536020E
536040E
536060E

3.1 Phase 1: previous work

Aerial photographic survey highlighted the presence of ridge and furrow agriculture, dug strips and levelled ditches in the surrounding area and a levelled ditch on the site itself. Evaluation in the field to north of development area identified prehistoric, Iron Age and medieval remains (Evans 1990). Documentary research concentrated mainly on nineteenth and twentieth century maps and sales catalogues. Earlier documents were only briefly examined but show the potential for further research (Way 1998).

Evaluations were carried out in advance of building phases and progressed northwards and eastwards from School Lane. Work in 1995 (Sutherland and Hatton 1996) identified limited medieval activity along School Lane. The site lies mainly on clay and was not regarded as a favourable settlement location in medieval or earlier periods.

Evaluation in 1996, to the west of the subject site, identified a zone archaeological remains indicating activity in the medieval period (Spoerry 1996). No pre-conquest remains were identified. The presence of ditch systems which were re-cut several times exemplifies the wet and poorly drained aspect of this part of the site.

3.2 Phase 2: evaluations

Evaluation of the area of the third phase of the development involved trenching around and within existing buildings. The trenches in the southern and western part of the site showed a considerable depth of alluvial deposits suggesting frequent flooding episodes. The trenches in the northern part identified the areas of highest archaeological potential (Cooper and Spoerry 1997; Roberts 1998).

The evaluation trenches dug in 1997 and 1998 identified two areas for further investigation. The size of the areas was determined by results of the evaluation and also by the level of disturbance caused by twentieth century industrial buildings. Nineteenth century buildings had only minimal impact and survival of archaeological remains beneath these was good.

3.3 Phase 3: excavations

In 1997 an area excavation to the west of the Black Horse Lane site identified evidence for timber structures and floors dating between 1150 and 1350. These structures indicate occupation around the edge of the main medieval settlement on the gravel 'island'. The area also contained a series of re-cut ditches dug as a response to localised flooding close to the settlement. The pottery recovered from features across the site was late Saxon, Saxo-Norman and medieval (*c* 875-1500).

4 METHODOLOGY

All soil and demolition debris above the archaeological horizon was removed with a mechanical excavator under archaeological supervision. Archaeological features were excavated by hand and features/deposits were recorded using the Archaeological Field Unit single context system. Each distinct cut, fill and layer was allocated an individual number. Features were planned using a Total Station initially and excavated features were planned manually. The level of ground water impaired excavation but pumps were used to enable fills and profiles to be recorded. Petrochemical contamination and deep modern disturbance reduced the area available for excavation.

Where possible a 20 litre bulk sample was retained from discrete excavated contexts. Samples were processed for remains by flotation.

Metal detector surveys were carried out over the exposed surface of the site and the spoil heaps by AFU staff and members of the Saffron Walden metal detectors club.

5 SUMMARY OF RESULTS

Excavation revealed the limits of land that was habitable in the pre-conquest, post-Roman and medieval periods. The better drained gravels of the slightly higher land were obviously preferable for settlement with the wetter clay lands probably being used for agriculture or clay and gravel extraction. Zones of activity appear to be discernible across the site. These zones include small scale 'industry', structures along a lane or track, pits to the rear of properties and boundary ditches leading off the lane at right-angles and draining down to the fen.

Two main phases of activity have been identified. A small quantity of worked flint (mesolithic to Bronze Age) was found scattered across the site and a few fragments of red deer and auroch bone was also found but no features were clearly attributable to an early prehistoric date.

Two possible round-houses, a kiln, a substantial ditch, together with various pits and possible postholes, and the partial remains of a human skeleton (in a pot) have been dated to the late Iron Age/pre-conquest period by 'Belgic' pottery, kiln furniture and by association. An Iron Age kiln, settlement features and ditches were found during excavations in the field to the north of the present development site.

The second main phase of occupation was during the medieval period – between the tenth and sixteenth centuries. In this phase there was extensive expansion of settlement along a spur of the gravel island. Excavations and geophysical survey suggest that settlement continued to the north of the development site. Occupation north of the present footpath appears to be dated between the 11th and 13th centuries and possibly relates more to the 'castle' and defensive enclosure. Settlement on the development site appears

to have been largely low-status and domestic. The proposed defensive enclosure did not extend more than 5m beyond the extant ditch and bank and much effort on the site appears to have been concentrated on drainage and boundary features.

There appears to have been little post-medieval occupation of the western part of the site until the twentieth century and only small scale domestic and agricultural occupation of the eastern part of the site in the eighteenth and nineteenth century.

5.1 Early prehistoric

There were no features clearly attributable to this period although a large number of features contained no artefactual material and the leached nature of the fills suggests the possibility these were deposited in an early stage of use of the site. The scatter of worked flints across the site suggests use of the area from the late mesolithic period but there is no clear evidence of settlement or artefact concentrations. A few fragments of red deer and auroch bone have also been identified. A single small rim sherd has been tentatively attributed to the Bronze Age.

5.2 Later prehistoric

Late Iron Age features

Iron Age settlement and industry is attested by the presence of at least one kiln (with a possible second kiln in the top of a nearby ditch). At least two distinct types of kiln-bar have been identified. Close to these features a shallow curvilinear feature with a possible floor/surface was identified which may relate to ceramics production. Other gullies, pits and postholes have been tentatively dated to the late Iron Age by pottery and association.

The partially articulated and partially cremated remains of a part of an individual (few cervical vertebrae, scapula and a few ribs) were recovered from an Iron Age vessel.

The pottery has been dated to a late Iron Age period (the very late Iron Age/Roman transition) with some forms continuing in use in the region into the second half of the first century AD. There is a notable absence of middle Iron Age material from the site.

Several Roman sherds were identified, these comprised Nene Valley colour-coated, grey wares and a copy of a Drag 31 samian dish. There is no clear evidence of occupation of the site during the Roman period.

5.3 Medieval

The main features attributable to the medieval period are a series of approximately north-west–south-east and north-east–south-west running ditches which align with a gravel track which at its eastern end follows the

line of the present footpath but which diverges, southwards towards the west. Four groups of postholes were identified which may represent structures parallel to the path/track and a few metres to its south. The third main group of features were pits of assorted sizes, many of which had been dug as rubbish pits. Some, however, appear to have been the result of quarrying either for gravel or the underlying clay. A few narrow linear features appear to be fence lines or beam slots but no clearly identifiable structural purpose can be assigned to these.

The bulk of the artefactual material comes from the medieval period (900-1400) and includes pottery from a variety of kiln sites in the east of England. Other artefacts include horseshoe and structural nails, personal and horse equipment ornaments, textile manufacturing equipment, fragments of bone tools and parts of instruments and whetstones.

5.4 Post-medieval

A number of metal artefacts were found during metal detector surveys which shows the area was occupied during the sixteenth to eighteenth century with a possible structure in the north-west corner of the site indicated by a concentration of building nails.

Post-medieval features include nineteenth century foundations for agricultural and domestic buildings, and their associated services, on the eastern part of the site. Extensive twentieth century disturbance has been caused by the industrial estate on the site.

6 ASSESSMENT

6.1 Quantification of the 1997 excavation archive

646 context records
116 plans at 1:20
131 sections at 1:10 or 1:20
267 photographs
45 environmental sample records
2 boxes of animal bone
1 boxes of shell, flint, daub, etc (misc)
4 boxes of stone
4 boxes of medieval and post-medieval pottery
1 boxes of metalwork and small finds

Quantification of the 1999 excavation archive

40 sheets of contexts
1256 context records
6 pages of section register
5 pages of plan register
4 pages of sample register
3 pages of site objects register
50 photographic record sheets
190 plans at 1:20 or 1:50
238 sections at 1:10 or 1:20

14 Black and white films
21 Colour print films
15 Colour slide films
110 environmental samples
12.5 boxes of animal bone
1 box shell
3 boxes stone
2 boxes building material
4 boxes Iron Age pottery
9 boxes kiln debris
9 boxes medieval and post-medieval pottery
5 boxes metal work and small finds

6.2 Stratigraphy and phasing

6.2.i Dating

The activity revealed through excavation in 1997 and 1999 can be attributed to two main periods.

Period 1: Late Iron Age

Period 2: Medieval

Dating is based on pottery spot dates, together with stratigraphic and spatial associations. Earlier prehistoric and post-medieval periods of activity were represented to a lesser extent. Modern building and services had a major impact on the site.

6.2.ii Range and variety

Feature types were mainly negative or cut features from the two main periods . Occupation surfaces were found in the northern part of the site. Many features were cut directly into the natural geology but a moderate number were intercutting and this will be taken into consideration for dating/phasing purposes.

Few features and artefacts could be securely dated to earlier prehistoric dates. Scattered worked flints, auroch and red deer antler and residual sherds of Bronze Age pottery are the main indicators of earlier prehistoric activity on the site.

Period 1: Iron Age

No Iron Age features were identified in the 1997 phase of work. Iron Age features were largely concentrated in the north-eastern part Area 1 with a few in the south-eastern part and stray Iron Age finds from other parts of the Black Horse Lane site.

Kiln(s): A truncated kiln with part of its sides and base intact and containing Iron Age pottery was found truncated by a medieval ditch. Debris from a kiln was found in a nearby ditch. This may represent another kiln or may be debris from the one to the north. Further analysis of kiln furniture may clarify whether there were more than two kilns in the area.

'Cremation'/urn burial: A single pot containing the right scapula, cervical vertebrae, rib fragments and a clavicle were found in a late Iron Age vessel in a shallow (truncated) pit.

Curvilinear gullies: Two shallow gullies may represent the truncated remains of roundhouses or windbreaks.

Ditches/gullies: A broad, curving ditch running approximately north-west–south-east from the northern edge of Area 1. Its south-eastern extremity could not be traced. Further shallower, narrower ditches on a slightly different alignment were noted to the north-east of the main ditch.

Pits: Pits containing Iron Age material and other undated pits and postholes were excavated but formed no discernible pattern and appeared random.

Period 2: Medieval

With the exception of post-medieval deposits all features excavated in the 1997 excavation were dated between 875-1500 by artefact association and stratigraphy.

Postholes: Posthole alignments suggesting property boundaries and possible structures were noted mainly in the northern part of Area 1 and the eastern part of the 1997 excavation. The bulk of these appear to be aligned along a south-west–north-east axis. Two isolated groups of postholes, possibly forming structures were found in the central-southern part of Area 1

Track: A surfaced track (approximately 2m wide), continuing the line of the footpath to Fen Drayton, but diverging and taking a slightly more southerly route was examined. This was bounded by a series of re-cut ditches to the south and further ditches to the north (although these were mainly beyond the edge of excavation). Ruts and repair patches were noted on the surface of the track. A westward, later, extension of the track was excavated in the 1997 phase of work.

Ditches: An extension of the castle bailey ditch was excavated. This ended just south of the northern edge of the site. It appeared to respect the trackway, ending north of the track. To the south of the track a series of shallow re-cut ditches extended, towards the fen. Narrower ditches, on a similar alignment, appear to form property boundaries leading off the track at right-angles. In Area 2 the bulk of features were ditches and gullies running north-west–south-west which may also have been property boundaries for properties along Black Horse Lane.

Pits: The pits varied considerably in size and shape. They appeared to have been used for rubbish disposal or quarrying gravel but the use of many was enigmatic.

Floors, surfaces, dumps and burning features: At the western end of Trench A (1997 excavation) a stratified sequence of clay floors and occupation surfaces survived. These surfaces sealed the remains of a post-built structure. A small number of associated post-holes were found within the sequence but their exact relationship was not determined. Some of the surfaces showed evidence

of burning, sometimes within shallow cuts, and there were a number of crude hearths, perhaps indicating a craft or industrial area.

6.2.iii Condition

It is clear that archaeological features across the site have been subject to considerable truncation both horizontally and vertically by successive occupation of the site, culminating in the construction of an industrial estate with its associated services.

Variability in natural geology across the site affected feature and deposit definition and preservation but medieval and later period features were generally clearly visible. Weather during the 1997 excavation was poor and heavy rain restricted excavation in some parts of the site.

Despite the high ground water level at present no waterlogged deposits were encountered. Preservation of artefactual material, bone and macrobotantical remains was good.

6.2.iv The written record

The site record has been checked for internal consistency and preliminary interpretation and has been cross referenced and entered into a database. Drawn records in pencil have been checked and cross referenced with the context record. The drawn record is being combined with electronic survey data to produce a site plan. The photographic record has been labelled and cross referenced with the context record.

The site records for all stages of work on the Cherry Trees Development at Swavesey are currently held at the Cambridgeshire County Council Archaeological Field Unit (CCCAFU) office at Fulbourn. Artefacts are being held at the CCCAFU office or are being studied by appropriate specialists. The written and material archive is identified by the site code SWABL99 (final archives will include records and material from previous phases identified by the following codes SWASL and SWABL 95 - 99).

6.3 Artefactual quantification

6.3.i Quantification of lithics

The lithic assemblages have been assessed by Steve Kemp (see Appendix I). A very small quantity of humanly modified flint was recovered. This consisted mainly of borers, blades, scrapers and flakes which have variously been dated between the mesolithic and Bronze Age.

Flakes	7
Borers	2
Mesolithic blades	2
Neolithic blade	1
Scraper	1

A considerable quantity of vesicular basalt was found (over 70 fragments). Several pieces represented more than a quarter of a quern and some showed evidence of grooves. A fragment of conglomerate stone and a burnt sandstone fragment have also been identified as parts of querns.

Several whet stones made from quartzite, sandstone, shale and schist were found in features. These varied in size and shape and it may be able to determine use from wear on the surface.

6.3.ii Quantification of ceramics

The ceramic assemblages have been assessed by Steve Willis and Jerry Evans (late Iron Age) and Paul Spoerry (medieval). Two main groups are represented. The late Iron Age pottery appears typical of north Cambridgeshire with little fine ware or high status pottery and no continental imports. A total of 721 sherds (18,278 grams) were recovered from Areas 1 and 2 (see Appendix II) together with nine boxes of kiln material (kiln bars, *in situ* kiln lining and other kiln furniture) and around 170 sherds of 'Belgic' pottery were recovered during the 1998 evaluation, with 61 kiln bar fragments and approximately 210 fragments of fired clay (kiln lining, luting, possible oven floor and clay plates). Kiln bars were of a long square-sectioned type with tapering ends.

Medieval pottery

The 1999 excavations generated 2711 sherds, 33722g of pottery, in addition to the Iron Age assemblage considered elsewhere (Willis this report). Figures for all elements in the excavation programme are given in Table 1.

Phase of work	Number of sherds	Weight of pottery (g)
SWASL95	149	2171
SWASL96	436	3782
SWABL97	105	1196
SWASL97	1356	13219
SWABL98	516 - 170 = 346	6933 - 4309 = 2624
	includes 170 IA sherds	weight not yet known - 4309
SWABL99	3432	52000
	includes 721 IA sherds	includes 18278g IA pot
Total	**5992**	**79301**

med-pmed sherds : 5103

or 56,744g (approx)

Table 1 All pottery recovered from the Swavesey excavations and evaluations

6.3.iii Small finds catalogue

Small finds were hand collected during excavation and recovered as a result of a metal detector survey. A total of 211 items have been examined (see Appendix IV).

Many of the items are related to buildings (fasteners and fittings), domestic activities such as spinning, personal adornment (buckles, brooches, studs), music and horse equipment. None of the items has been securely dated to

before the medieval period but several have been dated to the post-medieval period.

Three plano-convex hearth bottoms, fuel residue, slag and hammer scale were found. These are indicative of small scale domestic metal working such as smithing. The iron working residues are concentrated in the centre north of the site suggesting that there may be smithing along or beyond the northern edge of the site. Three hearths were noted in Trench A of the 1997 excavation which ran to the north of the SWABL99 site boundary.

6.4 Quantification of faunal remains

The faunal remains have been assessed by The Environmental Archaeology Consultancy (see Appendix V).

6.74kg from 1997 excavation
3.37kg of animal bone and 315g of shell from 1998 evaluation
50.83kg of animal bone and 2.87kg of shell were recovered from Areas 1 and 2 of the 1999 excavation

Animal bone from other phases of archaeological work at School Lane/Black Horse Lane is unlikely to add to the understanding of the economy and function of the village and will not be included in future work.

