NORFOLK ARCHAEOLOGICAL UNIT

ASSESSMENT REPORT

A140 SCOLE DICKLEBURGH ROAD IMPROVEMENT PROJECT

June 1994

CONTENTS

FIGURES

TABLES

1. INTRODUCTION

1.1. THE SITE

(Project Design Section 1.1)

Between June and December 1993 the Norfolk Archaeological Unit and the Suffolk Archaeological Unit conducted large scale joint excavations on areas peripheral to a small Romano-British 'small town' at Scole. The project was occasioned by construction of the A140 Scole-Dickleburgh Road Improvement for the Department of Transport, who are funding the entire project.

Open Area Excavation was undertaken in three areas at the southern end of the road improvement, adjacent to the River Waveney and the modern village of Scole where construction of a new river crossing and dual carriageway road would destroy the last remaining undisturbed parts of the Romano-British settlement. (Figure 1)

The project fieldwork was undertaken between June and December 1993, in advance of road construction.

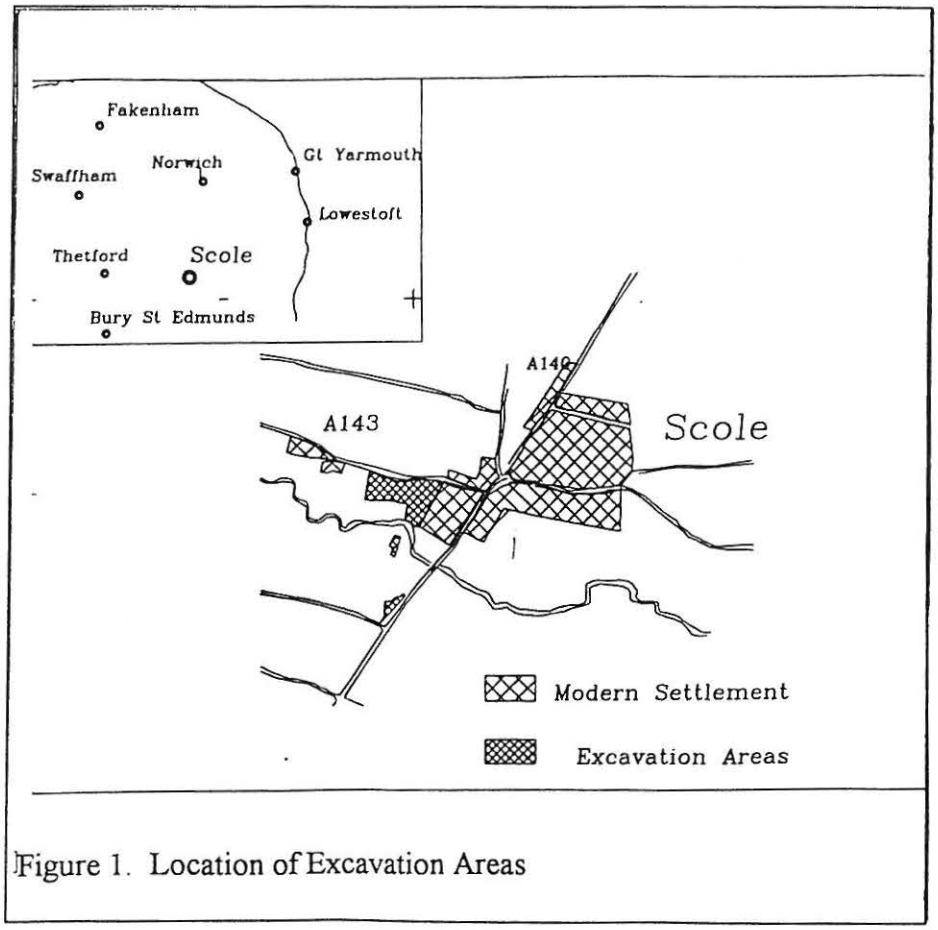

Figure 1. Location of Excavation Areas

1.2. ACADEMIC JUSTIFICATION AND POTENTIAL

(Project Design Chapter 2)

The A140 Road Improvement Project offered the opportunity to obtain data relevant to several nationally important Research Aims, including the study of Processes of Change, Archaeological Landscapes, and the development of nucleated settlements, which have identified by English Heritage in 'Exploring Our Past' as being national priorities (English Heritage 1991b, 35-40).

1.2.1. Mesolithic Studies

Analysis of Mesolithic activity is a nationally important Research Aim (English Heritage 1991b, 36), and the Waveney valley is considered to be particularly productive among the river valleys of East Anglia. Previous work in the Scole area had indicated the survival of flintwork on both banks of the river, with large quantities of material related to a later-mesolithic industry recovered to the west of the 1993 excavation area (Waterloo Sites "1" and "2". Wymer, 1977). The floodplain peat deposits presented the possibility of organic material surviving under waterlogged conditions; excavation of this type of deposit has been identified as being a vital research priority (Wymer, 1977).

1.2.2. Romano-British Small Town

Excavation allowed the study of a large proportion of a small Romano-British nucleated settlement, the last major area of the settlement at Scole as the remainder lies beneath the Post-Medieval village. The Society for the Promotion of Roman Studies stated in 1985 that "No town of whatever size...is sufficiently well-known for any threatened site to be abandoned without exploration, on academic grounds alone" and "Small towns are in many ways less well understood than their major counterparts, and deserve the same, if not greater, consideration" (SPRS, 1985. 4.3.1 p5 & 4.3.3 p6). Only four similar sites have been excavated in Norfolk and Suffolk (at Hacheston and Pakenham, in Suffolk; at Brampton and Billingford in Norfolk, all currently being prepared for publication).

The locale, at the point where the major Roman road from *Camulodunum* to *Venta Icenorum* crosses the Waveney was clearly important in the initial siting of the settlement and would have affected the economic and social catchment area, with both road and river based communications important. Analysis of the extent to which Scole differed from other small towns in the region in terms of circumstance of foundation, function within the official and local socio-economic networks, and development history will help in understanding the variety of processes involved in the formation of nucleated settlements in this period.

The excavation was considered to be of a large enough area to allow meaningful discussion of the settlement's morphology, development, and degree of formal planning. Comparison of the areas north and south of the river crossing allowed the degree of functional diversification and zoning within the settlement to be gauged, with the emphasis on the 'non-official' aspects of the settlement.

The survival of areas of buried 'dark soil' close to the A140 in Suffolk, and north of the river was an important element of the project. The deposit was similar to layers typical of very late Romano-British activity on many urban sites; little work has been undertaken on such deposits in 'small towns', and the extent to which they differ was unclear.

1.2.3. Medieval Settlement

The pattern of medieval settlement and the process of village formation is not well-understood for much of Norfolk, and appears to be unusual in the degree to which non-nucleated settlement continued. The opportunity to excavate an area adjacent to rare upstanding earthworks is of great importance, and was considered to be able to provide information to complement the documentary and field survey data collected in both Norfolk and Suffolk (eg. Davison, 1988). Nationally, research on the formation of

medieval settlement has also been identified as a priority in 'Exploring Our Past' (English Heritage, 1991b, 39).

1.2.4. Transition Period Studies

Mesolithic-Neolithic

The widespread finds of later Mesolithic and Neolithic material from this part of the Waveney valley raised the possibility of research into the transition between these periods. Excavated evidence for the transition has proved nationally elusive, and the opportunity to address the problem either through recovery of stratified deposits or environmental sampling is considered a national research priority (English Heritage 1991b, 36). The potential for waterlogged material increased the importance substantially.

Iron Age-Roman-Post Roman

The date-range of material recovered in earlier work on the 1993 excavation sites suggested that deposits ranging from the first to the later fourth centuries could be anticipated. This would make it possible to trace the processes active in the transition from 'Iron age' to 'Roman' and the formation of the settlement, and the varying fortunes of the town through the Roman period and beyond. This type of transitional study has been highlighted as a national research priority (English Heritage 1991b, 36). The potential to investigate the development of the town in the immediate post-Roman period (via the 'dark earth' deposits identified) has also been identified as a nationally important research priority by the Society for the promotion of Roman Studies (SPRS, 1985. 5.1.1).

1.2.5. The Palaeo-environment

The potential for the recovery of a wide range of environmental data during the excavation existed. This offered the opportunity to study the long-term changes in the palaeoecology and economy of the site over 7000 years, with alteration of the Mesolithic environment being considered a particularly important aspect.

1.2.6. Methodological Research

The opportunity to improve understanding of post-depositional processes was highlighted in the differing cultivation regimes present north and south of the river. The absence of extensive ploughing in the Norfolk areas permitted research on the extent to which artefacts migrate through and into the topsoil/ploughsoil as a result of ploughing. The opportunity to consider this aspect was considered to have national benefits.

1.3. PREVIOUS RESEARCH

(Project Design 1.2)

The first references to Scole as a Romano-British site date from the mid-nineteenth century. Further small-scale active and passive investigations in the intervening years have added to the catalogue. The largest single excavation previously conducted was undertaken by Andrew Rogerson for the Norfolk Archaeological Unit in 1973 (Rogerson, 1977). This investigated an area of 900 square metres in the centre of Scole, 200 metres east of Areas 1-4.

Previous work on the sites of the 1993 excavation is more limited, comprising small-scale work by Suffolk WEA in 1967 and 1972 within the site of Area 3, four

hand-dug trial holes by NAU in 1986 and 1987 in Areas 1,2 and 5, and evaluation of Areas 6 and 7 by the Suffolk Archaeological Unit in 1992 and 1993. Details of the findings of these recent interventions are summarised in the Project Design (Paragraph 1.2) and in the evaluation reports (Tester in Emery, 1992; Penn and Tester, 1993). The records of the Suffolk WEA have still to be seen.

1.4. PROJECT DESIGN

A Project Design was drawn up in March-April 1993 (Project Design Rev 2.4). This provided a scheme and programme for excavation and archive/assessment to achieve a series of seventeen Specific Research Aims. The threat imposed by road construction was described, and the academic potential of the proposed research outlined. Sampling and recording standards were established.

The Research Aims which the project was designed to address can be summarised as follows. The columns to the right indicate the degree of importance attached to each Aim with reference to Local (L), Regional (R), and National (N) research objectives. (For full details and academic justification see Project Design Chapter 2).

RESEARCH AIM	L	R	N
Mesolithic activity, and its affect upon the local environment	x	x	x
Mesolithic / Neolithic transition		x	x
Possibility of Pre-Roman Landscape fossilisation	x	x	x
Iron Age / Roman transition	x	x	
Morphology of small town	x	x	
Changing functional uses of parts of the settlement	x	x	x
Comparison with similar sites		x	
Participation in local, regional and national networks		x	
Road and River-based communications	x	x	
Social and economic changes during the Roman period	x	x	
Duration and continuity of activity	x	x	
Sub-Roman continuation of site	x	x	x
Medieval settlement formation	x	x	x
Nature of medieval activity	x	x	
Medieval settlement in its environs	x		
Long-term effect of humans on environment	x	x	
Processes involved in 'dark soil' formation	x	x	x
Differing nature of ploughsoil and undisturbed artefact assemblages	x	x	x

The fieldwork phase of the Project produced data relevant to two additional Research Aims, the study of Neolithic/Bronze Age 'pot-boiler mounds', and of Roman wooden construction techniques. These new aspects are described in greater detail below (Para. 4.19).

1.5. EXCAVATION METHODOLOGY

(Project Design Chapter 4)

The general and specific excavation methodologies employed during the fieldwork phase of the project were described in the Project Design (Chapter 4). The following is a summary of the main points.

1.5.1. Pre-Excavation Survey

(Project Design 4.2)

Prior to excavation in Areas 1-4 an earthwork survey was undertaken to record the surviving vestigial earthworks. This was followed by a systematic survey of the topsoil/ploughsoil artefact content by means of hand excavation of 1 metre squares and sieving. Other geophysical or geochemical techniques were not considered at this stage.

1.5.2. Site Clearance

(Project Design 4.3)

Topsoil was mechanically stripped from the entire area threatened by road construction (Areas 1-4, 6,7). All topsoil stripping was monitored archaeologically and accompanied by a detailed metal-detector survey. Topsoil removal was conducted in approximate 10cm spits.

Finds within the upper topsoil were collected in 20m square units, from the less-disturbed subsoil layers all find spots were three-dimensionally recorded. Hand collection of non-metal artefacts was undertaken in 20 metre square units.

Due to constraints on soil removal, the area north of the river was stripped in two distinct phases, with the southern field (Area 1 and the southern part of Area 3) being cleared first, in June 1993. The topsoil removed was stored temporarily in Area 2. Topsoil removal revealed a grey subsoil across most of Areas 1 and 3, but an area of around 9999 metres of peat deposits were encountered at the southern end of Areas 1 and of Areas 1 and 3. The upper layers of this deposit were removed across the whole extent to a depth of around 0.3m.

Further area excavation was deemed impracticable due to the degree of waterlogging, and further mechanical stripping was restricted to two north-south sample sections at the east and west edges of Area 1 which it was felt would provide a sufficient sample to assess the survival of waterfront structures. Both were initially excavated to the level at which archaeological deposits/preserved structural wood were encountered, or to the limit beyond which the weight of the hydraulic excavator would not be supported. The eastern section (on the boundaries of Areas 1 and 3) was deepened further by hydraulic excavators working from the upper edge of the section. This section was extended to confirm the depth of peat and the absence of sealed archaeological deposits.

The northern part of Area 3, Area 4, and Area 2 were stripped in September 1993, after excavation of Area 1 was complete. This enabled the storage of topsoil stripped in Area 1. An average of 0.3m of topsoil was removed from the site, though the southern part of Area 2 contained over 0.6m of colluvial overburden.

Stripping of Areas 6 and 7 was accomplished in June 1993, with the removed soil being stored in adjacent parts of the roadline. In both these Areas the average depth of ploughsoil was around 0.3m, though some thickening had occurred at the southern end of Area 7, and a maximum of 0.5m was removed.

Removal of topsoil/ploughsoil and subsoil revealed leached fine alluvial sand in Areas 1-4 and 6, with drift deposits of sand, gravel and boulder clay in Area 7.

1.5.3. Site Recording

(Project Design 4.4 - 4.8)

Initial plan recording was undertaken as ploughsoil/subsoil stripping progressed. Sample excavation was undertaken in accordance with the procedures established in the Project Design (Section 4.5, as refined in Section 5.2). A total of 345 plans (76 large format and 269 smaller), and 890 sections were drawn, and 3011 photographs (colour and black and white) were taken. Context, Plan, Section, and Photographic Registers were compiled as fieldwork progressed. Context recording complied with the separate requirements of the county curatorial bodies, though a single numbering system was imposed for the whole site:

Each Area was allocated a discrete range of context numbers:

Area	From	To
Area 1	10000	19999
Area 2	20000	29999
Area 3	30000	39999
Area 4	40000	49999
Area 6	60000	69999
Area 7	70000	79999

Recording used standard NAU and SAU pro forma sheets. A computerised context record was compiled during the fieldwork phase, and completed during archiving.

1.5.4. Finds Recording

(Project Design 4.9)

Bulk finds were recorded and processed within their collection units. Metal-detector finds from upper topsoil contexts were collected in 20 metre square units, from other contexts 'metal-detector' numbers were allocated at the time of recovery as a temporary reference system prior to the object's confirmation as a 'Small Find'. Small finds were individually located three-dimensionally within their collection unit; for Areas 1-4 a Small Find Register running from 1000 was created, in Areas 6 and 7 context numbers from 68000 and 78000 respectively were used, in accordance with county practice. Computerised databases were created for both Bulk Finds and Small Finds.

1.5.5. Environmental Sampling

(Project Design 4.7)

Collection of specific environmental samples (as opposed to general retrieval of animal bone/ large shell etc. during hand collection) was targeted on deposits within which conditions were considered benevolent for good preservation of ecofacts. This generally meant wet/waterlogged features. Comparative samples for pollen, insect, and plant macrofossils were normally taken from such deposits, with soil micromorphology sampling included where necessary. Additional Plant macrofossil samples were taken from deposits where preservation by charring was observed. Sample registers for the whole site were established using separate number sequences for the types of sample:

Macrofossil 100-499; Insect 500-599; Pollen 700-899. Soil Micromorphology samples were numbered separately by the micromorphologist 1-17.

Additional information on sampling criteria and proportions, and on particular exceptions deemed necessary can be found in the Project Design (Sections 4.5-4.8, 5.2).

1.6. VARIATIONS TO PROJECT AIMS AND METHODS

In general the project methods and aims matched those in the Project Design. A few changes were required and programmes were amended to reflect encountered archaeology as follows:

1.6.1. NEW RESEARCH AIMS

1.6.1.1. Identification of a waterlogged dump of potboilers datable to the late Neolithic or early Bronze Age beneath the riverside peat

This unexpected aspect to the site's history required gridded sampling and environmental sample collection. The dump was divided into 1 metre square units and 25% sample excavated by hand. All material was sieved through a 10mm mesh to recover artefactual data.

1.6.1.2. Discovery of artificial water channel and associated crop processing complex in Area 6

The allocation of resources for Area 6 had anticipated a low density of riverside archaeology. The discovery of a Romano-British water channel with significant waterlogged deposits and an associated industrial complex prompted further work. This was funded by shifting resources saved from Area 7.

1.6.2. ALTERATIONS TO EXCAVATION STRATEGY

1.6.2.1. 'Grey Soil' in Areas 1-4.

(Project Design 2.5.3)

8000 square metres of artefact-rich grey soil were encountered in Areas 1-4 after removal of topsoil. This layer was cut by medieval features and sealed Romano-British deposits. Initial interpretation of this deposit as a quasi-'Dark Earth' was quickly corrected to a podzolised subsoil, but in view of the large quantities of artefacts contained within the layer and the apparent lack of plough disturbance it was decided to undertake extensive sampling to record the spatial variation and post depositional disturbance to the upper fills of underlying features. This sampling addressed the Research Aims 4-12, though particularly the analysis of settlement layout (RA 5 and 6), and the nature and duration of activity (RA 10-12). It also provided incidental evidence for the study of non-ploughsoil assemblages (RA18).

The sampling regime adopted resulted in a 9% by area data collection: 4% sieved through 10mm mesh in 10cm vertical spits, an adjacent 5% hand collected in 10cm spits.

One small area of 'Dark Earth' in the strict sense was encountered in Area 4. This was sampled in the same the same manner with additional soil micromorphology sampling. Features preserved within the deposit were excavated stratigraphically.

1.6.2.2. 'Dark Earth' in Area 7

(Project Design 2.5.5)

In Area 7 the depth and extent of the 'dark earth' as less than anticipated. In response to this a limited programme of dry sieving in 2.5 square metre units was undertaken covering around 9% of the total area. Most of the remainder was removed by hand using the same collection grid. A small quantity was removed by machine. Gridded dry sieving was also undertaken through the 'dark earth' deposits associated with a quarry pit at the southern end of the site.

1.6.2.3. Substantial reduction in area of Area 4 affected

(Project Design 1.4; 5.2.4)

A mitigation strategy to preserve large parts of Area 4 was agreed between DTp, English Heritage and Norfolk Landscape Archaeology. This resulted in a substantial reduction in the required scale of archaeological work in this part of the site.

Work was limited to a series of four 5 metre square evaluation boxes excavated to determine the vulnerability of archaeological deposits across the Area, and the consequent excavation of the central-southern part (c.525 square metres).

1.6.2.4. Transfer of Resources from Area 1 to Area 3

(Project Design 1.4.3)

The density of features in the dry part of Area 1 did not require the full expenditure of the resources attributed to this Area, and it was possible to reallocate some to cover unexpected survival in Area 3.

The survival of one major road and one minor metalled track in Area 3, and the survival and range of structural features identified in this Area exceeded the anticipated potential. Transfer of Resources from the adjacent Area 1 enabled more detailed sampling to be undertaken, which assisted the realisation of Research Aims 4-12. Work was focused on the western part of the area, where the threat of damage from construction was higher.

1.6.2.5. Change to Sampling strategy for Wells

(Project Design 4.7)

Inclement weather and very high ground water levels necessitated changes in the sampling strategy employed for these collection of environmental samples from the fills of three of the wells, and the recovery of the preserved timber lining from five. The semi-liquid nature of the sandy fills made it impossible to retain a section from which to collect either *pollen cores* or *macrofossil* samples or to complete excavation of the shaft fill; similar problems prevented the full recovery of the timber lining. It was agreed that the sampling strategy for these wells should be amended so that a minimum sample from each well should comprise one example of each type of timber (e.g. Plank, Brace, Upright) as examination of more-fully excavated wells on the site had suggested that there was little variation within each feature.

1.6.3. REDUCTIONS / ABSENCES

1.6.3.1. Absence of major Waterlogged Structures at the Southern end of Area 1

(Project Design 5.2.1)

The extent and nature of Romano-British structural preservation in the waterlogged part of Area 1 was not as great as had been originally suggested, though a series of large pits, one with a wooden platform in its base, were excavated. However, the identification of a mound of thermally-shattered flints ('potboilers') sealed beneath the peat was significant.

1.6.3.2. Absence of mesolithic deposits beneath the peat

(Project Design 2.3)

The mesolithic deposits suggested as being a relict beneath the riverside peat were not identified. No traces of features datable to the Mesolithic period were encountered, and the quantities of unstratified/residual flint were not significant.

1.6.3.3. Absence of substantial medieval deposits

(Project Design 2.6)

The anticipated preservation of medieval features, particularly in Area 2, was not realised. Medieval features were identified in this Area, but the density and range was less than anticipated.

These variations, especially the sampling of the 'grey soil', and inclement weather after November led to an extension of the work programme in Norfolk by four weeks. Work continued until 10 December 1993.

Subsequent to the main phase of fieldwork two additional areas extending and adjacent to Area 6 were required by the DTp. Excavation of these areas (still designated Area 6) was undertaken between 24th February and 22 March 1994.

1.7. ACKNOWLEDGEMENTS

The Project was funded by the Department of Transport, though prior access to Areas 1-4 in Norfolk for a non-destructive earthwork survey was kindly allowed by agreement with the landowners, the Trustees of the Diocese of Norwich. The project has been monitored throughout by Brian Kerr of English Heritage on behalf of the DTp, and by David Gurney of Norfolk Landscape Archaeology and Jude Plouviez of Suffolk as local heritage curators.

The excavation and archive teams comprised:

Tony Breen	Jack Edwards	Steve Hickling
Ken Browell	Tony Frost	Ben Hobbs
Katherine Clarke	John Fulcher	Richard Holbrey
Jane Corcoran	Ruth Goater	Helenka Jurgielewicz
Jessica Cowley	Adrian Guscoigne	Su Leaver
Natasha Dodwell	Erika Guttman	Katie Lister
Caroline Drew	Sarah Jane Harknett	Tim Longman
Toby Driver	Kay Harvey	Steve Manifold

Tara Mawby
Malcolm McKenzie
Christiane Meckseper
Dick Moore
Richard Owen
Jamie Patrick
John Percival
Chris Phillips
Sam Pittam
Martin Redding
Eileen Reilly
Andrew Riley
Alan Smith
Martin Smith
Mark Sommers
Pip Stephenson
Jo Sturgess
Mel Stone
Jonathan Van Jennians
Danny Voisey
Pete Warsop
Dave Whitmore
Kerstin Wilson

under the supervision of :

Andy Crowson	Andy Letch	Andrew Richmond
Dave Gill	Neil Moss	Cathy Tester

Finds Processing was undertaken by
Julie Curl
Annabel Durnford

under the supervision of:

Alice Lyons
Ruth Prior

The project was coordinated by Jez Reeve of the Norfolk Archaeological Unit. Fieldwork and Assessment Report production was directed by Myk Flitcroft NAU (Norfolk, Areas 1-5) and Andrew Tester of the Suffolk Archaeological Unit (Suffolk, Areas 6,7), who would like to thank both excavation teams, all the local volunteers, and all the specialists named below. Further thanks must go to Philip Walker, Brian Kerr and Tim Williams of English Heritage, Tim Eden (Resident Engineer, DHV Burrows Crocker), Martin Millett (for his reading of drafts of this text and for suggesting so many avenues of research), Janet Wilkinson (Departent of Transport, Eastern Region), Brian Ayers, NAU, David Gurney and Jude Plouviez

1.8. CONTRIBUTORS

Assessment Reports were compiled by the following:

Stratigraphy	Myk Flitcroft, Andy Crowson, Andy Letch, Neil Moss (NAU) Andrew Tester, Dave Gill, (SAU)
Pottery	Alice Lyons, NAU
Samian	Cathy Tester, SAU
Brick/Tile	Alice Lyons
Fired Clay	Alice Lyons
Metalwork	Nicholas Cooper with Ruth Prior
Coins	John Davies
Glass	Ruth Prior
Iron Working Residues	Jane Cowgill and Jo Mills, City of Lincoln Archaeology Unit
Leather	Quita Mould
Flint	Edward Martin, SAU
Worked Stone	Ruth Prior,SAU
Wood Technology	Richard Darrah
Conservation	Gordon Turner-Walker, Norwich Castle Museum
Animal Bone	Rosemary Luff, Cambridge Faunal Remains Unit
Human Bone/Cremations	Jackie MacKinley
Plant Macrofossil	Val Fryer, and Peter Murphy, Centre for East Anglian Studies, University of east Anglia
Pollen	Patricia Wiltshire
Insect	Mark Robinson
Soil Micromorphology	Richard Macphail, Institute of Archaeology, UCL

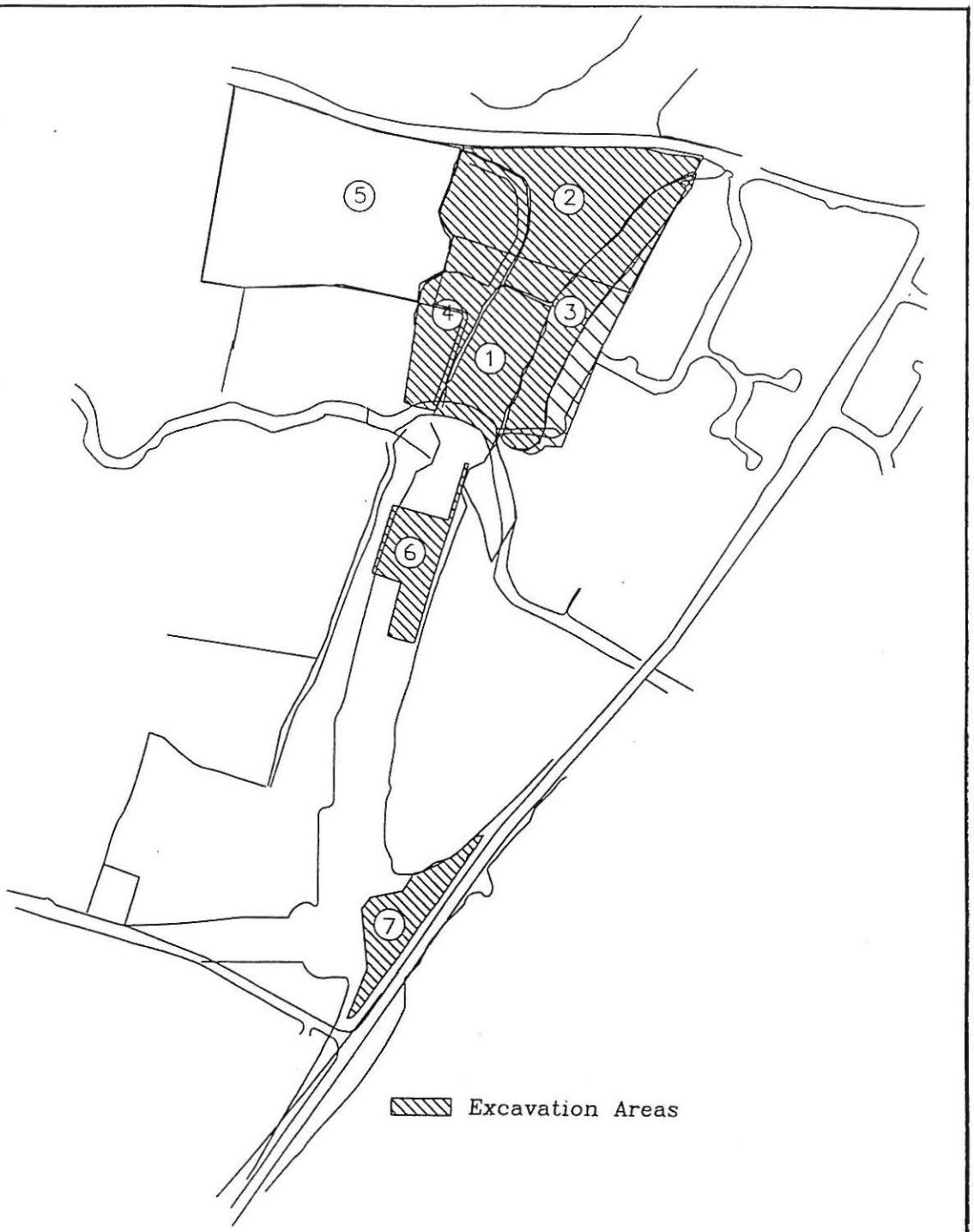

Figure 2 Site Plan.

2. ARCHIVE AND ASSESSMENT METHODOLOGIES

2.1. STRATIGRAPHIC ASSESSMENT METHODOLOGY

Factual Data 3.1.1; 3.2

The methodology outlined in the Project Design (Section 6) has been followed for the Archive and Assessment phases of the project, leading to the production of this Assessment Report.

After the fieldwork phase of the project all outstanding context, finds and graphic records were checked for completeness and consistency, and the computer database of context and finds information completed. All area plans were digitised as feature outlines as part of this process. Site Plans and Sections from the Suffolk areas were inked-in during the archive phase, following county practice.

The initial 'running' stratigraphic matrices compiled during fieldwork were integrated to create a provisional matrix covering the whole site. The Context, Plan, Section, Photographic, Sample and Small Find Registers compiled on site were checked and completed. A Site Narrative was produced at this stage, which was circulated to the Specialists involved in the Site Assessment.

As an aid to assessment and as a preliminary analytical step, Context Groups were defined comprising logical agglomerations of related contexts. The Groups and their constituent contexts were included in a Group Register and formed the units used in the stratigraphic assessment.

The Provisional Site Matrices were phased at the Feature level by pottery spot dates (though excluding detailed samian dates which were unavailable), and on the basis of vertical and horizontal stratigraphy. The intention was to provide an initial broad chronological framework for the site which could be tested against the excavated data and refined during the project analysis phase. The isolation of the Suffolk Areas resulted in their being treated separately for phasing; the shortage of ceramics resulted in a general phasing for Area 6 which was incorporated with Area 7. (However the association of pottery groups with well stratified contexts and the potential for dendrochronological dates in area 6 offers excellent prospects for later phasing).

A Site Narrative was produced at this stage which acted as part of the Project Archive Summary (MAP 2 Appendix 3.2- English Heritage, 1991a), but also outlined the main findings of the project and the provisional phasing for the benefit of external specialists who had been unable to visit the during fieldwork.

In order to make the provisional matrix more useful an individual Group Matrix was compiled for the each Group defined during Assessment. This showed the internal relation of all the constituent contexts of the Group and the external relations to contexts in other Groups. The Provisional Site Matrix only records the inter-relation of these Group Matrices. By levelling the data in this way it has been possible to display the whole of the Norfolk site on one (admittedly) large sheet while still allowing detailed study of individual relationships.

Two independent phasing schemes were developed for the stratigraphy of Areas 1-4 and Area 7. The paucity of dating evidence from Area 6 prevented the development of a separate phasing scheme for this area and the activity was assigned to 'Area 7' phases. During the assessment broad correlations were made between the two schemes using the spot-dating information. A 1:1 relationship between Area 1-4 and Area 7 phases was assumed for simplicity at this stage wherever possible, but this could not be used for Phase 5, where the

apparent chronological span was subdivided into three phases in Area 7 (Phases III-V). Phase V is also likely to have continued beyond the end of Phase 5, but to have been prior in chronology to Phase 6.