6.5 Environmental quantification

Forty five environmental samples were taken during the 1997 excavation, including 25 bulk samples for flotation, 13 samples for mollusc analysis, 4 auger samples and two column samples for micromorphological analysis. A total of 110 bulk samples were taken from the 1999 excavation and 35 have been submitted for assessment (see Appendix V). The flotation residues have been assessed by The Environmental Archaeology Consultancy.

6.6 Human bone

No human remains were noted in earlier phases of work on the site. A single individual represented by cervical vertebrae, scapula, clavicle, rib fragments (upper right part of a body) (see Appendix VI) was recovered from an Iron Age vessel during the 1999 excavation. Fragments of human bone were recovered from environmental sample 14 (context 3060).

7 STATEMENT OF POTENTIAL

7.1 The written record

The context record is the primary component of data upon which further analysis will be based. The complexity of physical and stratigraphic

relationships between individual features will place a great deal of reliance upon the receipt of data from artefactual specialists before detailed phasing and during spatial analysis. The identification of groups and sub-groups of features by period, across the site, is key to attempting any understanding of the type and range of activities occurring. It is important that the results of this excavation be seen in context with the surrounding area, including the nearby castle and settlement.

The context record, when integrated with the results of artefactual information will provide a major new source of information regarding the development of the settlement at Swavesey.

7.2 Artefactual

7.2.i Lithics

The assemblage broadly confirms the medieval dates assigned to many of the features.

Although only a preliminary examination was conducted there are noticeable differences amongst the material according to its contextual origin, broadly coinciding with the chronological phases identified.

The assemblage is small but interesting in its own right. There are many aspects that will help elucidate the chronology and nature of the occupation of the site. The small size of the assemblage and the nature of the artefacts means that further analysis or recording of this material would not be a valuable exercise.

7.2.ii Ceramics

The Iron Age pottery mainly comprises large sherds many of which conjoin to form profiles or part profiles with numerous complicated forms and a high proportion of handmade items. The association with evidence of pottery production is notable. Further study may provide refined dating of contexts and by association of features help define pottery production processes.

The research potential for medieval ceramics includes definition and dating of earlier settlement phases on the site and later contraction to non-urban status (primary tool pottery dating); analysis of trade contacts through the study of material culture, particularly intra-regional trade systems; examination of evidence for urban zoning and urban economics, especially craft specialisation and industrial processing. The above points remain generally valid. Analysis will refine intra-site comparisons of ceramics to account for the property units.

At the local level, no research strategy exists beyond that identified in the documentation for this project. It is worth noting, however, that dating and establishment of a chronology for the local ceramic assemblage is crucial in taking forward any understanding of settlement dynamics.

Study of the fenland town is rightly recognised as an area of high potential in the eastern counties research agenda and strategy document (Ayres 2000). In

urban studies in general this document also highlights communications between town, correlation of status with product of specialisation and output and the establishment of basic chronologies as crucial areas of research. Ceramic analysis on the assemblages can contribute to all of these

English Heritage has identified a number of research themes, all of which require the local sequence to be at least generally characterised before they can be investigated. It then identifies Cambridgeshire as a 'black hole' in medieval ceramic studies with a lack of well stratified or dateable groups. The onus is therefore on identifying, describing and publishing larger groups where they exist to lay the foundations for more specific analysis at a later date.

7.2:iii Small finds

A descriptive catalogue has been prepared for all small finds. The small finds are representative of rural and domestic activity. Structures are attested by building fittings and household utensils and home-based craft are indicated by spindle whorls and pin-beaters, knives and shears. Personal items (dress accessories and toiletry items) were present in limited number. There was only a slight indication of horitcultural or agricultural activity from the site.

The distribution of finds supports other analyses in that there is a concentration along the northern edge of the site, especially in the north-western corner. Datable finds suggest a Saxo-Norman/early medieval date for occupation in the northern and western part of the site with activity continuing into the thirteenth and fourteenth century.

The datable stratified assemblage was concentrated in the earlier medieval period whereas the finds from metal detecting and cleaning tended to include a higher proportion of late medieval to early post-medieval material. Further examination of the distribution of finds may determine a shift in focus of occupation activity towards the eastern part of the site.

As a group the small finds have limited potential for further study unless the metal detector and surface finds can be accurately related to features. Individually, however, some items may have value in terms of charting developments in, and use of, material culture. X-radiography has enabled more detailed description of objects and following this some items may be selected for further investigation and for illustration as appropriate. Functional interpretation of some items may enable processes taking place on the site to be better defined, but the small and varied nature of the assemblage will offer only a 'magpie' view of other activities.

The small finds, in combination with analysis of other material from the site and the association of features suggests Swavesey has a high potential to contribute o the understandng of the origins and development of the town. Comparison with other sites in the region may highlight similarities and differences in developing settlements in the area.

The metal work and metal working residues are indicative of small scale domestic smithing on or close to the site (Wall, pers. comm.). The hearth bottoms fall well within the range of medieval domestic smithing. No further study is recommended for this group of materials.

7.3 Faunal remains

The good condition of the animal bone and marine shell indicate afford good potential for the study of the early medieval diet in this small fenland town. The pattern of rubbish at Black Horse Lane appears to be significantly different from broadly contemporary deposits in Kings Lynn on the coast (Rackham *et al* 1999) and this seems likely to reflect major differences in the economies of these two towns. Further analysis of fish bones, selected molluscan assemblages and animal bones will help to identify patterns across the site, throughout its history, and the diet and economy of the medieval settlement.

7.4 Environmental remains

The richness of the soil samples will contribute to understanding of processing and diet in the small town. Further analysis of charred plant remains, waterlogged material and selected charcoal samples will contribute to understanding of the spatial use of the site and temporal variations.

7.5 Human bone

The poor state of preservation and the small amount of human bone limits the value of further analytical work.

8 RESEARCH AIMS

8.1 Excavation aims

The earlier work between School Lane and Black Horse Lane resulted in the formulation of a series of aims and objectives to be addressed through further excavations as follows:

Refined definition and dating of precursor settlements and study of planned town creation

- definition and dating of earlier settlements on the site including the possible creation of settlement alongside a mid-thirteenth century Anarchy Castle, and review of the concept of the thirteenth century 'planned' town model proposed by Ravensdale;

Study of marginal tensions between settlement and fen edge

- study of marginal tensions between the settled area and the fen edge and the spatial representation of the settlement's economic fortunes;

Phasing and dating of defensive circuit and planned streets

- recovery of information on the phasing and dating of the defensive circuit and planned street lines;

Trade contacts

- analysis of trade contacts through the study of the material culture, particularly intra-regional trade systems as recoverable from ceramic provenance data and evidence for marine and wetland produce;

Natural environment and agricultural economy

- study of the environment (including its modification through agriculture) and use of dry land and wetland resources;

Urban zoning and urban economy (craft specialists and industrial processing)

- examination of evidence for urban zoning and urban economics, especially craft specialisation and industrial processing;

Contraction of town and reduction in urban nature of the site

- analysis of the spatial/temporal dynamics of the settlement and in particular changes in the late medieval period that may illuminate de-urbanisation and reduction in the size of the settlement;

Ceramic production in the Iron Age

- study of late Iron Age pottery manufacturing process identified by evaluations in the vicinity and on the site.

8.2 Revised aims

The broad aims of the excavation are still valid but the range of questions has been expanded based on the nature of the data generated by that excavation. The primary aim of this project is to prepare for publication a coherent description and interpretation of the findings of the archaeological project undertaken at School Lane and Black Horse Lane, Swavesey. Various aspects of this analysis will be disseminated through inclusion in suitable publications. A number of objectives have been highlighted which will help to ensure that this aim is realised. Certain objectives apply across all periods and to all material assemblages whereas other more specific questions apply only to certain elements of the site record.

Objective 1:	To produce an accessible archive of the results including:
1.i	a detailed description of all excavated/recorded features;
1.ii	secure grouping and phasing of excavated/recorded features;
1.iii	identification and description of the elements characterising individual groups and phases.

Objective 2: To attempt the interpretation of the functional nature of the site

Objective 3: To place the interpretation of the site within its local context and with reference to previous work on adjacent sites.

Objective 4: To place the interpretation of the site within its regional context with reference to contemporary and comparable sites in the region.

Objective 5: To highlight the potential for re-assessment of any aspects of previous work in the local area where the findings of the recent excavations may indicate a re-appraisal either in terms of date or primary interpretation.

8.3 Research issues

Early prehistoric:

- *Early prehistoric features and remains*: the small quantity of earlier prehistoric remains appear to be a background scatter of remains and features.

Iron Age:

- *Date of the occupation of this part of the gravel island*: there are problems with dating artefact assemblages to within 200 years and a particular problem in north Cambridgeshire in the late Iron Age. In comparison to many other regions relatively little is known of the production and distribution of Iron Age artefacts in East Anglia.

- *Occupation related to periods of alluviation/flooding*: efforts will be made to define the extent and distribution of settlement and if possible any development of the settlement with regard to the industrial use of this part of the site. The site appears to be peripheral to the main settlement at this period.
- *Investigation of datable pottery assemblages*: this will be a priority where there is a low proportion of residual forms

- *Development of industrial production*: from household to commercial workshop level, especially wheel-thrown pottery.

- *Economic development*: analysis of environmental samples will be aim to identify other activities being carried out around the site.

Medieval:

- *Date of the occupation of this part of the gravel island:* there are problems with dating artefact assemblages to within 200 years

- *Occupation related to periods of alluviation/flooding*: efforts will be made to define the extent and distribution of settlement and if possible any development of the settlement with regard to the industrial use of this part of the site. The site appears to be peripheral to the main settlement at this period.

- *Settlement development*: understanding of settlement patterns and relationship to rural hinterland.

- Industrial use of this part of the site
- Peripheral nature of the site
- Sequencing of local ceramic types
- Relationship of settlement here with marine and fenland resources and position *vis a vis* fenland waterborne trade systems

9 METHODOLOGY

In order to address the research issues outline above and achieve the primary aim of this project the following methodology has been devised with reference to the objectives outlined above.

9.1 Stratigraphic record

9.1.i Selection of data for further analysis

All relevant records will be subject to further analysis upon receipt of specialist analytical reports.

9.1.ii Grouping and Phasing

Where stratigraphic relationships and artefactual and ecofactual assemblages were present a degree of preliminary phasing has been achieved. Further aids to final grouping and phasing include:

artefact identification and categorisation by individual specialists, particularly when ceramic, lithic and faunal remains occur in discrete contexts, whether in isolation or in association with other artefact types;

gross quantification of specific artefact types, particularly to characterise assemblages containing a range of artefactual or faunal remains. This will help determine whether features attributed to the different period of use display distinct characteristics.

Where artefactual or ecofactual data is available grouping and phasing may be attempted using inter and intra site comparisons with features of similar morphology and/or interpretation.

9.2 Artefacts

For all categories listed below material recovered from all stages of evaluation and excavation in this part of the development site will be integrated. Methodologies and recommendations for analysis for specific assemblages are contained within the relevant appendix.

9.2.i Lithics

The majority of the assemblage does not warrant further work but more detailed analysis and illustration of specific quern stone fragments and whet stones may be considered necessary.

9.2.ii Ceramics

Iron Age pottery

Further work on this important assemblage will be a significant addition to the growing corpus of later Iron Age and Transitional pottery known from Cambridgeshire. Most of the Iron Age pottery occurs in stratified context groups with large sherds forming profiles or part profiles. The association with evidence of pottery production is especially important because of the paucity of known kiln structures in the area.

The assemblage has numerous complicated forms with a high proportion of well-executed hand-made vessels. The analysis will consider more fully the dating evidence available to provide a more precise dating framework.

Further work will need to be undertaken to identify vessels made at Swavesey and fired in the kilns and consider their typology in comparison with other contemporary production sites. The identification of ceramic trade at this time would be very significant.

Publication will require refitting material, more focused comparative discussion and illustration of approximately 50 items.

Medieval pottery

Pottery from stratified contexts from all phases of evaluation and excavation described here requires quantification to at least a basic level. The proposal is to identify and quantify pottery from stratified contexts, recording all fields associated with fabric, form, decoration, technology and use. Macroscopic study will be made of all major new fabric types with discussion of provenance issues. Statistical results will be tabulated, new forms and traits (especially relating to local fabric types which are unpublished) will be illustrated and recommendations will be made regarding those fabric types warranting scientific (thin section and chemical) analysis as part of a regional study. A report will be produced using the results of the analysis

Publication of the results will be as a chapter in or appendix to the site report. Advances in understanding the local medieval ceramic assemblage (recognition of new producers, or identification of cross-fenland/regional contacts and trends) may require publication in *Medieval Ceramics*.

9.2.iii Small finds

A complete list of all objects recovered by excavation and from metal detector survey has been produced. A broad term, narrow term, functional category and where possible a date range has been assigned to each object. The metallic objects have all been subject to x-radiography and assessed for

cleaning and conservation requirements. Some artefacts have been selected for illustration and/or photography. Full description and identification will be compiled for all objects from stratified locations and for all other inherently significant pieces. Photographs and illustrations will be completed, where necessary, and all records provided as a report appendix.

9.3 Environmental remains

Further assessment work should probably be restricted to unprocessed samples that can be phased with due attention being given to maintaining a good range of samples across the whole site spatially and throughout the history of the site. The potential for understanding patterns across the site, throughout its history and the general diet and economy of the medieval settlement is very high. The major areas for detailed identification and further analysis are the charred plant remains, selected waterlogged material, the fish bones , selected charcoal samples, selected molluscan assemblages and the excavated animal bone.

9.4 Human remains

No further physical analysis or recording of the bones is required. Dating of this material is based on association of ceramics.

9.5 Storage and curation

The paper and material archive is currently held at the AFU office at Fulbourn (under the code SWABL and SWASL and the year of excavation). The bulk of the material archive is to be prepared for storage at the County store at Landbeach. Sensitive remains (metal and organic) will be held in controlled environment stores at the AFU office in Fulbourn. Residues from environmental samples will be discarded following full analysis.

10 TASK LIST

Key to abbreviations in Task List: CONS = Conservation; EA = Environmental Assistant; FC = Finds co-ordinator; ILL = Illustrator; PM = Project Manager; PO = Project Officer; S = Supervisor; SC = Specialist Consultant

10.1 Written record

Task	Days	
Write context/feature descriptions	20	PO
Collate and review results of previous work in the vicinity	1	PO
Write historical background	1	PO
Discuss issues raised through assessment with post-ex. team	0.5x2	PM/PO
Discuss grouping and phasing	0.5x3	PM/PO/S
Review results of specialist analyses	2	PO

Review results of specialist analyses	2	PO
Collate results of specialist analyses	5	PO/PM
Compile list of illustrations (liaison with illustrator)	0.5x2	ILL/PO
Discuss results of collation with post-ex. team	0.5x2	PM/PO
Produce illustrations	10	ILL
Compile excavation report (see 7.1)	15	PO
Group descriptions, phase descriptions, phase discussion and interpretation	10	PO/PM
Write summary of results/conclusions	2	PM
Incorporate illustrations	2	ILL
Edit report	2	PM
Incorporate edits	2	PO
Proof reading	7	SC/PM
Amendments	2	PO
Final Report production	2	ILL
Produce SMR summary	1	PO
Archiving	3	FC
Total	**91.5**	

10.2 Artefacts

10.2.i Lithics

Discuss issues raised, grouping and phasing with post-ex. team	0.5	PM/PO
Select lithics for illustration	0.5	SC
Illustration	0.5	ILL
Prepare assemblage for archive	0.5	FC
Total	**2**	

No further work recommended

10.2.ii Ceramics

Iron Age (pottery and kiln furniture)

Discuss issues raised, grouping and phasing with post-ex. team	0.5	PM/PO
Classification and data entry	8.5	SC
Quantify and describe kiln furniture	3	FC
Review results of specialist analyses	1.5	SC
Select ceramics for illustration	0.5	SC
Illustration	5	ILL
Prepare assemblage for archive	0.5	FC
Total	**19.5**	

Medieval (pottery)

Discuss issues raised, grouping and phasing with post-ex. team	0.5	PM/PO
Quantify assemblage	2/26	SC/FC
Describe fabrics	1	FC
Analyse data	2	SC
Report text	3	SC
Illustration	3	ILL
Prepare assemblage for archive	1	FC
Edits	2/1	PM/ILL
Total	**41.5**	

10.2.iii Small finds

Phasing and co-ordinate liaison	2	SC
Distribution analysis	1.5	SC
Publication catalogue	6	SC
Finds overview	3.5	SC
Select artefacts for illustration	0.5	SC
Illustration	1	ILL
General project liaison	1	SC/PO
Prepare assemblage for archive	0.5	FC
Total	**16**	

10.3 Animal bone

Discuss issues raised, grouping and phasing with post-ex. team	0.5	PM/PO
Analysis and report	9	SC
Review results of specialist analysis	0.5	PO
Select bone for illustration	0.5	SC
Prepare assemblage for archive	0.5	FC
Total	**11**	

10.4 Environmental remains

Flotation and sorting of further samples	10	EA
Discuss issues raised through assessment with post-ex. team	0.5	PM/PO
Classification and data entry	10	SC
Analysis	10	SC
Review results of specialist analysis	1	PO
Total	**31.5**	

10.5 Human remains

Review of specialist assessment	0.5	PO
Discuss provisional grouping and phasing with post-ex. team	0.5	PM/PO
Prepare assemblage for archive	0.25	FC
Total	**1.25**	

No further work recommended

10.6 General project administration — **Total** **18** PM

11 PROJECT PERSONNEL

NAME	RÔLE	EMPLOYER
Jon Cane	Illustrator	CCCAFU
Holly Duncan	Small finds and metalwork assessment	Beds. CCCAFU
Carole Fletcher	Finds co-ordinator pottery assistant	CCCAFU
Steve Kemp	Lithic assessment	CCCAFU
Caroline Malim	Illustrator	CCCAFU
James Rackham	Environmental analysis	Freelance
Judith Roberts	Project Officer	CCCAFU
Paul Spoerry	Project Manager/Editor/medieval pottery	CCCAFU
Steven Willis	Iron Age pottery	Freelance

12 CONCLUSION

Excavation and analysis will provide important information on the changing use of land in prehistoric and medieval periods on the edge of the gravel island upon which the modern settlement of Swavesey stands. The presence of Iron Age and medieval settlement raises the question as to what happened in the intervening period to the environment and population density. Spatial patterning and zones of activity can be defined. The results of the work may clarify questions as to when medieval occupation started in this part of Swavesey and how it related to earlier settlement and the 'castle'/town ditch model proposed by Ravensdale.