More detailed linking of the sequences through identification of common features (particularly flooding events) was not considered necessary to achieve the Site Assessment. The comparison chart below illustrates the relation of the two schemes against absolute chronology.

1	2	3	4	5	(5)	-	6	7	8	9
NEO -BA	Mid 1st	Late 1st	Early 2nd	Late 2nd	3rd	Late 3rd	4th	MED	PM	MOD
Prehis	Prehis	I	II	III	IV	V	VI	Post RB	(Post RB)	(Post RB)

Correlation of Area 1-4 phases (arabic numerals) and Area 7 phases (roman numerals) against broad chronological span

Both sites were assessed against the seventeen Specific Research Aims quoted in the Project Design (Rev 2.4, Para 2.10), though for clarity it was decided to present the Factual Stratigraphic Data in terms of seven interconnected Themes:

1. Layout and Communications
2. Industrial Activities
3. Technology
4. Ritual Life (and non-ritual burial)
5. Water Management
6. Agricultural Aspects
7. Non-Human (or Ecological) Systems

2.2. ARTEFACT ASSESSMENT METHODOLOGIES

Factual Data 3.1.3; 3.3

2.2.1. Pottery

Factual Data 3.1.3.1; 3.3.1

The pottery was spot-dated on site. To aid the assessment of the assemblage, and to minimise repetition during analysis the pottery recovered from hand collection was divided into broad fabric types and quantified by sherd number, mass, and vessel type. Pottery from wet sieved environmental Bulk Samples (three boxes in quantity) was not incorporated into the database due to unavailability at the time of Archiving. The information was noted on a pottery pro forma on the reverse of the context bulk finds sheet and subsequently entered onto a Foxbase database.

The small quantity of Post-Roman pottery was catalogued by fabric and form on pro forma pottery catalogue sheets. This technique is more commonly applied during analysis of pottery rather than assessment; however, as the post-Roman from each context represents only a few sherds it was decided to catalogue the pottery fully to avoid time-consuming repetition during the analysis phase.

The pottery is discussed by chronological phase and Area of the site with an assessment of the stratigraphic significance of the relevant phase assemblage. In addition the qualitative and quantitative nature of the assemblage is assessed. All percentages quoted in the assessment are pottery mass, unless otherwise stated; reference to vessel numbers (e.g. 'Twelve LGW jars') identify maximum numbers, unless identified as a minimum.

2.2.2. Samian

Factual Data 3.1.3.1; 3.3.2

Samian was extracted from the rest of the pottery on site, after incorporation in the overall pottery quantification. The archive record was completed during the Archive and Assessment phases by creating a catalogue of the entire assemblage. This provides an approximate date range for the material. Material from the topsoil, unstratified, and cleaning contexts was only scanned and summarised in the catalogue.

The collection was arranged by context and each sherd examined using low-power microscopy to identify the source of the fabric (i.e. South Gaulish, Central Gaulish, etc.). Fabric and vessel form gave an approximate date range to the vessels. This information, along with dimensions, descriptions and comments was entered onto a computer database.

Individual context catalogue numbers ("Column numbers") once assigned were marked onto individual sherds where there were multiple sherds in a context except in the case of small abraded scraps or flakes which would not be needed for further analysis.

2.2.3. Brick and Tile

Factual Data 3.1.3.2; 3.3.3

The brick was identified and dated on site in the case of material from Areas 1-4, or during the Assessment phase for material from the Suffolk excavation Areas. To aid the assessment of the assemblage and to minimise repetition during analysis the brick and tile recovered was divided into broad fabric types and quantified by number, mass, and type. The information was entered onto a Foxbase database. All material was recorded and processed, none was discarded. All percentages used in the assessment are of fragment mass, unless otherwise stated.

2.2.4. Fired Clay

Factual Data: 3.1.3.3; 3.3.4

The fired clay fragments from the site were counted and weighed on site. All material was recorded and processed, none was discarded. The quantification was entered onto a Foxbase database with the encoded fields Context; Material Count; Mass; Percentage Kept; No of Bags; and Comments. All percentages given, unless otherwise stated are of mass.

2.2.5. Metalwork

Factual Data: 3.1.3.4; 3.3.5

All copper alloy and iron objects had been x-rayed at the time of conservation, and together with the individual small find record cards formed the present documentary archive. Each object was identified to object class (except when too fragmentary) accompanied by a short description and appropriate measurements; where possible identification was refined to object type with reference to widely used typologies such as those of Crummy (1983) for copper alloy and bone, and Manning (1985) for iron. Identification of the iron objects relied heavily on x-rays, which also helped in the identification of problematic copper alloy finds.

Completion of this archive record allowed accurate assessment of the potential of the assemblage, and the identification of the most important areas for analytical work.

2.2.6. Coins

Factual Data: 3.1.3.5; 3.3.6

All coins, including unstratified finds, were examined for identification purposes and summarised using the coin issue periods established by Dr Richard Reece to facilitate comparison of assemblages between different sites. The importance of including all coins in the site coin lists has been recognised in preparing site profiles for comparison. The condition of the material meant that conservation cleaning or x-raying was not generally necessary. The coins from Areas 6 and 7 had been given preliminary identification prior to assessment; this coin list was examined and the coins also viewed for confirmation.

2.2.7. Iron Working Residues

Factual Data: 3.1.3.7; 3.3.8

All the slag from the site has been identified and recorded on standardised recording sheets. This information has been entered into a UNIX database and consists of the following encoded fields: Phase; Area; Context; Weight; Number of Pieces; Type; and Comments. The slag was visually examined and identified solely on morphological grounds. The categories used are those defined by McDonnell (1991). A note on the probable fuel type has been recorded when fragments were incorporated within the slags.

2.2.8. Leather

Factual Data: 3.1.3.8; 3.3.9

2.2.9. Flint

Factual Data: 3.1.3.9; 3.3.10

All pieces were individually examined, but no measurements were made. Pieces were classified as flakes, blades, cores, tools etc., and a count made of the number of the different types per context. The presence or absence of patination was noted. Struck pieces that were heat-affected were also noted, but the separately bagged (non-struck) burnt flint was not examined. Natural flints and patently recent breakages were discarded. The assemblage was assessed under three zonal divisions: Areas 1-4, Area 6 and Area 7.

2.3. STRUCTURAL WOOD ASSESSMENT METHODOLOGY

Factual Data: 3.4

The need to obtain samples for dendrochronological dating, and the possible reuse of timber made a rapid scan of all the pieces necessary. As the timber had to be unwrapped to undertake the scan the opportunity was taken to record and discard all timbers which were heavily decayed and where all further information could be quickly recorded. A large tank with over 100 pieces of wood submerged in it may be described as a massive lucky dip; the consequence of this was that a small number of timbers were not assessed.

2.4. ANIMAL BONE ASSESSMENT METHODOLOGY

Factual Data: 3.1.4; 3.5

Only bone from contexts which had been phased at the time of assessment was included in the study. This resulted in 154 of a possible 624 contexts from Areas 1-4 being assessed

(48kg); spot dating information for the Stuston material was used in place of phase data, which allowed 321 of 355 contexts to be used (94kg). The material for which phasing information was unavailable at the time of assessment were not assessed.

The phased animal bone was scanned at contextual level. Animal bone was weighed and the number of fragments (NISP) was counted approximately for each context. Although attempts were made to identify the bone to taxa level, this was not always possible with some skeletal elements, for example long-bone shaft, rib, vertebrae and skull fragments. These were recorded under the following categories:

oxo	Large mammals eg. horse, cattle, red deer
lar	artiodactyls eg. cattle, red or fallow deer
sma	sheep, goat, roe deer, or dog

In order to assess the degree of fragmentation of the assemblage, and therefore the possible potential for further analysis, indicators were counted for each taxa per period. Indicators are bones that preserve well and inform on the general state of preservation across the site. The following skeletal parts are indicators:

Horn Core	(base, 50% or more)
Mandible	(50% or more of the tooth row)
Scapula Glenoid cavity	(50% or more)
Distal epiphysis of humerus, radius, metacarpal, femur, tibia and metatarsal, first phalanx	(50% or more)
Acetabalum of the pelvis	(50% or more)

Mandibles (with either dP4 or M3), horn-cores (with at least an intact base) and measurable long-bones were counted approximately so that a more cost-effective control could be gained concerning the amount of work available for further analysis. Mandibles are among the most important bones to be recovered from a site and provide a wealth of information about agricultural economies and also the state of health of the animals, while metrical data can describe changes in animal size through time, which in turn reflect standards of animal husbandry.

2.5. HUMAN REMAINS ASSESSMENT METHODOLOGY

Factual Data: 3.1.5

A representative subsample of the material from the putative funerary pyre was selected. This consisted twenty-one samples from a 1 metre transect across the centre of the feature. Bone from each of the samples was passed through sieves of 10, 5 and 2 mm mesh size, to illustrate the degree of bone fragmentation. Each bone was examined to ascertain the presence of any identifiable human bone.

It was not felt necessary to view the cremation or inhumation burials in order to make an assessment.

2.6. ENVIRONMENTAL SAMPLE ASSESSMENT METHODOLOGIES

Factual Data: 3.1.6; 3.6

2.6.1. Plant Macrofossil.

Bulk samples of up to c.60 litres of soil were taken from contexts with more or less dry fills. These samples were processed on site in a bulk sieving/flotation tank, using 0.5mm meshes throughout. The flots were air-dried, then scanned under a binocular microscope at low power, noting the main constituents and macrofossils of any other particular significance. Estimates of relative abundance were made, but no counts.

From features with wet structured organic fills, bulk samples for machine flotation as above were taken, but whole-soil samples for more detailed laboratory analysis were also kept.

For the assessment only the organic flots from a selection of these samples have been scanned, to give a general impression of assemblage composition. Obviously most small macrofossils (<0.5mm) and delicate structures which would not survive drying could not be recorded.

Macrofossil samples from the organic fills of the water channel in Area 6 were supplied as whole-soil samples. 250g subsamples of these were disaggregated, graded in a sieve bank with a minimum mesh of 0.25mm, and scanned wet at low power.

2.6.2. Pollen.

Riverine sediments on the Suffolk bank of the River Waveney, and fills from a variety of excavated features from both the Norfolk and Suffolk sides of the river were sampled for palynological assessment. The range of features covered the fills of wells, pits, ditches, buried ground surfaces, and the silting of an artificial water channel.

The assessment aims to evaluate the abundance and state of preservation of palynomorphs within the sediments, give information on the surrounding vegetation throughout the periods of sediment accretion, and evaluate the function of some of the waterlogged and non-waterlogged features. As such, and in the absence of detailed counting of palynomorphs, the assessment must be considered to be a crude evaluation of vegetation change at and around the site.

Each sample was subjected to standard concentration techniques (Dimbleby, 1985). Palynomorphs were stained with safranine and mounted in glycerol jelly. Slide preparations were examined with phase contrast microscopy at x400 and x1000 magnification. No attempt was made to quantify palynomorphs other than to assess subjectively their overall abundance.

All palynomorphs encountered in standard traverses of each slide were identified and recorded. Where pollen was sparse, a total of ten traverses of each slide were examined; where it was abundant, scanning was restricted to five traverses. The pollen key of Moore, Webb, &Collinson (1991) was used for identification and plant nomenclature follows Stace (1991).

2.6.3. Insects.

Subsamples of processed Macrofossil sample flots were used in the assessment. The samples were gently disaggregated in water and washed through a stack of sieves down to 0.5mm. The sieve contents were then placed in water and scanned under a binocular microscope.

2.6.4. Soil Micromorphology .

Samples were examined in the field and ascribed to soil type and Soil Association (Hodges et al., 1983), partly in order to differentiate natural brown sandy soils and podzols

from Roman "dark soils" ("dark soil" *sensu stricto*, Macphail 1981, in press). Sampling of undisturbed samples for soil micromorphology was carried out in specific areas of the site to address particular site questions, as follows:

9 samples were taken to examine the Roman dark earth in Areas 4 and 7. This was to more-accurately identify differences noted in the field between the dark earths in these Areas, which may indicate variations in Roman landuse, and the relationship of the dark earth with earlier and later soil formation on the site.
6 samples were taken to investigate the podzols of the site north of the river. In particular the locations where a cremation had been cut, a nearby mound of burnt bone, and a ground surface sealed by a Roman road were sampled.
2 other samples were taken to study an early grey soil layer in Area 7 and the base of a rectangular clay tank in Area 6.

All 17 samples were assessed. The samples were impregnated with resin, then sent to the University of Sterling for thin section manufacture. To support soil micromorphological analyses, 4 bulk samples were investigated through Scanning Electron Microscope and Energy Dispersive X-Ray Analysis (EDXRA).

2.7. CONSERVATION ASSESSMENT METHODOLOGY

Factual Data: 3.7

At present all of the metal finds (with the exception of lead) have been routinely radiographed as part of the archive record. Lead finds have been mechanically cleaned/washed to remove potentially hazardous dust. Glass has been washed, dried and stabilised where necessary; all leather fragments have been treated with glycerol and freeze-dried. Smaller wooden artefacts including the bowl blanks and possible furniture fragment, are stored in distilled water pending further analysis and conservation.

3. FACTUAL DATA

3.1. SUMMARY

3.1.1. Context Data

(Section 3.2)

A total of 4452 contexts were allocated during the fieldwork phase of the project. At the end of the Assessment period, 3454 had been assigned to a provisional phase with a further 952 determined as Romano-British but without more precise phasing. Of the phased contexts 8 were considered to be natural features, 57 were assigned to the early prehistoric, 238 to the later prehistoric (IA-RB), 3888 to the Roman period, 49 to the Medieval, 135 to the Post-Medieval, (with a further 31 classified as 'Post Roman'), and 66 identified as modern elements.

The simple count of contexts is slightly misleading because SAU standard recording practice allocates a single context number to each feature and denotes layers within the feature by subscripts, NAU practice is to allocate individual context numbers to each stratigraphic unit identified. Thus totals of context numbers will underestimate the volume of data represented, but no other simple quantification method could be suggested.

Table 1 below shows the correlation between phases in Areas 1-4 and Area 7; Area 6 was not phased during Assessment, and contexts within this Area have been identified as 'RB'.

1	2	3	4	5		-	6	7	8	9
NEO -BA	Mid 1st	Late 1st	Early 2nd	Late 2nd	Early 3rd	Later 3rd	4th	MED	PM	MOD
Prehis		I	II	III	IV	V	VI	Post RB		

Table 1. Correlation of Phases and Chronology.

Correlation of Area 1-4 phases (arabic numerals) and Area 7 phases (roman numerals) against broad chronological span.

Table 2 below summarises the data per phase for each Area of the site to provide a summary of the assessment detailed below. The first row, 'Nat' quantifies excavated features believe to be of natural origin.

Phase	Area 1	Area 2	Area 3	Area 4	Area 6	Area 7	Total
Nat	8						8
1	13		21			14	57
2	100	6	118	14			238
3	158	23	81	45		10	
4	387	22	361	138		16	
5	385	37	286	170		116	
6	352		85	18		133	
7		49					49
8	65	9	36	15		38	
9	38	7	20	1			
'RB'	331	176	172	36	115	22	

Table 2. Summary of Contexts per Area per Phase

3.1.2. Structural Wood

(Section 3.4)

A total of 501 structural timber context numbers were allocated, with a further 54 record sheets for small wood finds recovered from other contexts.

The retained wood comprises:

31 well timbers forming the totality of one well shaft, 60 well timbers representing the wood technology of the other 7 wells, 6 reused roof timbers up to 3m long, 1 other roof timber, and 10 timbers from other contexts

3.1.3. Artefactual Data

(Section 3.3)

Artefacts were retrieved during excavation from 1071 contexts. The distribution of all types is reasonably consistent across the site, though metal working debris was concentrated in Areas 1 and 3

2866 Small Find numbers were allocated. In general each number relates to a single artefact, though where a number of related finds were collected from a restricted area (e.g. a dump of leather off-cuts or a concentration of lead droplets) a single Small Find number was used. 1241 coins were identified and 2566 other metal artefacts (recorded under 1651 Small Find Numbers).

3.1.3.1. Pottery

(Para. 3.3.1)

Excavations at Scole in 1993 produced 5,227 sherds, weighing 565.2 kg. Of this total 232 sherds weighing 10 kg are unstratified. The total quantity appears unusually low, given the areas excavated.

Within this total were 1611 sherds of *samian* weighing 14.89kg *(Para. 3.3.2)*. This fabric has been included in the general quantification of the pottery, but is also described separately for its intrinsic values.

3.1.3.2. Brick / Tile

(Para. 3.3.3)

A total of 1694 Brick and Tile fragments, weighing 126.4 kg were assessed.

3.1.3.3. Fired Clay

(Para. 3.3.4)

The fired clay assemblage consisted of 3366 fragments, weighing 35.9 kg. All were assessed. Fragments of furnace/kiln/hearth lining, and wattle were identified, though much of the assemblage was very fragmentary.

3.1.3.4. Metalwork and Small Finds

(Para. 3.3.5)

A total of 2566 items were recovered. The assessment considered the material in terms of the functional categories first employed by Crummy (Crummy 1983). The quantitative breakdown is presented below (Table 15).

In terms of materials, the assemblage contains 583 copper alloy objects, 5 silver objects, 491 records for iron (approx. 1000 objects), and 523 records for lead (993 objects) including the metal working debris noted below. Non-metal artefacts allocated small find numbers and included in the assessment comprised 33 bone/antler, 21 glass (beads and waste), 4 ceramic, 108 stone objects, and 2 shale items. The bulk of the iron and lead assemblages comprised nails and manufacturing waste respectively and these were often recorded in groups under single small find numbers, or as bulk finds in the case of nails found south of the river.

3.1.3.5. Coins

(Para. 3.3.6)

A total of 1883 'coins' were recovered during the fieldwork phase of the project. Areas 1-4 produced 1271, of which 1255 are Roman coins (1230 have been closely dated). In addition there are 3 Iron Age coins, 12 post-Roman coins and one non-numismatic item.

Areas 6 and 7 south of the river produced 612 coins. Closely-dated Roman issues account for 598, with a further 10 less-well identified; in addition there are 4 post-Roman coins.

3.1.3.6. Glass

(Para. 3.3.7)

In total, 47 fragments of Roman glass, and 82 Post Medieval sherds were recovered, with bottles, flagons, flasks, bowls, and cups represented among the assemblage.

3.1.3.7. Metal Working Debris

(Para. 3.3.8)

A large quantity of Iron working slag was recovered (93.85kg), the majority of which is probably Roman in date. This phasing is based on ceramic evidence and the appearance of the material.

The slag was recovered by three different methods during the excavation: visual hand collection, dry sieving, and from residues of environmental samples. 16.9% of the slag was found in the 'grey soil' of Areas 1 and 3 and cannot be ascribed to any particular period. However the lack of ploughing on the site suggests the findspots were close to the original points of deposition, despite possible animal reworking. The method of excavation used on the

ditches (which produced the largest slag assemblage) resulted in heavy fracturing to the assemblage.

Evidence for Copper Alloy, Lead, and ?Silver working were also recovered. This material was recorded as small finds. Over 800 items of lead spillage debris were noted with casting sprues and crucible fragments. The majority of the material came from the 'grey soil' in Areas 1 and 3.

3.1.3.8. Leather

(Para. 3.3.9)

27 small find numbers were allocated during the project fieldwork. This covered around xxx individual pieces of leather. The assemblage included parts of possibly 4 shoes, and lace fragments, but was mainly composed of scraps and offcuts.

3.1.3.9. Worked Flint

(Para. 3.3.10)

Relatively small amounts of worked flint were recovered from all parts of the site. Burnt (non-struck) flint was more common, particularly in Areas 1 and 3, but this material was not assessed, as its potential was limited. A total of (1445 + NAU) flakes, cores and tools were identified.

3.1.3.10. Wood

(Para. 3.3.11)

8 wooden artefacts and several barrel staves were recovered. These comprised 2 bowl blanks, 2 bench halves, 1 cart side, 1 moulded plank, 1 mortice joint, and a wooden peg.

3.1.4. Animal Bone

(Section 3.5)

272 kg of animal bone was recovered and submitted for assessment. 148kg had suitable phasing information at the time of assessment and was used.

3.1.5. Human Remains

(Section 3.6.4.1)

12 cremations and 4 inhumations, and 58 (spatially and stratigraphically based) samples from a putative funerary pyre were retained for assessment. It was not felt necessary to view the cremation or inhumation burials in order to make an assessment, but 25 samples from the 'pyre' were assessed.

15 further samples were taken from the interior of a coffin for possible chemical analysis to identify organic elements. These have not been assessed to date.

3.1.6. Environmental Data

(Section 3.6)

A total of 395 environmental samples were taken during the course of the Project fieldwork. These were taken from a variety of wet/waterlogged features across the site including Pits, Water courses, and well fills. Unfortunately, due to the high ground water level during the latter stages of the fieldwork, when many of the wells were excavated it proved impossible to recover any type of environmental sample from two of the seven excavated, and only restricted samples could be taken from a further two.

Macrofossil, Pollen, Insect, and Soil micromorphological samples were taken during the course of fieldwork; cremated and skeletal human remains were also retained for analysis.

17 Micromorphology Samples were taken and assessed

51 Specific Insect Samples were taken, though the assessment was conducted on subsamples of 29 macrofossil flots, which identified 10 containing insect remains. The specific insect samples have been kept unprocessed.

62 Pollen Samples were submitted for assessment, comprising 20 500mm monoliths, and 42 single context 'grab samples'. 127 slides were prepared from these, all were used in the assessment.

265 Macrofossil samples were taken. 69 were assessed.

3.2. FACTUAL STRATIGRAPHIC DATA

(Myk Flitcroft, Andrew Tester, Andy Crowson, Dave Gill, Andy Letch, Neil Moss, Andrew Richmond)

In an attempt to present the factual stratigraphic data from the excavation in a meaningful way a series of seven themes have been identified. The evidence for each is discussed separately, with the results summarised in tables at the end of each theme. The themes are related to the original project Research Aims by reference to the Project Design Specific Research Aims (Rev. 2.4; Para 2.10).

The tables detail the numbers of features (not contexts) of particular type encountered, structured by provisional phasing but describe the data in terms of more interpretative groupings in order to provide a better indication of the nature and extent of activity.

The Themes used are:

1. **Layout and Communications**
2. **Industrial Activities**
3. **Technology**
4. **Ritual Life (also non-ritual burials)**
5. **Water Management**
6. **Agricultural Aspects of the site**
7. **Non-Human Systems and Ecological Processes**

3.2.1. THEME 1: LAYOUT AND COMMUNICATIONS

(Research Aims 5,6,7,8,9)

Most of the information of the layout of the site and its communications route was recovered from stratigraphical analysis, and most of the stratigraphical data recovered can be described in terms of its contribution to the study of settlement layout and/or to communications. This data is summarised in Figures 3 - 21, which show the major features of each phase.

The data is distributed across the site, though concentrated in Areas 1, 3, 4 and 7 along the corridors of an East-West and a North-South aligned Roman road. Although changes in layout are observable through time the main foci remain the road corridors. Area 6 appears to

have been more marginal to the settlement, though a possible minor East-West road does run immediately south of the Area and would have linked it to the town.

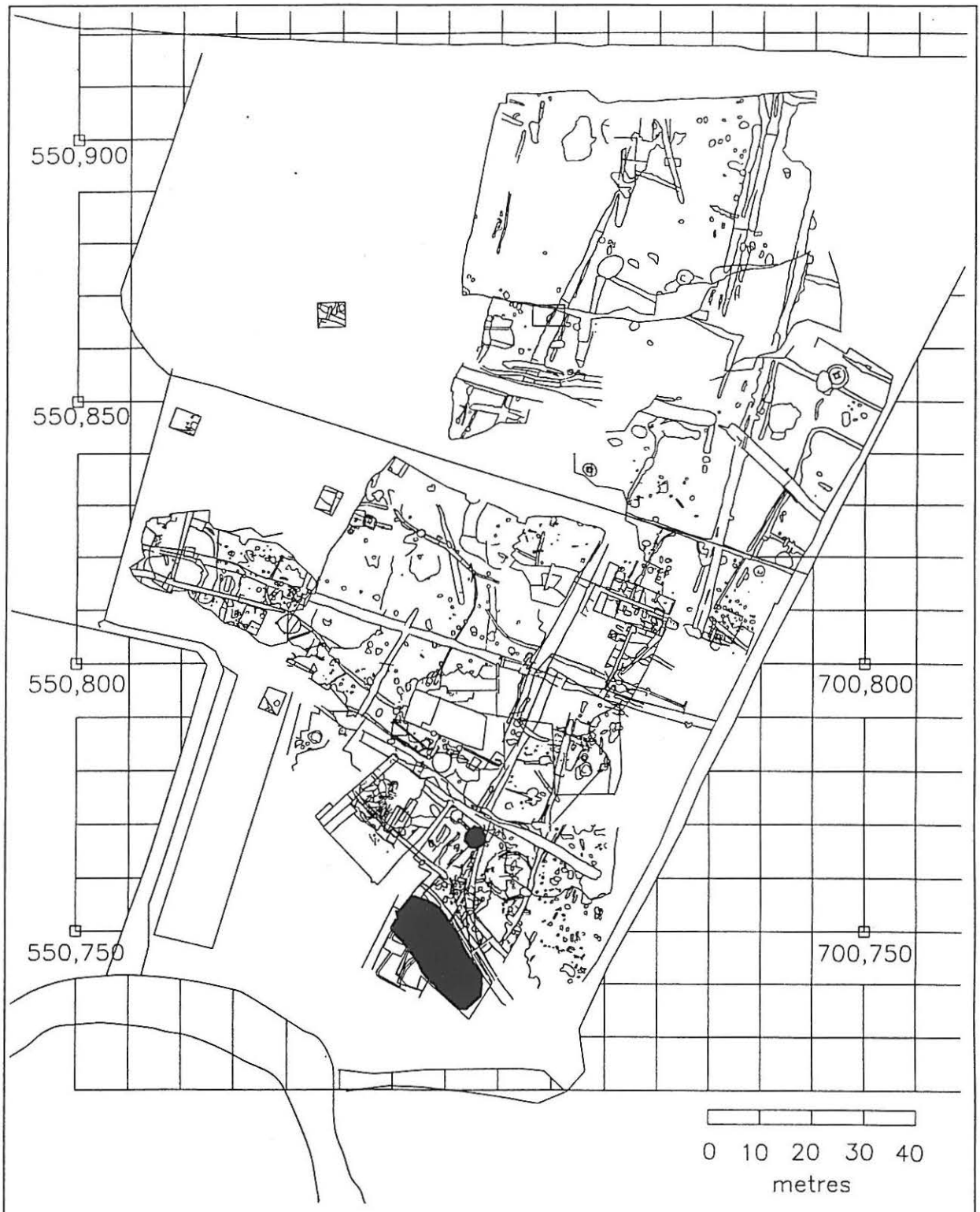

Figure 3. Phase 1 Features (Prehistoric). Areas 1-4

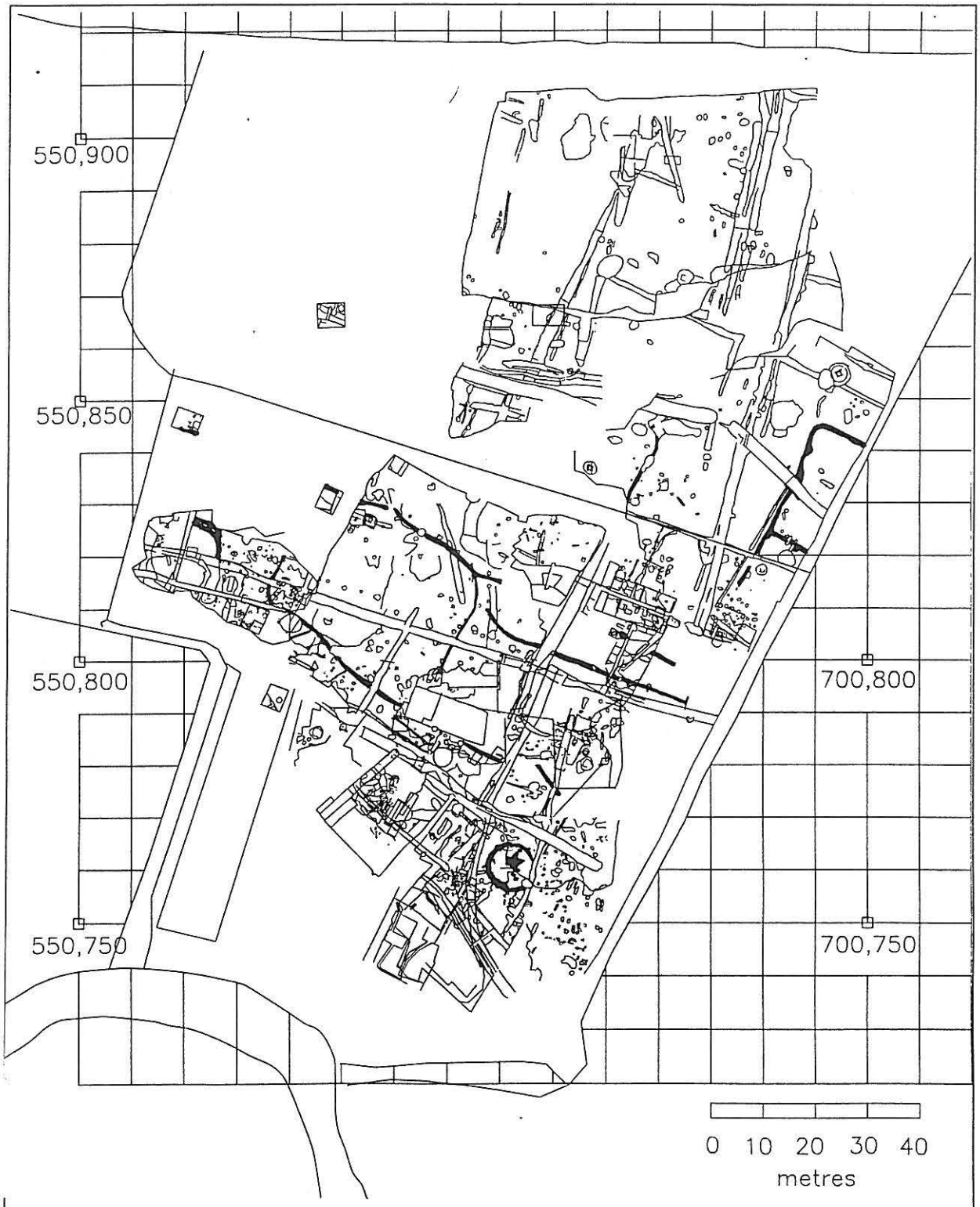

Figure 4. Phase 2 features (Late Iron Age/ mid First Century). Areas 1-4

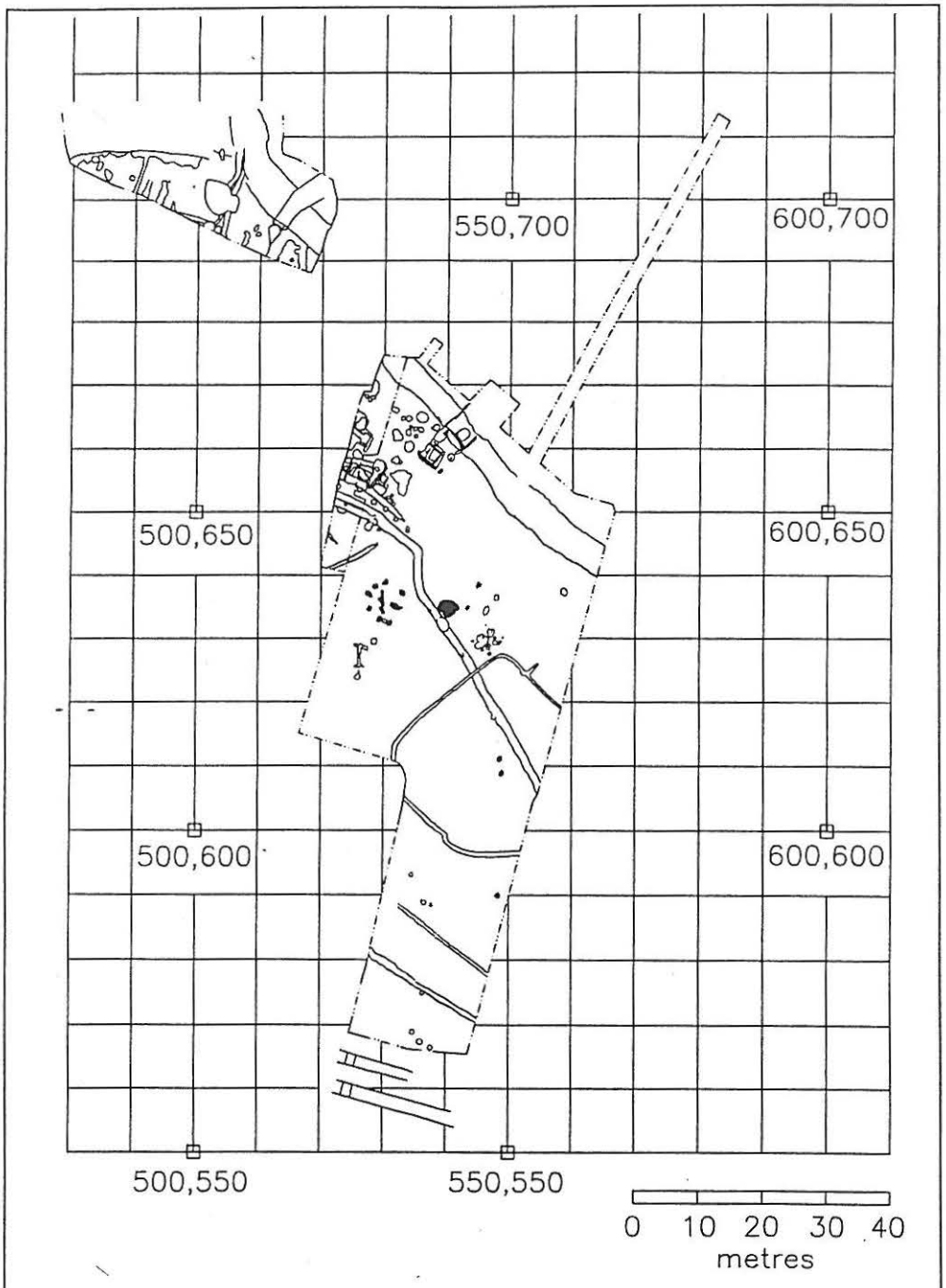

Figure 5.
Phase 2 features (Late Iron Age/ mid First Century). Area 6

3.2.1.1. PHASE 1 *(Prehistoric)*
(Figure 3)

Little can be determined about the layout and extent of human activity, though contexts allocated to this phase are situated in Areas 1 and 3 north of the river, with the main concentration adjacent to the river. Features relate to a dump of thermally-fractured flints

('potboilers') recorded beneath the riverside peat at the southern end of Area 3, and a similar (though more-disturbed) deposit slightly farther north in Area 1. A shallow ditch was provisionally also placed in this phase as a matter of convenience as it was cut by Phase 2 features. It is however unlikely that this ditch was contemporary with the potboilers.

South of the river evidence takes the form of gridded collection of surface flint. in Area 6. The survival of evidence in Area 7 is too poor to offer worthwhile comparisons.

3.2.1.2. PHASE 2 *(Mid-Late First Century AD)*

(Figures 4-5)

Information relating to Layout was identified in an expanded area, extending farther up the northern flood plain slope, though still restricted to Areas 1, 3, 4, and 6. The range of data increased to encompass domestic and enclosure entities. One small square ?field enclosure was identified in Area 1, with elements of possibly three more observable.

Five post holes within the square enclosure may be the truncated remains of a round house; more complete examples were recorded at the southern end of Area 3 at the crest of what would have been a slope down to the river, and in Area 6 to the south of the river.

The features assigned to this phase survived as relatively shallow deposits with a leached sand fill containing few datable artefacts. Their allocation to Phase 2 was based on horizontal stratigraphy and the similarity of their fills.

South of the river a small collection of Claudian coins and metalwork recovered from the surface of the southern part of the field during road construction may support Roman military activity as previously suggested in this area on the basic of air photograph evidence, though the presence of this early assemblage does not necessarily require a military explanation.

3.2.1.3. PHASE 3 *(Late First/ early Second Century)*

(Figures 6-7)

This phase marks a fundamental re-organisation of the site at the start of Romano-British activity. A road aligned East-West was constructed across Areas 1, 3 and 4, with flanking ditches either side. The northern ditch turned northwards in the centre of Area 1 to run into Area 2, though a shallower continuation was identified running farther West. The southern ditch extended across west, with a possible corner at the extreme western edge of Area 4. Features of this phase have been subject to truncation and minor contamination through later reorganisations, but the quality of information is still high.

At the southern edge of Area 3 attempts were made to drain the lower-lying parts and the first of a series of drains was excavated.

In Area 6 two east-west ditches may parallel road development noted in Areas 1, 3 and 4. An industrial complex was established , defined by a ditched boundary. In Area 7 a small ditch may be aligned with the main north-south road (which was almost certainly built prior to the settlement's foundation).

Figure 6. Phase 3 Features (Late First Century). Areas 1-4

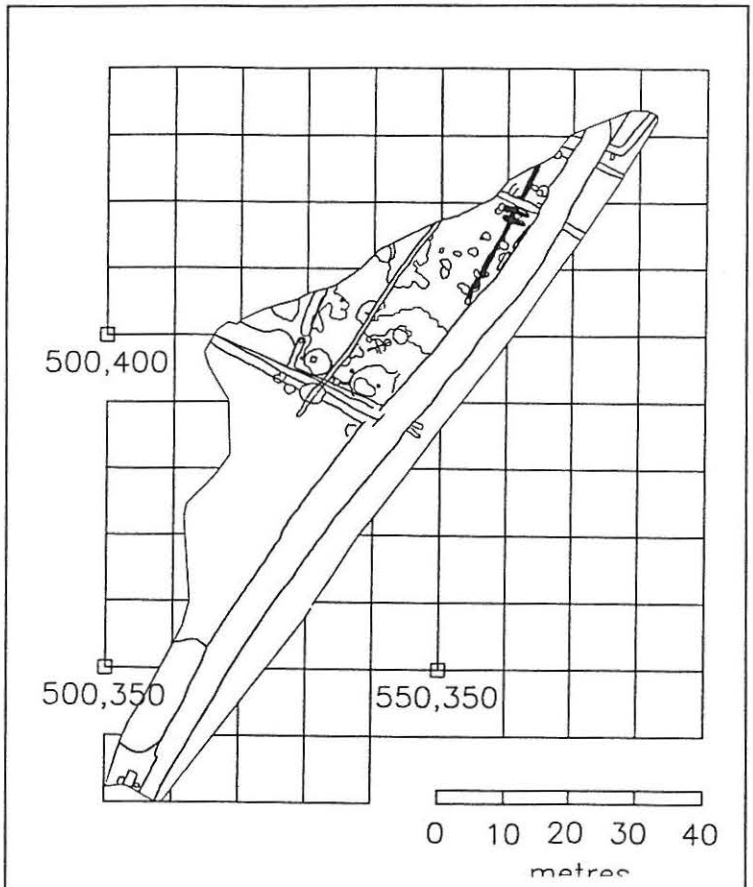

Figure 7 Phase 3 Features (Area 7)

3.2.1.4. PHASE 4 *(early-mid Second Century)*

(Figures 8-10)

The area north of the East-West road in Areas 1,3 & 4 was subject to continued expansion in this phase (Area 1/3 and Area 2). The range of entities increased to include domestic/commercial structures and associated property boundaries north of the road, and regular land divisions to the south.

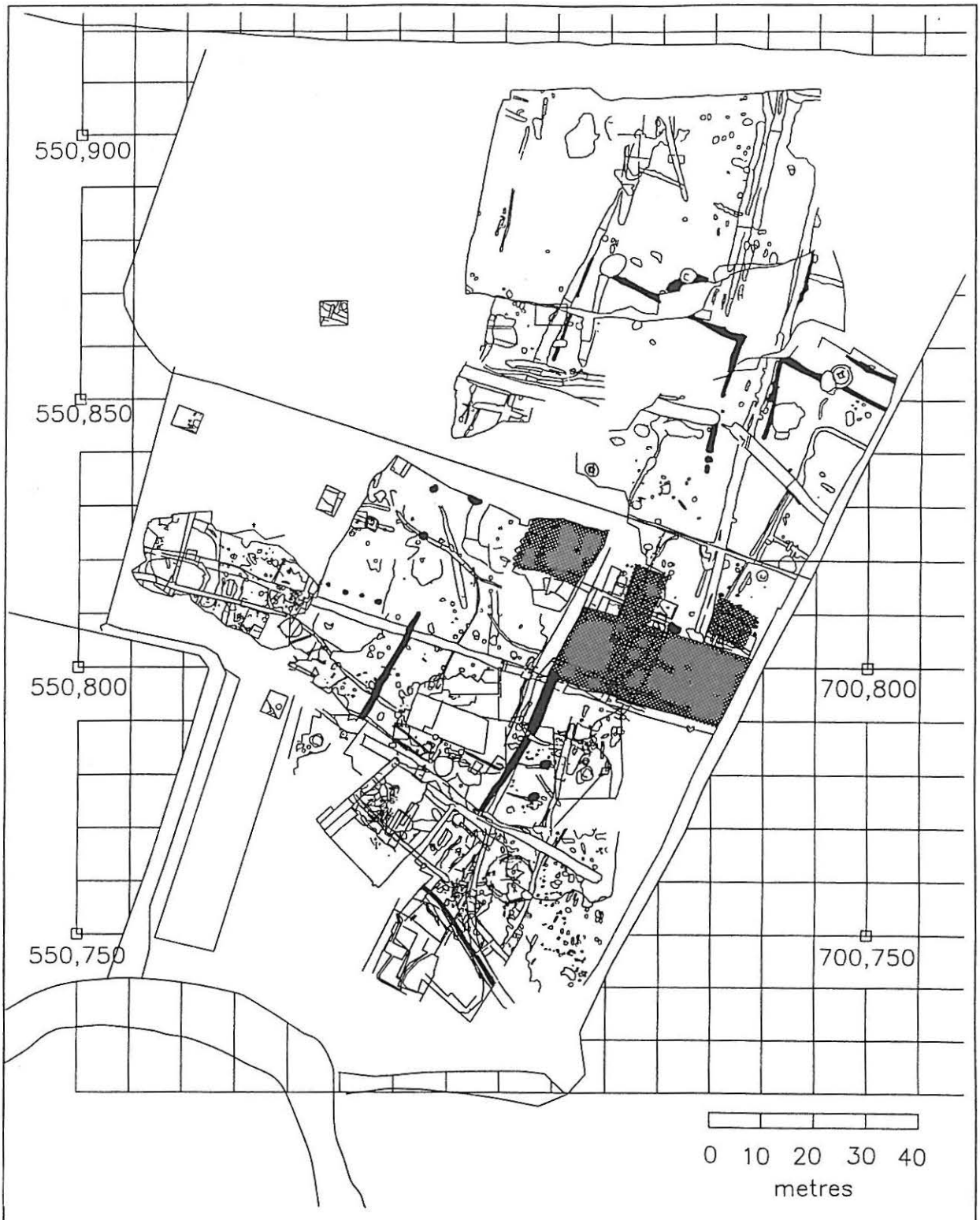

Figure 8. Phase 4. (Second Century). Areas 1-4

A clay-floored building with beam-slot superstructure and associated clay surface (to the west) was constructed immediately north of the road in Area 3. The building was the

subject of the 1972 excavations by Suffolk WEA, and it is unfortunate that the records of this investigation are still to be recovered.

Adjacent to this beam-slot building was a large clay surface; stake holes and post holes suggest a partial covering for this, but there is little evidence for more than a lightweight or temporary structure and the surface might be better explained as a working surface. The stratigraphic relationship between these two structures has been removed by a later medieval/Post-medieval ditch.

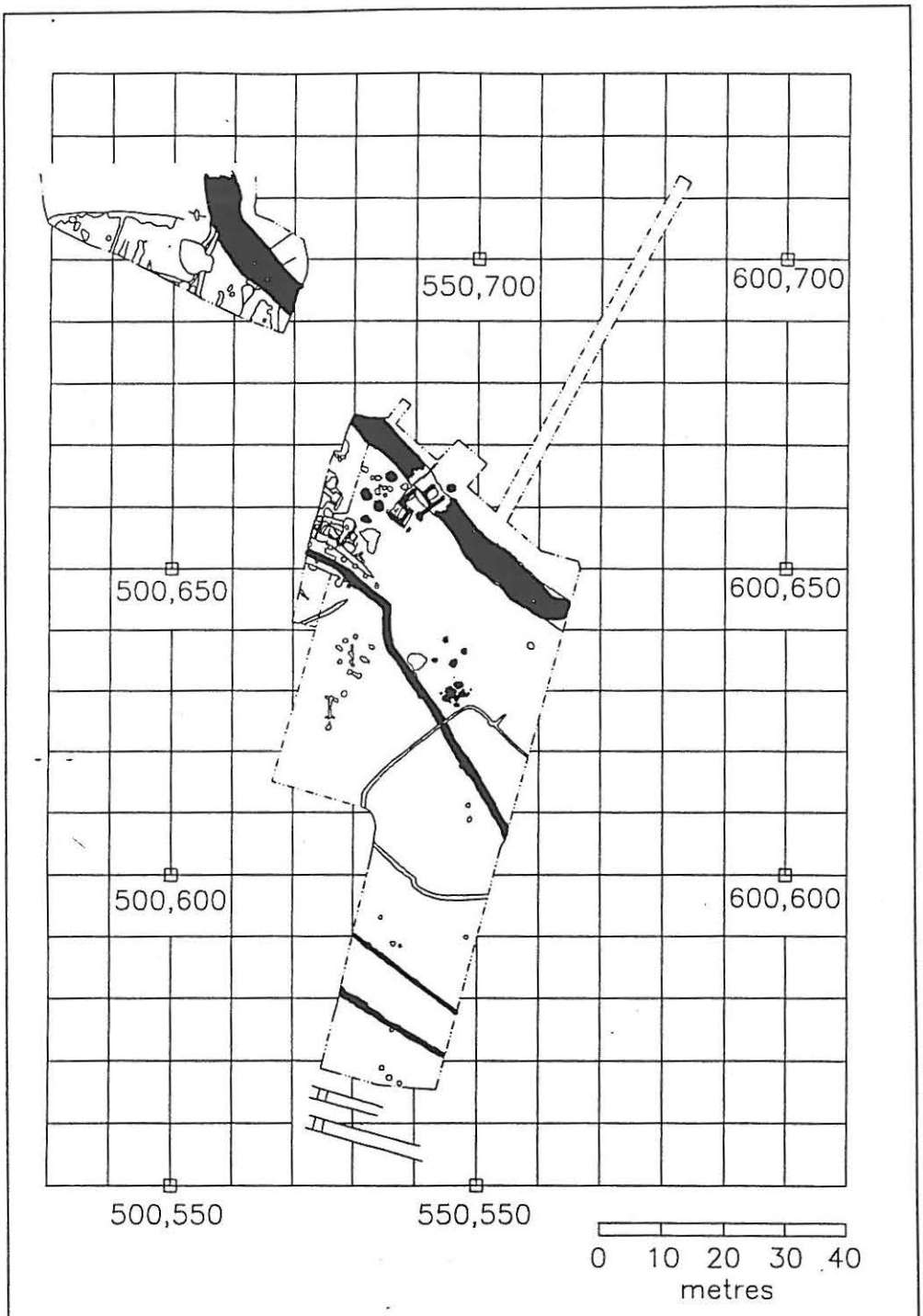

Figure 9. Phase 4 (Second Century). Area 6

It is suggested that at this time the building lay within a 40 x 60m enclosure running north from the road associated with a possible street network running north and east, though the remains of this network are fragmentary. The roadside ditches were partially in-filled to provide access to the surrounding land and a convenient street frontage for the building itself. There is some evidence that the road was widened at this time, extending it to the building frontage.

South of the river this phase may have marked the creation of a ditched enclosure fronting onto the street in Area 7. This enclosure was proved with a well though no other features were identified. The southern side of this enclosure appears to have marked the edge of the settlement and was maintained during subsequent phases. At the southern end of Area 7, outside the putative settlement boundary, a quarry pit (possibly for gravel) was excavated.

3.2.1.5. PHASE 5 *(later Second-Third Century)*
(Figures 11-16)
This phase marks the greatest extent of activity on the site. Expansion took place both north

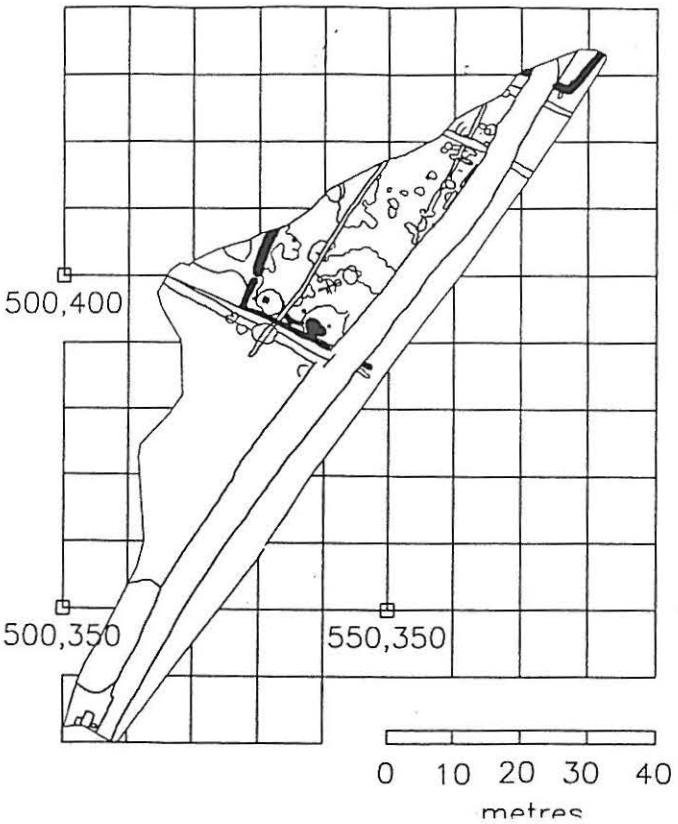

Figure 10. Phase 4 Features Area 7

and south of the road in Areas 1-4. Domestic/Commercial/Industrial structures were established along the northern and southern road frontage in Areas 1 and 3, and possibly in Area 4 as well. Lanes/service roads ran north and south between the buildings.

The original building north of the road in Area 3 continued in use. The new buildings occupied positions within the land divisions established south of the road previously and were similar in general form to the building north of the road, though without the great depth of floor make-up.

The two main structures were both located in the central and eastern parts of Area 1 and 3, with one opposite to the first building and one slightly farther west. The first of these buildings was situated end-on to the road with a gravel 'track' or service road to its immediate east. The second (westerly) clay surface was more badly truncated, but is again similar in form.

The boundary with the river was formalised through the excavation of drainage ditches; evidence for the continued expansion of the site westwards along the road frontage was found in the creation of a further enclosure to the south of the road continuing the line of the in-filled

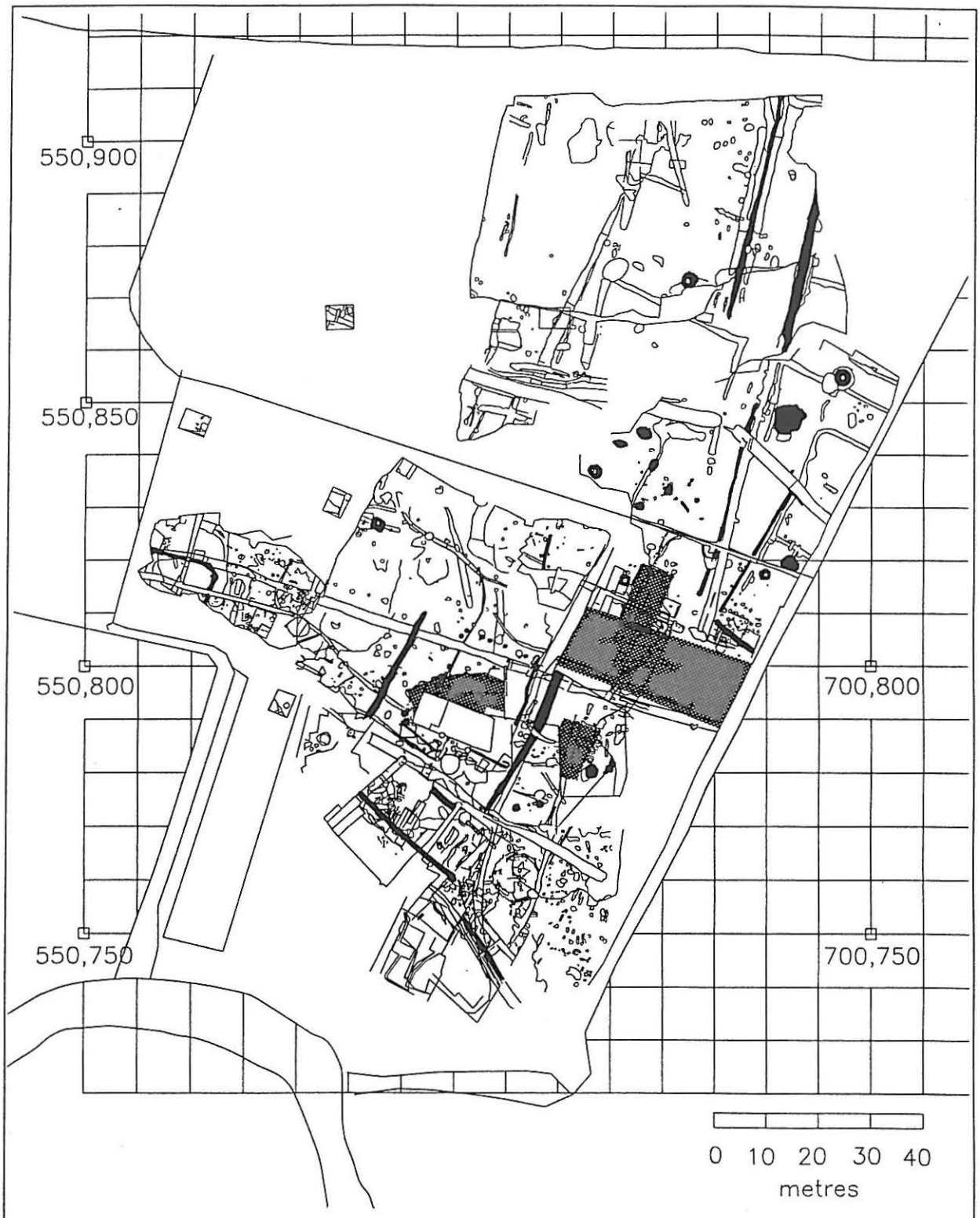

Figure 11. Phase 5 (Second/Third Century). Areas 1-4

southern roadside ditch. The regular layout of the site is also reflected in the regular spacing of a series of wells constructed at this time. The general impression of the site in this phase was of extensive but non-intensive activity over the whole area, with buildings clustered close to the road and open lots behind. Analysis of the wells' distribution is complicated by the fact that although they exhibit a regularity in their spacing, their distribution is not obviously related to the identified land divisions

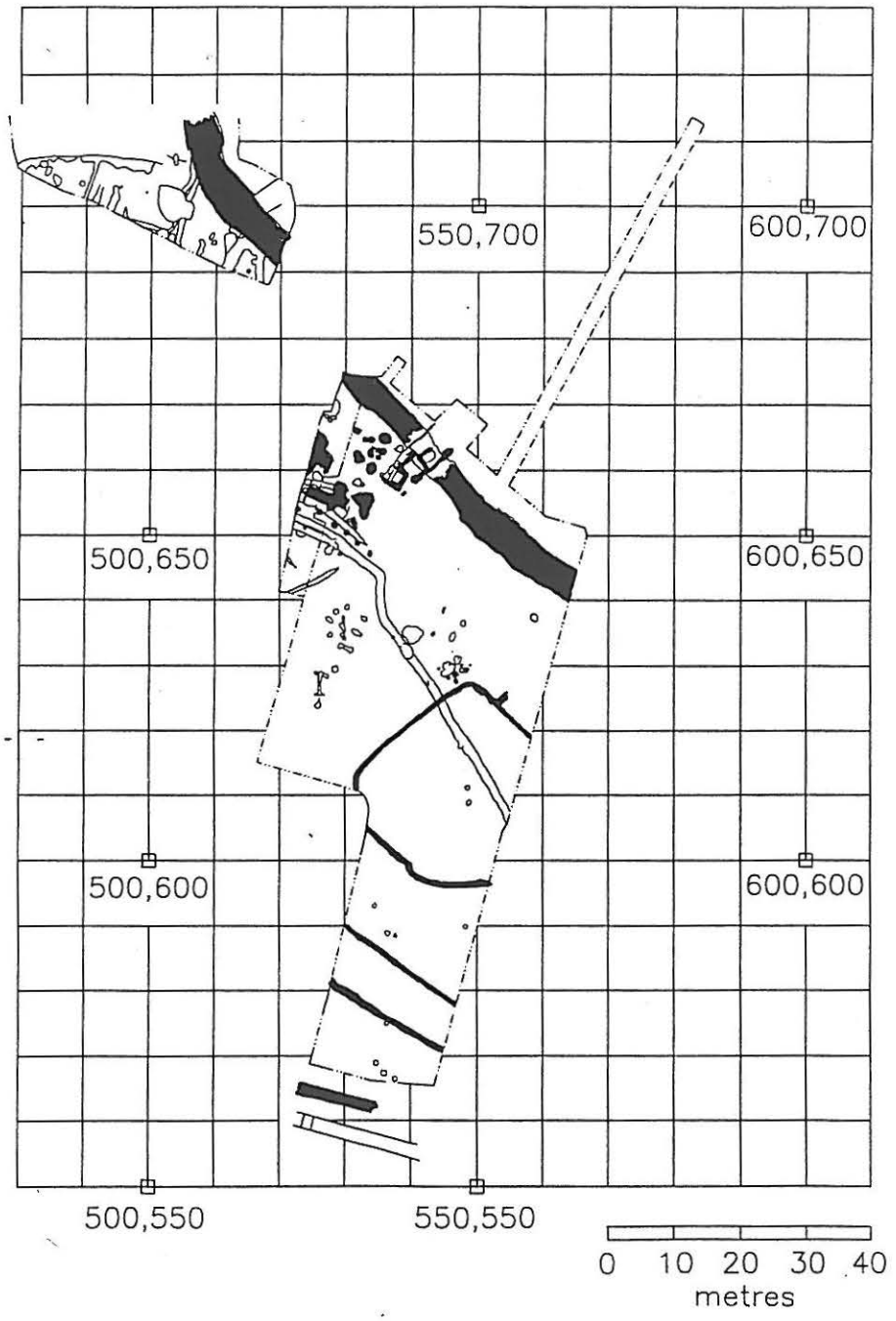

Figure 12. Phase 5 (III) (Late Second Century) Area 6

This picture correlates with the evidence in Area 7, where considerable activity took place during the three subphases associated with Phase 5 (*Figures 12-16)*. Topsoil was removed in a belt alongside the road, and the existing enclosure reorganised with a shorter frontage and greater depth. Excavation of the enclosure ditch resulted in the earlier well bring buried by upcast material. Further changes to the layout of Area 7 continued until Phase V when then first continuous north-south ditch was dug along the eastern side of the Area. The only direct evidence for road metalling occurred at the southern end of the site, which may indicate a slight divergence between the modern and Roman road lines, or a widening of the road.

During Phase 5 'dark earth' accumulated within the fill of the quarry pit at the southern end of the site, and within hollows inside the settlement boundary.

Immediately south of the river, in Area 6, the industrial complex appears to have been abandoned. This was probably due to the rising water table and the general susceptibility of the area to flooding.