There is considerable evidence for the environment of the site, despite the absence of well preserved organic remains. Remains of frogs, toads, newts and grass snakes are present in many of the samples. There were occupied buildings in the northern part of the site but there is also evidence of open space with grassland and water-filled ditches, small ponds and marshes. The wetness of the environment is confirmed by remains of taxa that prefer large bodies of water or even running water. Changing levels in the water table make this area marginal and the expansion and contraction of the settlement along the fen edge may be charted through time. The small finds give little evidence for the nature of agricultural activities. Few items can be directly linked to agriculture but knives, shears and textile working implements were found on the site. Similarly knives and shears cannot be linked to specific activities but may have been used for a range of domestic, agricultural or craft purposes. Horseshoes and shoeing nails are indicative of passing traffic rather than stabling.

Trade with coastal areas is evident from the transport of mussels, cockles, oysters and periwinkles and probably small fish species such as herring and flatfish. No larger sea-fish (such as cod, ling, haddock, etc.) were represented in the samples. The bulk of the fish were eels and freshwater species. Meat sources appear to be limited to cattle, sheep and pig with chicken, duck and goose. Eggs also were part of the diet. The most abundant cereals identified were wheat and barley, with oats and rye less common. Peas, beans and other legumes were recovered from samples together with small quantities of hazelnut shells.

Activities on the site appear to be mainly domestic with structures represented by building fasteners and fittings and a single piece of window glasscraft and agricultural Small scale industrial activity is suggested by the presence of pottery, fired earth, hammerscale, slag and kiln furniture. Concentrations of industrial residue have been noted and excavations in 1997 identified hearths, possibly relating to this, to north of the 1999 excavation site.

The settlement extends north and east but previous work shows little extension to the west and south, confirming the marginality of the settlement and pressure on available land. The site appears to lie beyond the area of the castle earthwork (an eleventh-twelfth century defensive precinct) but shows alignments and planning links with it.

Detailed quantification and analysis of the ceramic, small finds and environmental assemblages is essential to show changes in occupation and use across the site.

BIBLIOGRAPHY

Ayres, B. 2000 Anglo-Saxon, Medieval and Post-Medieval (Urban) in Research and Archaeology: A Framework for the Eastern Counties 2. research agenda and strategy, East Anglian Occasional Papers **8**

Cooper, S. and Spoerry, P., 1997 Late Saxon and Medieval Activity at Barwells Engineering Site, Blackhorse Lane, Swavesey Cambridgeshire County Council Archaeological Field Unit report no. 136

Evans, C. 1990 Archaeological Investigations at Swavesey CAU Report, no number

Roberts, J. 1998 Iron Age and Medieval Activity at Blackhorse Lane, Swavesey Cambridgeshire County Council Archaeological Field Unit report no. 151

Spoerry, P. 1996 Late Saxon and Medieval Activity and Ditch Systems Between School Lane and Blackhorse Lane, Swavesey Cambridgeshire County Council Archaeological Field Unit report no. 130

Sutherland, T. and Hatton, A. 1996 Medieval Features Outside the Town Defences at Swavesey Cambridgeshire County Council Archaeological Field Unit report no. 124

Way, H. 1998 Documentary-Based Landscape History of the area between Black Horse Lane and School Lane Swavesey (CCCAFU internal report)

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Appendix I Lithic quantification and assessment, S. Kemp

Swavesey, School Lane, 1997

The majority of stone collected during excavation consisted of red and grey sandstones, and shelly and oolitic limestones. Quartzite, granite, siltstone and conglomerate rocks were also present. It is likely that all of these materials would have been available within the river gravels and certainly most occur in a rolled form within the assemblage. The conglomerate may be an exception and could have formed part of a quern stone.

A small proportion of the sandstone and quartzites appear to have been burnt, although firing was not to a high temperature. Other rocks are blackened which may indicate very low firing temperatures or they may have come into contact with ash or charcoal deposits. Firing of any of these rocks would appear to have been unintentional and they are unlikely to have formed part of a hearth structure.

Stone Artefacts:

Two schist whetstones are present in the excavated assemblage. As is a piece of fine grey sandstone with scoring along one edge.

Fourteen fragments of vesicular lava from seven contexts represent the remains of several quern stones.

Lithics:

Nine flint artefacts were recovered from eight contexts. These are largely knapped flakes made from grey brown flint; a type of flint which was readily available in small cobbles within the local environment. One of the scrapers is manufactured on a either a natural or very crudely struck flake of the same flint raw material.

The flakes are short and broad, with the minimum of preparation and therefore little control over the resultant form. The fine, uniform and restricted edge damage on some of these flakes indicates that these artefacts which are usually the waste products of the manufacturing process have been used as tools without any additional preparation. Their condition also suggests that they probably functioned as tools for short periods and were easily replaced.

Three scrapers were present within the excavated assemblage. As mentioned above one of these occurs on a presumed natural flake. The other two occur on secondary flakes. One is an end scraper from a small river cobble the other a side scraper, both were made on flakes.

Three flint flakes have been burnt.

None of the artefacts are type fossils and therefore dateable to a specific period. The ease of manufacture and the crude forms, the lack of preparation and control, the use of natural flakes and the condition in which these artefacts have been disposed suggests a readily available raw materials and an almost fortuitous use of knapping products for the manufacture of formal tools and usable pieces.

Given the small assemblage their presence within a residual position over wide range of contexts which is compounded by the lack of type fossils and other dating evidence it is difficult to be specific about the date of these artefacts. Given the knapping attributes it is likely that the assemblage is Bronze Age in date and as has been stated before is based on small river cobbles which were readily available within the vicinity of the site.

The gravels along the River Great Ouse are rich in Neolithic and Bronze Age activity sites and it is likely that this assemblage is part of this intense prehistoric utilisation of the flood plain. The presence of a burnt flint flake within the assemblage is suggestive of prehistoric knapping around hearths close to the excavation area. It is likely that these activity areas and associated land surfaces on to which these artefacts were deposited have been truncated by later activity and are no longer in existence.

As these artefacts are in a residual position within the archaeological sequence and unless additional material is made available further analysis or recording of this assemblage would not be a valuable exercise.

Swavesey, Black Horse Lane, 1999

The table below lists stone collected during the 1999 excavation. The assemblage was examined by S. Kemp and unworked stone was recorded and discarded.

Context	quantity	comment
		Miscellaneous stone
3077 Δ39	1	slightly metamorphosed sandstone - not worked
3162	1	burnt red sandstone? with natural iron concretion
3195	1	burnt red sandstone
3259	1	exotic micro granite
3324	1	quartz sandstone, one smooth side - rubbing stone?
3340	1	metamorphosed silt (phyllite?) Scandinavian erratic?
3373	1	burnt sandstone
3396	1	fine quartzite river pebble - not worked
3567	1	slightly burnt fine sandstone, naturally smoothed
3716 Δ83	1	sandstone river pebble
3732	1	shale whetstone
3798	3	granite, basalt, sandstone
3828	1	sandstone river cobble, possible slight evidence of burning
3836	2	quartzite fragments
3947	1	burnt sandstone
3975	4	limestones
Δ74	1	quartzite, sharpening stone?
		Quern fragments
3806	1	conglomerate, quern fragment?
2117	1	vesicular basalt, worked on reverse side 0.25 of rotary quern
3004	1	vesicular basalt, fragment of lava quern
3004	1	vesicular basalt, fragment of lava quern Fd 17
3004	1	vesicular basalt, fragment of lava quern Fd 39
3004	1	vesicular basalt, fragment of lava quern Fd 71
3004	5	vesicular basalt, fragment of lava quern
3004	6	vesicular basalt, fragment of lava quern
3006	1	vesicular basalt, fragment of lava quern
3018	6	vesicular basalt, fragment of lava quern
3021	2	vesicular basalt, fragment of lava quern
3051	1	vesicular basalt, fragment of lava quern
3055	1	vesicular basalt, fragment of lava quern
3100	2	vesicular basalt, fragment of lava quern
3102	1	vesicular basalt, fragment of lava quern
3108	1	vesicular basalt, fragment of lava quern
3111	2	vesicular basalt, fragment of lava quern
3115	1	vesicular basalt, fragment of lava quern
3148	1	burnt sandstone quern fragment
3165	1	vesicular basalt, fragment of lava quern
3180	1	vesicular basalt, fragment of lava quern
3181	3	vesicular basalt, fragment of lava quern
3200	1	vesicular basalt, fragment of lava quern
3200	1	vesicular basalt, fragment of lava quern
3219	1	vesicular basalt, fragment of lava quern
3259	1	vesicular basalt, fragment of lava quern
3324	2	vesicular basalt, fragment of lava quern
3347	1	vesicular basalt, fragment of lava quern
3347	3	vesicular basalt, fragment of lava quern
3353	1	vesicular basalt, fragment of lava quern
3357	1	vesicular basalt, fragment of lava quern
3459	1	vesicular basalt, fragment of lava quern
3562	1	vesicular basalt, fragment of lava quern
3567	1	vesicular basalt, fragment of lava quern
3586	1	vesicular basalt, fragment of lava quern
3603	1	vesicular basalt, fragment of lava quern
3647	1	vesicular basalt, fragment of lava quern
3739	1	vesicular basalt, fragment of lava quern

3779	1	vesicular basalt, fragment of lava quern
3840	1	vesicular basalt, fragment of lava quern
3840	2	vesicular basalt, fragment of lava quern
3854	1	vesicular basalt, fragment of lava quern
3854	1	vesicular basalt, fragment of lava quern
3860	1	vesicular basalt, fragment of lava quern
3938	1	vesicular basalt, fragment of lava quern
3963	1	vesicular basalt, fragment of lava quern
3978	1	vesicular basalt, fragment of lava quern
3995	1	vesicular basalt, fragment of lava quern
4018	1	vesicular basalt, fragment of lava quern
4027	1	vesicular basalt, fragment of lava quern
		Flints
099/793	1	flint, medial backed blade - mesolithic
3004	1	flint - discarded
3004	1	flint bade fragment, proximal end - mesolithic
3004	1	flint flake
3004	1	flint flake
3018	1	flint flake
3307	1	flint, rough flake borer
3370	1	flint, large plunging blade
3716	1	flint - discarded
3716	1	flint flake
3810	1	flint flake
3894	1	flint - discarded
3909	1	flint - discarded
3941	2	burnt flint flakes
4621	1	flint - discarded
4623	1	flint flake
Fd 88	1	flint scraper, slight use on distal end
Δ84	1	flint awl/borer on blade - neolithic

Lava basalts

Two types of lava basalt were identified:

1) Vesicular (medium slight) vesicles small
2) No vesicles (very small)

The distinction between the two was not great.

Appendix II Prehistoric pottery, Steven Willis

Excavations at the Blackhorse Lane site, Swavesey, Cambridgeshire, 1998-9: Assessment of the Iron Age Pottery

Introduction

The excavations at the Blackhorse Lane site by CCCAFU produced an assemblage of later prehistoric pottery amounting to 721 sherds (18,278kg), of which 102 were rims. Much of this pottery came from a series of stratified deposits, evidently dating to the late Iron Age. Other sherds of this period were also recovered as residual items from later contexts. This material belongs on typological evaluation to a single ceramic phase which is undoubtedly late Iron Age, though not closely dateable. It has a potential date bracket of c. 130 BC and AD 80. No chronological sub-divisions are discernible within this material. Of particular importance is the evidence of pottery production at the site during the late Iron Age, this evidence taking the form of one, or possibly two, disturbed kilns and groups of kiln debris, including kiln bars, with which pottery was associated. These finds are additional to the kiln excavated immediately to the north in 1990 (Evans 1990). The kilns and the contemporary features in their vicinity, together with the well preserved pottery, offer a rare opportunity to begin to understand a pottery production site of this period.

Although the assemblage is not large it is of sufficient size to enable types of analysis involving quantifiable variables to be undertaken.

The range of fabrics and forms amongst the Iron Age pottery is wide, though this is not unusual for a site of this date in Cambridgeshire. Overall the assemblage is in remarkably good condition being characterised by an abnormally high proportion of large sherds, with many vessels being represented by several sherds and with a high number of readily identifiable cross-joins between contexts. In consequence the profiles or part profiles of many vessels are evidently reconstructable. Sherds generally display minimal or no abrasion and negligible weathering. Given this exceptional preservation of sherds, within stratified groups, together with the evidence of production, the assemblage has a high research potential. Considered study is likely to yield quality data and to enhance our expanding picture of later prehistoric ceramics in Cambridgeshire and East Anglia.

Six sherds of Roman pottery recovered during the excavations were also submitted of identification. Further, it is possible that a small rim sherd amongst the later Prehistoric material is Bronze Age rather than late Iron Age.

Methodology

The methodology adopted for the assessment followed the guidelines and conventions outlined by the Prehistoric Ceramics Research Group (PCRG 1995). Initial examination of sherds established the existence of considerable variation in the fabric types present and demonstrated that these differences could not be consistently determined by unaided visual examination. Consequently all sherds were scrutinised under a x20 microscope, to establish the nature of the fabric and character of the tempering inclusions. Sherds were accordingly allocated to 1 of 14 different fabric categories identified. The sherds were then counted and weighed and basic data on their technology of production (manufacture), firing conditions, vessel form and occurrence of decoration was recorded. The presence of any surface residues (carbonised deposits and/or limescale) was also recorded, as was a running tally of whether a sherd/vessel might be drawn. This information was entered into an Access database to facilitate basic analysis of the assemblage. The composition of the assemblage is recorded in Table 1.

Fabric	Number of sherds	%	Weight (grams)	%	Average sherd weight	No. of rim sherds
A	217	30.1	4168	22.80	19.2	32
B	168	23.3	2713	14.84	16.2	30
C	13	1.8	491	2.69	37.8	2
D	246	34.1	8994	49.21	36.6	27
E	13	1.8	238	1.30	18.3	2
F	11	1.5	141	0.77	12.8	0
G	1	0.1	13	0.07	13.0	0
H	1	0.1	6	0.03	6.0	0
I	26	3.6	993	5.43	38.2	6
J	2	0.3	28	0.15	14.0	1
K	3	0.4	41	0.23	13.7	0
L	2	0.3	37	0.20	18.5	0
M	17	2.4	398	2.18	23.4	2
N	1	0.1	17	0.09	17.0	0
	721	**100.0**	**18,278**	**100.00**	**25.4**	**102**

Table 1: Late Iron Age Pottery from Swavesey, Blackhorse Lane, (1998-9) by Fabric

Chronology

The Iron Age sherds belong, unequivocally to a late Iron Age cultural horizon. Precise dating in frustrated by the absence of continental imports and of metalwork. Nonetheless, the general form types present, together with the fabric varieties, are well precedented in the region and are consistent with forms catalogued by Thompson (1982); specific parallels can be found amongst the Camulodunum assemblage (Hawkes and Hull 1947; see below). The start date for these types is not securely anchored, especially since the conventional dating of the late Iron Age in south-east England is now in doubt, with the probability that types have been consistently ascribed dates which are unnecessarily 'late' (cf. Haselgrove 1997). Hence the material from Swavesey may pre-date the turn of the millennium. Equally, pottery of this type is known to continue in use in Cambridgeshire into the period following the Roman conquest. No early Roman pottery is present, though this is also the case at other Cambridgeshire sites where occupation is believed to continue well into the second half of the first century AD (pers. comm. J. D. Hill and Chris Evans); Roman material culture was evidently slow to arrive at least some sites in the county. The potential date range is therefore *c* 140/130 BC–AD 80/90. A considerable proportion of the vessels represented display a clear 'Transitional' dimension in terms of their form and/or fabric (i.e. transitional between what is typical of Iron Age vessels and what is typical of Roman vessels, in these respects).

The absence of any pottery that is culturally middle Iron Age is a matter of interest. At some late Iron Age sites in the lower Nene valley, c. 20-25km north-west of Swavesey, late Iron Age (so-called 'Belgic') pottery forms appear alongside Ancaster-Breedon/'Scored Ware' types which are more typical of the middle Iron Age (Elsdon 1992). The evidence from these sites (e.g. Rollo 1988; Willis 1998) and indeed from other sites in Cambridgeshire (pers. comm. J. D. Hill) demonstrates that these types were, at some locations at least, being used contemporaneously. It is unclear whether this absence of middle Iron Age pottery from the Swavesey assemblage is due to cultural factors, or is an index of date (for instance, implying that the assemblage post-dates any overlap between these two ceramic traditions).

The typology of the extant 'Belgic' kiln remains (feature 3928 and perhaps features 2112/2053, see below) and furniture offers no assistance in refining the chronology. Thermoluminescence and archaeomagnetic dating of the kiln remains were considered by the excavator, but in the event did not prove feasible following discussions with various specialists.

There is one rim sherd, from 3100, which may be a Bronze Age residual piece. The sherd is small (6g) and from an uncertain form, though the rim is upstanding above a slight neck. This item has a brown surface and is decorated with simple slash marks at the top of the rim and a narrow herring bone arrangement on the exterior below the rim. These features imply a Bronze Age cultural association but such features are not unprecedented for the Iron Age; some further research is therefore necessary.

The six Roman sherds present are not closely diagnostic of date within that era. A grey ware sherd (from 3259) and a fine oxidised sherd (from 3810) can only be classified as Roman (c. AD 50-400) while three of the remaining four sherds are Nene Valley colour-coated fine wares (c. AD 140/150-400); the remaining item is a copy of a Drag 31 samian dish (c. AD 150-300).

Fabric and Manufacture

Fourteen fabric types are represented amongst the Iron Age pottery. These categories are principally based upon inclusion type though there are other (corresponding) differences. With the possible exception of the quartz grains in Fabrics H and L, and the probable exception of the mica in H, all inclusions are evidently deliberately added temper. A large proportion of sherds can be described as heavily tempered. The following list summarises the fabrics on the basis of inclusions (see Appendix 1 of this report for a fuller description):

Fabric A:	Quartz grains with rare grog.
Fabric B:	Quartz grains with sparse to moderate grog.
Fabric C:	Quartz grains; hard; oxidised.
Fabric D:	Grog.
Fabric E:	Quartz grains; unoxidised.
Fabric F:	Calcareous fragments.
Fabric G:	Rare calcareous fragments.
Fabric H:	Grog, plus very fine mica and some quartz grains.
Fabric I:	Calcareous fragments and grog.
Fabric J:	Flint.
Fabric K:	Flint and grog.
Fabric L:	Flint and sparse quartz grains.
Fabric M:	Grog; calcareous fragments rare.
Fabric N:	Quartz fragments and grog.

The presence of a wide range of fabric categories is not surprising amongst an assemblage of this date from Cambridgeshire, whilst the nature of the tempers used is well precedented in the region. There is no reason to believe that these fabrics are other than very local, though some vessels may have been made elsewhere in the region. Fabrics A, B and D predominate (see Table 1); there was a clear preference for potters to use quartz grains and grog. This is typical for a late Iron Age / 'Transitional' assemblage from this area. Quartz grains and grog are both efficient tempers and will have been readily accessible. Calcite tempering is common amongst Iron Age assemblages in East Anglia and Lincolnshire. The flint and calcite tempered fabrics form only a very minor proportion of the assemblage (Table 1) and represent only a few vessels; rims and other sherds in these fabrics suggest that the forms in question also differ from those of the general run of the assemblage. This latter pattern might imply a different source/s or a slightly differing (earlier) date. This matter should be investigated for the report. However, as a number of later Iron Age assemblages from Cambridgeshire and the south-east Midlands testify, typologically (and ostensibly culturally) differing pottery was, during this period used on settlement sites contemporaneously (cf. above; Rollo 1988; Willis 1998; Hill in Press).

Two strong trends amongst the material are worthy of note here and will require some further investigation in the final report. First, virtually all of the contexts which contained comparatively sizeable groups of Iron Age pottery yielded proportions of the three fabrics which dominate the assemblage as a whole. An exception is context 4016 (27 sherds of Fabric D, from a variety of vessels, but none of A or B). Second, there is no tight form-fabric correspondence in the case of Fabrics A, B and C: a similar variety of vessel forms, including bowls and large storage jars, occur in both the predominantly quartz grain tempered fabrics Fabric A and B and the grog tempered Fabric, D.

The vessels have been manufactured with care and skill. The majority of the sherds (59.8%) come, unequivocally, from hand-made vessels; these are well formed and some may have been finished on a turning board. Some 21.2% of sherds appear to be from wheel-made vessels. In the case of 137 sherds (19%) it is not possible to tell for certain how the vessel was formed; with a proportion of items careful surface finishing has obscured the manufacturing technique (cf. Seager Smith 1998, 13). For the report it will be useful to establish whether there are correlations between method of manufacture and vessel form or fabric. The results of this analysis could then be compared will Hill's thesis that the potter's wheel was a technology adopted by late Iron Age people because they wished to produce new, specific, ceramic forms, and that the choice of a temper to be used in potting was a culturally influenced (Hill in press).

The firing environments which produced these vessels also show variation. Just over half of the sherds (51%) have unoxidised exterior surfaces. The figure for sherds with oxidised surfaces is just over a quarter (28.4%), while the remainder show variation in exterior surface colour. The storage jars tend to have light grey or light brown surfaces, while the three beakers represented (see below) are all oxidised. These types apart, the impression gained is that there is no clear correspondence between colour and form. However, work for the publication report should examine this question.

Form Types and Function

A wide range of forms is represented amongst the material. The very good condition of the material means that a high proportion of the assemblage is sufficiently extant to ascertain forms, profiles and sizes.

The generic form type of the 102 rim sherds present has been identified and these data are presented as percentages in Table 2. (These data are not a perfect index of the form composition of the assemblage as in a number of cases there will be more than one rim sherd from the same vessel; nevertheless the figures provide a valid guide to the character of the assemblage).

Form	Number of rim sherds	Relative frequency
Bowls	52	51.0
Jars	12	11.8
Large storage jars	9	8.8
Bowls or jars	19	18.6
Beakers	5	4.9
Cups	2	2.0
Uncertain	3	2.9
	102	100.00

Table 2: Late Iron Age Pottery from Swavesey, Blackhorse Lane, (1998-9):
Rim sherds by Form Type

The assemblage is clearly dominated by bowls. In large part these are medium sized necked bowls with high rounded shoulders or carinations and a simple bead-type or slightly out-turned rim. A high proportion of the vessels of this type display burnishing or semi-burnished on the exterior of the neck, though this tends to be absent from the body. Vessel shoulders frequently display cordons or corrugations typical of Late Iron Age vessels from south-east England (Thompson 1982; Cunliffe 1991) in the style which has often been referred to as 'Belgic' or late La Tène. In many instances bowl forms present at Swavesey can be paralleled with examples from elsewhere in the region. Some instances can be noted: contexts 2144, 3828 and 3906 produced sherds from vessels of Cam. 218 (Hawkes & Hull 1947); from 3006 came a rim probably from a Cam. 242; 3828 also contained rims from forms Cam. 221 and 258; 3906 also contained a fine example of a Cam. 211b and sherds from identical bowls similar to Cam. 267.

The storage jars present are evidently tall forms with a high shoulder and neck; their straight sided bodies taper moderately to the base. They occur principally in Fabrics A, B and, particularly, D, though there is an example in L. These forms display a high frequency of decoration at Swavesey, with vertical combing on the body and wavy combing on the shoulder being common characteristics. Similar vessels are known from elsewhere in East Anglia and the southern Midlands (e.g. Kenyon 1948, Fig. 34 No. 13; Clamp Fig. 31 Nos. 11 & 12)). One vessel, from 3926, has a thick interior residue, presumably limescale.

Jars form a small proportion of the assemblage and the rim sherds are less easy to parallel than are those from bowls (perhaps due to the fact that these sherds often represent smaller proportions of their parent vessels). Necked and narrow mouthed vessels occur. One vessel resembles Cam. 232, while a vessel in Fabric I has a lid-seated rim and carbonised residues on its exterior.

Sherds from three beakers are present, all warranting illustration. 3948 produced a group of sherds from a single vessel in Fabric M; a number of sherds from a decorated beaker similar to Cam. 115 (in B) came from 3906; much of a further decorated beaker came from 4023 (Fabric A). These beakers are large vessels, with a capacity making them suitable for communal use.

Sherds from a single cup are present (context 3828). Cups are occasionally present amongst later Iron Age and Transitional assemblages. In this case the item in question is a miniature version of the simple carinated bowl, Cam. 214, a type which is widespread in southern Britain during the first century AD.

The overall composition, whilst displaying some considerable range in form variants, is, at the generic level, heavily weighted to one class: the bowl. This basic form is the traditional mainstay of Iron Age assemblages from the region comprising north Cambridgeshire, Peterborough, the Fens, Norfolk and north Suffolk. The near absence of beakers and cups, and the actual absence of platters is typical of the region during this period (cf. Hill in press).

A total of 184 sherds (25.5%) have some decoration present. A large proportion of these are body sherds from large 'storage' jars, which show combing characteristic of the form type, or bowls with bands of horizontal grooves on their upper body.

Soot, carbonised residues and limescale can provide an indication of the functions to which vessels were put. Amongst the present material 4.3% of sherds have interior limescale deposits suggesting that they have been used in a process/es involving the boiling of water. A closely similar proportion of sherds, 4.4%, have exterior soot/carbonised residues, indicating use over fires and perhaps the burning of foodstuffs which have boiled over the side of the vessels. Work for the report should establish whether there is a correspondence between these residues and fabric and/or form type. The proportions of the assemblage with these residues at Swavesey should likewise be compared with data from other sites in the region of equivalent date.

In sum the forms present show a close affinity to those occurring amongst other late Iron Age assemblages in the region. The beakers and cup are the only vessels classifiable as 'finewares' amongst the ensemble (a total of four vessels). The bowls are comparatively well made but are heavy and robust types which cannot be categorised as fineware. In fact the assemblage has a distinctly 'undifferentiated' character, with an absence of 'status' vessels. Quite how the form composition of this assemblage, and the indices of its usage, compare with those of other regional sites is a question to be addressed in the report for publication.

Kiln 3928 and its associated Pottery, and possible kiln 2112/2053

Kiln 3928. This kiln was encountered in 1999 by the northern limit of the excavation. It was disturbed and was only partially exposed within the area of archaeological investigation. The deposit filling the kiln, 3926, produced sherds from four vessels, and in the case of three of these vessels, substantial proportions survived. In sum 83 sherds weighing over 4kg were recovered. The three well represented vessels were all large storage type jars in Fabric D. They differed, however, in typological detail and size; while two were combed on the body the other was unembellished. The latter, however, has what appear to be extensive limescale deposits on the interior. All three were wheel-made and essentially unoxidised. They were clearly not elements of a consistent batch, if indeed their production took place in this kiln or not. The fourth vessel was represented by two rim sherds from a thin walled jar or bowl (more probably the latter), in Fabric B. This vessel was also wheel-made and unoxidised.

An associated deposit lying to one side of the kiln, context 3924, was believed to represent kiln collapse. It yielded 12 sherds belonging to one of the three storage jars from 3926; further sherds from the same vessel were forthcoming from the ditch fill 3934.

'Kiln' 2112/2053: This feature was encountered and investigated during the trial trenching in 1998. It lay between kiln 3928 and the ditch immediately to its south (2123, etc.) which contained large quantities of kiln debris. The identification of 2112/2053 as a late Iron Age kiln is problematic. Morphologically this feature resembles a flue (2112) and Kiln (2053) which can be paralleled with examples from the Nene Valley (Woods 1974). However, no evidence for firing was found and sherds recovered from 2053 were spot-dated to AD 900-1150. The fill of the flue, 2113, contained four small body sherds (35g) in Fabrics B, D and F.

No wasters/sherds from wasters were present amongst the recovered assemblage.

Residuality

The late Iron Age pottery groups should not have any residual material as the site was not used in the Iron Age before this period.

The site was, however, occupied fairly intensively in the early medieval and medieval periods, and as is to be expected in such circumstances an amount of Iron Age pottery had evidently been disturbed by this later activity and incorporated in younger deposits. However, in all cases the amount of Iron Age pottery occurring in later groups is (seemingly) very small. All of the larger groups of Iron Age pottery appear to come from undisturbed contexts.

Curiously all of the Roman sherds from the site were associated with either earlier or later pottery. The two Roman fine ware sherds from 3810 were recovered together with three Late Iron Age sherds. Moreover, all three Nene Valley Colour Coated sherds present in the assemblage (from 3203, 3281 and 3941) were associated with Saxon sherds, while the Roman grey ware fragment from 3259 was present amongst a large medieval group.

Summary and Recommendations

The assemblage from the 1998-9 work at Swavesey is a significant addition to the growing corpus of later Iron Age and Transitional pottery now known from Cambridgeshire. It has particular importance for several reasons. Firstly, most of this pottery occurs in a series of stratified settlement context groups, comprising large sherds many of which con-join to form profiles or part profiles of the original vessels. Secondly, the association with evidence of pottery production is especially notable as very few kiln structures of this period are yet known in Britain (Swan 1984). Third, for a Late Iron Age assemblage with numerous somewhat complicated forms, the proportion of handmade items (albeit well executed) seems high, potentially raising a number of questions.

Iron Age pottery from Cambridgeshire has been comparatively well studied in recent years; understanding of the Swavesey material is likely to benefit from the knowledge gained from these other assemblages, a number of which are being published.

The composition of the assemblage by form appears typical of north Cambridgeshire at this time. Equally characteristic of this region, there is little in the way of what might be defined as fineware or high status pottery, and there are no imports from the continent. The variety of fabrics used in making this pottery is, perhaps, unsurprising, though trends and biases need to be compared to regional norms. There is helpful evidence of use in the case of a proportion of sherds, and likewise this data requires evaluation in terms of other assemblages from the region. Understanding of the assemblage will only be extracted from detailed study and comparison with other groups from the region.

The report for publication will need to consider more fully the dating evidence available (for instance that associated with the specific form types present), in order to arrive at a firmer idea as to the likely date of the assemblage within the late Iron Age bracket.

Further work will need to be undertaken aimed at identifying potential vessels manufactured at Swavesey and fired in the kilns, and considering their typology *vis-à-vis* the products of the few other contemporaneous kilns known in the region. It is possible that the great majority of the vessels represented amongst the 1998-9 assemblage where made on site or very locally. Work by the excavator for the published report should aim to define which contemporary features (if any) are associated with the pottery production process. The identification of such features should shed light on the organisation of the process. Helpfully, con-joining sherds from Iron Age vessels link the following contexts, including the fills of kiln 3928, implying that they might have been existent/open at the same time: 3906, 3924, 3926, 3934, 3939, 3976 and 4016, at minimum.