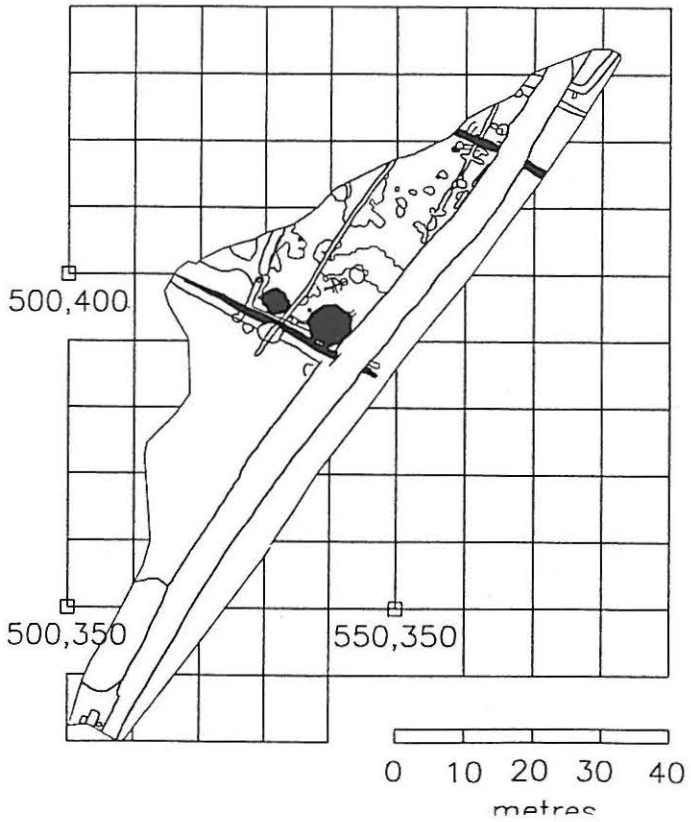

Figure 13.
Phase 5 (III) (Late Second Century). Area 7

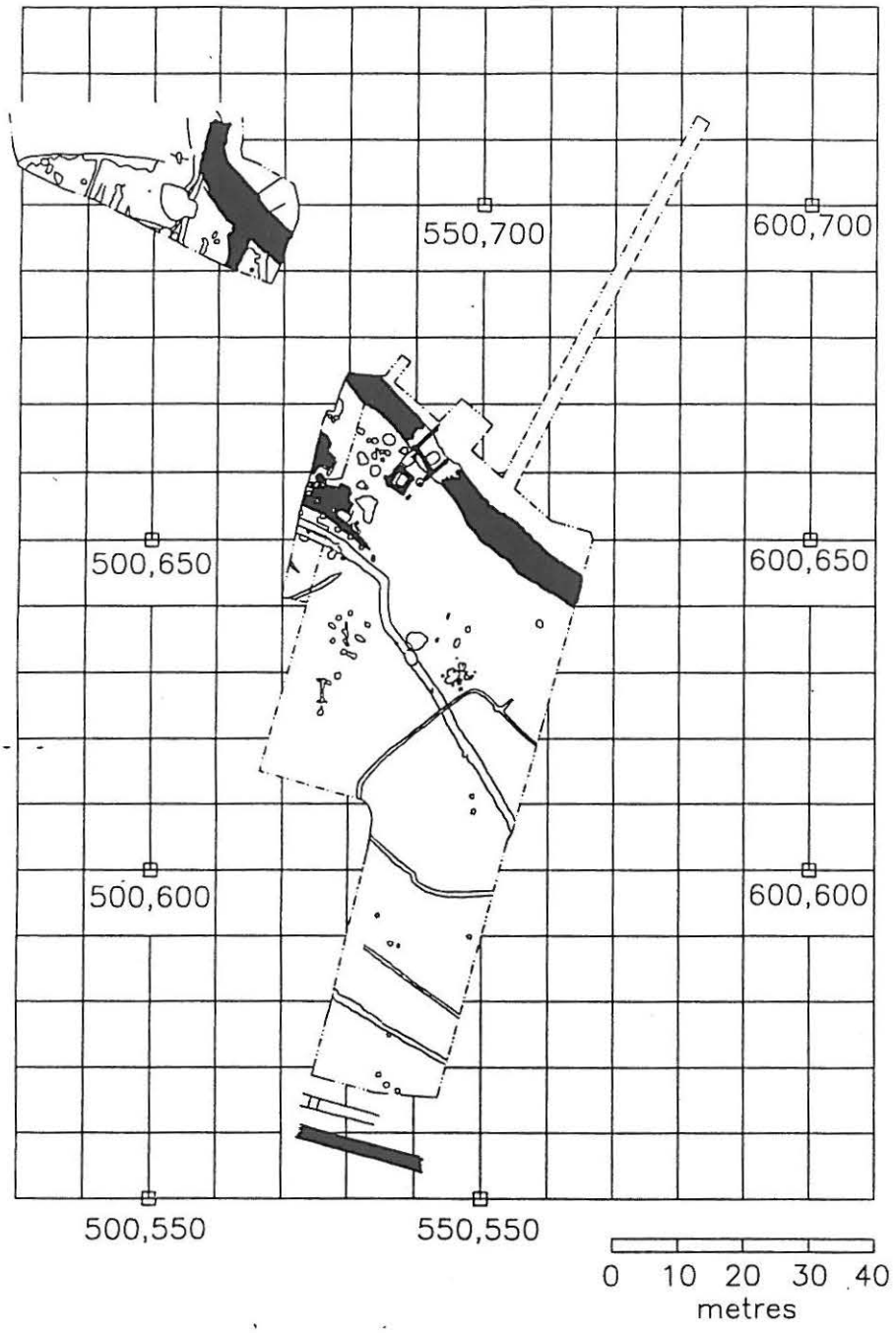

Figure 14.
Phase 5 (IV) (Early Third Century). Area 6

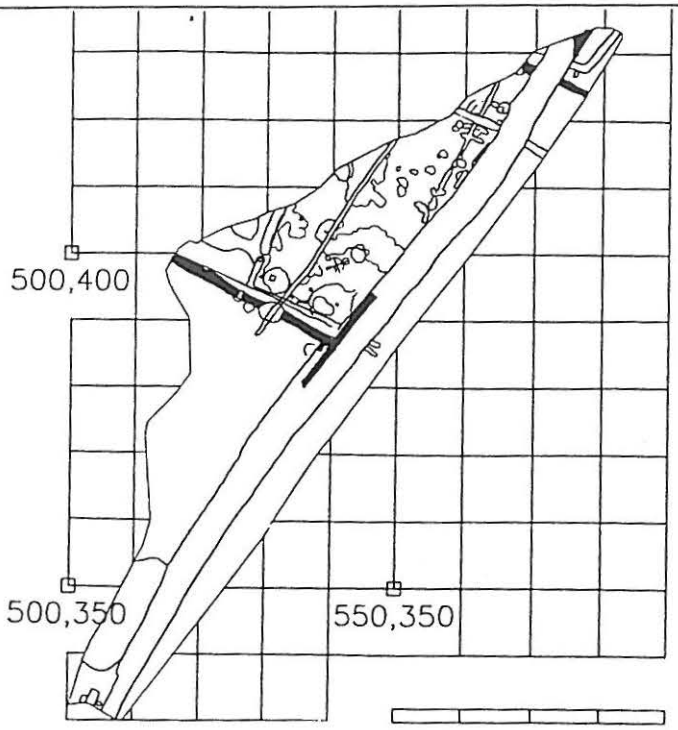

Figure 15.
Phase 5 (IV) (Early Third Century). Area 7

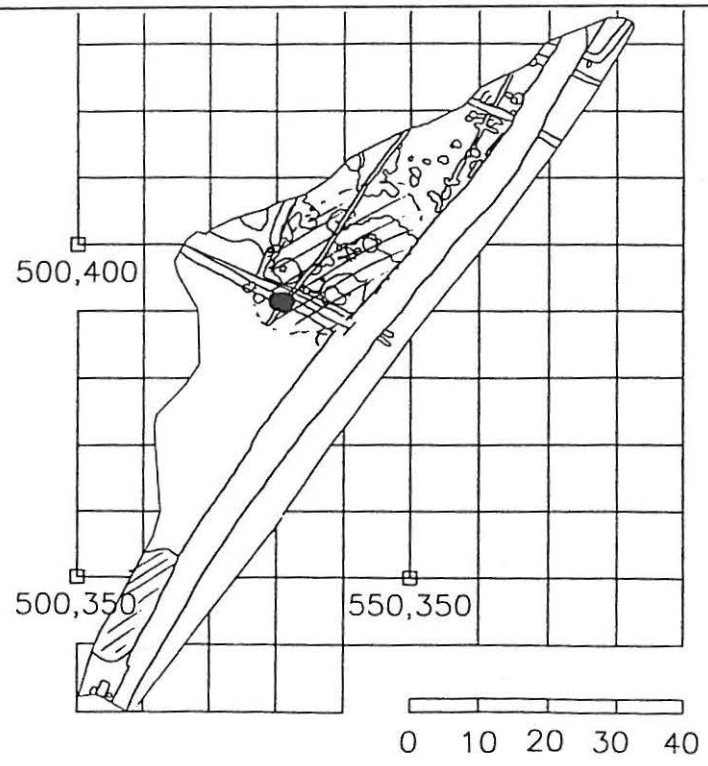

Figure 16.
Phase 5 (V) (Later Third Century). Area 7

3.2.1.6. PHASE 6 *(Fourth Century)*
(Figures 17-19)

The general layout north of the river remained constant in this phase, though with the possible disuse or at least remodelling of the easternmost building south of the road, and with a greater use of the river-edge zone. Activity in this area included excavation of a series of large pits at the edge of the peat (for industrial processing it is suggested), and apparent dumping of rubbish in the wetter parts of the zone. This phase marked the final layout of the Romano-British settlement with no later construction identified.

There was apparent continued use of the northern building, though it appears that of the two structures south of the road, the eastern was remodelled by the excavation of a drain through the clay floor.

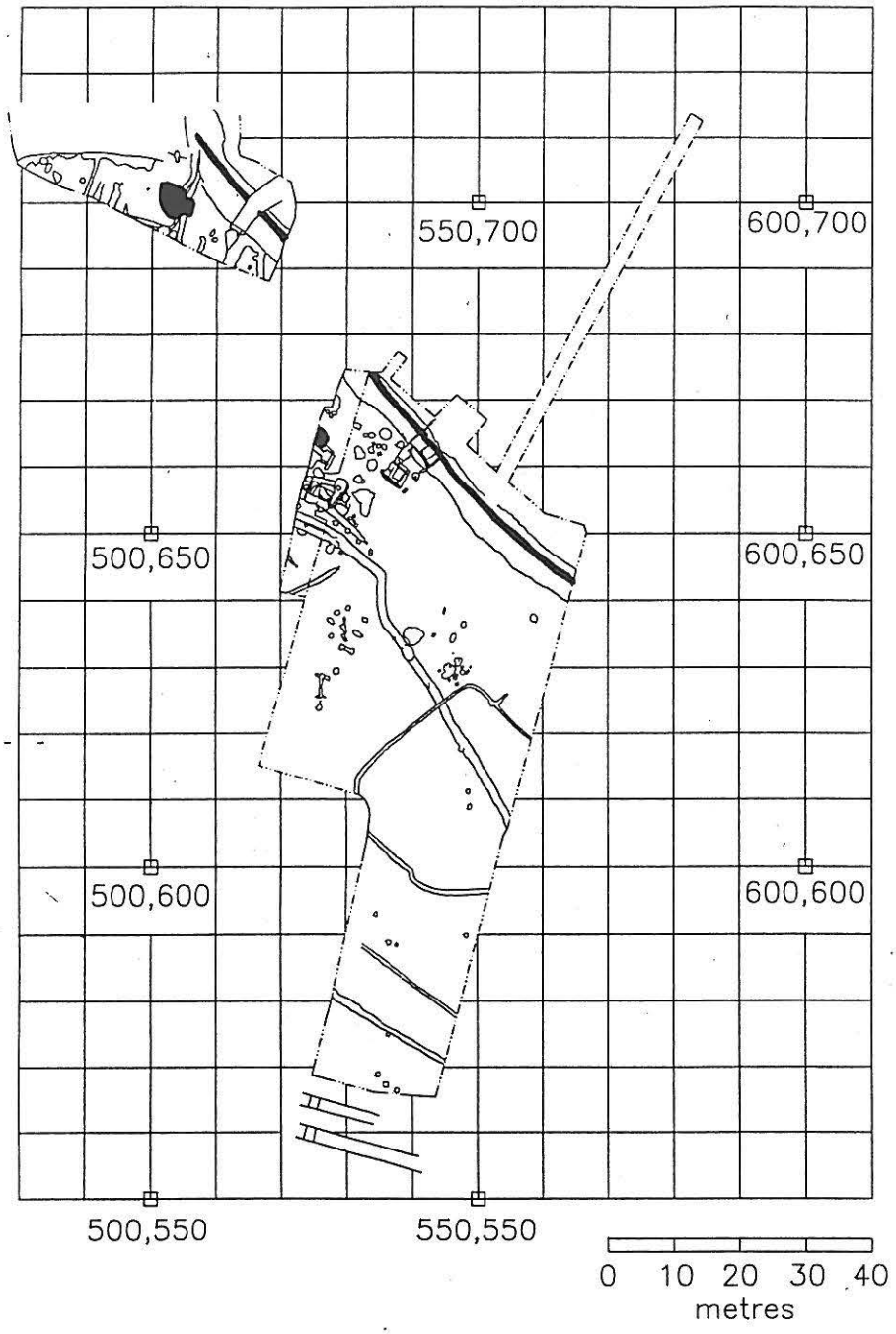

Figure 17 Phase 6 (Fourth Century). Area 6

Adjacent to the main road in Area 7, a new post hole and ?beam-slot building was erected, confirming the importance of the road. The wide frontage of this buito be indicative of commercial premises although there is no direct functional evidence. The industrial complex in Area 6 had been abandoned by this stage and the leat had silted up, with alluvial deposits over much of the Area.

lding would seem

'Dark Earth' deposits found in Area 4 may also be assigned to this Phase. Assessment by Richard Macphail suggests that they formed through the dumping of occupation material, the lack of building debris within the deposit may indicate an absence of prior building in this part

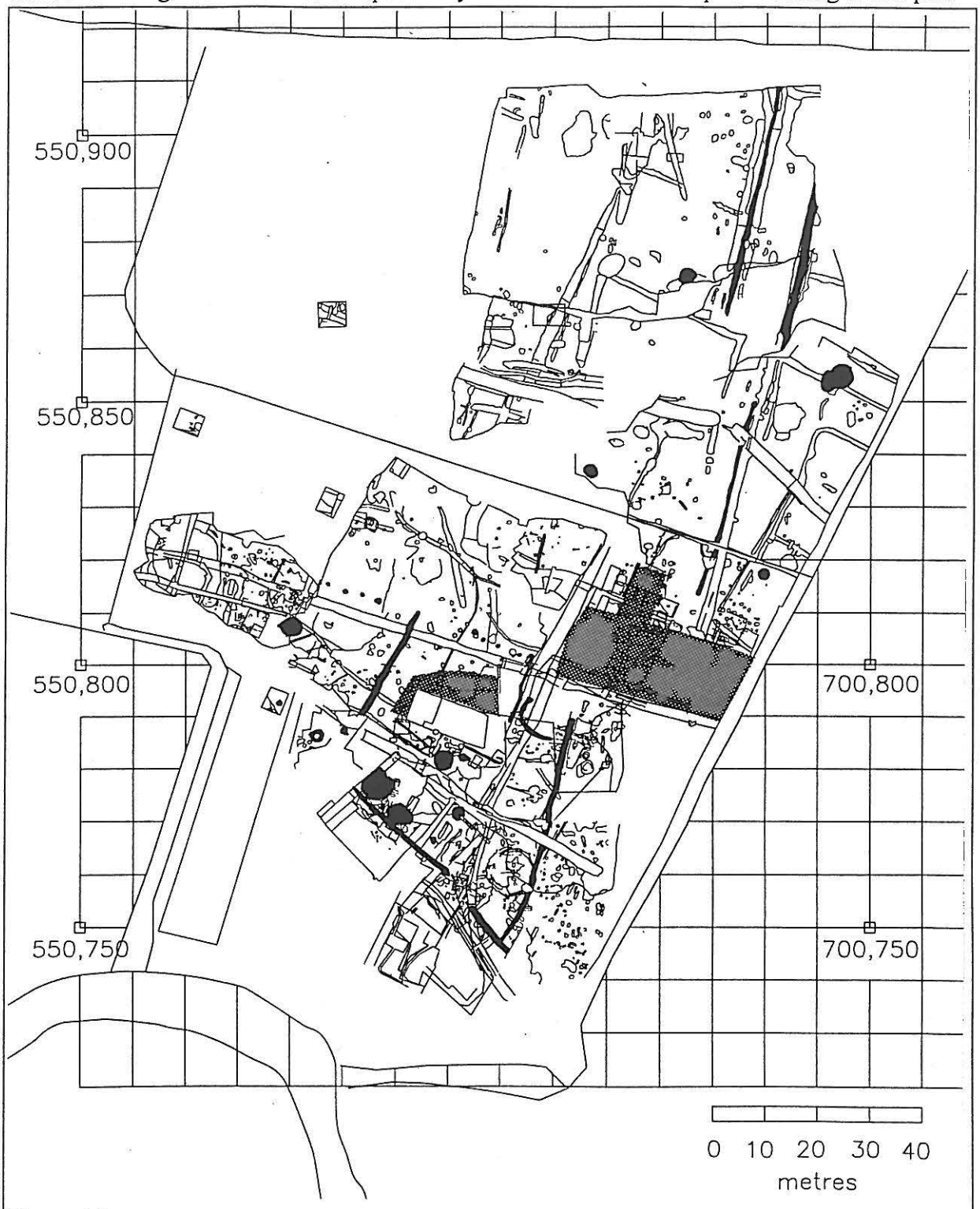

Figure 18.
Phase 6. (Fourth Century). Areas 1-4

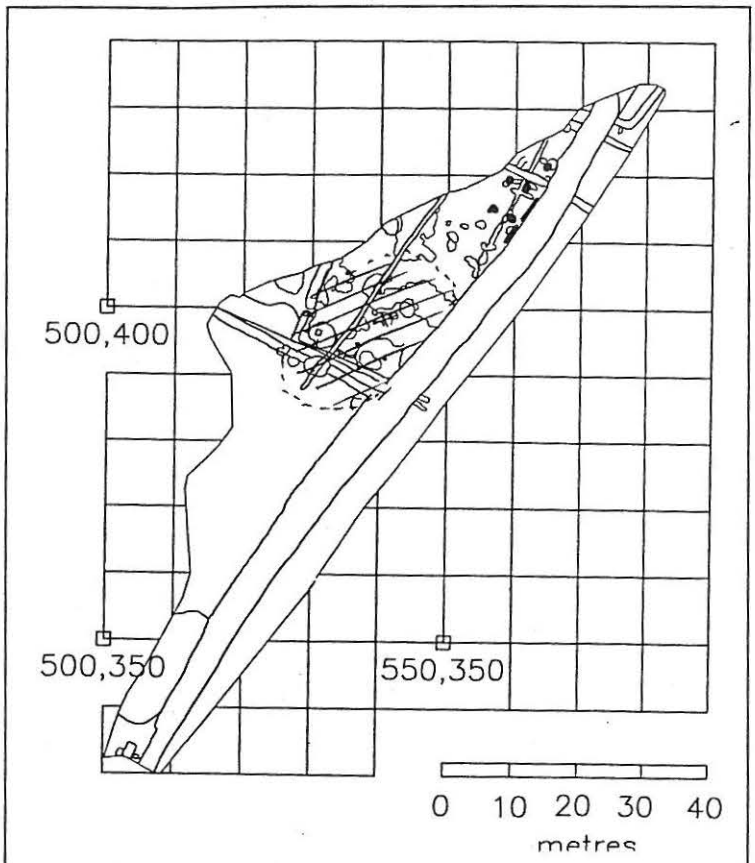

Figure 19.
Phase 6 (Fourth Century) Area 7

of the site.

3.2.1.7. PHASE 7 *(Medieval)*
(Figure 20)

A complete re-organisation of the site can be seen with the first traces of human activity for 600 years. Features are restricted to Area 2 with no evidence for a widespread layout of the site. The layout of the site in this phase comprises two parallel ditches running south from the present A143, and cut by excavation of a large sand quarry and a smaller hemp-retting pit. The linear features allocated to this phase are aligned with both the earlier Romano-British land divisions and the modern hedge lines and demonstrate an interesting continuity of orientation.

3.2.1.8. PHASE 8 *(Post Medieval)*
(Figure 20)
In Phase 8 the southern parts of Areas 1 and 3 were again divided by boundary ditches though these followed the modern field edges and the natural topography of the site rather than the

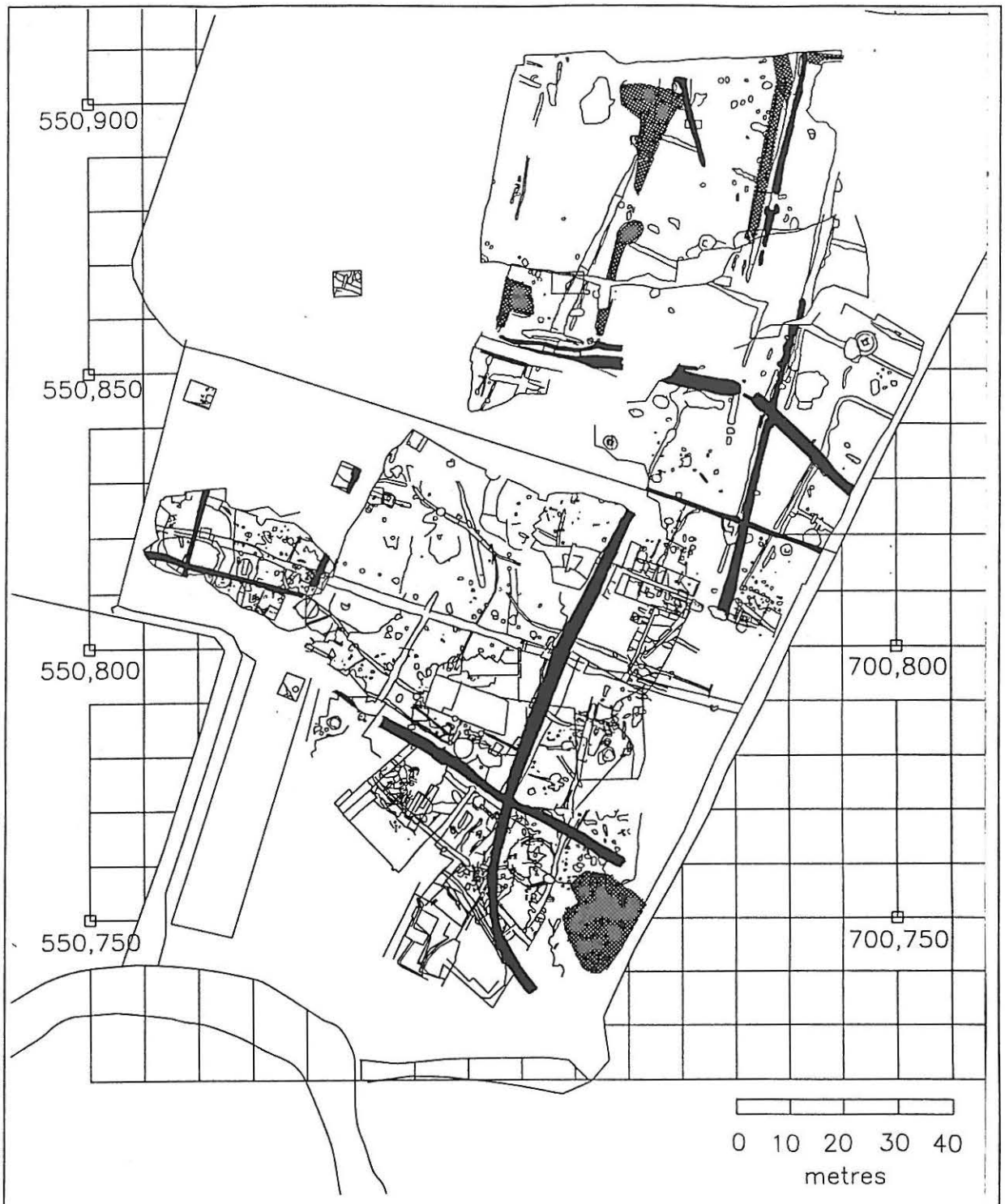

Figure 20.
Phases 7 (Medieval, shaded) & 8 (Post-Medieval, solid). Areas 1-4

Other features of apparent modern date include a borehole drilled as part of the initial site survey prior to road construction, and a large rectangular flat-bottomed pit, surviving as an earthwork hollow with surrounding raised spoilheaps. The function of this feature is unknown,

but the regularity of shape suggests a modern date. A gas pipeline crossed Area 6, and in Area 7 a large north-south ditch was dug along the eastern side of the area, adjacent to the main road. In alignment the ditch followed the earlier (Phase 5) Romano-British ditch before turning west to run into the field at the northern end of the site. The coincidence of alignment is a result of the continuous use of the roadline.

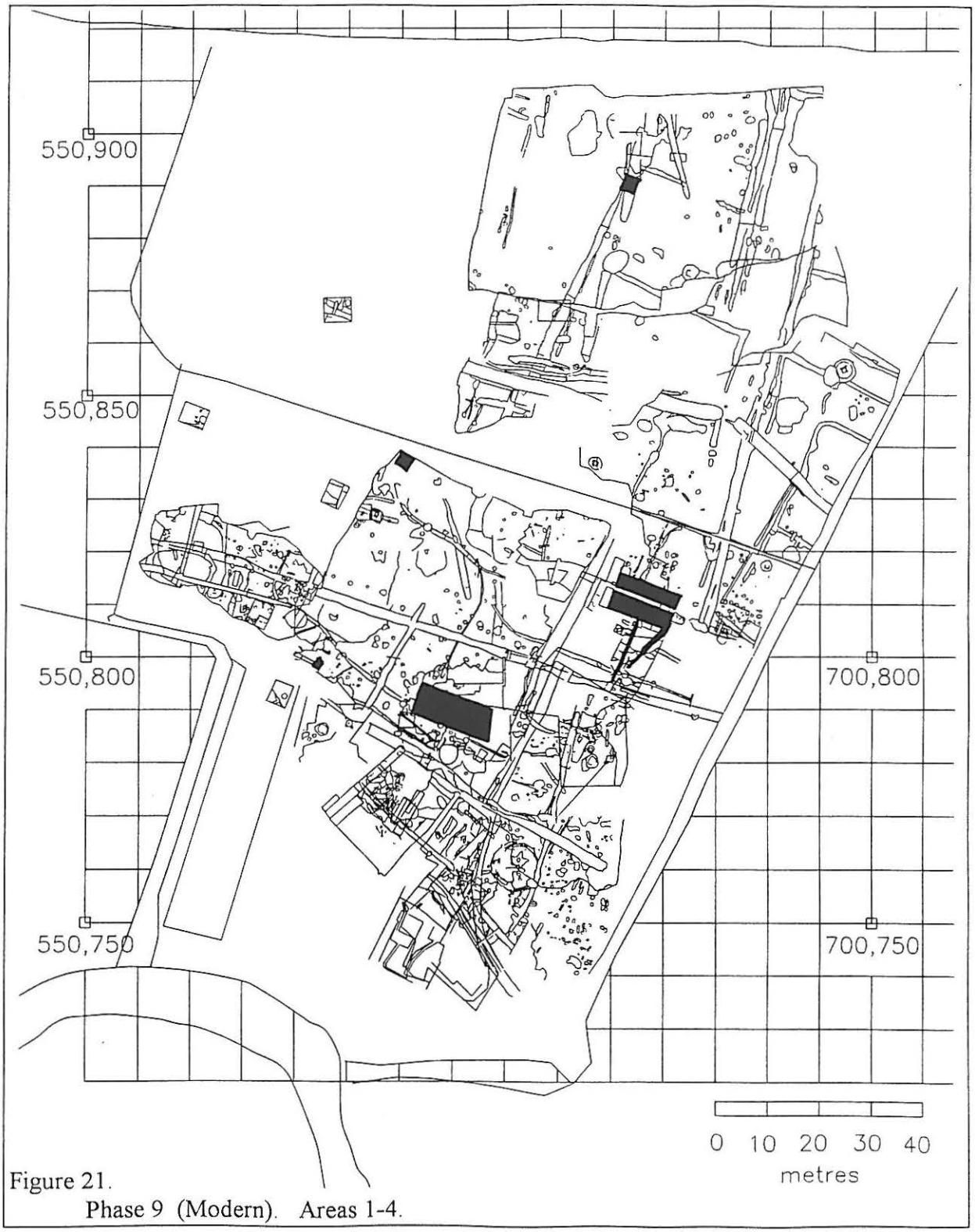

Figure 21.
Phase 9 (Modern). Areas 1-4.

Category \ Phase	1	2	3	4	5	6	7	8	9
Ditches	1	10	10	19	10	11	4	10	
Pits/Post Holes		7		109	46	26	3		
Industrial Zones				3	5	5	1		
Structural Zone		2		4	5	3	1		
Enclosures/ Fields		3	1	2	3		1	2	3
Roads/ Tracks etc.			1	4	4	2		1	

Table 3. Summary of Layout Elements by Phase

3.2.2. **THEME 2:** INDUSTRIAL ACTIVITIES

(Research Aims 5,6,7,8,10,14)

Much of the excavated data can be related to a variety of industrial activities occurring on the site, particularly in the Roman period (Phases 3-6). The data is spread over the whole site, though particularly concentrated in the Areas 1, 3, 4 and 6.

3.2.2.1. PHASE 1 *(Prehistoric)*

The dumps of burnt flint found under and adjacent to the riverside peat in Area 3 could be taken as evidence for late Neolithic /early Bronze Age Industry, though they are probably best seen as relating to domestic cooking activities.

3.2.2.2. PHASE 2 *(mid-late First Century AD)*

No evidence for Industrial processes was noted in contexts allocated to this Phase.

3.2.2.3. PHASE 3 *(late First/ early Second Century)*

A large scale crop processing industry was established in Area 6 (*Figure 22)*. A water channel was dug across a loop in the River Waveney, providing a water supply and a waste outlet for the adjacent processes. A range of industrial features including clay structures and pits, and post holes were present and an internal sequence of change and development can be traced.

Environmental samples from a corn drier (Para. 3.6.1) revealed a number of partially sprouted grains suggestive of malting, and it is likely that all the structures in this area were related to this process.

3.2.2.4. PHASE 4-6 *(Second - Fourth Centuries)*

Evidence for a number of separate industrial processes can be identified. The provision of wells adjacent to the building in Area 3 and across Areas 1-3 indicates a need for localised water supplies, and the general lack of overtly domestic structures suggests that the primary function was not for human drinking.

A series of hearth bases have been allocated to this phase. these were especially concentrated at the western end of Area 1, adjacent to the road where they survived in a truncated state as burnt clay pads. Further similar hearths were recorded in Area 4 (where they overlay the in-filled roadside ditch) and in the area of the eastern building south of the road. A

Figure 22.
Industrial Complex. Area 6.

small hearth/oven was also identified within the building immediately north of the road in Area 3. The quantities of iron slag recovered from the grey soil overlying these features and from backfilled ditches in the general area point to iron smithing as the function of these features.

No structures were identified which could be directly associated with the western group of hearths.

The large scale processing centre identified in Area 6 continued in use through the early part of these phases, though the silting of the water course and flooding problems across the area resulted in a gradual abandonment by Phase 6

Excavation of an irregular pit at the southern end of Area 7, may be indicative of quarrying for road construction minerals.

3.2.2.5. PHASE 7 *(Medieval)*

Limited evidence for medieval industrial activities was found in the northern field (Area 2), and possibly in Area 6. This comprised in Area 2 an irregular hollow- possibly a sand quarry- which was later filled in and sealed with a clay surface, and a large flax-retting pit.

The evidence from Area 6 consisted of a large pit morphologically similar to the retting pit in Area 2.

Category	Unphased	Phase 4-6	Phase 7	Total
Post Hole	3	43	1	47
Ditch/ Gully	2	7		9
Pit	6	24	3	33
Surface				
Hearth		10		10
Structure				
Wells		8		8
CLASSIFICATION BY INDUSTRY (Features)				
Metal Working		c.15		
Fabric Production	1	1	1	
Brewing		c.8		
Mineral Extraction		1	1	
Unclassified				

Table 4. Summary of Industrial Aspects

3.2.3. **THEME 3**: TECHNOLOGY

(Research Aims 6,7,8,9,10)

Several strands of evidence relate to the technological aspects of past societies. The artefacts and constructs themselves provide valuable data, but the context and use of the constructs are also of importance.

Three main aspects of 'technology' can be observed on the site: Constructional technology (e.g. buildings, wells), Manufacturing Technology (All types of artefact), and Industrial technology (e.g. Hearths, waste products). However the factual data relating to this Theme will be presented by provisional phase.

3.2.3.1. PHASE 1 *(Prehistoric)*

The technological aspect was recorded in the dumps of thermally-shattered flint 'pot-boilers' recorded at the southern end of Area 3, these being by-products of the technology used (arguably) for cooking or bathing (See Barfield and Hodder for a full discussion of the possible functions of burnt flint mounds).

Dumps or mounds of burnt flints survive at the southern end of Areas 1 and 3 at the margins of later peat growth, but scatters of pot-boilers in later features across the southern part of the site suggest a possibly wider original distribution.

3.2.3.2. PHASE 2 *(late Iron Age)*

The Round Houses identified at the southern end of Area 3 and in Area 6 provide clear evidence for constructional technology during this phase in the form of wall foundation trenches and internal post holes in Area 3, and a ring of post holes in Area 6. A third possible round house was identified further north, associated with the contemporary small field; in form it resembled the Area 6 building with no traces of a wall foundation being recorded. This may reflect the differing survival of the examples or may indicate constructional differences.

3.2.3.3. PHASE 3 *(late First/ early Second Century)*

Constructional Technology is evident in the morphology of the East-West road and flanking ditches built in this phase in Areas 1 and 3. A constructional history of metalled surfaces on dumped sand make-up layers was observed in section, with piecemeal patching and extension recorded in plan and section. On excavation the gravelled surface proved to be limited to the eastern 14m of the site, and it was apparent from sections through the flanking ditches that the metalling had never extended further.

Evidence for the construction of the main road south from the settlement is more limited due its position beneath the modern A140. However the removal of topsoil alongside the road and the quarry pit at the southern end of Area 7 are probably associated with road construction/maintenance.