Preparation of this pottery for publication should examine the possibility that Swavesey products may have been exchanged to the wider region: the identification of such a trade would be a highly significant finding.

Ideally c. 50 items should be drawn for illustration in the published report. The Iron Age pottery specialist should check these drawings at the pencil stage. No specialist petrologic work is required.

My estimation of the time it would take to study and produce a full report for publication on this material is c. 10.5 working days, including proof reading and the checking of drawings

Appendix 1: Description of the Fabrics

Fabric A: Common to abundant sub-rounded and rounded quartz grains, which are fine and well-sorted, occur, together with sparse or rare grog pellets, which are also fine.
Fabric B: Well-sorted sub-rounded and rounded fine quartz grains are common or moderate; fine grog pellets, equally well-sorted are sparse to moderate.
Fabric C: Well sorted, sub-rounded and rounded fine quartz grains are common or abundant; the fabric is hard or very hard, oxidised, with a rough feel.
Fabric D: Examples of this category are moderately hard with a soapy feel and tempered with sub-angular grog pellets in moderate frequency. The pellets are (seemingly invariably) well-sorted, though their size varies from sherd to sherd (vessel to vessel), the range being, typically, c. 0.5-2.5mm.
Fabric E: Well sorted, sub-rounded and rounded fine quartz grains are common or abundant; the fabric is hard and unoxidised.
Fabric F: Calcareous (fossil shell) fragments, typically c. 1-2mm, are common to abundant.
Fabric G: Calcareous (fossil shell) fragments c. 1mm and less are rare.
Fabric H: The fabric is moderately hard with a soapy feel; fine grog pellets occur in sparse frequency together with some very fine mica and rare fine/very fine quartz grains.
Fabric I: Calcareous (fossil shell) fragments, typically c. 1-2mm, are moderate; grog pellets, c. 1-1.5mm are sparse to moderate.
Fabric J: Angular/sub-angular flint, c. 1-2.5mm, is moderate to common.
Fabric K: Angular/sub-angular flint, c. 1-2.5mm, is sparse to moderate; grog pellets c. 1-2mm are sparse to moderate.
Fabric L: Angular/sub-angular flint, c. 1-2.5mm, is moderate to common; fine quartz grains are sparse.
Fabric M: Grog pellets, c. 1-1.5mm are sparse to moderate; calcareous (fossil shell) fragments, typically c. 1mm, are rare.
Fabric N: Fragments of quartz c. 1.5-2mm and grog pellets are sparse.

Bibliography

Clamp, H. 1985. 'The late Iron Age and Romano-British pottery', in P. Clay & J.E. Mellor, Excavations in Bath Lane, Leicester, Leicestershire Museums, Art Galleries & Records Service Archaeological Reports Series, 10, Leicester, 41-59.

Cunliffe, B.W. 1991. Iron Age Communities in Britain, Routledge and Kegan Paul Ltd, London.

Elsdon, S.M. 1992. East Midlands Scored Ware, Transactions of the Leicestershire Archaeological and Historical Society, 66, 83-91.

Evans, C. 1990. Archaeological Investigations at Swavesey, Cambridgeshire, 1990, Cambridge Archaeological Unit, Cambridge.

Haselgrove, C.C. 1997. 'Iron Age brooch deposition and chronology', in A. Gwilt and C.C. Haselgrove (eds), Reconstructing Iron Age Societies, Oxbow Monograph 71, Oxbow, Oxford, 51-72.

Hawkes, C.F.C. and Hull, M.R. 1947. Camulodunum. First Report on the Excavations at Colchester 1930-1939, Reports Research Committee of the Soc. Antiquaries of London 14, Oxford.

Hill, J.D. In Press. 'Just about the potters' wheel? Using and depositing middle and later Iron Age pots in East Anglia', in A. Woodward & J.D. Hill (eds), Prehistoric Britain: The Ceramic Basis, Oxbow monograph, Oxbow.

Kenyon, K.M. 1948. Excavations at the Jewry Wall Site, Leicester, Reports of the Research Committee of the Society of Antiquaries of London, 15, Oxford.

PCRG: Prehistoric Ceramics Research Group 1995. The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication, The Prehistoric Ceramics Research Group Occasional Papers 1 and 2.

Rollo, L. 1988. 'The shell-gritted wares', in D.F. Mackreth, 'Excavation of an Iron Age and Roman enclosure at Werrington, Cambridgeshire', Britannia, 19, (59-151), 107-20.

Seager Smith, R.H. 1998. 'Further excavations at the Iron Age enclosure at Tattershall Thorpe, Lincolnshire, by Peter Chowne, 1986, Lincolnshire History and Archaeology, 33, 7-19.

Swan, V.G. 1984. The Pottery Kilns of Roman Britain, Royal Commission on Historical Monuments Supplementary Series 5, HMSO, London.

Thompson, I. 1982. Grog-Tempered 'Belgic' Pottery of South-Eastern England. BAR British Series, 108, Oxford.

Willis, S.H. 1998. 'Pottery and society in the Iron Age of eastern England and the arrival of Gallo-Belgic and Gallo-Roman wares', in A. Jacques & M. Tuffreau-Libre (eds), La Cèramique Prècoce en Gaule Belgique et dans les Règions Voisines: de la Poterie Gauloise la Cèramique Gallo-Romaine, Nord-Ouest Archèologie 9, Berck-sur-mer, 231-54.

Woods, P.J. 1974. Types of late Belgic and early Romano-British pottery kilns in the Nene Valley, Britannia, 5, 262-81.

Appendix III Medieval pottery, P. Spoerry

1 Factual Data

i) Introduction

This assessment considers pottery from all phases of work from 1995-9. New data has been generated for the 1999 excavations, and this has been added to that produced in earlier phases.

ii) Methodology

The basic guidance in MAP2 has been adhered to (English Heritage 1991). In addition the MPRG documents 'Guidance for the processing and publication of medieval pottery from excavations' (Blake and Davey,1983) and 'A guide to the classification of medieval ceramic forms' (MPRG, 1998) act as a standard.

Spot dating was carried out using the AFU's in-house system based on that used at the Museum of London. Fabric classification has been carried out for all previously described types. New types have been given descriptive identifiers, but full fabric descriptions using binocular microscope and x20 magnification have yet to be carried out for these. All sherds have been counted and classified, and weighed at 'entry' level. Sherds warranting possible illustration have been flagged as have possible cross-fits, although both of these procedures would need more full consideration during quantification.

All data for 1999 has been placed on a full quantification database (Access 1997) which allows for the appending of quantification data.

All pottery has been 'spot dated' on a context by context basis. A single spot dating form has been completed for each context. These are held as part of the central project archive.

iii) Quantity of material

The 1999 excavations generated 2711 sherds, 33722g of pottery, in addition to the Iron Age assemblage considered elsewhere (Willis this report). Figures for all elements in the excavation programme are given in Table 1.

Phase of work	**Number of sherds**	**Weight of pottery (g)**
SWASL95	149	2171
SWASL96	436	3782
SWABL97	105	1196
SWASL97	1356	13219
SWABL98	516	6933
	includes 170 IA sherds	weight not known
SWABL99	3432	52000
	includes 721 IA sherds	includes 18278g IA pot
Total	**5992**	**79301**

Table 1 All pottery recovered from the Swavesey excavations and evaluations

The date of most material is either in the 900-1150 bracket, or more commonly in the 1150-1400 bracket. There is surprisingly little late medieval and early post-medieval material. There are less than five pre-AD900 Saxon sherds. The assemblage offers high potential for characterising assemblages in the period 1000-1400, with probably continuity throughout this period. Either side of this date-range there is little potential and few groups.

iv) Provenance and contamination

Basic statistics relating to source area for the 1999 assemblage are given in Table 2. This indicates a wider source area than might be expected in most rural assemblages, but the dominance of material from further west, rather than the fenland in the east is intriguing.

General provenance	% of assemblage by count
Fenland/local	28%
Essex	1.4%
Norfolk/Suffolk	17.2%
Lincs	2.7%
Northants/Beds	44.4%
Other/unknown	6.3%

Table 2 General provenance areas for 1999 post-Roman assemblage

Contamination of this assemblage has been difficult to quantify owing to the poor state of knowledge for local industries and the slow rate of change in ceramics during this period. There are, however, many sherds of ostensibly 900-1150 date found alongside others of later than 1150 date. The former are thus assumed to be residual. This may, however, demonstrate more a lack of clarity regarding the end of Saxo-Norman types and their replacement, than actual residuality within context groups. This questions will be pursued in analysis, where other fabric types or artefact types offer closer dating to groups of sherds demonstrating these problems.

v) Sampling bias

The open area excavation was carried out by hand and selection made through standard sampling procedures on a feature by feature basis. There are not expected to be any inherent biases. Where bulk samples have been processed for environmental remains, there has also been some recovery of pottery. This is only small amounts, however, and serious bias is not expected to result.

vi) Condition

This assemblage is not large. On average sherd size is fairly small (13.6g per sherd) and more in keeping with averages on rural sites than with urban-type deposition. No preservation bias has been recognised and no long-term storage problems are likely.

This assemblage has few near-complete vessels. It is moderately to significantly fragmented and in a well-understood and published region would be deemed of limited value beyond the basic requirements of the stratigraphic sequence and the need to provide comparative period statistics. In this region, however, where the medieval assemblage is poorly understood and barely published, it offers a window into the fenland/fen edge assemblage not so far provided by other sites in the zone between Cambridge and Huntingdon. Thus full quantification and analysis of the main period groups seems appropriate.

2 Statement of Research Potential

i) Research Potential

Relevant Research Questions in Project Design

Definition and dating of earlier settlement phases on the site and later contraction to non-urban status (primary tool pottery dating)

Analysis of trade contacts through the study of material culture, particularly intra-regional trade systems

Examination of evidence for urban zoning and urban economics, especially craft specialisation and industrial processing

New Questions

The above questions remain generally valid. There will be refinement of intra-site comparisons of material culture to account for the actual property units recognised. In addition the evidence for craft specialisation and industrial processing was not substantial and ceramics are unlikely to supply much data here.

Potential to aid Local, Regional and National priorities

At the local level, no research strategy exists beyond that identified in the documentation for this project. It is worth noting, however, that dating and the establishment of a chronology for the local ceramics assemblage are crucial in taking forward any understanding of settlement dynamics.

Study of the fenland towns is rightly recognised as an area of high potential in the eastern counties research agenda and strategy document (Ayers 2000). In urban studies in general this document also highlights communications between towns, correlation of status with product specialisation and output and the establishment of basic chronologies as all crucial areas of research. Ceramic analysis on this assemblage can contribute to all of these.

At the national level the English Heritage funded review medieval ceramic studies in England (Mellor 1994) identified a number of research themes, all of which require the local sequence to be at least generally characterised before they can be investigated. It then identifies Cambridgeshire as a 'black hole' in medieval ceramic studies with a lack of well stratified or dateable groups. The onus is therefore on identifying, describing and publishing larger groups where they exist to lay the foundations for more specific analysis at a later date.

ii) Proposals for Further Record and Analysis (method statement)

Stratified pottery from all phases of evaluation and excavation described here requires quantification to at least a basic level. Thus the proposal should be to identify and quantify stratified pottery from excavation areas, recording all fields associated with fabric, form, decoration, technology and use.

Analysis of this assemblage on various field criteria, based on major stratigraphic units.

A textual report on the results of the above.

Macroscopic (based on x20 magnification) of all major new fabric types, with discussion of provenance issues.

Tabular statistics of fabric and vessel data.

Illustrations of new forms and traits, especially relating to local fabric types which are otherwise unpublished to date.

Recommendation of those fabric types warranting scientific (thin section and chemical) analysis as part of a regional study (not proposed as part of this report).

iii) Publication

The above report should be included as a chapter in or appendix to the major site report. Advances in understanding the local ceramic assemblage: either recognition of new producers, or identification of cross-fenland/regional contacts and trends, may require publication as a separate short paper in Medieval Ceramics. The latter is not deemed to be an actual direct outcome of this project.

Bibliography

Ayres, B. 2000 Anglo-Saxon, Medieval and Post-Medieval (Urban) in Research and Archaeology: A Framework for the Eastern Counties 2. research agenda and strategy, East Anglian Occasional Papers **8**

Blake, H. and Davey, P. 1983 Guidelines for the Processing and Publication of Medieval Pottery from Excavations. Directorate of Ancient Monuments and Historic Buildings Occasional Paper **5**

English Heritage 1991 MAP2

Medieval Pottery Research Group 1998 A Guide to the Classification of Medieval Ceramic Forms. Medieval Pottery Research Group Occasional Paper **1**

Mellor, M. 1994 Medieval Ceramic Studies in England: A Review for English Heritage

Appendix IV Swavesey Registered Finds Assessment by Holly Duncan

Method statement for assessment

For the purposes of the assessment all the registered finds were identified and quantified. Each registered find was assigned a broad term, narrow term, and allocated to a functional category. Descriptive catalogue entries were written for every item. Where possible, dates have been allocated to the individual items. This information was entered into an access database. All ironwork and six items of copper alloy were submitted to Lincolnshire Archives for x-ray, plate numbers were entered into the finds database.

Quantification

A total of 211 items was submitted for identification. A single item was found to be naturally formed concretion. The remainder of the assemblage is presented below by material.

Material	Quantity
Bone	7
Copper alloy	24
Iron	134
Glass	2
Lead/Tin	8
Lead	35
	210

Table 1: Quantity of artefacts by material

Date range

A scan of the typologically datable finds indicates a date range spanning the early to late medieval/early post-medieval period with an additional component of modern items. A number of finds could not be assigned a close date due either to long periods of use with little alteration in form or to incomplete survival. Quantification of the dated items is as follows: -

- Saxo-Norman-early medieval (10th-12th) – twelve
- 'High medieval' (13th-14th) – eleven
- later medieval–early post-medieval (14th-16th) – eleven
- post-medieval – nine
- modern – seven

This suggests that there was continued occupation and/or activity at Swavesey throughout the medieval and into the early post-medieval period.

Provenance

The quantity of finds by method of recovery is presented in table 2. Of the total finds recovered, 61% derived from metal detecting and 'cleaning' activity. Although this assemblage does not derive from stratified deposits, the majority of these finds were allocated co-ordinates. Therefore there is potential to compare the date range and function of this group of finds to that of the assemblage deriving from the underlying, stratified deposits.

Recovery method	Quantity	Percentage
Metal detecting and cleaning	128	61
'Hand' excavation	78	37.1
Soil samples	4	1.9
Total	210	100

Quantities of artefacts from stratified contexts by feature type are presented below. The majority of finds derived from ditch and pit deposits, with few directly associated with structural deposits.

Feature type	Quantity	Percentage
Layers (unspecified)	3	3.66
Ditch	46	56.09
Pit	28	34.15
Structural (foundation trench, postholes & gullies)	4	4.88
	1	1.22
	82	100

Table 3: Stratified assemblage by deposit type

Of the 52 stratified contexts producing non-ceramic finds, 44 were assigned a pottery spot-date. These dates fall into four basic divisions:-

- 900-1200
- 1200-1400
- 1400-1600
- 1600-1800

A preliminary comparison of the date range of the finds with that of the pottery spot dates indicates a general compatibility, with only a small constituent of both residual and intrusive elements apparent. Residuality is suggested in the case of the fill of foundation cut [3946], where a single-sided composite bone comb dating to the 10th-11th centuries was associated with pottery of 1200-1350. The fill of pit [1539] produced a fiddle key, shoeing nail, generally dated to between the 9th to 13th centuries, in association with pottery of the 14th and 15th centuries. The final possible instance of residuality was noted from the fill of pit [3186]. This deposit, dated between 1200-1350, yielded a drilled femur spindle whorl. This form of spindle whorl was in use initially in the Iron Age, and continued sporadically thereafter until renewed burst of use in 9th-11th/12th century (MacGregor 1985, 187). Examples recovered from later deposits are generally considered to be residual, although it should be noted that several examples from deposits of the 13th to 15th century were encountered at Norwich (Margeson 1993, 184-85).

Intrusive activity was noted in one instance. The fill of ditch [4588], which produced pottery of 10th-12th century, also yielded a modern screw.