The industrial complex in Area 6 provides details of the technology associated with malting through the survival of a comprehensive range of structures in a good state of preservation. The value of this group is enhanced by the absence of other activity in the area. The survival of timbers in this area enables the recording of a range of wooden structures associated with the industry. This is described below (Structural Wood, Section 3.4)

No certain buildings can be assigned to this phase, but a collection of post holes in Area 6 may provide information of building techniques on further analysis.

3.2.3.4. PHASE 4 *(early Second Century)*

Construction of a rectangular building adjacent to the northern side of the road in Area 3 in this phase allows some discussion of the constructional techniques and technology employed, though the value of the information is limited pending receipt of the records of the 1972 excavation of this building. From the remaining sections it is apparent that complex sequence of partial rebuilds of the floor surface awaits definition.

Construction of a well in Area 7 provides useful data on the technology used both in well building and wood working (through the survival of the wooden well lining). The value of the well is enhanced through comparison with the later wells north of the river. The construction method employed was similar to the northern wells, with corner posts and curved braces; the re-use of wood including dovetail joints for the lining provides additional information on wood technology and construction techniques not usually surviving. This is considered below (Structural Wood, Section 3.4).

3.2.3.5. PHASES 5 & 6 *(Second - Fourth Centuries)*

Expansion of activities in this phase provides further information on the range of constructional techniques available, in the presence of at least three further buildings/structures in Areas 1 and 3, two of which included clay ?floor surfaces (the other survived as post hole alignments).

Construction of six wells in this phase provides useful data on the variety of constructional techniques available for utilitarian structures. Two broad types have been identified (with minor variations). The most common type on site, though unusual nationally, utilised curved braces and square corner posts; five of the seven wells excavated were of this type. Generally the wood employed was carefully-shaped tangentially split oak, rather than the more common sawn timber, though in the southern well (excavated through the upper layers of peat in Phase 6) the timbers used were less finished. The other well was constructed in the (nationally) more common lap joint construction and contained slower-grown oak planks.

Evidence for the original well superstructure was identified in two of the wells: the westernmost well in Area 1, immediately north of the road, and the northernmost well at the southern edge of Area 2. In both these cases the construction cut was packed with clay around the timber lining to provide a solid surround to the shaft, which would have been more stable than the natural light sand. In the Area 1 well it is possible that the packing survived to its original height as the upper excavated surface was of a comparable height OD to the preserved clay floor surfaces.

This constructional technique was not apparently used for the other wells despite similar ground conditions, though flint packing was commonly used around the lining.

3.2.3.6. PHASES 7-9 *(Medieval - Modern)*

None of the observed data assigned to post-Roman phases could realistically be used as evidence for later technology, with the possible exception of the Phase 7 retting pit in Area 2, which provided environmental evidence for the range of materials processed (See below, 3.6.3).

Category	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5-6	Total
Post Hole				5		
Pit				2	3	
Deposits				5+	3+	
Structures						
Roads			1	3	3	5 diff
Wells				2	6	8

Table 5. Summary of Technology Aspects

3.2.4. **tHEME 4:** RITUAL LIFE AND OTHER BURIALS

(Research Aim 4,5,6,7,10,11)

Evidence has been found relating to the 'ritual' aspect of, particularly, the Romano-British settlement. Features identified relating to this theme include human burials, 'votive' finds, and burnt bone deposits not interpretable in other ways. It is additionally acknowledged that many other parts of the recorded data may have ritual aspects originally associated with their location or form, but only the overtly 'ritual' will be discussed here, and all other burials.

3.2.4.1. Pre-PHASE 3 *(pre Romano-British)*

Two cremations excavated adjacent to the water channel in Area 6 may relate to pre-Roman aspects of the site, from the handmade vessels in which they were buried.

3.2.4.2. PHASE 3 *(late First / early Second Century)*

In Area 7 two inhumations and a cremation may provide evidence on the rituals associated with the disposal of human bodies. Neither inhumation could be described as 'typical' as one was deliberately interred in a ditch in the prone position, and the other had apparently been flung into an irregular hollow.

In Area 6 two horses' skulls were recovered from the timber box within the water channel and are undoubtedly of ritual significance (Wait, 1985). A further find, possibly similar in intent, was of a third horse's skull in the backfilled Phase 6 construction cut for the southernmost well in Area 1.

3.2.4.3. PHASE 5 - 6 *(Second - Fourth Centuries)*

In these phases a small cemetery was established at the southern end of Area 1 / 3 at the margin of the peaty zone. The group comprised the disturbed inhumation of a child within a wooden coffin and mortuary chamber and subsequent cremations. No firm boundaries to the cemetery area were identified, but the significance of the area is suggested by the terminals to a major East-West drain which respect the area.

Adjacent to the initial burial a series of ash and bone deposits built up. Initially it was thought that these deposits formed the remains of a series of funerary pyres and that the large quantities of burnt bone were of human origin. However assessment of a representative cross-section sample by Jackie McKinley (Para. 3.6.4.1) has conclusively shown that all the bone was animal. Given the stratigraphic and spatial relation of this deposit and the cemetery some form of association must have existed (the pyre was stratigraphically later than the earliest cemetery elements, and earlier than the latest; and was located 3m east of, and aligned with, the coffin burial).

Further individual cremations and small groups were recovered from in-filled boundary ditches. Evidence in some cases suggests their siting prior to backfilling of the ditch.

A second inhumation was made during Phase 6 in the top of a backfilled pit on the peat margin at the southern end of Area 1. It is unclear whether the body was deposited legitimately or not as it was apparently fully-clothed when thrown unceremoniously into the top of a pit. Evidence was found for attempts to cover the body with a length of branch and a layer of sand. The skeleton was subsequently damaged through recutting of the pit (and possibly during mechanical removal of the upper deposits of peaty sand in the early stages of the 1993 excavations).

6 animal burials were excavated at the opposite end of the site (Area 2). All were located in the western half of Area 2, though unfortunately all are stratigraphically isolated and could not be phased, though it is assumed that they are of relatively recent date. However the possibility that they do relate to the Romano-British settlement, and that they were deliberately buried in an isolated area, should not be discounted.

One other burial of animal remains should be noted. A fragmented horse's skull, with signs of dismemberment, was recovered from the backfill of a Phase 6 well construction pit,

and it must be assumed that it was placed there deliberately. Comparison with the two complete horse's skulls from the wooden box within the water channel in Area 6 is obvious.

Category	Prehis	Phase 3	Phase 4	Phase 5	Phase 6	?	Total
Inhumations		2		1	1		4
Cremations (Urned)	2	1	1	7			11
Cremations (Loose)						1	1
Animal Burials			2		1*	6	9

Table 6. Summary of Ritual and Other Burials

* Deliberate burial of skull (horse)

3.2.5. **THEME 5:** WATER MANAGEMENT
(Research Aim 5,6,7,9,10,11,16)

As might be expected for a site situated immediately adjacent to a river, the management, containment and removal of water is a theme which appears to run throughout the history of the site. However it is apparent that during the life-span of the Romano-British settlement ?natural conditions produced an increased need for action. This will be discussed and quantified more fully below in the Section on 'Non-Human Systems' (Para. 1.2.7).

3.2.5.1. PHASES 1 & 2 *(Pre- Romano-British)*

Although features datable to these phases are concentrated in the southern part of the site they cannot be seen as directly relating to water management.

3.2.5.2. PHASE 3 *(late First / early Second Century)*

With the expansion of activity into Areas 1 and 3, the first of a series of drains/flood defences were dug along the southern edge of the area. These appear to have extended across the whole width of the site excavated. The earliest ditches were overwhelmed and sealed by subsequent peat growth.

South of the river the establishment of the crop-processing complex led to the excavation of a channel to supply water from the river Waveney. The excavation of a shallow well in Area 7 also provides some evidence for the water requirements on the site.

3.2.5.3. PHASE 4 *(early-mid Second Century)*

Continued attempts to keep the lower-lying parts of the site manageable resulted in a redefinition of the earlier drains and provision of an upcast bank on the landward side of the main drain.

In Area 6 silting of the water channel led to its being recut, though silting continued to be a problem.

3.2.5.4. PHASES 5 & 6 *(later Second - Fourth Centuries)*

Further attempts were made in these Phases to limit flood damage to the southern parts of Areas 1, 3 and 4 through further drainage ditches and recuts to existing defences. The water

channel in Area 6 silted up, possibly due to the rising water table and the industrial zone was abandoned.

A new aspect to the management of water resources can also be considered in Phase 5. The provision of wells across the drier parts of Areas 1, 2, and 3 illustrates the need for water supplies in all parts of the site, and the subsequent excavation of a well on the peat margins in Phase 6 suggests a continued need for clean localised water supplies.

3.2.5.5. PHASES 7-9 *(Post-Roman)*

After the Romano-British settlement there were no apparent attempts to continue water management schemes; the southern part of the field was allowed to become very wet and marshy. A layer of clay recorded above the peat when machining this part of the site appears to be evidence for past flooding events.

Category	Phase 3	Phase 4	Phase 5-6	Total
Ditch	1	5	7	13
Well		2	6	8
Water course	1	1	1	Max 1

Table 7. Summary of Water Management

3.2.6. **THEME 6:** AGRICULTURAL ASPECTS

(Research Aims 4,5,6,7,8,9,10,11,12)

Although the part of the Romano-British settlement excavated was peripheral to the centre of the small town, and a mixture of 'urban' and 'rural' activities might have been expected, the agricultural aspects of the site in this period are limited with industrial activities apparently playing a far greater role in determining the character of the site. More evidence for agricultural activities was identified in the preceding and subsequent parts of the site's history, though the areas south of the river, Area 6 in particular, did provide good evidence for agricultural aspects to the site; both in the crop processing industrial complex and in the complicated field system between the two areas.

3.2.6.1. PHASE 1 *(Prehistoric)*

No evidence was found for agricultural activity in this Phase.

3.2.6.2. PHASE 2 *(late Iron Age)*

Spatially extensive evidence for agricultural activities across Areas 1, 3 and 4 was found in the form of small square ?field enclosures and circular buildings. Features which can be attributed to this phase confidently have been located in the southern parts of Areas 1, 3 and 4; rectilinear enclosures in the northern part of Area 3 (north of the later Roman road) may relate to this Phase on the basis of morphology and alignment.

Soil Micromorphology samples taken from Area 3 and 4 suggest that the podzolised conditions present at the time of the Romano-British settlement had formed some time previously and that these soils had been cultivated, possibly with the use of manure and peaty soils from the Waveney - (?)during the Iron Age.

Two *Plant Macrofossil* samples from the foundation trench of the Round House in Area 3 were assessed. These produced no evidence for the building being associated with possible agricultural activities, with little except charcoal being noted.

3.2.6.3. PHASES 3-6 *(Romano-British)*

As mentioned above, agricultural data during the currency of the small town is more limited, and comes from environmental data predominantly.

Macrofossil and *Pollen* samples from features north of the river show a consistent high level of waste-ground weed remains suggesting much of the site was open unused land.

Soil micromorphology samples from the podzol beneath 'dark soil' in Area 4 suggest this area might have been cultivated using organic manures at this time, though this activity had ceased prior to the dumping which created the dark soil layer.

More environmental evidence for agriculture came from the southern parts (Area 6 especially), where malt parching has been recognised, and the general levels of cereal processing waste are higher. The environmental data is supported by a concentration of stone quern debris within the water channel. The adjoining Roman field system was probably contemporary with this phase.

The important identification of grape pollen from a pit at the southern end of Area 3 is also an indicator of local agriculture.

The creation of the homogenous grey soil layer over Areas 1, 3, 4 and the southern part of Area 2 is partly at least the result of agricultural activity either in the later Roman period or subsequently. Evidence for ploughing of the southern part of Area 3 was identified. This took the form of plough marks and damage to cremation urns within the grey subsoil which physically sealed the earlier features in Areas 1,3 and 4; the limited nature and extent of this activity can be seen in the survival of clay floors and gravel road surfaces within the grey soil.

3.2.6.4. PHASE 7 *(Medieval)*

A series of medieval and later field boundary ditches were identified during excavation. These were present in all areas of the site. The corner of one rectangular enclosure was recorded in Area 4; this was also visible prior to excavation as a minor earthwork depression. The function and layout of the other ditches was less certain, though a possible lane or track appears to have run south from the modern A143 at the northern end of the site. Initial phasing suggests that this track preserved the alignment of an earlier Roman boundary, though this may be reviewed.

In the south east corner of the site an area of irregular cut features was interpreted the remains of a rabbit warren; although few of the features were excavated, those that were support this interpretation and the warren has been allocated to the medieval phase.

Pollen samples through the stratified fill of an oval pit in Area 2 produced clear evidence in the lower fills for its use as a hemp-retting pit (Para 3.6.3.2). An additional interest was provided by the possibility that nettle-retting was also being undertaken.

3.2.6.5. PHASES 8-9 *(Post Medieval - Modern)*

Further ditches, interpreted as field boundaries, were identified in all four Areas north of the river with one north-south ditch in Area 1 and 3 surviving as an earthwork hollow prior to excavation. The lack of surviving earthworks in the northern field (Area 2 and 3) may be

explained as being the result of more extensive/continued ploughing in the field adjacent to the road.

Prior to the time of excavation the site formed two paddocks; local information indicated that they had been so for at least 60 years (and therefore presumably also considerably longer).

The area around Areas 6 and 7 was under cultivation prior to the start of bypass construction, but evidence for the earlier subdivision of the large modern field was found in cropmarks visible on air photographs and ditches encountered during fieldwork.

Category	Phase 2	Phase 3-6	Phase 7	Phase 8-9	Unphased	Total
Ditch	14	22	6	18	4	64
Post Hole	3	26		2	2	33
Pit		3	2		4	9
Crop Proc.		1				1
Hemp			1 ?2			1 ?2
Fields	1			3		4
Structures	2					2
Warrens			1			1

Table 8. Summary of Agricultural Aspects

3.2.7. THEME 7: NON-HUMAN SYSTEMS AND ECOLOGICAL PROCESSES (Research Aims 15,16,17,18))

In addition to the processes directly attributable to human activities a number of other systems can be identified on the site. The evidence for these comes particularly from the environmental samples taken (See Section 3.6), but is also reflected in the stratigraphic record.

3.2.7.1. Rising Water Levels and Flooding

As mentioned previously (Para. 3.2.5), the danger of flooding appears to have been a continual worry in the riverside area, particularly as water levels seem to have been rising throughout the Roman period and after. Much of the riverside peat encountered can be shown stratigraphically to have formed during the first centuries AD. Deposits of silt and sand in Areas 1 and 4 appear to show individual flooding horizons within this sequence. These events provide one of the few direct ways of relating the stratigraphic sequences either side of the river. The underlying reason for the river rising is unknown, though construction of a bridge or ford 250 metres further east where the Roman road crossed the Waveney might emotionally be seen as the cause.

Interleaved with the upper part of the peat deposits were rills and lenses of 'natural' sand considered by Richard Macphail as a result of colluvial thickening and wind-blown sand.

3.2.7.2. 'Grey Soils'

A grey soil layer was identified as sealing the Romano-British cut features in Areas 1, 3 and 4. This layer was extensively sampled by means of sieving and hand collection prior to mechanical removal, and is considered to form a re-worked podzolised subsoil horizon. In the northern field (Area 2) a similar layer survived to a depth of 0.5m over the southern part of the

field. Richard Macphail has suggested that the depth of deposit in this area is a result of colluvial movement from further up the hill slope.

3.2.7.3. Pre-Roman soils

Widespread podzolisation of the natural sand has been shown as being a pre-Roman phenomenon as it is sealed by construction of the main East-West road.

Category	Prehistoric	Romano-British	Post-Roman
Soil Deposits	7	139	
Peat Deposits		105	
Alluvial Deposits		1*	

Table 9. Summary of Contexts relating to Non-Human Systems

* Excludes alluvial fills of features (54)

3.3. FACTUAL ARTEFACT DATA

3.3.1. Pottery

(Alice Lyons)

Six areas were established for excavation recording purposes during the fieldwork phase of the project. These were amalgamated into three for assessment (Areas 1-4 north of the river, and Areas 6, and 7 to the south). The range of ceramic types recorded is indicative of the trading relations active during the history of (particularly) the Romano-British settlement.

The data is discussed below by phase, with the individual Norfolk and Suffolk phases being related by chronology. Small quantities of intrusive pottery were found in many of the phases; this was consistently well less than 1% of the phase total, and was probably introduced by the moles which were ubiquitous on the site.

Table 10 below summarises the quantities of each fabric recorded by phase using mass rather than proportions, to illustrate the quantities involved. One apparent abnormality revealed in the fabric assemblage profile is the low proportion of samian and other fine wares compared with coarse wares (both around 3%); another unusual aspect is the (relatively) small size of the whole assemblage. As a broad comparison of coarseware quantities 550 kg were recovered from the entire 1993 excavation of around 21,300 square metres; excavation in 1973 on a 900 square metre site 200 metres east of Areas 1-4 (Rogerson, 1977) produced almost 700kg. While some of the difference can be explained as differing excavation strategies and collection policies, the massive variation in average density of ceramics must be a real phenomenon.

3.3.1.1. Fabric types used in Assessment

As mentioned in the methodological statement, the pottery assessment divides the fabrics into broad fabric families. These are not intended to represent individual kiln sites or industries, but act as a rapid general differentiation between the numerous individual fabrics. Work during the project analysis phase will break down each family into a series of fabrics, it

is not anticipated that many fabrics will need to be moved from one family to another during this process. Specialist wares such as amphorae and mortaria have been included with their appropriate fabric family, though features of particular note, such as stamps have been noted separately.

The fabric families have been given acronyms, which normally refer to their physical characteristics or presumed source. Those defined during the assessment are:

Acronym	Name	Typical Sources
IA	Iron Age etc.	NB. Used here for all prehistoric types, since majority are Iron Age, but includes ?Neolithic
LGW	Local Grey Ware	General Waveney valley kilns, but particularly WATTISFIELD, Needham, and Homersfield
LRW	Local Red Ware	As LGW but oxidised
FW/CC	Fine Ware/ Colour-coated	All such sources: Nene Valley, Pakenham, Oxfordshire Colour-coat..
O/WW	Oxidised and White Wares	Unidentified presumably local sources
RGW	Non-local grey wares	eg. Brampton, Nar Valley, black burnished
STW	Shell-tempered Ware	
ES	Early Saxon	General early Saxon types
MS	Middle Saxon	eg. Pimply Ipswich ware types
LS	Late Saxon	Thetford Ware type
MED	Medieval	eg. Grimston
PM	Post Medieval	Salt Glazed wares, Glazed Red Earthenwares...

Very few vessel stamps have been recorded in this assemblage. Only single mortarium, amphora and flagon stamps were noticed, fifteen further sherds had graffiti marks.

3.3.1.2. Phase 1 *(Neolithic)*

No contemporary ceramic evidence was recovered from Phase 1 contexts (Late Neolithic/ early Bronze Age) in Areas 1-4; though two intrusive sherds were noted. A small contemporary assemblage was noted in Area 7. The majority of fabrics from this phase are intrusive Romano-British types but eleven sherds of Neolithic (or possibly Iron Age) pottery were recorded.

3.3.1.3. Phase 2 *(Late Iron Age)*

The small pottery assemblage from this phase (29 sherds) is composed of entirely of Roman and later types with samian , white wares, and local grey wares represented, and two sherds which may be intrusive Early Saxon wares, though the likelihood of their being Romano-British wares should not be overlooked. All material came from Areas 1-4.

3.3.1.4. Phase 3 *(Late First Century)*

4.8% of the pottery from Areas 1-4 comes from contexts provisionally assigned to this phase. Most was recovered from Areas 1 and 3. No residual ceramics were identified.

Local grey wares dominate the phase (70.3% by mass) with white wares (12.3%) and Local Red Wares (12.3%) making up the bulk of the remainder.

Six significant groups of ceramics were identified. These comprised well stratified assemblages with sufficient quantities of material for detailed analysis.

The Area 7 assemblage assigned to the equivalent phase (Phase I) was very small, and no important ceramic groups were identified within it.

3.3.1.5. Phase 4 *(Early-mid Second Century)*

6.0% of the Norfolk pottery assemblage comes from contexts assigned to this phase, with the majority located in Area 1. No residual sherds were noted.

Within the main body of the pottery local grey wares are the most common fabric class (63.4%), with white wares being the only other significant fabric type (28.7%), though samian, Colour-coats and non-local grey wares were also found.

Four significant groups were isolated from pit fills. All contain a good range of uncontaminated Roman pottery.

1.2% of the Area 7 assemblage comes from contexts provisionally assigned to this phase. All the pottery recovered is compatible with the phase date-range. Local grey wares make up the bulk of the assemblage (73.8%) with white wares (23.9%) and samian (2.3%) the only other fabrics present.

Although the assemblage is small, three ceramic groups have been defined from ditch fill assemblages.

3.3.1.6. Phase 5 *(Second-?Third Century)*

The chronological span of Phase 5 north of the river was subdivided into Phases III-V in Area 7 (with the likelihood that Phase V continued after Phase 5 had finished). Each phase is discussed separately below.

Phase 5

Contexts provisionally assigned to this Phase accounted for 12.1% of the pottery assemblage, with the bulk of the material coming from Areas 1 and 3. Two sherds of residual Iron Age pottery were recorded.

The majority of pottery assigned to this phase is White Ware or local grey ware (48.3% and 45.2% respectively),with samian, Colour-Coats, Local Red Wares and non-local grey wares also present.

Phase III Late Second- Early Third Century

18.4% of the pottery area assemblage comes from contexts provisionally assigned to this phase. One residual Iron Age sherd was noted

The majority of the pottery recovered is local grey ware (87.6%) with white wares (5.9%) and samian (3.6%) the only other significant fabrics. Five viable ceramic groups have been identified including an assemblage from a 'dark soil' deposit.

This is a large phase with excellent form and fabric diversity from a range of feature types.

Phase IV Third Century

9.3% of the area assemblage comes from contexts in this phase. Five sherds of residual Iron Age material were noted.

Three ceramically interesting groups have been isolated: a 'dark soil' assemblage, a group from a pit, and material from a 'layer'.

Phase V Late Third Century

9.7% of the Area 7 pottery assemblage was assigned to this phase. Although early (samian) and late (Shell-tempered) fabrics are present it is likely that all were in contemporary use during the late third century. No residual or intrusive fabrics have been recognised.

The majority of the potter recovered was local grey ware (85.6%) with Colour-coated wares the only other significant fabric (8.4%). Samian, white wares, local red ware and Shell-tempered wares were also identified.

Four groups of ceramic interest have been identified. Three are ditch fill assemblages, the fourth comes from a pit fill.

3.3.1.7. Phase 6 *(Fourth Century)*

4.3% of the Area 1-4 assemblage was found in contexts allocated to this phase, and was only found in Areas 1,3 and 4, with the bulk of the material found in Area 1. One Iron Age sherd was noted (<0.1% of the assemblage by mass) and a little residual samian (3.8%).

The Roman phase assemblage consisted mainly of local grey wares (73.9%), with some white wares (15.1%); Colour-coats, Local Red Wares and Shell Tempered Wares complete the assemblage as no non-local grey wares were recorded.

A massive 52.8% of the Area 7 assemblage came form contexts assigned to the equivalent phase (Phase VI). Intrusive and residual elements accounted for around 1.8% of the phase total.

Again local grey wares constitute the main fabric represented (86.4%) supplemented by white wares (7.5%). Samian, Colour-coated, local red ware, non-local grey wares and shell-tempered wares were also present.

The 'dark soil' deposits in Area 7 were the source of most of the ceramics, and three distinct groups have been identified within this assemblage. A contemporary ditch fill provides a fourth ceramic group.

3.3.1.8. Phases 3-6: *Romano-British Grey Soil Assemblages*

The extensive sampling and subsequent controlled machining of this deposit produced large assemblages of spatially-identifiable pottery (25.9% of the whole by mass). This was recovered primarily from Area 1, though deposits in Areas 3 and 4 were also productive. This material includes all the main fabrics represented in the cut features of all phases, though local grey wares (75.9%) and white wares (11.9%) were the only fabrics present in significant quantities.

3.3.1.9. 'Post Roman'

Assessment of the pottery has identified material datable to periods of the site's history not presently represented in the phased stratigraphic record. Much of the pottery was found as intrusive elements in earlier features, in unphased features, or as unstratified topsoil finds but does indicate some continued use of trading links beyond the immediate boundaries of the site.

Fifteen sherds of possible early Saxon pottery were recovered from Areas 1, 4, 6 & 7, the majority from unphased contexts, though four were found in a Post-Roman gully in Area 7 and one more was identified as an intrusion into a Phase 4 post hole.

Thirty-two sherds of late Saxon or early medieval pottery were recorded. This assemblage contained small quantities of Thetford-type ware and Early Medieval Sandy Ware but was predominantly local Early Medieval Ware (88.9% of this assemblage by mass). Again most of this material was found in unphased contexts, in Area 2 and 6, but also as intrusive elements in earlier phased features.

3.3.1.10. Phase 7 *(Medieval)*

Only 0.2% of the pottery assemblage was found in contexts allocated to this phase, and of this the majority was residual Romano-British material. Intrusive Post-Medieval Wares accounted for a further 27% by mass and only 22.5% were stratified medieval material.

The majority of the pottery came from Areas north of the river, with only single sherds being recorded in Areas 6 and 7. The stratified material was restricted to Area 2.

3.3.1.11. Phase 8 *(Post Medieval)*

A larger Phase assemblage came from this phase, though as in Phase 7 the majority of pottery is residual (99% by mass for Phase 8). The phase assemblage is spread over Areas 1,2,3,4,& 7 though the non-intrusive element is restricted to the areas north of the river.

Glazed Red Earthenwares are the most common fabric represented, though Staffordshire Slipware, Speckled Glazed Ware, and Iron Glazed Wares are also present. Evidence for wider trading connections can be seen in the single sherds of Frechen and Westerwald stoneware drinking vessels recorded.

Phases 8 and 9 equate to a less well-defined 'Post Roman' phase in Area 7.

3.3% of the area assemblage comes from contexts datable to this phase. The majority of the pottery is residual (98.2%) and includes all the common Romano-British fabrics. Sherds provisionally identified as 'early Saxon' (though probably Roman in fact) and Post Medieval wares were the only post-Roman fabrics identified.

Three viable groups have been identified, all from ditch fills.

3.3.1.12. AREA 6. All Phases

No phase information was available for this Area at the time of assessment, and only a brief overview of the pottery was undertaken. The pottery from this Area represents 2.8% of the total site assemblage.

Probably residual Iron Age material constitutes 0.1% of the Area assemblage, and intrusive ?early Saxon, medieval and later material a similar amount. These sherds have been classified as contaminants on the basis of small sherd size and small proportion compared with the Romano-British assemblage (99.8% of the Area total).

The local grey wares are by far the most common type recovered (87.1%), with white wares constituting 6.7% and samian 3.0%. Colour-coated wares, non-local grey wares and Shell-tempered wares were also recovered.

The range of vessels noted include local grey ware jars, bowls, and flagons, with examples of graffiti and adaptation. White ware flagons and mortaria, amphora, colour-coated beakers, Local Red Ware jars and flanged bowls, and Shell-tempered bowls are also among the

assemblage. The date range of these fabrics and forms spans the period from the first to the fourth century.

Key for Tables 10 and 11.

IA	Iron Age Pottery		ES	Early Saxon
Samian			MS	Middle Saxon
FW/CC	Fine Ware/Colour-coat		LS	Late Saxon
O/WW	Oxidised/White Ware		MED	Medieval
LRW	Local Red Ware		PM	Post-Medieval
LGW	Local Grey Ware		MOD	Modern
RGW	Non-Local Grey Ware		Misc	Miscellaneous
STW	Shell-Tempered Ware			

Note. The separate phasing schemes for Areas 1-4 and Area 7 have been correlated in the two tables below where possible. In cases where this is impossible (e.g. where SAU Prehis is equivalent to NAU Phases 1 & 2) separate columns have been used for each part of the site. No attempt to sum the figures to produce a super-phase total was made.

In both tables the figures given are masses in kilograms (to 2 decimal places) in order to illustrate the quantities rather than simply the proportions.

NAU	Phase 3	Phase 4	Phase 5				Phase 6	3-6	
SAU	I	II		III	IV	V	VI		Area 6
IA			0.01	0.01	0.04		0.01	0.26	0.01
Samian	0.43	0.64	1.03	1.05	0.32	0.30	2.10	2.26	0.08
FW/CC	0.27	0.29	1.41	0.42	0.71	1.30	3.38	3.11	0.12
O/WW	2.29	7.19	22.66	1.73	0.99	0.47	8.87	11.99	1.06
LRW	2.27		0.04	0.08	0.01	0.12	0.27	0.66	0.32
LGW	13.91	16.29	21.25	25.80	12.76	13.29	12.26	76.04	13.90
RGW	0.01	0.01	0.30	0.29			0.08	0.69	0.01
STW	0.02	0.11	0.09	0.03	0.02	0.05	0.85	3.39	0.02
ES		0.28	0.05	0.02	0.01		0.04	0.09	0.02
MS	0.10		0.02				0.04	0.25	
LS	0.12								
MED	0.02	0.14	0.06					0.11	0.01
PM		0.09	0.02		0.01		0.01	0.08	
MOD		0.01						0.05	0.01
Misc		0.30	0.04		0.08		0,10	0.99	0.01

Table 10. Summary of Pottery Fabric masses per Phase: RB phases (3-6)

(Units: kg)

NAU		1	2		7	8		9
SAU	Prehis						Post RB	
IA			0.1					
Samian		0.05	0.00		0.01	0.22	0.06	0.08
FW/CC		0.00	0.01			0.06	0.24	0.02
O/WW			0.01		0.01	4.21	0.87	0.17
LRW							0.04	
LGW		0.19	0.88		0.39	5.43	3.93	1.68
RGW								
STW						0.08	0.05	0.06
ES		0.03					0.08	
MS								
LS								
MED					0.18	0.21		
PM					0.22	0.11	0.01	0.02
MOD						0.01		0.08
Misc							0.01	

Table 11. Summary of Pottery Fabric Masses by Phase: Non-Roman Phases in Areas 1-4 and 7. (Units: kg)

3.3.2. Samian

(Cathy Tester)

The samian assemblage was quantified at a basic level as part of the general pottery assessment. However, long-standing archaeological interest in samian allows more detailed assessment of the ware as a material in its own right.

3.3.2.1. Fabrics

Table 12 summarises the quantities and proportions of the samian fabrics identified from all areas of the site. About 11% of the samian catalogued comes from first century South Gaulish (SG) producers, centred around La Graufesenque; 5.5% was sourced to Trajanic Central Gaulish production at Les Martres des Veyre (CG MV); while the bulk of the collection- 62%- comes from Hadrianic and Antonine central Gaulish production centred at Lezoux (CG). The other significant source (14%) was the second and third century centres in East Gaul (EG); less than 0.5% were products of the Colchester factories (COL). A further 7% could not be confidently assigned to a particular production centre, and was consequently classified only as "samian" (SA).

The high proportion of Central Gaulish samian recovered is not surprising as this industry dominated the market for an entire century from the to the centuries AD.

Source	Sherd Count	%	Sherd Weight	%
SG	113	8.1	1.32	10.7
CG MV	41	2.9	0.68	5.5
CG	778	56.0	7.64	62.1
EG	177	12.7	1.72	14.0
COL	3	0.2	0.05	0.3
SA	276	19.8	0.89	7.2
Total	1388	99.7	12.31	99.8

Table 12. Summary of samian fabrics represented. All Areas

(Weight in kg)

3.3.2.2. Decorated Forms, Stamps and signatures, and Graffiti

Table 13 below summarises the quantities of Decorated, Stamped, and marked samian from all parts of the site. The stamped fragments came from a variety of bowl and cup forms, though almost half were found on cup Form 33; three sherds with cursive signatures in the original mould were also noted. The graffiti ranged from simple incised X's and possible tally marks, to groups of letters and one complete name.

The identification of individual potters (i.e. bowl makers and mould makers) can give more precise dating to stratified contexts.

	Sherd Total	Areas 1-4 Contexts	Area 6 Contexts	Area 7 Contexts	Total No Contexts
Decorated	97	56	5	21	82
Stamped	51	27	1	11	39
Signatures	3	3	-	-	3
Graffiti	22	16	1	-	17

Table 13. Summary of Decorated and Stamped samian, by Area

3.3.3. Brick and Tile

(Alice Lyons)

All the Brick and Tile material recovered from the 1993 excavations appears to be alien, that is transported onto the excavation areas for reuse after their primary use had been completed. Thus the assessment of this material may enable further analysis of the layout of the settlement.

Examples of 26 separate fabrics were identified during assessment, datable to the Roman to Post-Medieval Periods. Material came from all excavation Areas, with large quantities in Areas 1 and 7; no recognisable examples were found in contexts phased earlier than Phase 4 (early second century) supporting the hypothesis that only introduced waste/reused material was present.

Area 1 produced 808 fragments (45.6kg). Most of the material from this Area came from the grey soil layer (25.0%) with roof, flue, floor, Tegula and Imbrex Tiles being recorded from this Area. Three significant groups of material were noted: from a well and two 'Industrial' Pits.

Area 2 produced only 82 fragments (4.9kg). No recognisable forms were noted.

Area 3 produced 213 fragments (25.4kg). No material was recovered from Phases 1,2 or 7, and only unidentifiable fragments from Phases 3 and 8. Examples of floor, flue, roof, Tegula and Imbrex were identified. Two features contained significant quantities of tile: A Phase 3 ditch, and a Phase 4 Post Hole, though large quantities were also noted in the backfill of an earlier archaeological excavation.

Area 4 produced 86 pieces (10.1kg). Little of the material could be identified.

Area 6 also produced a small assemblage: 49 fragments (7.9kg). Floor tile was the primary tile type, with appreciable quantities of Imbrex and Tegula also being recovered.

Area 7 produced a relatively large assemblage with 456 pieces (mass 32.5kg). The majority of the material was recovered from the dark soil (62.0%). No recognisable fragments were phased earlier than Phase III (Phase 5). Four features contained significant groups of ceramic building material. A well, two Ditches, and a Layer.

3.3.4. Fired Clay

Most of the fired clay from the site comprised small unidentifiable fragments, though wattle and smithing furnace lining can be identified, and most of the assemblage appears to have been used in processes associated with 'Industry'. Table 14 below quantifies the material by mass and provisional phasing.

Few significant groups of material were identified, though a pit in Area 1 (Phase 4), and a ditch and well in Area 7 produced larger assemblages.

Area 1 produced largely small unidentifiable pieces, with most of the material (23.3%) coming from the grey soil layer covering the site . Smithing furnace lining and wattle fragments could be identified.

No identifiable material was recovered from Area 2

Much of the fired clay from Area 3 had at least one smooth surface, while wattle impressions and kiln/furnace lining were also represented. The only feature containing any quantity of material was the modern backfill of an earlier archaeological trench.

Area 4 produced a relatively small amount of furnace and finger-impressed material.

Material from Area 6 included daub with wattle impressions, smooth and shaped surfaces with possible tool marks, and kiln/furnace lining.

Area 7 contained the widest range of fired clay, including wattle; thumb, grass, and other vegetable impressed pieces; and clay with smooth flat and smooth concave surfaces. There are two examples of incised decoration or graffiti (one with a fine lattice pattern, the other with the numeral XX scratched on a smooth surface. Kiln/furnace lining was also recorded.

Phase	Area 1	Area 2	Area 3	Area 4	Area 6	Area 7
1						6
2	10					
3	25		40			68
4	1762		337	10		16
5	575		802	100		5781
6	903		20	46		11037
7						
8	68					34
9			1984			
'RB'	1956		148	551		
?	3086	110	2568	1550		300
	8385	110	5899	2257	1678	17542

Table 14. Summary of Fired Clay Mass (g) by Area and Provisional Phase

3.3.5. Small Finds

(Nicholas Cooper and Ruth Prior)

The metal and other Small Finds were assessed by functional category as defined by Crummy (1983); the quantitative breakdown is tabulated below.

The vast majority of the material has been retrieved through controlled metal detection both prior to and during excavation with detailed location records for all finds. Contamination or residuality has not been identified as a serious problem on the site. North of the river a large proportion of the finds derive from the 'grey soil' deposits. The distribution of finds in Areas 1-4 appears to concentrate in the area of the East-West road, representing rubbish disposal and accidental loss associated with the occupation of the buildings adjacent to the road.

South of the river, Area 6 produced very few finds in comparison with Area 7 (1:5 for iron objects, 1:40 for copper alloy). The water course ditch in Area 6 yielded the majority of the mill and quernstone fragments, with the majority of other artefact types coming from the industrial complex. This included lead droplet casting waste from the square clay-lined pit. In Area 7 the largest proportion of small finds derived from the dark earth layers.

The policy of undertaking controlled metal detection has already proved advantageous on a number of Norfolk sites, including the Romano-British small town at Billingford (Cooper, forthcoming). In addition to the large coin assemblage it is clear that the range and variety of metal small finds from the site is also far greater than would have been generated by excavation alone. The range of non-metal small finds (particularly bone) is therefor made to look poor by comparison.

	Total	Further work
PERSONAL ADORNMENT		
Brooches	56	56
Hairpins	33	19
Beads	14	14
Armlets	17	15
Finger Rings	20	20
Belt Fittings	35	15
Buttons	63	
Toilet Implements	8	7
Textile Implements	14	6
HOUSEHOLD		
Spoons	7	3
Vessels	15	10
Furniture / Fittings	17	5
Quern / Millstone		
Weights / Measures	13	8
Recreation	7	5
Written Communications	7	4
Transport	6	6
Tools	17	8
FASTENINGS / FITTINGS		
Copper Alloy misc	61	10
Iron nails	785	
Bone Hinges	2	2
Decorated Fittings / Mounts	33	14
Locks / Keys	8	6
Copper Alloy Sheet / Wire	120	
AGRICULTURE	5	
MILITARY	5	2
RELIGION	8	8
MANUFACTURING (Summarised separately)	710	9
MISCELLANEOUS		
Copper Alloy: Modern	6	
Copper Alloy: Unidentified	45	
Iron: Misc/ Unident	171	
Lead Misc/ Unident	262	
Bone	4	
TOTALS	2566	252

Table 15. Quantitative Breakdown of Small finds by Functional Category

3.3.5.1. Personal Adornment and Dress

The brooch assemblage of 56 items, most of which are closely datable, is impressive and deserves study in its entirety. The remainder of the Roman objects of personal adornment and dress represent a good range of types; the three finger rings set with intaglios are of particular note.

As seen at the NAU excavations at Billingford the excavation has yielded a good range of belt fittings, only two of which appear to be of Roman date. The remainder are medieval or later, and a selection of the more complete has been made for possible further analysis. All the buttons are of post-medieval date and warrant no further work.

3.3.5.2. Hygiene, Household and Domestic Activities

A number of items within these categories are of particular interest and importance. Amongst the toilet instruments are remains of three toilet sets, one of which is particularly well preserved.

The objects relating to weighing and measuring include part of a balance arm *statera* identical to two other Norfolk examples from Billingford and Wereham which are probably products of a single workshop. The group also includes six rectangular fragments of lead sheet incised with crosses, punched dots and a single 'V'. These would appear to represent Roman numerals and could either be tally marks or possible weights (Reference to RIB has not revealed any parallels).

Among the household utensils are two decorated pewter spoons of Crummy's Type 2 and 3 which are an unusual occurrence on a site of this status.

3.3.5.3. Written Communication

This group includes two seal boxes and two near-complete iron styli which are unusual objects from a relatively low status settlement and are indicative of a certain level of literacy among its inhabitants.

3.3.5.4. Fastenings and Fittings

A wide range of decorated and plain types were recorded.

3.3.5.5. Military and Religious

The occurrence of military fittings is of some interest on a civilian site, and two possible examples were identified (a belt fitting and a harness pendant). Objects of possible religious significance include two near-identical lead objects of plano-convex section in the form of miniature ?helmets with incised decoration and 'eyes'. It is unfortunate that both are from topsoil contexts, though analysis of their find-spots may be useful. No parallels have been traced during Assessment. Three miniature copper alloy axes (and a possible further axehead in lead) are also included in this category as in southern Britain they do appear to be associated with the cult of a sky god (Green, 1981, 258 and Fig 2). They can take the form of hairpins belonging to Cool's (1990) Group 18 subgroup C but none of these examples appears to be so. Two of the examples come from the area of the small cemetery adjacent to the marshy zone at the southern end of Area 3 and this may therefor be significant.

3.3.5.6. Quernstones and Millstones

The site produced 53 quern stone fragments in an unidentified sandstone, 12.36kg of lava quern fragments, and 12 pieces of millstone. All were recovered in fragmentary condition.

3.3.6. Coins

(John Davies)

The coin assemblage from the excavation, particularly Areas 1, 3 & 4, is extremely large for a Romano-British small town (this is probably due to the use of metal detection during all phases of fieldwork).

3.3.6.1. Areas 1-4

Table 16 below summarises the chronological breakdown of the coins from Area 1-4. Of the 1270 coins, approximately 650 came from the topsoil, 568 from the grey Roman subsoil, and 36 from cut features (though it is likely that three-dimensional analysis of the finds spots will enable more coins to be related to cut features). The bulk of the assemblage is Roman; 975 have been allocated to issue periods.

A broader summary of the chronological groupings of the coins can be viewed by redividing them into four phases:

		Total	%
Phase A	(to AD 259)	69	7.1
Phase B	(259-296)	27	2.8
Phase C	(296-330)	29	3.0
Phase D	(330-402)	850	87.2

The later fourth century coin is clearly seen to dominate this assemblage. The expected pattern of coin loss for a Romano-British settlement of this type would closer to 30-40% in Phase B and 30-40% in Phase D. The recorded distribution clearly presents an interesting and unusual pattern, which is particularly significant in that it comes from a very large collection and sample bias can be discounted.

There is a full run from early to very late coin, with a high number of post-378 issues. That date normally marks the decline in Romano-British coin assemblages in this part of Britain (Davies & Gregory, 1991).

3.3.6.2. Areas 6 and 7

A chronological breakdown of the coin assemblage from the areas south of the river is also shown in Table 16. The bulk of the coins can be associated either with a context or by a grid reference; the vast majority were recovered from Area 7. A smaller element are unstratified, from the site spoil. Again the bulk of the assemblage is Roman, with 463 allocated to issue periods.

Division of this assemblage into the same broad phases used above provides an interesting comparison:

		Total	%
Phase A	(To AD 259)	39	8.4
Phase B	(259-296)	308	66.5
Phase C	(296-330)	25	5.4
Phase D	(330-402)	91	19.7

The pattern shows a main emphasis during the late third century (Phase B) with less in the later fourth century (Phase D). This is in total contrast to the assemblage from Areas 1-4.

There are less very late coins in this assemblage (Areas 6 and 7). The main component of the Phase B coinage comprises barbarous radiates of reduced module (minims) and it is possible that there was a production site for these coins at Scole. A substantial element of the early coinage of periods 2a-2b are /military' issues, and could suggest a military presence to the south of the settlement site.

The combined numismatic assemblage from Scole is substantial and provides one of the largest collections from a Romano-British small town for analysis. over the last 20 years archaeologists and numismatists have benefited from a more quantitative and numerical interpretation of coin assemblages from British sites. In particular this has been the case for Roman coin groups. The two groups from Scole are complementary in nature, with an earlier peak in Area 7 and later fourth century predominance in Areas 1-4. Combined they show a more typical Romano-British curve.

In addition to the Roman coins, there are three Iron Age coins from Areas 1 and 3; there are no Saxon coins present, but a small number of medieval and later issues from all parts of the site.

		Areas 1-4		Areas 6 & 7	
Period	Dates	Number	%	Number	%
1	to AD 41	2	0.2	3	0.6
2a	41-54	1	0.1	9	1.9
2b	54-69	4	0.4	6	1.3
3	69-96	22	2.3	4	0.9
4	96-117	12	1.2	-	-
5	117-138	10	1.0	2	0.4
6	138-161	10	1.0	4	0.9
7a	161-180	2	0.2	2	0.4
7b	180-193	2	0.2	2	0.4
8	193-222	3	0.3	2	0.4
9a	222-238	1	0.1	1	0.2
9b	238-159	-	-	4	0.9
10	259-275	20	21.	54	11.7
11	275-294	7	0.7	254	54.9
12	294-317	9	0.9	8	1.7
13a	317-330	20	0.7	17	3.7
13b	330-348	440	45.1	63	13.6
14	348-364	187	19.2	18	3.9
15a	364-378	195	20.0	8	1.7
15b	378-388	3	0.3	-	-
16	388-402	25	2.6	2	0.4
		975		**463**	
1-2 Century		30		19	
3-4 Century		225		116	
		1230		**598**	
Iron Age		3		-	
Post Roman		12		4	
Others		25		10	
TOTAL		**1245**		**612**	

Table 16. Chronological summary of coins from areas north (Area 1-4) and south (Areas 6 & 7) of the river.

3.3.7. Glass

(Ruth Prior)

Glass artefacts (eg. beads) have been included within the functional breakdown of general small finds above.

The assemblage of glass contains both vessel and window glass of Roman date as well as post-medieval material which requires no further work. The Roman group comprises 129 sherds, including 47 bottles, flasks or flagons, 4 bowls, 13 beakers or cups, 2 jugs, a single

fragment of ?perfume flask, and one piece of window glass. The remaining 81 sherds are unidentified vessel fragments including seven pieces of waste (sherds which might be wasters from their irregular profile/presence of impurities, or pieces which have been partially melted). The identification of these pieces as glassworking debris is not certain, as it is possible that the small number of melted glass fragments could have been formed by another process.

3.3.8. Metal Working Debris

(Jane Cowgill & Jo Mills)

Although material was recovered from all Areas of the site, the distribution and quantities of slag and furnace fragments from the northern excavation areas (Areas 1-4) suggest this area formed a focus.

The majority of the recorded slag is associated with iron smithing or is of undiagnostic type (e.g. clinker). There are four pieces of tap slag (198g; 0.21% of total assemblage) from the 'grey soil' and cleaning layers. These may have derived from the smithing activity. The clinker (28g; 0.03% by mass) again occurs in surface deposits and probably represents relatively recent domestic or industrial activity.

The smithing slags have been subdivided into the following categories:

Plano-convex hearth bottoms

Secondary smithing lumps

Cinder (dense)

Cinder

These will be discussed individually below but there are some general comments which appertain to the group as a whole. The slag is generally matt, pale to medium grey in colour or yellowish-orange. This is unusual as Romano-British smithing slags are generally black and glossy. The colour of the Scole material is due to the exceptionally high silica content in all the material, which gives the slag both its uncharacteristic appearance and an unusual density (in that there are more and larger voids than normal). Many of the pieces contain fragments, or have extensions, of fuel ash slag (a 'slag' which is almost entirely a silicate); over 50% of the plano-convex hearth bottoms have this unusual feature.

The high silica levels in the hearths would have resulted in damage to the hearth structure requiring frequent and major repairs. When the hearth was in use the heat around the tuyere would have been high enough for the walls to have a plastic structure, resulting in the walls blending into the hearth bottoms and being torn away with the slag when cooled. This has preserved details of the hearth form, which seldom survives, and produced an unusually high quantity of hearth bottoms with attached lining.

3.3.8.1. Plano-Convex Hearth Bottoms

The examples from Scole show the expected diversity in form, some elongated, many part-formed, and a few reheated (suggesting they had been left in the hearth for more than one operation). The hearth bottoms are generally small and have less of a size range than may be

expected. They are also noticeably lighter although this is difficult to prove because so few are complete.

A common but unusual occurrence is the amount of fuel ash slag incorporated both within the matrix and on the surface of the hearth bottoms. This was generally found on the upper surface but occasionally covers the base or appears as 'ears' on each side, suggesting a major and rapid transfer of the hearth to the slag.

The number of heart bottoms with lining still attached is unusual, being roughly twice the expected ratio (2:5 rather than 1:5). Large pieces of charcoal are frequent inclusions, and large pieces of stone (usually flint) are also found. These last seem to have been introduced with the fuel, as stones of similar size are not seen in the hearth lining.

3.3.8.2. Secondary Smithing Lumps and Cinder (Dense)

The extremely free movement of silica into the Scole slag was further reinforced by this material. The category Cinder (Dense) was created to cover the secondary smithing slags with an exceptionally high silica content. Much of this material had the appearance of concretions on initial examination.

The material also had frequent large voids and a large amount of charcoal incorporated in the matrix and adhering to the surface.; a few pieces having a peculiar crystalline structure.

3.3.8.3. Cinder

Conventional definitions of cinder depend on high silica content; almost all the slags assessed fitted this category even though the structure was definitely a hearth bottom or secondary smithing slag. Some of the material described as Cinder should perhaps be reclassified as fuel ash slag, though all appears to be associated with iron smithing.

3.3.8.4. Hammerscale

The soil in all the bags containing slag was tested for hammerscale with magnet. It was noted in a number of contexts in moderate quantities and always appeared crushed or trampled. A number of hearth bottoms have hammerscale attached to their base.

3.3.8.5. Fuel

Although a few fragments of coal were noted in sample residues, charcoal was the sole material incorporated within the matrix of the Scole slag; many pieces were large in size. Oak has been identified as one type.

3.3.8.6. Hearth Lining

The vitrified clay from the hearths was also assessed. The matrix proved to be a fine sand mixed with relatively little clay. This is not suitable for a smithing hearth because of the high sand content, and it is evident that suitable refactory clay was not available in the area.

3.3.8.7. Tuyeres

The tuyeres from Scole appear to be made from the same material as the hearth structure and thereby suffered from the same problems of slag formation and adherence. The preserved air holes are unusually large. Keeping the air hole open for the bellows would have been a problem considering the heat generated, and one of the recovered examples has a hole blocked by slag formation. This problem may also explain the unusually large air holes recorded. There are at least three types of tuyere amongst the assemblage; the standard 'plate'

form is represented, but at least two other forms are unique, and the quantity and variety is exceptional.

3.3.8.8. Copper Alloy, ?Silver and Lead working Debris

(Nicholas Cooper with Ruth Prior)

Evidence for manufacturing other metal artefacts was also recovered from Areas 1 and 3 in the form of *Copper Alloy, ?Silver* and *Lead Waste*. The last category is the most notable, with over 600 items of spillage debris and offcuts. Casting sprues of lead, copper and ?silver are present; two crucible fragments were identified, but no mould fragments were noted.

The numerous lead droplets are likely to relate to the use of lead in the casting of objects in other metals (the 'lost lead' technique), and appear on first impressions to be concentrated in Area 1, particularly south of the road. Further lead droplet casting cast waste comes from Area 6, associated with the industrial complex.

3.3.9. Flint

(Edward Martin)

3.3.9.1. Areas 1-4

Most contexts were only represented by small numbers of flints, mostly flakes with little in the way of diagnostic pieces (13 blades and 14 cores were identified). Blades are relatively frequent, suggesting a sizeable mesolithic component in the assemblage, which is further emphasised by the fact that most of the diagnostic pieces are mesolithic.

Five distinctive mesolithic flint examples were recorded. Two cores, a small axe, a ?microlith tip, and a concentration of blades, and flakes, many apparently from one knapping event were recovered from a small pit in Area 1.

Core rejuvenation or trimming flakes, probably more indicative of a Mesolithic industry than a later one were recorded in seven contexts evenly distributed between Areas 1 and 3, with one in Area 4.

Only one piece could be ascribed to a late Neolithic or early Bronze Age industry; this scraper was found in Area 2.

The majority of the material is, however, not diagnostic enough to be closely dated.

3.3.9.2. Area 6

Most contexts in Area 6 were represented by small numbers of flints, mostly flakes (83%), with little in the way of diagnostic pieces. Two blade cores may be indicative of Mesolithic activity, and the blade component in the two contexts producing the blade cores was relatively high (18% and 20%) compared to the assemblage as a whole (13%).

The relatively small number of tools (scrapers, denticulate and transverse arrowhead) are mainly of late Neolithic/ Early Bronze Age date and it is probable that much of the assemblage is of this date.

3.3.9.3. Area 7

As in the other parts of the site, most contexts in Area 7 were represented by only small numbers of flints, mostly flakes and spalls (91%) with few diagnostic pieces. The largest context groups contained 21 and 26 pieces. There was little sign of positive Mesolithic material and blades only comprised 7% of the total assemblage. Only a small number of tools were present and these are probably of Late Neolithic/Early Bronze Age date.

3.3.10. Wooden Artefacts

(Richard Darrah)

The wooden coffin and enclosing chamber, and the round wood found around the skeleton were so poorly preserved as to be fragmented. These were not kept except where there is the potential for dendrochronological dating.

A wooden peg was recovered from the Phase 1 potboiler deposit.

The two wooden bowl blanks, however, appear to have suffered virtually no degradation

3.4. FACTUAL WOOD TECHNOLOGY DATA

(Richard Darrah)

The survival of wood under waterlogged conditions produced copious evidence for the technology of wood conversion and working. 350 timbers were allocated context numbers, though weather conditions and collection policy for roundwood stakes meant that a number were left in the ground.

As a dating material the use in a number of wells of freshly felled oak less than 40 years old may make tree ring dating difficult. Determination of season of felling should be possible, but not necessarily the year. Samples have been kept from a number of decayed timbers from a pit revetment in Area 3, which may provide dendrochronological dates, though the presence of reused timbers in this structure has been noted.

There are a series of excellently preserved timbers from wells in Phases 5 and 6. Although slight variations in building techniques are used the same distinct bracing technique is consistent across the site. Some well braces are robust heart wood, though some are more slender and include sapwood. timber conversion varies including cleft timbers, cleft timbers hewn to shape, and sawn timbers which have been slab cut from larger trees.

3.4.1. Provenance

The majority of the constructional timbers were oak from several distinct sources (though each well contained timber from only one of these sources):

1 A small amount of slow grown timber typical of high forest
2 Fast grown timber which could have come from managed woodland
3 Some sawn timber which is fast grown with an uneven growth habit

There is no reason to suggest that the timber was not locally obtained.

The majority of the timber from Areas 6 and 7 was reused, with lap joints, countersunk nails and frequent use of saws. this complicates the question of provenance, but local sources are likely.

3.4.2. Range and variety

The retained wood archive consists of :

All the components of a selected well

A selection of the better-preserved pieces from the other wells (including at least one piece from each) which are of a similar but distinct construction.

Parts of the lining of a well from Area 7 employing similar constructional techniques as the other wells north of the river, but using reused timber
Reused pieces from a revetment for the water channel, including a series of roof timbers
Reused pieces from parts of a pit revetment, including a cart side
All pieces with recordable tool signatures
A series of stake points (of several species) with tool signatures

Several wooden objects were separated from the main group as small finds and consist of:
A small group of bucket staves, one with the hole for the rope
A complete plank c.0.5m long with common ovolo moulding on all four edges, and three mortices on one face
Several complete pegs
Two carefully shaped bowl blanks in perfect condition

3.4.3. Wood Condition

The condition of the wood varied from perfectly preserved to very poor.
The poorly preserved wood has been recorded and discarded. The remaining wood has been stored in water.

The majority of the timber in well constructions is oak, with some ash. The quality of preservation of well timbers was from excellent to OK; there was not necessarily a gradation of decay from top to bottom of the well.

The retention policy was biased towards pieces with joints and other evidence for working, with poorly preserved pieces exhibiting joints being retained in preference to better preserved pieces without, which were discarded after recording.

3.5. FACTUAL ANIMAL BONE DATA

(Rosemary Luff)

3.5.1. Areas 1-4

At the time of assessment most of the bone from Areas 1-4 was not phased, this included the largest groups from the grey soil, and from ?rubbish dumps along the edge of the peaty zone. This amounted to 57% of the assemblage weight in Area 1 including the best-preserved material. A similar proportion of the material from Area 3 came from three pits and a well subsequently phased to Phase 5 (later Second-Third Century).

In addition 4 complete undisturbed juvenile pig skeletons were excavated from Area 2. A small proportion of dog-gnawed bone was identified, spread evenly across the site.

Most of the animal bone was recovered from pits, wells, and ditches. As might be expected preservation of bone in the ditches was poor, but surprisingly there was variable preservation between contexts for both the wells and the pits. For example, in Phase 4 (early Second Century) only one of twelve pits yielded well preserved animal bone; in Phase 5 (later Second-Third Century) three pits had sizeable samples of well preserved bone, and two only eroded material. Of the wells in-filled in Phase 5, one contained a large deposit of well preserved material, while another contained a mixture of eroded and very well preserved bone (This last case can be explained in terms of the secondary nature of the context).

The sieved *samples from the funerary pyre* were characterised by the small artiodactyl category, mainly long-bone fragments and ribs (both from sheep/goat sized animals, astragali

(sheep/goat) and calcanea (sheep/goat); the astragali and calcanea were quite commonly whole but cremated white. In addition a fair proportion of loose teeth were also spotted, but no phalanges.

A few small mammal and amphibian bones were also identified, however no fish remains were observed which is unusual, given the proximity of the river. The sieved samples also isolated some small bird bone

Table 17 below records the material assessed, but also identifies the total number of contexts subsequently made available.

Phase	Ctxts	*Total Ctxt*	Mass	NISP	Indicators				Mandibles		
					HOR	COW	S/G	PIG	COW	S/G	PIG
1		*3*									
2	1	*11*	6	1							
3	19	*36*	2860	129	1	6	1			1	
4	36	*76*	10030	273	6	13	7			4	
5	47	*72*	22616	280	6	37	6		9	5	2
6	27	*61*	11751	217	3	24	10	3	2	5	
7	4	*13*	1178	124	1	2			1		
8	15	*28*	1309	46	1	3	2				
9		*16*									
Grey soil		*154*									

Table 17. Numbers of bone fragments (NISP), indicators and mandibles. Areas 1-4
(Total numbers of contexts subsequently made available in italics)

It would appear at present that cattle dominate the samples in all phases, but the sample sizes for each phase were very low at the time of assessment (the numbers of phased contexts has been increased subsequently). The numbers of mandibles present are too low to construct kill-off profiles that would inform on agricultural economics. Only 17 cattle horn-cores could be assigned to specific phases, and only 40 were identified in the whole site assemblage; no particular concentrations were noted in this group and it thus seems very unlikely that tanning/horning was a major activity at Scole.

3.5.2. Areas 6 and 7

Most contexts in these areas were supplied with spot dating information, and this was used as a coarse phasing of the material. The general preservation in this part of the site was poorer, with more eroded and broken up material.

Table 18 records the material assessed, after amalgamating the spot dates into the phasing supplied for Areas 1-4.

Phase	Ctxts	Mass	NISP	Indicators				Mandibles			HC
				HOR	COW	S/G	PIG	COW	S/G	PIG	COW
5	12	24661	419	8	29	9	1	6	5	1	1
6	11	20887	481	3	27	4	2	4		2	3

Table 18. Numbers of bone fragments (NISP), Indicators, Mandibles, and horn cores (HC). Areas 6, 7.

While the weights of bone are similar to the northern areas in the same phases, the NISP quantities are much higher and this indicates greater fragmentation of the bone samples. It should also be noted that there are also more indicators for the northern group. In common with the group from Areas 1-4 there are not enough mandibles, horn-cores, or measurable bones with which to pursue a satisfactory analysis.

3.5.3. Material of particular interest

A fallow deer antler was recovered from a Phase 5 (Second-Third Century) well fill. This is of particular importance since there are no definitely secured provinces for fallow deer in the Roman period, it is thought to have been a Norman introduction.

Two partial dog burials were excavated from Phase 4 deposits, and a medieval dog skeleton from Phase 7.

Three cattle scapulae were recovered from an in-filled pit at the edge of the peaty zone. All exhibit distinctive butchery marks (ie. holes in the blade) suggesting that the joints were hung up- possibly for smoking. The glenoid cavities show similar butchery. A human radius was recovered from the same context, and it is probable that it was originally part of the body buried in a part-filled pit', as the pit in which it was found cuts the inhumation pit and evidence for disturbance was noted when the body was excavated.

Two cattle skulls recovered from rubbish dumping in the peat display distinctive butchery to the occipital region of the skull and also horn-core removal, together with evidence for pole-axing.

Two horse skulls were recovered from two contexts associated with the wooden 'box' within the water channel; a third, fragmented, skull with knife-cuts and chop-marks indicative of dismemberment was recovered from the packing of the southernmost well in Area 1.

3.6. FACTUAL ENVIRONMENTAL DATA

(Soil Micromorphology: Richard Macphail)
(Insects : Mark Robinson)
(Plant Macrofossils : Val Fryer and Peter Murphy)
(Pollen : Pat Wiltshire)

The environmental sampling methodology used during the fieldwork phase of the project entailed the collection of duplicate samples from most features selected, with individual copies being submitted to each specialist. The Factual Data is presented below as an integration of the individual results provided by each specialist.

3.6.1. INDUSTRIAL COMPLEX, AREA 6

A *Soil micromorphology* sample taken from the base of the rectangular clay-lined 'tank' forming part of the Industrial complex in Area 6 suggests that it used high amounts of water; Energy Dispersive x-ray Analysis of the charcoal rich layer within this sample indicated amounts of Potassium, Sulphur, and Chlorine compounds which may also suggest the original presence of chemical solutions which had been absorbed by the charcoal.

Eighteen *Plant Macrofossil* samples from other elements of the Industrial complex in Area 6 produced moderate to high densities of charred cereals with some associated weed seeds. The main crop represented was spelt, some probable emmer, barley and oats; wheat chaff predominated. 'Sprouts' from germinated cereal grains were fairly consistently present. This clearly points to some cereal processing having been undertaken in the vicinity. Four samples were taken from a 'corn drier' excavated in an extension to Area 6 adjacent to the industrial complex in March 1994. Rapid assessment of small subsamples of these samples identified chaff and poorly preserved cereal grains from the stoke pit and sprouted grains from the flue, suggesting that the drier was being used for malt parching; the cereal chaff would have formed part of the fuel. It was suggested that the abundant charred cereals from other features in the vicinity might represent material cleared out from earlier usage of the corn-drier.

Four samples from wet fills of the adjacent water course were assessed. Macrofossils of aquatic plants were present, together with wetland and grassland taxa. Seeds of weeds were abundant, and a scatter of charred spelt and barley remains were noted. It appears that the feature included standing water, though the aquatic flora was not rich. The evidence of the plant macrofossils indicates that the surrounding area was open, consisting of wet grassland and weed vegetation. There were indications of cereal processing in the vicinity but no clear evidence of the function of the water course.

Fourteen *pollen* samples were processed at intervals from 4-105cm from the surface of the water course. Abundant, well preserved pollen was noted in most of the samples, with woody plants most common in the early parts of the channel's life and less tree pollen than was anticipated (hazel being the most consistently present). The higher parts of the section contained few woody taxa.

The range of plants represented throughout the history of the feature were typical of stagnant water and open wet soil and imply long periods of minimal management, though three possible phases of active use were suggested on the basis of an absence of pollen.

Six *Pollen* samples from a barrel-lined pit which formed part of this complex were assessed. Pollen was absent from the uppermost sample and too sparse and badly preserved in the others for further analysis. However the assessment has identified lime and elm pollen from the lower fills, and quantities of bracken throughout. It was impossible to determine the reason for the quantities of ling and bracken pollen, but it is possible it was deliberately concentrated.