Range and Variety

Metalwork accounts for 95.7% of the assemblage, strongly suggesting the metal detecting survey biased the overall composition. The assemblage deriving from stratified contexts is fairly modest (Table 4). Although building fabric was poorly represented, with only a single sherd of window glass, building fittings, in the form of door furniture, locking mechanisms and general fastenings, were more numerous, although not suggestive of a concentration of structures. No household furnishings and few household utensils were recovered, perhaps due to their portable nature. The knives and shears may also have been used within the household, although these items may equally have been used in craft activities. Craft activity appears to have been restricted to textile production, with both spinning and weaving implements present. Based upon the typological date of these items, this activity may have occurred in the earlier half of the medieval period.

Both horseshoes survived in a fragmentary state and considering the relatively short life span of these items (Clark 1995, 1 and 9), their presence is more likely attributable to passing traffic rather than the existence of stabling. Agricultural and horticultural implements are poorly represented. This may be due to a combination of factors, the expense of iron, the fact that wood formed a major component of many of the tools and, in the instance of hand tools, their portable nature.

Items of a personal nature, including dress fittings, jewellery and toiletry items, were limited in number. Two of the three items recovered date to the first half of the medieval period. The later medieval–early post-medieval period, when dress fastenings are generally encountered in some quantities, is poorly represented. This may indicate a shift in the focus of occupation or activity away from the excavated area.

Function category	Broad Term	Quantity
Building material	window glass	1
Building fasteners and fittings	door stud	3
Building fasteners and fittings	hinge	2
Building fasteners and fittings	key	1
Building fasteners and fittings	nail	28
Building fasteners and fittings	padlock	1
Building fasteners and fittings	screw	1
Building fasteners and fittings	staple	1
Household	spoon	1
Household	vessel	1
Craft & Industry	pin beater	2
Craft and Industry	spindle whorl	1
Multipurpose blades & sharpeners	knife	6
Multipurpose blades & sharpeners	shears	1
Transportation	horseshoe	2
Transportation	shoeing nail	4
Agriculture and subsistence	rake	1
Dress and personal accessories	buckle	1
Dress and personal accessories	pin	1
Toiletry	comb	1
Unidentified	fragment	19
Unidentified	ring	1
Unidentified	uncertain	2
Total		82

Table 4: Stratified assemblage

The assemblage from the surface collection although mirroring some aspects of that from stratified deposits is more numerous and possesses a larger component of late medieval-early post-medieval finds. This is evident in the personal fittings, with the find of buttons, strap-ends, white metal buckles and a brooch, all typical of the 14th-16th century. Components of earlier medieval activity are apparent, and include finds of a bone pin-beater, 'Norman' horseshoe, reaping hook and buckle. There is a wider range of craft activity indicated, as evidenced by the presence of an axe and a mason's chisel.

Function category	Broad term	Quantity
Building material	came	1
Building fasteners and fittings	door stud	7
Building fasteners and fittings	lock	1
Building fasteners and fittings	nail	37
Building fasteners and fittings	padlock	1
Building fasteners and fittings	swivel	1
Building fasteners and fittings	washer	1
Household	curtain ring	1
Household	upholstery tack	1
Household	vessel	1
Craft & Industry	axe	1
Craft & Industry	chisel	2
Craft & Industry	off-cut	2
Craft & Industry	pin beater	1
Craft & Industry	spindle whorl	3
Craft & Industry	waste/scrap	17
Craft & Industry	wedge	1
Multipurpose blades and sharpeners	knife	2
Currency	coin	3
Transportation	horseshoe	2
Transportation	harness ring	1
Transportation	shoeing nail	4
Agriculture and subsistence	weeding or reaping hook	1
Agriculture and subsistence	fishing weight	3
Weaponry	musket ball	1
Dress and personal accessories	badge	1

Dress and personal accessories	brooch	2
Dress and personal accessories	buckle	5
Dress and personal accessories	buckle plate	2
Dress and personal accessories	button	3
Dress and personal accessories	lace end?	1
Dress and personal accessories	pin	1
Dress and personal accessories	cast rivet/strap fitting	1
Dress and personal accessories	shoe iron	1
Dress and personal accessories	strap end	1
Dress and personal accessories	strap mount	1
Toiletry	comb	1
Unidentified	fragment	11
Unidentified	uncertain	1
		128

Table 5: Surface Collection

Condition, Storage and Curation

The condition of the metalwork was assessed by visual examination with the aid of a microscope. All ironwork (135 items) and six copper alloy objects were submitted for x-radiography to Lincolnshire Archives. X-radiography indicated that a single item of iron was in fact concretion. The ironwork and copper alloy were generally in fair condition. In a few instances the surface detail was worn or indistinct on the copper alloy coinage. Lead and lead alloys survived in fair to good condition, as did items of bone. The two small sherds of glass displayed signs of decay in the form of iridescent surfaces.

Appropriate packaging, including padding and silica gel, will ensure, as far as is possible, the long-term preservation of the assemblage. The metalwork will need to be stored in air-tight boxes, with silica gel and RH indicator cards. The RH within the containers must be monitored on a regular basis and the silica gel replaced as soon as the RH rises above 20%. Non-metal items should be stored in as stable an environment as possible, preferably at an RH of 50-55% and a temperature of 18-20 degrees Celsius.

Statement of Potential

Revised aims

Objective 1: To produce an accessible archive of the results
As a result of the assessment, descriptive catalogue entries have been prepared for all the finds submitted. These have been entered on an Access database table which can be linked with the structural, ceramic and ecofactual data to provide an integrated and accessible archive.

Objective 2: To attempt the interpretation of the functional nature of the site.
An analysis of the date, function and distribution of the registered finds assemblage has moderate potential to contribute to this aim. Presence/absence of certain finds types over time may assist in indicating the nature, and to a degree status, of the settlement or activities undertaken. The assemblage recovered from stratified deposits suggests domestic activity. Structures are attested by building fittings and a limited number of household utensils. Home-based crafts of spinning and weaving are indicated by the presence of a spindle whorl and pin-beaters. Knives and shears are equally at home in both a domestic and craft setting. Objects of a more personal nature such as dress accessories and toiletry items, although limited in number, are present. There is slight indication of horticultural or agricultural activity. Few finds were recovered from deposits within buildings, the majority deriving from ditches and pits (see table 3). An examination of the proximity of these pits and ditches to structures may assist in determining the dating, and to a lesser extent activities carried out within, these structures.

Objective 3: to place the interpretation of the site within its local context and with reference to previous work on adjacent sites.
Objective 5: to highlight the potential for re-assessment of any aspects of the previous work in the local area where the finds of the recent excavations may indicate a re-appraisal in terms of date or primary interpretation.

The distribution pattern of the stratified non-ceramic assemblage indicates a northerly concentration, especially in the north-northwest corner of the site, with a limited number of finds deriving from the south-southeast. Few finds were recovered from the easternmost portion of the site. Where datable, the finds from the northern concentration are of Saxo-Norman/early medieval date with, to lesser degree, some indication of continuing activity in the 13th-14th century. This distribution pattern confirms and complements that of the earlier investigations (Cooper and Spoerry 1997; Roberts 1998), suggesting a Saxo-Norman origin for this settlement concentrated on the better drained soils of the gravel island. Combining the results from all seasons of investigations, from 1995 to 1999, has moderate to high potential to examine the nature and origins of this settlement, and to a lesser extent, to examine the process of development from this settlement to the 12th century castle and suggested 13th century planned town.

The datable stratified assemblage was concentrated in the earlier medieval period, whereas the assemblage from metal detecting and cleaning, although possessing an earlier medieval component, had a greater number of late medieval to early post-medieval material. A plot of the metal detecting and cleaning assemblage has moderate potential to examine if a shift in the focus of occupation activity, toward the eastern portion of the investigated area, occurred over time.

Objective 4: to place the interpretation of the site within its regional context with reference to contemporary and comparable sites in the region.
The Research agenda and strategy for the Eastern Counties (draft 1999) notes that 'Most settlement sites located or excavated are deserted and there are virtually no data for the origins and development of existing settlements, other than the major historic towns' (Wade 1999, 42). Whilst the confines of the investigated area limit the potential to address all the issues in this research objective, the combined study of all the strands of evidence from Swavesey possesses high potential to contribute to the determination of the origin of this town. A comparison of the finds assemblages from settlements of similar date within the county and surrounding area, e.g. Botolph Bridge, Orton Longueville, Peterborough, Hinxton Hall, Cambridgeshire, Stratton, near Biggleswade, Bedfordshire, may highlight potential similarities and differences in the composition of these assemblages which may assist in determining the nature of this 'pre-town' settlement. The wider regional objective, the development of towns and their relationship to the hinterland, in particular with reference to the Fenland basin, must await further excavation and research on hinterland sites in the area of Swavesey before any conclusions as to their inter-relationships can be attempted.

Research issues

***Early prehistoric** features and remains*
The registered finds assemblage has no potential to address this research issue.

***Iron Age:** date of the occupation (including datable pottery assemblages), development of industrial production and economic development.*
As no finds of this date were identified within the current assemblage, the registered finds have no potential to address this research issue.

***Medieval:** date of the occupation of this part of the gravel island and relating these to periods of alluviation/flooding; settlement patterns and relationship to the rural hinterland.*
The registered finds assemblage has moderate to good potential to contribute to determining the date of occupation of this part of the gravel island. There is little potential to link occupation activity with alluviation/flooding due to the absence of stratigraphic links between water-related deposits and occupation deposits. Until further excavation is conducted on hinterland sites in the area of Swavesey, no conclusions as to their inter-relationships can be attempted. The finds from Swavesey will however, serve as a reference point for future research.

Method statement for analysis

As a result of the assessment stage, each registered find submitted was assigned a broad term, narrow term, functional category and where possible, a date range. A descriptive catalogue entry was also compiled. X-radiography was carried out on all ironwork and six items of copper alloy and no further work to assist in determining the identification of the objects was considered necessary.

1. Phasing and co-ordinates liaison
Before undertaking further finds analysis, liaison with the excavating unit and other finds specialists, will be required to refine phasing information.

In addition, although the assemblage garnered from surface collections, cleaning and metal detecting (61% of the total assemblage) is not securely stratified, if co-ordinates are available these finds could be related to excavation areas. Potential therefore exists to compare the date range and function of this assemblage to that from the underlying, stratified deposits. Such a comparison could complement trends which may be present within the stratified assemblage. Liaison will be required to ensure efficient transfer of this information via electronic media.

2. Distribution Analysis
Once phasing has been finalised, analysis of the distribution of the stratified assemblage can be undertaken. This is essential in order to identify patterns or concentrations of artefacts of specific date, period or function across the site. A plot of the assemblage deriving from metal detecting and surface collection will be carried out in order to see if complementary patterns are evident. Finds which cannot assist in determining the nature, date or function of activity (for example the 30 items identified as 'fragments') will not be the subject of this distribution analysis.

3. Publication Catalogue
A selection of registered finds will be made for inclusion in the publication catalogue and the draft catalogue prepared. Items deriving from metal detecting will be included in the catalogue if they are of intrinsic interest and/or contribute to the aims and objectives of the project.

This will be organised in the following hierarchy:
- Functional category
- Broad term
- Narrow term and chronological date range within each broad term category.

Selection of artefacts for publication standard illustration will be made at this juncture and liaison between the illustrator and the finds specialist will be required.

4. Registered finds assemblage overview
A discussion of the registered finds in relation to their site context will be written. This discussion will address fluctuations in:
- Rates and types of artefact recovery within each functional category; and
- The presence/absence of functional categories in relation to both the temporal and spatial framework of the site. Interpretations are considered in light of general availability of materials, technological innovations, trade patterns and prevailing fashions of each period represented.

5. General Project liaison
In any project involving both in-house and external specialists it is essential to the smooth-running and efficiency of the project to ensure that time is allocated for liaison with the contracting unit and between the project specialists.

Task List and Resources

Task	Description	Aims	Quantity of Evidence	Staff	Days	Rate	Cost
3	Phasing and co-ordinate liaison			HD	2.0	169.70	339.40
4	Distribution analysis		210	HD	1.5	169.70	254.55
5	Publication catalogue		175	HD	6.0	169.70	1018.20
6	Finds overview			HD	3.5	169.70	593.95
7	General project liaison			HD	1.0	169.70	169.70
					14.0		**2375.80**

Notes:
Courier service for the transfer of the finds assemblage is not included in the above costs.
Travel costs to Cambridge, if required, will be an additional cost.
The day rate quoted is for 2001-2002 financial year.

Bibliography

Clark, J 1995 The Medieval Horse and its Equipment

Cooper, S and Spoerry, P 1997 Late Saxon and Medieval Activity at Barwells Engineering Site, Blackhorse Lane, Swavesey Cambridgeshire County Council Report No. 136

Glazebrook, J (ed) 1997 Research and Archaeology: A Framework for the Eastern Counties I resource assessment East Anglian Archaeology Occasional Paper 3

MacGregor, A 1985 Bone, Antler, Ivory and Horn The Technology of Skeletal Materials since the Roman Period

Margeson, S 1993 Norwich Households – Medieval and Post-Medieval Finds from Norwich Survey Excavations 1971-78 East Anglian Archaeology 58

Roberts, J 1998 Iron Age and Medieval activity at Blackhorse, Lane, Swavesey Cambridgeshire County Council Report No. 151

Wade, K 1999 'Anglo-Saxon and Medieval (Rural)' in Research and Archaeology: A Framework for the Eastern Counties 2: Research Agenda and Strategy Draft April 1999, 42-50

Sf. no.	Box no.	Period	Type/Description	Material	Total	Context no.
97/001	1	13th	buckle frag	cu alloy		1087
97/002	2		knife frag	iron		1105
97/004	2		hinge, strip	iron		1268
97/005	2		knife	iron		1384
97/006	1		strap with punched hole	cu alloy		1437
97/007	2	post1350	'key hole' horse shoe	iron		1480
97/008	2		strap hinge	iron		1498
97/009	1		annular buckle	cu alloy		1000
97/010	2		bolt	iron		1000
97/011	2		disc with punched hole	cu alloy		1000
97/012	2	med	buckle	iron		1004
97/013	1	1714-60	George I or II farthing	alloy		1005
97/014	2		flat strip	iron		1043
97/015	2	9-13th	T-shaped horse shoe nails	iron	2	1146
97/016	2		nail shank	iron		1231
97/017	2		fragment	iron		1278
97/018	2		nail fragments	iron		1332
97/019	1	modern	badge?	aluminium		1438
97/020	3		scrap	lead		1004
97/021	3		scrap	lead		1000
99/001	7	16-18th	comb	bone ?		3004
99/002	6	12-14th	sickle	iron		3004
99/003		14-15th	not used			3004
99/004	4	16-17	stud	pewter		3004
99/005	5	15-16	stud	pewter		3004
99/006	5	16-17th	shoe buckle	cu alloy		3004
99/007	5	18th	harness ring and 18th c halfpenny	cu alloy		3004
99/008	4	9-10/11th	spindle whorl	lead		3004
99/009		med	spindle whorl - missing	lead		3004
99/010		med	spindle whorl - missing	lead		3004
99/011	4		lozenge shaped weight	lead		3004
99/012	4		toggle / fastener	lead		3004
99/013	4		rolled sheet	lead		3004
99/014	4	15-16th	cast handle fragment	cu alloy		3004
99/015	4		fragment	lead ?		3004