3.6.2. WELLS

3.6.2.1. Plant Macrofossil

Seventeen *Plant Macrofossil* samples were assessed from five of the wells excavated north of the river (Adverse weather conditions prevented collection of samples from the other two). Samples were taken from the upper aerated and lower waterlogged fills of the features. Assessment recorded a thin scatter of charred cereals, rare aquatic and wetland species, occasional shrubs and trees, but consisted mainly of weeds. The only evidence for possible

food plants consisted of hazel nut fragments, elder seeds, and wild celery (the latter particularly common in samples from the Phase 6 well on the peat edge).

3.6.2.2. Pollen

Thirty-two slides were prepared from monolith samples from five of the wells. The Well in Area 7, surprisingly, produced no pollen remains. Samples from the other four wells did contain variable amounts of pollen in varying degrees of preservation. The basal layers, where available for assessment, contained the best preserved material, though the number of taxa was generally low. The pollen spectra indicate local weedy grassland with disturbed soil and some cereal processing in the locality indicated in some of the wells' samples. The general absence of evidence for floating aquatic plants might indicate that the wells were kept covered, or at least that they were kept clean. Bracken and ling pollen was commonly noted in the lower fills.

The pollen taxa from the upper fills were generally less-well preserved or even non-existent and contained more tree pollen.

3.6.3. PITS AND OTHER INDUSTRIAL FEATURES

3.6.3.1. Plant Macrofossil

Nine *Plant Macrofossil* samples were assessed. These came from two pits, two hearths/furnaces, and a clay surface immediately north of the road in Area 3. The hearths and surface produced little but charcoal fragments, the pits included charcoal, occasional cereal fragments and a range of seeds from weed, grassland, wetland and scrub species.

3.6.3.2. Pollen

Twenty-one slides were assessed from four samples of waterlogged pit fills in Areas 1-4, two pits on the peat margin, one at the northern end of Area 1, and a medieval pit in the centre of Area 2. All four produced distinct results.

A large oval pit at the southern end of Area 1 had well-preserved pollen in the lowest fills and a very dense concentration of microscope charcoal fragments in its central portion. The presence of duckweed and iron pyrites spherules in the lower fills indicated that the feature had contained stagnant water enriched by organic debris (Wiltshire et al. in press). Overall the deposits recorded areas of open, weedy grassland with heath-type areas nearby. Most of the tree pollen was probably derived from the river's edge. Cereal pollen was very abundant in the basal fill which might indicate dumping of cereal waste or even accidental accumulation.

What was of considerable interest is the very high levels of oak pollen in what had been standing water within the pit. Oak pollen was found in every phase throughout the site, but only sporadically and at low levels. It is tempting to suggest that the unusually high oak pollen levels might indicate that oak debris (probably bark with pollen adhering) was being placed in the pit deliberately. It is conceivable that the pit had been used for tanning purposes.

One particular Wood-lined Pit at the southern end of Area 3 assigned to Phase 5 produced evidence for standing water at some stage in its history and other wet soil plants. Sedimentary conditions remained damp through the period of accumulation as pollen was relatively abundant and preservation moderately good. Mixed woodland was important in the vicinity of the feature with dry soil taxa being represented as well as those wet soil species presumably growing close to the river. The herbaceous flora also indicated a range of habitats in the area.

Of great interest was the identification of grape pollen in two separate slides from this pit. The vine produces small amounts of pollen so that two single grains probably represent a considerable amount of plant material. It is unlikely that the pollen was airborne; it would

probably have been derived from either faecal matter, residual pollen on grapes, or residual pollen on the remains of the plant itself. There was no evidence that the pit had contained faeces and this leaves the possibility that the feature was used as a rubbish dump or compost bin, or that grapes were being processed within the pit. However two *Plant Macrofossil* samples from the pit were also assessed. These produced no grape remains, indeed little except possible weed species. This would tend to negate the suggestion that the pollen was residual on grapes, and suggest that the pit may have been in use as a rubbish dump / compost bin..

A *pollen core* was taken from an oval medieval pit in Area 2. The upper fills were devoid of pollen remains, but the lower fills were perfectly preserved. Finds of duckweed and abundant iron pyrites spherules suggest stagnant organic-rich water.

With such good preservation the immediately local and extralocal vegetation is likely to have been represented in this pit. No alder pollen was recorded and only relative sparse grains of birch, oak willow and elm were found. This would seem to indicate a change in local environment prior to the medieval period. No ling or bracken pollen was noted but much pollen of grass and plants characteristic of trampled conditions was present.

Cereal pollen indicates that crop growing/processing was still carried out on the site, but the overwhelming abundance of cannabis type pollen (i.e. hemp) attests to the function of the feature- the retting of hemp. It must also be noted that nettle pollen was also relatively high. Although macrofossils of this plant are common in archaeological deposits, the pollen is rarely found, and it is possible that the pit was also being used for retting nettle to make a very fine fabric.

3.6.4. BURNT 'PYRE' DEPOSITS AND COFFIN BURIAL

A detailed sampling strategy was devised to investigate a possible funerary 'pyre' identified adjacent to the cemetery area. The rectangular deposit was divided into 1 mere squares and then excavated stratigraphically. The soil from each stratigraphic unit was 100% sampled by metre square to allow identification of both horizontal variation in each unit as well as vertical differences. This produced 58 Bulk Samples for Plant Macrofossil/Bone analysis. Pollen and soil micromorphology monoliths were taken through the central part of the deposit.

For the evaluation a north-south aligned section of 1m squares was selected as a representative subsample. All samples from this section were studied.

3.6.4.1. Burnt and Unburnt Bone

Analysis of the abundant *Bone* recovered from the processed residues of the section subsample failed to identify human bone, burnt or unburnt. The bone from each sample comprised a mixture of burnt and unburnt animal bone including pig, sheep, bird, and cattle, and antler fragments. Many fragments of bone carried evidence of butchery in the form of knife marks. The burnt bone varied from lightly charred to fully oxidised white. One suspect piece of burnt bone may be a fragment of a worked pin.

3.6.4.2. Soil Micromorphology

A *Soil Micromorphology* sample was taken from the burnt bone 'pyre' deposit. This identified an enigmatic material, possibly residual soft tissue after the burning/cremating of animals. In between burning events increments of sand and peaty soil suggest either soil being thrown onto the 'pyre', or a natural accumulation through wind-blowing and wetland soil formation.

3.6.4.3. Plant Macrofossil

Twelve *Plant Macrofossil* samples from the 'pyre' deposit were assessed. All included abundant charcoal, including tree charcoal and ericaceous stems. Other macrofossils were scarce but included a thin scatter of charred cereals and weed seeds.

3.6.4.4. Pollen

A sequence of 3 slides was prepared from the monolith sample through the 'pyre'. A very high concentration of charcoal was noted in the uppermost layer of the section, though no pollen was preserved at this point. Preservation improved with depth through the section. The basal deposits upon which the pyre was made appeared to have been inundated at some time, though the pollen assemblage was indicative of a mixed tree/shrub environment with wet woodland, dry woodland, and scrub/hedge taxa represented.

One *Macrofossil* sample from the interior of the wooden coffin was also scanned. Remains of some seeds were noted, though mainly weeds with elder seeds. Nothing interpretable as intentionally placed plant material was seen.

3.6.5. THE 'NATURAL ENVIRONMENT'

3.6.5.1. Soil Micromorphology

The seventeen samples assessed for all areas of the site suggest that podzols were present, particularly north of the river, by the Iron Age/ Romano-British period (though the vegetation under which they had formed is unclear). Wind-blown and colluvial sand was responsible for mixing of deposits along the peat edge and for thickening the topsoil during and after the period of the Roman settlement. Podzolisation continued in the post-Roman periods. The Soil micromorphology sample taken through the burnt 'pyre' deposit provides additional evidence for the rising water table through the Roman period.

3.6.5.2. Plant Macrofossils

A total of nine samples were taken from the valley peat sediments during the fieldwork. During the main phase of excavation a machine-cut trench was cut through the valley sediments; eight samples were taken, but problems with recording the exposed section resulted in a second set of samples being deemed necessary. A monolith sample was taken from a buried soil at the edge of the water channel in an extension to Area 6.

3.6.5.3. Insect

A total of eight samples were taken from the valley floor peat sediments during the fieldwork phase of the project.

3.6.5.4. Pollen

Many of the pollen samples from the basal fills of features provide general information about the surrounding environment, but a series of fourteen samples were also processed from a sequence of monoliths through the valley floor peat sediments immediately north of Area 6.

Samples from a monolith extracted from the burnt flint mound beneath the peat provided little information about the mound itself, but did characterise the local environment prior to rising water levels and the onset of peat growth.

Few palynomorphs survived in the upper parts of the column, but the lower parts did indicate a mixture of tree and open habitat taxa, including alder, birch and hazel, and oak and lime. Bracken was common and it is suggested that at this time it formed a normal part of the

understorey. Other ferns were probably growing in the riverside woodland, but open weedy ground is also indicated by the herb taxa.

The river peat samples preserved abundant relatively well preserved pollen and iron pyrites spherules indicative of standing, possibly flood, water. This sequence held the history of the vegetation at the edge of the River Waveney and the species represented showed a diverse flora with trees, shrubs and herbs characteristic of a wide variety of habitats. The site seems to have been dominated by alder carr and tall herb communities throughout its history, though other species were sufficiently well-represented to suggest a relatively open environment. Cereal-type pollen was consistently present throughout the sequence, suggesting that cereal cultivation/processing was practised very close to the river.

The pollen spectrum of this body of peat was very similar to that in the sequence studied during the site evaluation, though with the addition of frequent cereal pollen in the samples assessed.

The composite picture obtained from all the pollen samples suggests that the southern side of the river was particularly dry, while the area to the north had wetter soils. In view of the overall high number of taxa and the heterogeneity of habitat they represent assessment of the site is very complex.

However it is clear from the pollen assessment that, for most of the site's history, trees were relatively abundant within the pollen catchment. The riverbank appears to have been dominated by alder carr and tall herb communities for a very long period, but trees and other plants characteristic of drier soils were also important in the vicinity. Samples from a medieval feature studied would suggest that most of the woodland at the site had been cleared by that period.

Although the evidence is very tentative, it would seem that the soils might have been more mesotropic very early in the site's history whereas by the Roman period, podzolisation had occurred in at least some areas. Plants characteristic of dry leached acidic soils were established by the late first century, but local variations must have been present in the soil type as plants of varying nutritional requirements were also represented.

The pollen evidence would suggest that soils of varying nutritional status were available at the site throughout its history. In an area which has obviously been subjected to intense human activity for such a long period it is not surprising that a variety of microhabitats developed.

3.7. FACTUAL CONSERVATION DATA

(Gordon Turner-Walker)

3.7.1. Iron

A brief review of the x-radiographs of the ironwork from the excavation shows that the bulk of the iron finds comprise a typical assortment of nails, horseshoes and post-medieval material common to rural excavations. More interestingly, the assemblage contains a considerable quantity of iron working slag (19 separate bags) which may represent the remains of iron smithing on the site. This interpretation is reinforced by the presence of what appear on the x-rays to be offcuts of iron bars (c. 27 objects), and other iron artefacts which may prove to be fragments of iron working tools.

Other iron objects considered of possible interest on the basis of conservation records include possible armour fragments, a pair of interlocking spikes, a tinned buckle, a wedge with handle, a possible chain and hook, and two spade shoes.

3.7.2. Copper alloy

A review of the copper alloy x-radiographs reveals that in addition to the usual array of brooches, pins, and items of personal adornment, there is considerable evidence for copper alloy working, particularly south of the river. There are a total of 33 fragments of waste/slag/dross and spillage droplets. There are also a few examples of edge strips that appear to have been cut off bronze sheet.

Other copper alloy artefacts worthy of closer examination are a cosmetic/surgical tool, possible cruse styli, and a fitting which appears on the x-ray to have been brazen or soldered.

3.7.3. leather

The leather recovered from the waterlogged deposits also suggests workshop activity with the vast majority of fragments representing waste offcuts and re-use of shoes. There are also at least four shoes.

3.7.4. Other organic material

The waterlogged deposits at Scole have preserved other organics; in particular elements associate with two inhumation burials were well-preserved. One of these was of an infant in which the timber "coffin" was preserved. The other was of a female adult, buried in a part-filled pit. The skull of this burial contained a white waxy/chalky matter- probably representing brain adipocere. This has been examined and sampled by Dr Roberts, Director of Pathology at the Norfolk and Norwich Hospital. Arrangements have also been made to have samples analysed for lipid and possible DNA residues by Dr Richard Evershed (Bristol University) and Dr Martin Richards(Oxford) respectively. Three animal skulls (2 dog crania and part of a cow skull) are being held in deep freeze at the Conservation Department, Norwich Castle Museum awaiting similar sampling.

4. STATEMENTS OF POTENTIAL

4.1. Specific Research Aim 1: To characterise the nature of mesolithic activity and its affect upon the local environment.

Little potential exists for characterising the mesolithic activity on the site. Environmental assessment has also indicated limited scope, though further sampling may address this problem.

4.1.1. Stratigraphic/Structural.

The 1993 excavation did not reveal the waterlogged mesolithic deposits suggested in the Project Design (Paragraphs 2.3, 5.2.1.2).

The single feature in Area 1 which produced mesolithic finds had been phased to Phase 5 (2nd-3rd Century AD).

This assignment should be re-examined, if only to confirm that the flint was a residual element.

4.1.2. Artefact

Factual Data: 3.3.10

The mesolithic flint assemblage recovered during the excavation was too small (both in terms of overall quantities, and in numbers per context) to have much potential for characterising mesolithic or other prehistoric activity.

4.1.3. Environmental

No reconstruction of the early prehistoric palaeo-environment has proved possible using the samples taken during the 1993 fieldwork. However, due to the road construction programme, the proposed section across the diverted river channel was not excavated at this time.

Analysis of the samples from the river crossing operation may enable a reconstruction of the mesolithic environment.

4.2. Specific Research Aim 2: To explore the mesolithic/neolithic transition

Artefact analysis has some limited potential to address the transition, though the lack of stratified contexts limits the scope of any work.

4.2.1. Stratigraphic

No features dated to the mesolithic/neolithic transition were identified.

4.2.2. Artefact

Factual Data: 3.3.3.1.2; 3.3.10

The few neolithic ceramic finds recovered from Area 7 do suggest some use of the area in the third millennium BC, but the lack of associated mesolithic material limits the potential for direct study of the transition.

The small quantities of worked flint have limited potential for meaningful analysis in this context.

4.2.3. Environmental

See above for an assessment of the early prehistoric environmental research potential.

4.3. Specific Research Aim 3: To test the validity of the pre-Roman landscape fossilisation hypothesis.

This Research Aim was deleted from the Project Design at the request of HBMC prior to start of fieldwork.

4.4. Specific Research Aim 4: To explore the Iron Age/Roman transition

Excellent potential exists for studying the transition.
Stratigraphical and Artefactual Analysis of the deposits stratified beneath a Roman Road in Areas 1 and 3, Artefactual Analysis of early (including possibly military) assemblages, and Environmental Analysis of valley floor sediments will all contribute to this research.

4.4.1. Stratigraphic

Assessment Themes: 1, 2
Factual Data: 3.2.1.2; 3.2.3.2

The identification of two certain (and other possible) round houses in Areas 1,3,& 6, and of pre-Roman enclosures and ditches in Areas 1 and 3 is important in studying the transition between Iron Age and Roman, and determining the manner in which the Roman settlement was established (although it is accepted that the buildings' morphology does not rule out their being Romano-British in date).

Detailed stratigraphic analysis will seek to establish the dating of the buildings, confirm the extent of pre-Roman activity on the site, and to identify any discontinuity between it and the Romano-British settlement.

4.4.2. Artefact

Ceramics

Factual Data: 3.3.1

No Iron Age pottery was recovered from features assigned to Phase 2 (covering the Iron Age-Roman transition), but a well stratified small assemblage of early Romano-British types was identified. Spatial analysis of the Iron Age pottery residual in later features may provide information on the original spread of activity. Analysis of the Roman pottery group will confirm the stratigraphic work on the transitional features outlined above.

Coins

Factual Data: 3.3.6

The coin list spans the period from the mid first Century AD to the early Fifith Cnetury types. Anaysis, both in terms of date range and quantity, and for any distributional information that may become apparent, should be undertaken. The study of transition periods has been identified as an important national goal by English Heritage (1991b).

Metalwork
Factual Data: 3.3.5
Further analysis of the brooch assemblage (in particular) will contribute to arguments regarding the origin of the Romano-British settlement, and its relation to earlier activity.

Timber
Factual Data: 3.4
The conversion of timber by cleaving points to a continuity of some prehistoric wood working techniques on this site that may be lost or masked in more urban settlement.

4.4.3. Environmental
Factual Data: 3.6.5
Pollen and *Soil Micromorphology* samples were taken from the podzolised buried land surface beneath the Phase 3 Roman road in Area 3, and *Macrofossil* samples from the ground beneath the leat upcast in Area 6. Initial assessment of these samples has identified features of the pre-Roman environment; further detailed analysis will enable a reconstruction of the environment at this time.
By contrasting these samples with samples from Romano-British contexts the environmental transition will be discernible.

The *Plant Macrofossil* samples from the fill of the Round House wall trench in Area 3 produced little except charcoal.
No further analysis of these samples is warranted.

4.5. Specific Research Aim 5: To examine the morphology of the Romano-British 'small town'.

Great Potential exists for examining the morphology of the Romano-British settlement through stratigraphical analysis and comparison between the excavation Areas. Environmental and Artefact Analysis will assist in determining tenor of activity.

4.5.1. Stratigraphic/Structural
Assessment Theme: 1
Factual Data: 3.2.1
The excavated data provides excellent potential for studying the morphology of the small town. Structural elements of both land divisions and evidence for zoning and functional differences within divisions were identified in Areas 1,2,3,4 & 7; with evidence relating to the environs of the town recovered from Area 6 (Paras 3.2.1.1-3.2.1.6). The opportunity to study and compare disparate areas of the town is particularly valuable.

A major Roman road running west from the central part of the town acted as a focus for ribbon development in the areas north of the river, and similar development was identified adjacent to the main road south.

Initial assessment has identified regular enclosures fronting onto main roads south and west of the settlement's core with subsidiary roads/lanes in Areas 1-3; further detailed analysis of these units and other possible divisions will enable the definition of any standard building units employed and the characterisation of differences between parts of the settlement.

This analysis of settlement morphology should be extended to include comparison with the information from the 1973 excavations closer to the centre of the small town (Rogerson,

1977) in order to determine any variation between 'suburban' and 'central' parts. The analysis should also include study of the air photography of the other areas of the settlement, particularly in the remainder of the field containing Areas 6 and 7.

The stratigraphic relationship between the street and the buildings fronting onto it in Area 1/3 should be analysed in greater detail to confirm the suggestion (Para. 3.2.1.4) that the width of the road was increased at this time, possibly to improve access to the building.

4.5.2. Artefact

Factual Data: 3.3; 3.3.5

An important artefact assemblage relating to the settlement layout was recovered from the 'grey soil'- a layer of Roman podzol subsoil noted covering Areas 1, 3 & 4, and overlying cut features in these areas (Para. 3.3.1.8). This deposit has been slightly disturbed by (relatively) early ploughing and by animal action but the degree appears minimal. Spatial analysis of the distribution of *all artefact classes* within this layer will complement the information from the cut features beneath it. Analysis will aim firstly to determine whether the grey soil assemblage contains equivalent material to the cut feature assemblage or whether there are 'missing' phases represented, and subsequently to relate the grey soil assemblage to the phased contexts beneath.

4.5.3. Environmental

The *Insect* samples assessed suggest semi-rural conditions existed over the site. Further analysis to confirm this would provide valuable information about the intensity of occupation and tenor of the site.

4.6. Specific Research Aim 6: To characterise the changing functional uses of individual parts of the site through the Roman period.

Stratigraphic, Artefact, and Limited Environmental Analysis hold excellent potential for determining the detailed functional histories of each part of the site.

The range of activities undertaken in Romano-British small towns is generally very varied. Analysis of the stratigraphic and artefact data from the 1993 excavations, together with limited environmental analysis, will allow the range of manufacturing and processing activities, and the other uses represented on the excavation site to be determined, quantified, and descrbed.

4.6.1. Stratigraphic

Assessment Themes: 1,2,4,5,6

Factual Data: 3.2.1; 3.2.2.; 3.2.4; 3.2.5; 3.2.6

Initial assessment of the stratigraphic sequence and of the physical relationships of features in all areas of the site suggests a continued (though not intensive) use of all parts of the site. The function of individual areas appears to change through time.

In Areas 1-4 (north of the river) the early road line was quickly encroached by industrial/domestic buildings in enclosed plots - a layout that appears relatively stable throughout the rest of the Roman period (Para 3.2.1.3-3.2.3.1.6). The areas further removed

from the road line seem to have been less-intensively utilised and to have undergone a series of changes of use, related to industrial processing and manufacturing, with the provision of wells in all parts of the site. In the area immediately adjacent to the river rising water levels throughout the Roman period resulted in a gradual movement north to higher ground (Para 3.2.5.2-3.2.5.4).

In Area 7, adjacent to the modern A140, early use of the land for ?casual burials was replaced by enclosures; these were in turn replaced by a removal of topsoil (possibly in a search for gravel for road construction/repair). Later phases saw the formation of dark earth and a strip building.

The area immediately south of the river (Area 6), which appears to lie outside the original extent of the settlement, was initially used as a crop processing (possibly malting, see Section 3.2.2.3), but after apparent problems with flooding associated with the rising water table mentioned above the entire area was abandoned. To the south of the industrial complex in this Area an early East-West road was encroached by later field systems.

The history of all these areas has been outlined more fully above in Section 3.2.1.

Detailed stratigraphic analysis will be necessary to refine the provisional phasing established during assessment. This work will also draw upon the dating and other information available as a result of the other artefact and environmental assessments and is a prerequisite of any detailed study of the functional changes in all parts of the site. The detailed analysis will permit full integration of the two (presently only correlated) provisional phase sequences defined north and south of the river.

Analysis of the building excavated by Suffolk WEA in 1972 will depend heavily on obtaining copies of the excavation records. These have not been located despite continued correspondence with the excavator, though attempts are continuing.

The data from the small cemetery in Area 3 and the other inhumations and cremations from the site (Para 3.2.4) have the potential to describe changes in the social/ritual aspect of the settlement suburbs. The location of the majority of cremation urns in boundary ditches may also have significance beyond convenience. Further stratigraphic and spatial analysis of the cemetery and 'pyre' deposits should be undertaken to provide a definitive statement of their inter-relation and the time-span involved; the function and significance of the 'pyre' has also to be determined as it has been shown that it was not used for cremating human bone (See Environmental Potential below). Initial impressions are that the feature is of considerable importance as there are no obvious parallels within the region, or possibly within the country.

4.6.2. Artefact

Pottery

Factual Data: 3.3.1; 3.3.2

Analysis and comparison of the stratified groups of pottery identified for each Area and Phase will assist in the detailed phasing of the individual areas and in relating sequences across the site. Form and function analysis will seek to identify vessel forms characteristic of particular activities and use the distribution of these forms as an indicator of the changing functions of parts of the site. Analysis of the components of assemblages across the site (eg. Fine : Coarseware ratios) may prove of considerable importance in determining the functional differences between areas.

Samian
Factual Data: 3.3.2
Additional spatial analysis will confirm and enhance the phasing data provided by the coarse pottery, as a closely-defined national chronology for samian forms has been established.

Brick and Tile
Factual Data: 3.3.3
Spatial analysis of the small, but well stratified assemblage and study of the contexts in which it appears will illustrate the changing functional uses of the individual parts of the site, as it is apparent that most (if not all) the material is imported from elsewhere within the settlement and present as secondary depositions.

Coins
Factual Data: 3.3.6
Spatial analysis of the large coin assemblage, and a relation of them to the stratified deposits will assist in the clarification of the phasing necessary to study the changing functional uses of the site. The possibility that barbarous radiates were being produced in Scole is an important aspect, as few such sites can be pointed to nationally with any certainty; die-analysis may confirm the possibility. Detailed analysis should also consider the validity of the hypothesis identifying a military site close to Area 7.

Glass
Factual Data: 3.3.7
The minor evidence for glass working may have some potential to define further activity zones within the site. However it should be noted that the evidence for glassworking is equivocal.

Slag
Factual Data: 3.3.8
The evidence from the slag is so overwhelming that the possibility of the smithy being within the excavated areas should be reviewed. If the location of the smithy can be established or confidently predicted, a wide avenue of questions concerning the site can be addressed, such as whether the workshop was static through time or moved. If a smithy can be identified the associated features, in particular hearth type, will be important to record in order to consider whether the hearth is a specialised form and its similarities to domestic types and any other recognisable hearths associated with other specialist functions. Further analysis of associated fired clay assemblages may identify further tuyere pieces.

The presence of hammerscale indicated that smithing was occurring near to the site but was not noted in high enough quantities in any of the material assessed to indicate the exact location of a smithy. The large numbers of tuyeres and quantity of hearth lining reinforces the fact that the smithy was likely to be close. Hammerscale was not actively sought during the excavation (and is easily missed); therefore further examination of x-radiographs of the iron objects is suggested (high concentrations of hammerscale in the corrosion products might be expected close to the smithing activity). Outstanding environmental samples from contexts producing slag and/or tuyere fragments should also be examined for possible hammerscale presence.

Any assemblage of iron objects associated with deposits of datable slag will require careful examination for the presence of bars, blanks or other types of waste iron; identification of broken, possible scrap, iron items should also be attempted. One other area of analysis

that can be addressed is the disposal of the slag and its distribution across the site, including analysis of whether any was deliberately reused for specific purposes (e.g. resurfacing roads...)

Wood
Factual Data: 3.3.11
The variation in the quality of construction of the wells may help to indicate changing functional uses of parts of the settlement.

4.6.3. Animal Bone

Factual Data: 3.5
Limited potential exists within the animal bone assemblage for discussion of the function of particular parts of the site, as the group assessed was considered too small to be useful. Provision of further phase information may change this, although the impression gained from scanning the remaining assemblage is that little evidence for tanning or horning is present- the potential for butchery/slaughter is less clear. The relatively large proportion of the material to come from the 'grey soil' deposits might indicate some potential to discuss the differences between surface and earthfast deposition patterns across the site, when used in association with the other artefact classes

4.6.4. Associative Potential: 'Grey Soil' deposits

Considerable potential exists to explore the spatial layout of the non-earthfast elements of the site's layout. Sample excavation of the extensive 'grey soil' deposits in Areas 1, 3 and 4 has produced a large, spatially located assemblage which comprises at least 25% of the total artefact population of these areas for most classes of artefact. Integrated spatial analysis of the distribution of all artefact types (including those for which analysis cannot be justified on the basis of individual potential) will provide nationally important information on the patterning evident in surface deposits above the earthfast features. Spatial comparison with the cut features will also be important in this respect. The research potential of this type of analysis is being demonstrated at the Romano-British small town at Shiptonthorpe, Humberside, where consistent differences between patterns of deposition in surface features and those from earthfast features are being found (Martin Millett, pers comm.).

This research will also contribute to Specific Research Aim 17, 'To study the processes involved in the formation of late Roman 'dark soils'

4.6.5. Environmental

Factual Data: 3.6
Environmental samples from selected pits etc. were assessed to determine their potential for attributing function to features. The potential was variable, but generally poor.

Samples from 'the pyre'
Factual Data: 3.6.4
Assessment of a representative series of samples through the 'pyre' deposit adjacent to a small inhumation and cremation cemetery in Area 3 was undertaken. *Macrofossil, pollen* and *soil micromorphology* samples were studied, and the *burnt and unburnt bone* components submitted for *identification/assessment.*

The *Macrofossil* assessment identified abundant charcoal, but only rare cereal and weed remains, the *Pollen core* similarly identified little but microscopic charcoal within the pyre deposit.

Identification of the *bone* has shown it to wholly of animal origin (initial scanning suggests mainly sheep/goat) and the *micromorphology* samples have identified possible soft tissue residues, and thin layers of soil forming between burning episodes.

Associative Potential

No further analysis of the environmental samples was recommended on the basis of their individual potentials, but their *associative value (*when considered with the adjacent burials) *is critically high*, as assessment of the stratigraphic record has clearly shown that the burnt deposit is intimately associated with the adjacent cemetery, being stratigraphically later than the inhumation, but earlier than the cremations.

Preliminary literature searches for parallel features have not been successful, and it has been suggested that it may be unique in this country (Martin Millett, pers comm.). If so, the feature must assume national, if not international, importance; the absence of human remains among the cremated bone assemblage of a pyre directly associated with a cemetery is particularly significant. Further analysis will clarify some of the non-burial elements of cremation activities during the Roman period. Identification and analysis of the burnt and unburnt animal bone will be of particular value in this respect, but supportive analysis of the other environmental samples will maximise the information recovery from this feature.

Samples from the coffin burial

Factual Data: 3.6.4.3

None of the species noted in assessment of the *Plant Macrofossil* sample from the interior of the coffin could be interpreted as having been intentional elements. No further work on this sample is thought necessary.

Industrial Processing complex, Area 6

Factual Data: 3.6.1

Assessment of the *plant macrofossils* from this complex has shown that charred cereal remains are common in all the features sampled and that grain malting (possibly for brewing) was an important activity. Full quantitative analysis of the four samples from the corn drier is recommended in order to define more reliably the latest use of the feature.

Although the other samples in the vicinity produced rich assemblages they are not considered to be primary contexts, and further analysis is not proposed. Similarly no further work is needed on the samples from the adjacent water course.

The Wells

Factual Data: 3.6.2

No evidence for significant disposal of domestic food or other wastes in the disused features was identified in the *Plant Macrofossil* samples. The weed-dominated assemblages, which closely resemble those from other parts of the country (Greig 1988), point to infilling in abandoned land. On the basis of this assessment no further analysis can be recommended.

Miscellaneous 'Industrial' Features
Factual Data: 3.6.3
Assessment of the *Plant Macrofossil* assemblages has determined that further analysis can contribute little to the interpretation of features and activities on the Norfolk side of the river, beyond general comments that the comparative rarity of charred cereals suggests that crop processing was not an important activity, and that the ubiquity of waste ground plants indicates a general absence of intensive activity..

However, the wood-lined pit in Area 3 may benefit from further Plant Macrofossil and Pollen analysis of the lower fill, as unusual grape pollen fragments were identified during the assessment. The analysis should aim to determine the significance of the pollen results and suggest reasons for the pollen's presence, as the possibility of grape cultivation in this part of Britain during the Roman period has not been been considered previously.

The *Pollen*, *Plant Macrofossil* and *Animal Bone* assemblages from the oval pit [11001] at the southern end of Area 1 would also benefit from additional study. The pollen assessment identified unusually high oak pollen levels within the lower fills of this pit, and it has been suggested that it may have acted as a tanning pit. Analysis of the Plant Macrofossil samples from this feature is necessary to provide corroborative evidence, and additional work on the animal bone assemblage should also be considered.

4.7. Specific Research Aim 7: To enable the town to be contrasted with other regional examples.

The Stratigraphic, Artefactual, and Environmental Assessments indicate considerable potential exists for comparison with similar sites in Norfolk, Suffolk and beyond.

4.7.1. Stratigraphic/Structural

Assessment Themes: 1,2,3,4,5,6,7
Factual Data: 3.2
The 1993 excavation has produced a valuable corpus of data on the degree of planned layout and the range of activities undertaken on the outskirts of a Romano-British 'small town'. In terms of relative location in regard to the town centre, the recent excavations at Billingford, Norfolk, and at Brampton are of apparent immediate regional relevance, but the data available after analysis will be of use beyond the confines of East Anglia..