99/016	4	9-10/11th	spindle whorl	lead		3004
99/017	5	pre-19th	button	cu alloy		3004
99/018	4		scrap	lead		3004
99/019			scored pot (with med. pot)	ceramic		3018
99/020	6		timber nail	iron		3004
99/021	6		timber nail	iron		3004
99/022	6		object	iron		3006
99/023	6	13-mid	horseshoe	iron		3004
99/024	6		object	iron		3004
99/025	6		timber nail	iron		3004
99/026	6		door stud, nail shank	iron	2	3004
99/027	6		timber nails	iron	4	3004
99/028	6		door studs	iron	2	3004
99/029	6		object	iron		3004
99/030	6		timber nails & nail shank	iron	2	3004
99/031	6		nail shank	iron		3004
99/032	6		nail	iron		3192
99/033	6		nail	iron		3192
99/034			piece of pot with wire (with IA pot)	ceramic & cu alloy		3182
99/035	7	10-12th	pin beater	bone		3174
99/036	7	10-12th	pin beater	bone		3174
99/037	6		nail	iron		3229
99/038	6	9/10-11c	door key	iron		3200
99/039			whet stone (with stone)	stone		3077
99/040	6		nail	iron		3098
99/041			whet stone (with stone)	stone		3113
99/042	6		nail	iron		3176
99/043	6		nail	iron		3220
99/044	6		nail	iron		3207
99/045	6		nail	iron		3229
99/046	5	13-14th	brooch	cu alloy		3286
99/047	6		nail	iron		3282
99/048	6	19th	boot heel	iron		3282
99/049	6		nail	iron		3051
99/050	6		door stud	iron		3202
99/051	6		nail	iron		3200
99/052	7		pierced shaft large mammal	bone		3207
99/053	6		nail / pin punch	iron		3311
99/054	4	late 13th	spoon stem	pewter		3259
99/055			pin - missing	bone		3349
99/056	6		knife ?	iron		3328
99/057	4		object	lead		3004
99/058	7	10-12th	pin beater	bone		3004
99/059	6		object	iron		3309
99/060	6		nail	iron		3309
99/061	6		nail	iron		3345
99/062	6	9-13th	shoeing nail	iron		3345
99/063	6		nail	iron		3443
99/064	6		knife fragment ?	iron		3443
99/065	6		hook staple (door gate)	iron		3316
99/066	6		nail	iron		3311
99/067	6		object	iron		3273
99/068	6		nail	iron		3266
99/069			face pot sherds (with med. pot)	ceramic		3472
99/070	5	mod?	coiled ring	cu alloy		3562
99/071	6		mason's chisel	iron		3004
99/072	5	1807	halfpenny	cu alloy		3004

99/073			flint flake (with stone)	stone		3716
99/074			worked stone (with stone)	stone		3004
99/075	6		nail	iron		3455
99/076	6		nail	iron		3357
99/077	6		nail	iron		3357
99/078	6		nail	iron		3340
99/079	6		nail	iron		3340
99/080	6		strap hinge	iron		3340
99/081	6		rake/harrow	iron		3461
99/082	5	14-15	round headed pin	cu alloy		3004
99/083			hammer stone (with stone)	stone		3716
99/084			worked flint (with stone)	stone		3004
99/085			worked bone (flute - with G. Lawson)	bone		3004
99/086			fragment - missing	glass		3891
99/087			stake - missing	iron		3907
99/088			flint flake (with stone)	stone		3004
99/089			pot from kiln (with IA pot)	ceramic		3926
99/090	6		door stud	iron	2	3869
99/091	4		scrap	lead		3004
99/092	6		nail shank	iron		3004
99/093		12-16	tuning peg (with G. Lawson)	bone ?		4541
99/094	7	IA/9-11th	pierced femoral head	bone		3188
99/095	6		knife ?	iron		3798
99/096	4	14-15th	brooch	pewter		3004
99/097	6		door stud	iron		3004
99/098	6		timber nail	iron		3004
99/099	6	19th	shoe iron	iron		3004
99/100	6		tack	cu alloy		3004
99/101	6		timber nail	iron		3004
99/102	5	13-16thc	strap end buckle	cu alloy		3004
99/103	4		scrap	lead		3004
99/104	6	16th+	shoeing nail	iron		3004
99/105	6		timber nails & nail shank	iron	4	3004
99/106	6		timber nail	iron		3004
99/107	6	9-16th	nail shank	iron	5	3004
99/108	6		timber nail	iron		3004
99/109	6		door stud	iron		3004
99/110	4		scrap	lead		3004
99/111	4		scrap	lead		3004
99/112	6		timber nail	iron		3004
99/113	6	15-16	axe or sickle fragment	iron		3004
99/114	6	1550+	knife	iron		3004
99/115			missing			
99/116	5	15-19th	button stud	pewter		3004
99/117	5	14-15	pin from buckle	cu alloy		3004
99/118	6		door stud	iron	8	3004
99/119			missing			
99/120	6	16-17	large nail fragment	iron		3004
99/121	6	16-17	large nail	iron		3004
99/122	6	med/pm	ward plate	iron		3004
99/123	6		door stud	iron		3004
99/124	6		small nail	iron		3004
99/125	6		small nail	iron		3004
99/126	6		small nail	iron		3004
99/127	6		small nail	iron		3004
99/128	6	18th+	horseshoe	iron		3004
99/129	4	9/10-11th	spindle whorl	lead		3004
99/130	5		rivet	cu alloy		3004

99/131	6		small nail	iron		3004
99/132	4		scrap	lead		3004
99/133			missing			
99/134	4		scrap	lead		3004
99/135	4		scrap	lead		3004
99/136	4		scrap	lead		3004
99/137	4		scrap	lead		
99/138	4		scrap	lead		3004
99/139	5		belt buckle plate	cu alloy		3004
99/140	5	12th	strap end	cu alloy		3004
99/141	6		buckle	iron		3004
99/142	4		scrap	lead		3004
99/143	4		pellet	lead		3004
99/144	5		stud	cu alloy		3004
99/145	4		scrap	lead		3004
99/146	4	16th+	musket ball	lead		3004
99/147	4	13-16th	badge fragment	pewter		3004
99/148	5	14-e15th	strap end	cu alloy		3004
99/149	4		scrap	lead		3004
99/150	5		fragment	cu alloy		3004
99/151	4		scrap	lead		3004
99/152	4		scrap	lead		3004
99/153	4		window lead	lead		3004
99/154	6	13-14th	padlock bolt	iron		3004
99/155	7	10-11th	comb	bone ?		3947
99/156	7	16-17c	window glass	glass		3282
99/157	4		scrap	lead		3004
99/158	4		scrap	lead		3004
99/159	6		nail	iron		3067
99/160	6		horseshoe fragment?	iron		3427
99/161	6	med-post	padlock bolt	iron	5	3868
99/162	6		nail	iron		3947
99/163	6		nail	iron		4513
99/164	6	19th+	screw	iron		4518
99/165	6		door stud	iron		4573
99/166	6	9-13th	shoeing nail (from ◊ 53)	iron		3468
99/167	6		nail (from ◊ 72)	iron		3458
99/168	6		nail / pin (from ◊ 92)	iron		3695
99/169	6		corroded lump (from ◊ 101)	iron		3906
99/170	5		fragments (from ◊ 92)	cu alloy		3695
99/171		17-19th	vessel glass	glass		4579

METAL DETECTOR SURVEY – C. Montague

A systematic metal detector survey was carried out across the site, to determine the concentrations of ferrous and non-ferrous objects. It soon became apparent that there were concentrations of ferrous signals. One concentration of ferrous signals was in the north-west of the site. A small number of these objects where dug and tested. These turned out to be small building nails and may be an indication of a later (17-18th) century building. It was noticeable that most of the concentrations of metal work were in the north-west of the site. This was highlighted by a total station survey of metal finds over the whole site. It was with the plotted out overlay that these results where found .

The track-way also had a high percentage of both ferrous and non-ferrous metal finds. Ferrous items were mostly 17-18th century nails. Non-ferrous items included a ring brooch, found in an adjacent ditch, and a 14-15th century copper-alloy round-headed pin. This is an indication that the track-way was in use through the medieval period to at least the 17th century.

Appendix V Environmental remains assessment, J. Rackham and D. Schlee

Assessment of potential for environmental samples from excavations at School Lane, Swavesey 1997 by Duncan Schlee

It was intended that environmental sampling would provide information relating changes in economy, land use and settlement, to changes in local environmental conditions on the fen edge, especially flooding episodes. Archaeological evidence was recovered indicating activity at the site from the Late Saxon period through to the fourteenth century.

Bulk soil samples were taken from excavated archaeological features to obtain economic data from charred and waterlogged plant remains. Mollusc samples were taken in the hope of obtaining evidence for changes in water conditions throughout the history of the site and local environmental conditions. Micromorphological samples were taken through unexpected surviving medieval floor deposits.

Quantity

A total of 25 bulk soil samples (generally of 10 or 20 litres), were taken for the recovery of plant macrofossils and any other archaeologically significant material. Thirteen mollusc samples were taken through a series of deposits within a ditch. Two monolith samples were taken for micromorphological analysis. Four postholes, four ditch deposits, seven possible hearth deposits, and ten samples from five pits were taken for the recovery of plant macrofossils.

Method of assessment

Sixteen bulk samples were processed using a standard Siraf-type flotation machine. Flots were collected in 5mm meshes, heavy residues retained in 1mm meshes.

This assessment of potential is based on rapid scanning (using a low magnification binocular microscope) of the flot fractions only. The aim was to ascertain both the quality and types of preservation, and the range and relative quantities of plant species represented, in order to assess the potential of the samples for further analysis.

The heavy residues of two samples were sorted since they were visibly rich in macrofossils. The remainder have not yet been sorted.

Condition and quality

All the samples contained charred plant remains but the quantities involved varied greatly between features. Non charred seeds were occasionally present, and on the whole seem likely to be archaeologically significant. The small numbers involved, and the absence of delicate types suggests that ground conditions have not been consistently or sufficiently wet for waterlogged preservation to have occurred. The non charred seeds that have survived are all of relatively durable types.

Preservation of charred seeds was variable. Wheat grains, were usually puffed , distorted and lacking in surface detail. Oat grains, however were generally very well preserved, In addition to cereal grains a variety of very small weed seeds were also present, often well preserved.

Range and variety

Initial scanning of the samples has identified the following cereals, other plant seeds and foodstuffs: bread wheat, oats, barley, peas, beans, cherry, bramble, elderberry, mussels, cockles, charred fish bones, weed seeds. No crop processing residues (chaff etc.) were recovered.

Statement of potential

A fuller assessment of the environmental samples from the 1999 excavations offers the best possibility of providing a statement on the general potential for understanding the economy, local environment and changing water conditions prevailing at Swavesey at various times in its development. The assemblage does not require any unusual attention, but it has not been possible to complete processing and analysis by the deadline for this assessment of potential. Further analysis will provide the range of

crops and weed seeds present, and recovery of any other archaeologically significant material from heavy residues.

Sample no ◊	context no.	Feature no.	deposit type	pot	m. bone	s. bone	amph. bone	fish bone	bird bone	burnt bone	egg shell	marine mollusc	slag	charcoal
100	1009	1045	pit	*	*	*	*							*
101	1010	1045	pit	*	*		*	*						
102	1014	1045	pit	*	*	*	*	*	*	*				
103	1104	1106	ditch	*	*	*		*			*	*		
104	1155	1156	ph					*		*	*			
106	1217	1218	pit	*	*			*			*			
107	1230	1234	pit	*	*			*		*	*	*		
108	1231	1234	pit	*	*			*	*	*	*		*	
109	1232	1234	pit	*	*			*		*	*	*		
110	1258	1259	hearth	*	*			*			*			
112	1272	1275	pit	*				*						
113	1332	1333	ditch	*	*			*		*	*	*		
116	1359	1361	pit	*	*	*		*	*					
117	1329	1331	ph		*			*						
118	1373	1375	ditch	*	*			*		*	*			

Assessment of potential for environmental samples from excavations at Black Horse Lane, Swavesey 1999 by James Rackham

Introduction

Excavations conducted by the Archaeological Field Unit, Cambridge County Council on a redevelopment site at Swavesey produced a large number of samples and several hundred excavated animal bones. The samples were processed by the Archaeological Field Unit, following their normal processing procedures and a selection of 29 of these samples were submitted for environmental assessment (Table 1). The samples were in general 20 litres in volume. The bulk of the deposits sampled dated to the medieval period, with a small number of features assigned to the Iron Age. The phasing of the features given in Table 1 is based on the ceramic dating evidence available at the time of this assessment. Ten of the samples have no precise phasing and are at present assigned to the medieval period.

Sample no	**context no**	**cut no**	**sample vol**	**feature**	**date**	**phase**
1	3006	3005	20	gully	IA	1
2	3021	3020	?	pit	1200-1350	4
3	3045	3043	20	pit	900-1150	2a
4	3055	3079	20	ditch	900-1200	2b
5	3067	3065	20	pit		med
6	3051	3050	20	ditch	1200-1350	4
7	3072	3075	20	pit		med
9	3100	3154	20	pit	900-1200	2b
10	3115	3114	?	ditch	900-1150	2a
12	3088	3093	20	ditch		med
14	3060	3059	20	pit	1000-1200	3
16	3152	3153	20	pit	1250-1400	5
51	3427	3428	20	pit		med
53	3468	3495	20	ditch	1200-1350	4
56	3039	3022	20	pit		med
58	3377	3454	20	pit		med
60	3380	3453	20	gully	1200-1500	6
69	3304	3305	15	posthole		med
71	3560	3559	20	ditch	1250-1400	5
72	3456	3458	20	pit		med

77	3704	3703	30	ditch		med
78	3720	3719	20	pit		med
82	3773	3777	20	post-hole	900-1150	2a
83	3716	3782	20	ditch	900-1200	2b
87	3822	3818	10	pit	1200-1500	6
92	3695	3796	40	pit	900-1200	2b
97	3891	3892	?	ditch	IA	1
98	3898	3899	?	pit	900-1200	2b
100	3953	3952	20	ditch	IA	1
101	3906	3904	20	ditch	1200-1350	4

Table 1 Environmental samples assessed

Methods

The soil samples were processed by the Archaeological Field Unit and the flots and residues submitted for sorting and assessment. The sample volumes were as recorded in the field and were not re-measured or weighed. The coarse (>5mm) residue for a few samples were sorted by the AFU and only the finds submitted for assessment. Both residue and float were dried, and the residues subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flots were measured and the volume and weight of the residues recorded.

The residue was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The float of each sample was studied under a low power binocular microscope. The presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones, etc.) was noted and their abundance and species diversity recorded on the assessment sheet. The float was then bagged. The float and finds from the sorted residue constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are summarised in tables held in the archive.

Results

The assessed samples derive from a range of dates from late Saxon (900-1150) to medieval (1200-1500), with two samples assigned to the Iron Age.

Contaminants

Some contamination by more recent material of the sampled deposits is suggested by some of the finds. Very small quantities of coal and one sample cinder were recorded from the residues and flots of a few samples. All these fragments were very small and given their low density it is probable that they represent contamination as a result of movement down through the soil as a result of soil processes. All the samples produced charcoal, in varying proportions, and it is probable that wood and charcoal were the only fuels being used on the site throughout the period represented by the sampled deposits.

Most of the samples produced a few uncharred plant seeds and many produced uncharred rootlets. The latter in all cases probably reflect survival of recent roots from plants growing on the site but the seeds could also have moved down through the soil as much as the coal has. The presence in some samples of fibrous, non-rootlet, vegetable matter indicates that there has been some survival of waterlogged material in a number of the contexts and in these many of the seed are likely to be contemporary with the deposits. A predominance of blackberry, goosefoot and elder seeds however suggest that even these deposits have been influenced by degradation and only the most robust seeds have survived. Problems in the recognition of *in situ*, as against intrusive, seeds and the poor survival in those contexts where they are contemporary suggests that except in specific cases the uncharred plant remains do not merit further study.

Iron Age

Samples 1 and 97 have been assigned an Iron Age date. However, there is nothing from either of these samples that sets them apart from the Late Saxon and medieval contexts. Sample 97 shows close similarities with the nearby sample (◊98), and in general the range of material from it is very similar to that from the medieval samples. A very similar picture is indicated for ◊1. The presence of eggshell, eel and small cyprinid bones, pulses and oats or rye is much more suggestive of a Saxon date than an Iron Age one and it may be worth re-considering the age of the sampled fills. The identification of the type of cereal in these contexts is likely to be diagnostic since an Iron Age context should be dominated by spelt wheat, no rye and oats only as a weed, while a late Saxon context may have bread wheat, rye and oats.

Industrial evidence

The samples produced a limited range of archaeological finds with pottery, fired earth and animal bone most abundant. A little evidence for industrial activity is suggested by the presence of hammerscale, slag and possible kiln furniture.

The samples that produced the highest concentrations of flake and spheroidal hammerscale, some of the waste products of iron smithing, are concentrated in the centre north of the site in ditch 3559 (◊71) and pit 3796 (◊92). A number of samples within ten to twenty metres of these two produced a number of flakes, with a ring of samples beyond these with even fewer flakes. Very small quantities of slag, possibly from smithing, were present in a few samples to the east of ◊71 and ◊92 and these data suggest that there may be smithing activity taking place along or beyond the northern edge of the site.

Two samples produced a high proportion of fired earth and burnt flint (◊56 and ◊101). Only one of these gives any clear indication of industrial activity and this is ◊101 from ditch 2904. Besides the residue including a high proportion of burnt flint some of the fired earth is shaped and may be kiln furniture. The location of this sample near other features that produced Iron Age kiln debris may indicate a similar origin for this material.

Rubbish deposits

The bulk of the sampled deposits reflect rubbish disposal in secondary or tertiary contexts. All the samples derive from the fills of ditches or pit (Table 1), except for two postholes, and none appear to reflect *in situ* activity.

The range of debris including pottery, fired earth, charred cereals, charcoal, occasional iron and copper alloy finds, animal bone and marine shells is consistent with domestic occupation waste, particularly the discard of food remains and fire ashes. However, concentrations of material within this general pattern suggest that not all the activities generating this rubbish are necessarily domestic.

The strongest spatial pattern evident is that made by the distribution of the samples richest in charred cereals and pulses. The highest concentrations of charred grain, that is several hundreds or thousands of grains per sample, occur in pit 3020 (◊2 and ◊56), pit 3796 (◊92), pit 3043 (◊3), ditch 3079 (◊4) and ditch 3050 (◊6). The latter three are located in the south-eastern corner of the site and are surrounded by a further three samples (◊5, ◊9 and ◊14) still rich in charred cereal, although at somewhat lower densities. The grouping of these six samples, and a seventh that has not been studied, suggests a concentration of activities tending to generate charred cereal remains taking place in this part of the site. The remainder of the site has only four features with similar densities. A surprising correlation exists between the samples with large quantities of charred cereals an those with lots of fish scales. All six of these cereal rich samples in the south-eastern part of the site have fish bone assemblages dominated by scales, as does the sample in pit 3796. This abundance of scales may reflect preparation of the fish. Most fish on the site are small and when small fish are prepared for cooking they are gutted and de-scaled by very rarely filleted or de-headed. An abundance of scales may therefore reflect a location where fish are being prepared or cooked, but not where their bones are discarded. The juxtaposition of the charred cereals and the fish scales may therefore be indicative of areas in which food preparation and baking may have been taking place rather than a chance association. This might therefore reflect the location of domestic cooking areas or even the pie-shop quarter. Such ideas must remain conjectural until post-excavation study of the remains can shed further light on these distribution patterns.

Another specialised area of discard is indicated by ◊51 from pit 3428. The residue of this sample was largely composed of fragmented mussel shell, and with this sample comprising approximately 50% of the layer this deposit indicates the disposal of shells from a good bucket full of live mussels. Possibly one or two meals for an extended family, or the discard from the commercial sale of the cooked mussels.

Food resources and their relative importance

The most characteristic aspect of all these samples is the abundance of charred cereals, and the consistent presence of peas, beans and as yet unidentified pulses and smaller legumes. In virtually al the samples assessed grain densities appear high and except in one or two samples, such as the mussel dump noted above, charred cereal densities are much higher than the densities of fish bone, mammal bone, edible marine shell and eggshell . In some samples this appears to be true of the pulses as well. One might be inclined to view this as an illustration of the relative importance of these different foodstuffs to the people of Swavesey but such comparisons are notoriously difficult and cannot take account of the amount of meat procured off the bone.

Those plant preliminarily identified during the assessment suggest that wheat is the most abundant of the cereals, with barley and then oat/rye less common. Peas and bean are relatively common and many smaller pulses, other legumes and possibly other crop plants may be present. Hazelnut shell fragments occur in a number of the samples but not in any great abundance. Identifiable domestic meat sources are surprisingly limited. Although bone fragments occur in all the samples their size and density were such that few samples produced identifiable fragments. Cattle, sheep and pig were identified in a few samples, and chicken, duck and goose are also present. Eggshell occurs in small quantities in almost all the samples and a few include thick shell fragments that may indicate goose eggs being used. The most frequent of the fish recognised during the assessment are eels, with a few samples producing freshwater cyprinids, but many of the other small fish may include species such as herring and flatfish transported upstream from fisheries and fishing ports on the Wash. There appears to be a complete absence of the larger fish such as cod, ling, haddock, etc. in any of these samples and apparently no trade in these whitefish or stockfish had been established during the period represented by the sampled deposits. A trade with coastal area is nevertheless evident from the transport of mussels, cockles, oysters and periwinkles to Swavesey, of which mussels are clearly the most important shellfish consumed on the site.

Palaeoenvironment

There is considerable evidence for the environment of the site despite the absence of well preserved organic deposits. Frogs, newts and grass snakes occur in the samples with the former two almost ubiquitous. The house mouse is testament to nearby occupied buildings, but the occurrence of field voles, water voles, shrews and moles is more reminiscent of open spaces with grassland and waterfilled ditches. The latter is certainly evident from the molluscan fauna which has been rapidly scanned but not fully recorded. Aquatic snail taxa are common in many samples and species include bivalves (*Pisidium* sp.), *Planorbis leucostoma, P. planorbis, P. contortus, P.carinatus, P. vortex, P. laevis, Segmentina nitida, Valvata cristata, V. macrostoma, V. piscinalis, Bithynia tentaculata* and *B. leachii.* This assemblage is generally characteristic of drainage ditches, marshes and small ponds although one or two taxa prefer large bodies of water or running water (Macan 1976). This is sometimes the most abundant group in samples and indicates a relatively wet environment.

The terrestrial snails reflect a damp grassland environment with *Vallonia* sp. dominant (only one shell of the species *Vallonia costata* a taxa of slightly drier calcarous grassland was observed), and *Pupilla muscorum, Vertigo* sp., *Cochlicopa* sp. and *Hygromia hispida* present in many, and species typical of shaded habitats or woodland much less common. The most frequent snail is *Cecilioides acicula,* but since this species is a burrowing blind snail that lives underground it may not be contemporary with the original formation of deposits.

The uncharred weed seeds, dominated by seeds of elder, *Rubus* (blackberry/raspberry) and goosefoots perhaps suggest overgrown areas, but since these assemblages are biased by preservation they may be giving an incorrect impression. Identification of the charred weeds seeds is likely to prove more informative on the local environment of the site.

Excavated Animal Bone

The excavated animal bone sample comprised 1883 catalogued fragments, although a number of these were broken into two or more fragments (generally modern breaks) and some bones buried in articulation were catalogued as a single record (a partial skeleton). One bag attributed to two contexts) was not catalogued. The condition of most of this material was good and there was generally little evidence for post-depositional damage other than some fragmentation and fairly common dog gnawing, the latter may have resulted in some loss from the deposited bones. One context, 3883, included bones that had undergone considerable post-depositional weathering and erosion and the presence of probable aurochsen bones within this context and the only record of red deer from the site suggests that this feature is of much older date than all the other bone bearing contexts, and a date of Bronze Age or earlier is suggested. Although the phasing of the contexts was not available at the time of writing the bone from some contexts is brittle, possibly partially mineralised material, otherwise in good condition, which may be characteristic of the Iron Age contexts on the site. The total weight of the recorded sample was 50.861kg giving an average fragment weight of 24.7g for each excavated animal bone after exclusion of the partial skeletons. This is high, many assemblages being lower than 10g/fragment. There is a recovery bias in this excavated sample which is clear from the bone recovered from the soil samples which includes many small bone fragments and particularly fish bones (see above). Despite this proviso it is nevertheless apparent that the assemblages at Blackhorse Lane were not heavily fragmented and the inclusion of seven partial skeletons of horse, cattle and dog may imply that some of the other largely complete bones could derive from disturbed burials.

The animal bone was identified by reference to modern reference skeletons in the collection of the author and recorded directly onto an ACCESS database using the recording procedures and codes routinely used by the Environmental Archaeology Consultancy. The details of these codes and the data recorded in each field are given in the key accompanying the bone catalogue in the archive. A small number of bird bones were not identified (or included in the catalogue) in this assessment but will be studied as part of the post-excavation programme.

The following taxa were identified and their frequency and total bone weight is indicated (Table 2).

Table 2 Identified vertebrate taxa in the hand collected animal bone

	No. of fragments	weight of bone
Horse	100	13289
Horse size*	60	186
Aurochs?	3	189
Cattle	468	27651
Cattle size	588	4625
Sheep/goat	186	2058.5
Sheep	9	295
Sheep size	140	288
Pig	109	1514
Dog	13	346
Cat	12	34
Red deer	2	63
Rat	1	0
Chicken	14	25.5
Chicken size	2	0
Goose	8	49
Goose size	6	6
Duck	1	1
Frog/toad	6	0
Fossil bone	2	109
Unidentified	146	128.5
Unidentified bird	7	3.5

* fragments probably associated with a skeleton

The significance of the differences in the frequency of the different taxa cannot be assessed until the contexts have been phased. A relatively high proportion of dog gnawing on the identified bone fragments (22% of cattle, 21% of horse, 25% of sheep/goat and 20% of pig fragments) and a pattern of

survival that suggests the robusticity of the bones have affected their frequency of occurrence (for instance the most common sheep/goat bones are tibia and mandible fragments) will necessitate a detailed fragmentation and taphonomic study of the material before interpretation of the assemblage.

Marine shell (hand collected)

In addition to the shellfish remains recovered from the soil samples, shells were hand collected during excavation. These have been weighed and the shells identified (Table 3). The common mussel, *Mytilus edulis*, dominates the sample with oysters, *Ostrea edulis*, the next most common species. A few cockles, *Cardium edule*, were present and a valve fragment of scallop, *Chlamys* sp. No other marine shells were recovered by hand although two freshwater shells, a bivalve, *Sphaerium* sp. and a Great Ramshorn, *Planobarius corneus*, were collected. One context, 3427, a pit of medieval date contained an abundance of mussel shells both in the soil sample and hand collected assemblage. Since this feature probably contained well over a thousand shells it may indicate localised processing of shellfish rather than purely domestic food waste.

These shells indicate some trade with coastal areas along the margins of the Wash, which has extensive shellfish beds. The shellfish from the soil samples indicate that periwinkle, *Littorina littorea*, was also included in this trade and that cockles may have been more frequently eaten than the hand collected sample suggests.

Table 3 Excavated Marine Shell (number of valve fragments with intact hinge)

Context no.	weight of all shell	Mussel	Oyster	Cockle	Others
3004	20		1	1	
3023	1	1	1		
3051	34	14			
3052	72	40		1	
3055	20	9			*Chlamys* sp. 1
3060	6	1			
3092	2	1			
3100	68	4	2		
3104	4	2			
3110	4	2		1	
3111	27	11			
3126	13		1		
3130	8	1			
3138	13	1	1		
3152	7				
3165	16	4		2	
3181	3	1			
3197	1	1			
3200	20	8			
3203	13		1		
3236	11	7			
3250	5	5			
3259	13	7			
3281	13		1		
3324	35	7	1		
3325	1	1			
3333	93	1	2		
334	0.5	1			
3345	2	1			
3347	95		2		
3352	5		1		
3353	3		1		
3357	201	7	2		
3359	9	7			
3372	90	47			
3384	3	2			
3395	8	4			

3397	5	5		
3427	1538	628e		*Sphaerium* sp.1; *Planobarius corneus* 1
3455	2	1		
3493	5		1	
3548	5	2		
3560	1	1		
3629	1		1	
3643	26			
3644	21	18		
3697	2		1	
3759	11	6		
3779	1	2		
3829	37		1	
3894	4			
3951	4	2		
4026	273		26	

e - estimated by counting and weighing the first 200 shells then extrapolating

Conclusions

Some limited evidence for iron smithing is recorded in the material from the samples, with evidence for this activity being located in an area at the north or just beyond the north of the site. There is no indication of other commercial or craft activities such as bone and antler working (although a single fragment of waste antler was recovered during hand excavation), horners, tanners or other activities recognisable from bone and environmental evidence.

The bulk of the environmental evidence recovered appears to reflect the food and domestic waste of settlement, although the high number of horse bones and presence of partial skeletons of horse, cattle and dog suggest that the area of the site may have been fairly open and used for carcass burial during some part of its history. Until the phasing is available whether this is contemporary with the domestic settlement on the site or not cannot be established. The dietary resources of the settlement are extensively represented in the remains. Cereals and pulses are common and include wheat, barley, oats, probable rye, pea and bean. Other plant resources are probably indicated by the as yet unidentified botanical remains. Bird eggshell, probably chicken and possibly goose, chicken, duck, goose, eel and cyprinids occur in most samples, and smaller marine fish species such as herring and flatfish are probably present. Other marine resources include the shellfish – mussels, oysters, cockles and periwinkles.

The excavated mammal bones suggests that the site may include a Bronze Age feature, as well as Iron Age and medieval features, with the occurrence of fragments of what are probably aurochs. The bulk of the deposits which can probably be assigned to the medieval period are dominated by the bones of cattle, followed by sheep (or goat), pig and horse, although detailed analysis will be required to assess whether or not the horse bones derive from animals killed and butchered for human use or merely buried on site or fed to dogs. The dietary variety of the site is limited, with no evidence for larger marine stockfish arriving on site, very little indication of game or wildfowl and a definite reliance on beef.

One of the more interesting aspects of the results of the assessment is the abundance of charred cereals and pulses, many of these particularly concentrated in the south-eastern corner of the site. This and an abundance of fish scales in the same samples might indicate that this area of the site contained food preparation and baking activities, perhaps even on a more commercial scale than a simple domestic level. Specific identification of the botanical and vertebrate remains from the samples in this area should help to interpret this pattern.

The palaeoenvironmental evidence for the site is limited although the few reliable waterlogged samples should be of considerable use in analysing this aspect. A generally damp open/grassland environment is suggested with ditches and some pits probably waterfilled, although uncharred seeds of elder, blackberry/raspberry and a few molluscan typical of shaded habitats may indicate some overgrown areas. Whether these patterns reflect chronological or spatial variation across the site will require more detailed quantification of the mollusca, but the one phase 1 sample, a gully fill, produced no aquatics and samples for quantification should be selected to test for chronological changes at the site.

Recommendations

The richness of the soil samples and the good condition of the animal bone and marine shell indicate that the samples and excavated bone and shell from this site afford very good potential for the study of the early medieval diet in this small fenland town. The pattern of rubbish at Blackhorse Lane appears to be significantly different from broadly contemporary deposits in Kings Lynn on the coast (Rackham *et al* 1999) and this seems likely to reflect major differences in the economies of these two towns. Other site may afford more local comparisons.

Patterns of occurrence and distribution of material across the site also suggest that areas of activity may be recognisable from the samples and if the dating and phasing of the features can be confidently assigned then this may assist in the interpretation of the structural archaeology.

The major areas for detailed identification and further analysis are the charred plant remains, selected waterlogged material, the fish bones, selected charcoal samples, selected molluscan assemblages and the excavated animal bone. The most valuable samples will be those that can be confidently dated and assigned to phase.

further assessment work should probably be restricted to unprocessed samples that can be phased with due attention being given to maintaining a good range of samples across the whole site spatially, and throughout the chronological history of the site. The potential for understanding patterns across the site, throughout its history and the general diet and economy of the medieval settlement is very high. The assessed samples and those still to be assessed are likely to constitute a group of major importance for understanding the local urban economy and for comparison with other urban and rural assemblages.

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Bibliography

Cameron, R.A.D. and Redfern, M. 1976 *British Land Snails*. Linnean Soc. Synopses of the British Fauna No. 6

Ellis, A. E. 1969 *British Snails* Clarendon Press, Oxford

Evans, J.G. 1972 *Land Snails in Archaeology*, Academic Press

Macan, T. T. 1977 *A key to the British Fresh- and Brackish-water Gastropods*. FBA

McMillan, N. F. 1968 *British Shells*, Frederick Warne & Co. London and New York

Rackham, D.J. Giorgi, J.A. and Locker, A. 1999 Austin Street, Kings Lynn, 5530KLY – The Environmental Archaeology Report. An unpublished report for Soke Archaeology Services and Archaeological Project Services

Appendix VI Human remains - Corinne Duhig, Ph.D.

The badly eroded but largely unburnt remains of an individual – the right scapula, right clavicle, upper vertebrae and upper ribs with totally burnt animal bone mixed in. These remains were found in an Iron Age vessel.

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The Archaeological Field Unit
Fulbourn Community Centre
Haggis Gap
Fulbourn
Cambridge CB1 5HD
Tel (01223) 576201
Fax (01223) 880946