The excavation of a possible malting complex in Area 6, uncontaminated by later Roman activity is a potentially important element (Para 3.2.2.3). Comparison should be made with an allegedly similar complex at Stebbing in Essex and a search for other similar sites conducted.

The identification of areas of 'dark soil' in Area 4 and 7 (Para 3.2.1.6; 3.2.7.2) should be used to allow comparison with similar deposits in other small towns and with urban 'dark earths'. The prior soil truncation in Area 7 (Para 3.2.1.5) is of particular importance as it has produced a demonstrably uncontaminated deposit.

Timber
Factual Data: 3.4
The similarity of the well construction technique throughout the site over more than 100 years suggests a continuing local tradition of well building, with a distinct design.

4.7.2. Artefactual

Metal Working Residues

Factual Data: 3.3.8

The apparent concentration of metal working debris and the identification of extensive iron, lead, copper alloy and ?silver working in Areas 1, 3 and 4 should be analysed in terms of distribution and chronological extent in order to allow contrast with suburban metalworking at other Romano-British sites.

There are difficulties in assessing the value of the material in terms of national or regional priorities because so few iron working assemblages have been fully studied and published. This lack of information on industrial evidence has been highlighted by English Heritage (English Heritage 1991b) and put forward as an Academic Objective that warrants particular attention.

Although it is accepted that most Roman towns would have had an operational smithy, this assumption has not been tested or fully considered. The likely location or permanency of these workshops is also not known. The Scole assemblage is ideal for addressing these general topics because of both the quantity and range of material recovered and the size of the excavated area.

4.7.3. Animal Bone

Factual Data: 3.5

The small sample available for assessment was not considered large enough for description and analysis allowing comparison with other towns; subsequent provision of information may have altered this opinion.

4.7.4. Environmental

Factual Data: 3.6

Soil Micromorphology

The thin section produced form a unique archive on Roman occupation of lowland acid soil substrates, and may prove a useful soil database in conjunction with ongoing research on Roman occupation of upland acidic soils along Hadrian's Wall, for example.

Insect

The semi-rural insect assemblage from the excavated areas north of the river can be usefully compared with assemblages from sites in similar situations at other small towns to determine how typical the assemblage is.

4.8. Specific Research Aim 8: To assess the extent to which, and the mechanisms by which, the small town participated in local, regional, national and international networks during the Roman period.

Analysis of the sources of the artefacts found during the 1993 excavation will enable the settlement's trading and social networks to be elucidated; distribution analysis across the site may highlight the mechanisms involved

4.8.1. Structural

Factual Data: 3.4

Both the wood technology and probable local source of the timber suggest participation in local rather than regional, or national networks.

4.8.2. Artefacts

Factual Data: 3.3

The 1993 excavations have produced evidence for the site's participation in social and economic networks at all levels. Despite the extensive evidence for metal working and other manufacturing/craft activities in the area north of the river the site appears to be a net beneficiary of these networks rather than a contributor. Analysis of all classes of sourceable artefact will address this Research Aim.

The find spot of all artefacts are recorded within the site system (either by three-dimensional co-ordinates, by context, or by broad grid reference in the case of unstratified material); initial assessment has identified spatial variations in the distribution of each type. By analysing the distribution of *each artefact class* across the six excavated Areas and further detailed analysis where necessary to identify sources, it may be possible to identify the mechanism responsible for the material's appearance on the site and the degree of participation denoted by each.

Comparison with other sites in the vicinity may be necessary to establish the terminals of the network links.

The identification of potter's stamps where they occur on *samian* sherds (Para. 3.3.2.2), and their attribution to particular potters will be of particular importance in identifying the site's participation in this international network as well as possibly extending the known distribution of particular potters' products..

4.8.3. Animal Bone

Factual Data: 3.5

Because of the small size of the assemblages assessed it was not considered that analysis of the kill-population would provide much useful data on the relation of the settlement to its hinterland. However the subsequent phasing of many more contexts may allow this type of analysis.

4.9. Specific Research Aim 9: To examine the extents to which the town utilised road- and river-based communications

4.9.1. Stratigraphic

Assessment Theme: 1,5

Factual Data: 3.2.1; 3.2.5

The 1993 excavations have revealed extensive evidence for activity adjacent to the main road communication routes out of the Romano-British settlement at Scole (Para. 3.2.1.2 - 3.2.1.6)

Analysis of the structures and layout of the site adjacent to the east-west road in Areas 1,3 and 4, and adjacent to the north-south road beside Area 7 will assist in determining the importance of land-based routes through estimations of the currency of each structure and of the roads. The degree of and nature of repairs recorded in the metalled part of the east-west

road in Area 3 should also be analysed as direct evidence of the continued importance of this route.

Less evidence for utilisation of the river Waveney has been found. No means of access to the river was identified on the north bank, and although the leat on the south side does provide a means of access (Para 3.2.5.2), the dimensions and cross section make it unlikely that it was used as a communication route. Some further analysis of the stratified sequences either side of the river will be undertaken to confirm these interpretations.

4.9.2. Artefactual

Factual Data: 3.3

Analysis of the origin (As discussed above, Specific Research Aim 8, Section 4.8) spatial distribution and origin of non-local material may help identify the transport networks and mechanisms involved and thereby allow examination of the road and river communications.

4.10. Specific Research Aim 10: To outline the social and economic changes in the suburban areas of the town during the Roman period.

Stratigraphic, Artefactual, and Environmental potential exists for outlining the social and economic changes on the site. Stratigraphic and artefact distribution analyses should be used to determine the precise sequence of events and allow their correlation across the site. Analysis of the human remains will add to the social aspects of the settlement.

4.10.1. Stratigraphic

Assessment Themes: 1,2,3,4,5

Factual Data: 3.2.1; 3.2.2; 3.2.3; 3.2.4; 3.2.5

Although there is no evidence that the Romano-British settlement at Scole was ever provided with defences, (the only possible evidence being the continued use of the southern boundary ditch in Area 7) and so cannot have had extramural suburbs in the strict sense, it is apparent that all the areas excavated in 1993 lay outside the physical centre of the town and form ribbon development along the main communication routes. This extensive suburban development is typical of small towns (Esmonde Cleary, ????)

Detailed stratigraphic analysis will create a secure phase-history for the site and link all the excavation Areas. This will permit changes in layout in one area to be seen in terms of their significance to the site as a whole.

Initial assessment has identified changes in site layout in all excavated areas (Para 3.2.1). Further analysis is required to date these changes, determine their causes, and relate them to contemporary events in other parts of the site.

4.10.2. Artefactual

4.10.2.1. Coins

Factual Data: 3.3.6

The large size and the composition of the coin assemblage compared with published material from other small towns makes analysis of this group of national importance.

Analysis of the coin losses on all parts of the site will provide both chronometric data for the interpretation of other classes of artefact and the stratigraphy, and also give direct evidence for the changing economic conditions during the Roman period. The size of the

assemblage, combined with the overall size of the areas excavated and the detailed recording of findspots, offers a rare opportunity to analyse patterning across the settlement.

The Assessment has indicated a substantial reduction in coin loss during the third century AD on the northern sites (Areas 1-4) with a resumption of 'normal' loss patterns in the fourth (Para. 3.3.6.1). This runs counter to the regional and national norm where late third century issues predominate and further analysis is required to account for this anomaly, particularly as the loss-pattern from the southern site (Area 7) is more typical with a preponderance third century types (Para. 3.3.6.2). However Area 7 produced abnormally low numbers of later Fourth Century issues and analysis of this is also of importance in determining the changing fortunes of the different parts of the settlement.

The possibility that barbarous radiates were being produced in Area 7 (3.3.6.2) should also be investigated through detailed study of the individual coins and spatial analysis of the find spots.

4.10.2.2. Pottery

Factual Data: 3.3.1

Detailed analysis of the pottery assemblage using the refined phase-history as a chronological key will elucidate functional and supply changes within the assemblage. Comparison of fine ware : coarse ware proportions across the site and between phases should be included. These analyses will indicate possible changes in the social and/or economic status of the excavation Areas through the Roman period.

4.10.2.3. Metalwork

Factual Data: 3.3.5

Further analysis of selected metal small finds will investigate the social status, aspirations and pretentions of the inhabitants of the settlement. The categories of artefact most useful in this respect are the items of Personal Adornment (3.3.5.1), those relating to Household Activities (3.3.5.2), and the Religious artefacts (3.3.5.5). In particular work should be undertaken on the large group of brooches, three finger rings with intaglios, the unusual pewter spoons, the writing implements, and the 'votive' miniatures.

4.10.2.4. Samian

Factual Data: 3.3.2

Further analysis of this material will assist in the determination of social and economic changes within the pottery as a whole. The 'higher status' nature of samian will be used as a contrast with more utilitarian fabrics, and the comparison of samian assemblages between phases and areas will further highlight changes.

4.10.2.5. Slag

Factual Data: 3.3.8

The evidence from the metal working residue assessment overwhelmingly suggests the presence of a smithy within or near to the excavated area. The location of such a smithy within the settlement may have importance regarding its social status, and the possible designation of Areas 1-4 as an 'industrial' zone.

Analysis of the iron working residue assemblage will address elements of the local economy including such concepts as the functional requirements of such a smithy (e.g. charcoal, bar iron, hearth construction and repair materials) and their local availability.

Metallurgical examination of the slags could be an important element of this study. The formation processes (e.g. 3.3.8.2) are undoubtedly unusual and analysis could clarify and explain the reasons. Other factors that may be answered are the speed of slag accumulation, allowing informed estimates on the scale of the activity and the quality of smithing.
Little is currently understood about these processes and this group could add considerably to our knowledge.

The nature of the material suggests that the economic viability and longevity of the operation could be questioned, particularly with regard to the high silica levels present in all slags and the possible resultant increased number of hearth bottoms to secondary slag recorded (3.3.8.1; 3.3.8.2). Further analysis will be required to clarify the exact nature of slag formation and the possible problems involved in smithing in such poor conditions.

4.10.3. Human Remains

Analysis of the human bone has the potential to cover several aspects of study related to the social aspects of the settlement, such as Demography and Pathology, and the study of general pyre technology and the rituals involved..

The demographic study would address the number of individuals in each burial, their age, and sex (where this is possible/reliable in the case of cremations). The pathological study may be limited in to the interpretation of lesions in the case of cremations, as full recovery of the skeletal remains does not occur. Some types of lesion are not conducive to surviving cremation and only a partial picture is ever recorded.

A comparison of the demographic formula and pathology of the inhumed and cremated parts of the population may illustrate the short-falls in the latter or possibly differences between the two.

A study of pyre technology and ritual will examine the efficiency of cremation and collection for burial, the inclusion of pyre debris with the cremated remains, the possibility of multiple cremations and/or multiple burial, and the inclusion of cremated pyre goods. It is anticipated that both artefacts and animal bone will be recovered from up to 50% of the cremations.

4.10.4. Environmental

Factual Data: 3.4

4.10.4.1. Timber

Factual Data: 3.4.1

The change in timber resource from the use of slow grown timber earlier in the settlement to fast grown later is an indicator of changed woodland resources during the Roman period. Its association with the continuation of cleaving of timber rather than sawing may be an indicator simply of the continuation of traditional craft skills in a rural setting.

4.11. Specific Research Aim 11: To determine the duration and continuity of settlement within the Roman period.

Stratigraphic and Artefact Analysis has considerable potential for determining the duration of Romano-British activity and for comparison between the areas excavated in 1993 and the area studied in 1973.

4.11.1. Stratigraphic

Assessment Themes: 1,2,4,5,6
Factual Data: 3.2.1; 3.2.2; 3.2.4; 3.2.5; 3.2.6

Evidence from the 1993 excavations suggests that the general layout of the site remained constant through the Roman period, and that once the main land divisions had been established further change was largely restricted to internal divisions and reorganisations (Paras. 3.2.1.3 - 3.2.1,6).

Features provisionally dated to the period spanning the late first century AD to the late fourth century have been identified north of the river, and from the first to the early fourth to the south.

Stratigraphic analysis should be focused on identifying the earliest Romano-British elements in each area, and determining the duration of activity. In relation to this latter aim detailed study of the 'dark soil' deposits in Areas 4 and 7 (Para.3.2.1.6) will be of prime importance.

4.11.2. Artefactual

Factual Data: 3.3

Analysis of the datable artefact types will be vital in understanding the duration and continuity of activity in all areas of the site.

4.11.2.1. Coins

Factual Data: 3.3.6

Further analysis of the coin lists, relating the coins to their excavation context and other datable finds is required to confirm the impression gained from the assessment of a virtual absence of third century issues in the northern area (3.3.6.1), and of later fourth century types from the southern (3.3.6.2). This break in continuity in the northern areas is particularly unusual and its study is of great importance.

The large size of the coin assemblage will be important in determining the degree of settlement continuity during the Roman period, as well as itsduration.

Analysis of coin assemblages from late deposits (such as the dark earth in Area 7) will be of particular importance in determining the duration and continuity of activity in this particular area.

4.11.2.2. Pottery

Factual Data: 3.3.1

Detailed analysis and comparison of stratified pottery assemblages with other datable artefacts and the stratigraphic sequence is necessary in order to date the majority of stratigraphic elements and provide the raw data for any discussion of settlement continuity and duration. The assessment has indicated that although each phase assemblage is relatively small (3.3.1.2 - 3.3.1.12), groups of ceramics exist which have good potential for the refining the phase-history of the site. The larger assemblage from the 'grey soil' in Areas 1-4 (3.3.1.8) has potential for a more general determination of the duration of activity in these areas, while the spatially-defined sample will also enable the continuity in specfic areas to be studied.

4.11.3. Environmental

Factual Data: 3.4; 3.6

4.11.3.1. Timber

Factual Data: 3.4

The fast growth rates of the majority of the wood from the wells may limit their potential to date the duration of activity on the site, but it may be possible to create a local, site-wide sequence and provide at least an internal chronology.

4.11.3.2. Samples

Factual Data: 3.6; 3.6.5

Macrofossil, *Insect* and *Pollen* samples from features across the northern site (Areas 1-4) all produced background evidence for large open areas of 'waste ground' colonised by weeds. This may be taken as evidence for intermittent use of individual parts of the site, but there is little further potential for contributions from the environmental data.

4.11.4. Comparative Potential

Evidence from all types of datable artefacts and from the stratified context sequence should be compared with the published data from the 1973 excavations (Rogerson, 1977), and current work on the A143 Scole-Stuston bypass when this is available to allow a wider discussion of the duration of Romano-British activity at Scole and the identification of localised or more general breaks in continuity.

4.12. Specific Research Aim 12: To investigate the possible continuation of activity on the site into the sub-Roman period.

Analysis of the latest stratified features, particularly the 'dark soils' in Areas 4 and 7, and their artefact assemblages offers potential for determining any continuation of the site into the Sub-Roman period.

4.12.1. Stratigraphic

Assessment Themes: 1,2,7

Factual Data: 3.2.1; 3.2.2; 3.2.7

Initial assessment of the latest features north of the river suggests continued activity on the site until the end of the fourth century at least, though no subsequent early Saxon presence was identified during the fieldwork (3.2.1.6). Little evidence for Saxon activity at Scole exists: some metalwork has been found in Oakley parish, Suffolk (Suffolk SMR No OKY 010); and some early Saxon pottery and metalwork was recovered in a salvage excavation immediately east of the Roman road in the centre of Scole in 1983 (Long Meadow; Norfolk SMR No 1008). The reworked grey soil in Areas 1,3, & 4 may contain further evidence for late Roman activity not surviving as features cut into natural and which may continue into the sub-Roman period. Further definition of the stratified sequence and spatial correlation of features identified as being late in the history of the site should be made in order to answer this nationally important Research Aim.

Further analysis of the latest Romano-British features in Area 7- the 'dark soils' - (3.2.1.6) may also be relevant in this context, though (on the basis of coin spot-dating) it is not currently thought that they continued far into the fourth century.

4.12.2. Artefactual

Pottery

Factual Data: 3.3.1

Identification of 'late' Roman assemblages containing South Midlands Shelly Ware and Oxford Red Colour-coated wares (which do not seem to appear in Norfolk until the fourth century) (3.3.1.7), and the presence of a few sherds which may prove to be early Saxon types in Areas 1, 3 and 7 (3.3.1.9) suggest that the pottery might have some potential to investigate a Sub-Roman continuation of the site.

The possibility of identifying chronologically-based variations in the latest assemblages should be monitored during other analytical work, as any such variation this may enable a seriation of suitable deposits to extend activity beyond the coin range. The initial impression from the assessment is that this would not be feasible given the size of the latest assemblages, but the possibility should be kept in mind.

At least one sherd of the putative early Saxon ware has been identified as a Horningsea storage jar fragment (Jude Plouviez, pers comm), but further analysis and comparison is a priority to confirm this for the other possible Saxon sherds.

Metalwork

Factual Data: 3.3.5

No identifiable very-late Roman, or early Saxon, material was recovered from the 1993 excavations.

Coins

Factual Data: 3.3.6

Almost by definition there appears to be little potential for further analytical work on the coins to address the question of a Sub-Roman aspect to Scole. Although the coin list does extend to the very end of dated Romano-British activity on the site, that is the date it stops, and no continuing coin evidence exists.

4.12.3. Environmental

Factual Data: 3.2; 3.6

Analysis of the *soil micromorphology* samples taken from the 'dark soils' in Areas 4 and 7 (3.2.1.6) may provide information on the immediate Post-Roman conditions, though difficulties are anticipated in distinguishing the Sub-Roman from general Post-Roman effects.

4.13. Specific Research Aim 13: To study the processes and date of medieval settlement formation at Scole.

Limited Stratigraphic and Artefactual potential exists for the study of the development of Scole as a medieval settlement

4.13.1. Stratigraphic

Assessment Themes: 1,6
Factual Data: 3.2.1
The limited nature of medieval activity recorded in the 1993 excavation areas makes determination of the processes of medieval settlement problematic. Medieval features were identified only in Area 2 at the northern end the site (3.2.1.7), and the scarcity of features makes it difficult to determine the degree of layout and plannng indicated.

4.13.2. Artefactual

Factual Data: 3.3.1

Pottery

Factual Data: 3.3.1.9; 3.3.1.10
Although late Saxon and early medieval wares were identified during the 1993 excavations, the extremely small assemblage and high level of residual contamination make it unlikely that the date of settlement formation or the processes involved will be demonstrable.

4.14. Specific Research Aim 14: To characterise the nature of medieval activity on the site.

Stratigraphic and Environmental Potential exists for the study of medieval activity in the north part of the site. The identification of a retting pit using both hemp and nettle of particular importance and requires further study.

4.14.1. Stratigraphic

Assessment Themes: 1,2,3,6
Factual Data: 3.21; 3.2.2; 3.2.3; 3.2.6
Dated evidence for medieval activity was again restricted to Area 2 at the northern end of the site investigated in 1993 (3.2.1.7), though undated field ditches observed in Area 6 and on air photographs of that area are also considered to be medieval in date.

In Area 2 the evidence for medieval activity comprises a series of north-south ditches, an irregular hollow (possibly a sand quarry) later backfilled as the site for an irregular clay surface, and a large oval pit (a flax retting pit. See environmental potential, 4.14.3 below).

The north-south ditches appear to continue into the Post-Medieval period but follow the alignment of an earlier, Romano-British, ditch (3.2.1.8). The survival of this latter feature as an earthwork must be considered;. further stratigraphical analysis of this ditch sequence, and comparison of recorded sections and artefact assemblages should be undertaken to confirm the dating of this sequence.

4.14.2. Artefactual

Factual Data: 3.3

Pottery

Factual Data: 3.3.1

A small Post-Roman pottery assemblage was recovered from the 1993 excavations, with much of the material coming from contexts with large residual Romano-British elements.
It is considered that there is limited potential for characterising the medieval settlement.

Timber

Factual Data: 3.4

Unless some of the cleft timber proves to be medieval in date (which is unlikely as all the associated timber working technology is Roman) there is no potential for studying the period from the wood evidence.

4.14.3. Environmental

Factual Data: 3.6

Pollen samples taken from the large oval pit preserve abundant quantities of hemp and nettle pollen and must be seen as a retting pit (3.6.3.2). Initial assessment indicates that the unusual processing of both fibrous plants was being conducted. More detailed analysis of the pollen samples is strongly recommended to confirm both the interpretation and the details of the processed materials, and to identify possible alternate bands of hemp and nettle pollen within the sediments confirming the processing of both plants.

Analysis of the *plant macrofossil samples* and possibly *Insect samples* from the fills of this retting pit may support this interpretation and provision should be made for the study of both.

4.15. Specific Research Aim 15: To examine the relationship of the medieval settlement to its environs.

Limited Stratigraphical Potential exists for the study of the locality of the medieval settlement. Cartographic analysis may be a fruitful additional area of research.

4.15.1. Stratigraphic

Assessment Theme: 1

Factual Data: 3.2.1

It was envisaged that data addressing this Research Aim would be recovered primarily from the Watching Brief on road construction north of Scole village. The Watching Brief is not due to be completed before the end of May 1994, but work to date has revealed a few boundary ditches and a light scatter of medieval pottery.
There is no strong potential for further work.

The data recovered from Area 2 can also be used to describe the nature of the medieval village surroundings, as the excavation areas appear to lie outside the settled village limits.

A potentially useful additional source of information which should be investigated is the early maps held in the Norfolk Record Office. Comparison of maps of the Scole area with the

excavated details may assist in the interpretation of the medieval and later features and relate the excavated area to adjacent settlement areas.

4.16. Specific Research Aim 16: To outline the long-term effect humans have had on the environment of the area.

Analysis of the Environmental samples, particularly from the riverside peat deposits, and of the riverside stratigraphy will provide information concerning the 'natural' environment around Scole in the period from the early Bronze Age to the Present

The research addressing this particular Aim of the Project will be undertaken mainly on environmental samples, though analysis of the recorded stratification within the riverside peat deposits and adjacent areas, the early prehistoric features in Area 7, and circumstantial evidence for the ground-water level in the Roman period should also be included.

4.16.1. Stratigraphic

Assessment Theme: 7
Factual Data: 3.2.7; 3.6.5
It appears from assessment of the riverside peat deposits north of the river that much of the present peat depth formed during the Roman period (3.2.7.1), though growth continued subsequently, sealing the Romano-British contexts. Further analysis of the stratigraphic sequence north of the river, combined with study of the artefact assemblages will enable this process to be dated more precisely, though it is unlikely that the underlying reason for the change in water level will be identified in this analysis.

Analysis of the stratigraphic history of Area 6 will provide additional information on the rising water table through the Roman period and on periodic flooding episodes.

4.16.2. Environmental

Factual Data: 3.2; 3.6
Soil Micromorphology
Analysis of the prepared sections should enable an accurate appraisal of the Iron Age- Roman-post-Roman soils, especially during the Iron Age-Roman transition, including the characteristics of 'slash and burn' and the maturing of infertile podzol soils for agricultural purposes (3.2.6.2; 3.2.6.3).

Plant Macrofossil
The eight samples taken from the initial section through the valley floor sediments should be not analysed. The problems relating the samples to the recorded section (3.6.5.2) are too uncertain to be soluble by reference to the recorded datum height.

Analysis of the second, column, sample taken from the palaeosoil sealed by upcast from the construction of the leat in Area 6 and peat growth deposits (3.6.5.2) will enable a reconstruction of the local environment from the late Iron Age to the late Roman period; the environmental aspects of this latter phase are poorly understood regionally and are considered a research priority (Murphy ,in prep.). It is anticipated that an opportunity for analysis of the earlier prehistoric environment will arise with the sampling of the river channel when the Waveney is canalised in summer 1994.

Analysis of these two sets of samples should be cross referenced to the equivalent Pollen and Insect sample analyses to maximise the information yield..

Analytical potential of the samples from other parts of the site is limited. *Charcoal identifications* and at least one *radiocarbon date* should be sought for the material from the 'burnt mound' sealed beneath the peat (3.2.1.1).

Insect
The eight samples taken from the initial section through the valley floor sediments should be not be analysed for the same reasons of uncertainty expressed in relation to the macrofossil samples.

Pollen
The monoliths taken from the initial section through the valley floor (3.6.5.4), although preserving pollen, should not be used for further analysis for the reasons outlined above for the macrofossil samples.

Good quality data relating to this Research Aim has been obtained from most of the other pollen samples assessed (3.6.5.4) but further analysis should concentrate on the samples to be collected from the river channel in order to allow comparison with the data from the Plant Macrofossil and Insect samples also taken.

4.17. Specific Research Aim 17: To study the processes involved in the formation of late Roman 'dark soils'.

'Dark soil' deposits were identified in Areas 4 and 7. Stratigraphical, Artefact, and Soil Micromorphological analysis will enable the formation processes involved at Scole to be described and compared with other small towns and urban deposits.

4.17.1. Stratigraphic

Assessment Themes: 1,7
Factual Data: 3.2.1; 3.2.7; 1.6.2.1
Deposits of late Roman 'dark soil' were anticipated in Area 7, where they had been identified during evaluation of the site (Tester, in Penn and Tester, 1993). However topsoil removal north of the river in Areas 1-4 also revealed apparently similar deposits across the whole of the southern part of this area (Para. 1.6.2.1). Although much of this deposit was later reinterpreted (see Environmental potential, 3.17.3 below) 'dark soil' deposits were confirmed in Area 4.

In Area 4 small cut features (stake holes and post holes) were interleaved with layers of 'dark soil'. Full analysis of the stratigraphical relationships between these layers and features, and the spatial analysis of the features and others without a direct relationship with the 'dark soil' layers will assist in studying the formation processes involved and the date of formation.

In Area 7 assessment suggests that the original ground surface had been removed prior to deposition of the 'dark earth' deposit (3.2.1.5). Further analysis will be required to confirm the extent of this, but within the areas affected the value of the dark soil assemblages will have been increased as a possible source of contamination will have been removed. Analysis of this deposit will enable comparison with the (apparently) better preserved deposits excavated on the Scole-Stuston bypass (Dave Gill, pers comm).

Both areas of 'dark soil', and the grey soil in Areas 1-4 should be compared with the data from the 1973 excavations in the centre of the settlement (Rogerson, 1977 Phase IV)

4.17.2. Artefactual

Factual Data: 3.3

Detailed analysis of *all artefact assemblages* from the 'dark soils' in Areas 4 and 7 may enable the sources of the deposit to be identified. It will also be possible to compare the two deposits to determine the similarities in terms of constituents, date, and post depositional processes evident. Comparison should also be extended subsequently to the material from the Phase IV 'dark soil' recorded in the 1973 excavations in the centre of the settlement (Rogerson, 1977), and 'Grey Soil' sampled across Areas 1 and 3.

4.17.3. Environmental

Factual Data: 3.2.1; 3.6

Soil micromorphology samples were taken from 'dark soil' and similar layers in Areas 1,3,4 & 7 (3.2.1.6). 'Dark soil' sensu stricto was identified only in Areas 4 and 7, the remainder in Areas 1 and 3 being reclassified on observation as Roman podzol subsoil.

In Area 4 initial analysis suggests the deposited developed through dumping of occupation material, and the paucity of building material argues against the earlier presence of buildings in that part of the site. The presence of human coprolitic material and vivianite suggest dumping of material from latrines/drains, though the additional possibility of industrial processing waste (in the form of cereal ash) is also worth considering.

In Area 7 two areas of dark earth were sampled, inside and outside the probable boundary of the settlement (3.2.1.5), and found to contain fine charcoal, many phytoliths (particularly from samples inside the boundary), and a little anthropogenic material (chalk, wood charcoal, mortar, bone fragments).

No evidence for substantial buildings was identified, but further analysis of the samples will allow determination of the contemporary landscape and the processes by which the soils formed.

4.18. Specific Research Aim 18: To improve understanding of the differing nature of ploughsoil and non-ploughsoil artefact assemblages.

4.18.1. Artefactual

Factual Data: 3.3

Analysis of the small samples sieved prior to topsoil removal will enable the comparison of relative quantities of artefacts in the ploughsoil and non-ploughsoil present on the site. Analysis will also consider the 'unstratified' (but located) metal detector finds recovered during the topsoil stripping.

It will also be instructive to compare the topsoil sample from Areas 1-4 with the underlying grey soil assemblage (using an appropriate subsample from the sieved element of this deposit) to model the possible effects continued ploughing might have had in these areas.

4.19. POTENTIAL FOR NEW RESEARCH

4.19.1. Stratigraphic/Structural

The discovery of a burnt flint 'potboiler' deposit beneath the riverside peat in Area 3 offers considerable potential for additional research into this type of monument.

Assessment Themes: 1,3

Factual Data: 3.2.1.1; 3.2.3.1

Although the locations of such deposits are relatively commonly identified during fieldwork in the region, they typically survive as surface concentrations of flint which has been badly or completely damaged by modern ploughing. The opportunity to study an example where mounded flint survives will prove a valuable comparison with similar monuments elsewhere in the region (eg. Fenland Management Project Site Feltwell 171).

The surviving feature does not appear to be a burnt flint mound in the strict sense as no central hearth/trough was identified and the general nature of the flint was more fragmented than normal, but the general morphology is similar.

4.19.2. Artefacts

Factual Data: 3.4

4.19.2.1. Timber

Factual Data: 3.4.2

The extremely rare survival of a pair of Roman rafters (mirror images) from a hip roof is of national importance, and means that the opportunity exists to work out the roof pitch and structure of a complex roof.

Two timbers from a revetment to the water channel in Area 6 have been identified as a pair of complete rafters with birdbeak joints to fit over a wall plate, and setting out lines. The top joint is angled indicating that the rafters were used in a hip roof. As these are the first complete Roman roof timbers to be found in Britain they should be considered to be of national importance.

Of the two, one is in excellent condition the other has lost its sapwood surfaces.

Associated with these are two further timbers, of more uncertain interpretation. the pair have identical sets of angled lap joints along one face which would match up if the timbers were halved together at right angles. The timbers were originally 5m long and presumably also represent some form of roof structure.

Both require more detailed study to ascertain their exact use.

Study of two wooden bowl blanks in perfect condition is of national importance. Two part-finished wooden bowls recovered from the riverside peat in Area 3 (3.3.11) show both the setting out lines and careful shaping that took place before the bowls were to be finished on a lathe.

The artefacts are in perfect condition.

4.20. STORAGE, CONSERVATION AND DISCARD STATEMENTS

4.20.1. Conservation of All Material

(Gordon Turner-Walker)

Because of the high cost in materials and labour involved in air-abrasive cleaning of ironwork, it is not anticipated that any mechanical cleaning of iron objects will be undertaken except in those cases where identification or technological evidence cannot be resolved by radiography. If necessary, radiography in two or more planes or stereo-radiography may be employed in the investigation of some of the more complex or engmatic objects.

Only those copper alloy or silver objects that are likely to suffer extensive handling during either photography or illustration, may warrant full cleaning, stabilisation and lacquering. Such objects are likely to include the brooches and other items of jewellery. In most other cases, suitale storage (Stewart boxs and silica gel) and careful handling (possibly with cotton or surgical gloves) will ensure the integrity of the finds.

After mechanical cleaning of the objects and chemical stabilisation (if considered necessary) in the case of copper alloys, careful packaging and appropriate storage environments will beemployed for the long-term preservation of the finds.

All of the waterlogged wood finds are presently kept underwater awaiting decisions on their further treatment. The structural timbers, including the roof timbers and the wel linings and revetments are stored in an external tank at the Rural Life Museum, Gressenhall. The small finds, including the bowl blanks and possible furniture fragment are stored in distilled water at the Conservation Laboratory, Norwich Castle Museum. These objects are suitable for treatment with PEG (mixed molecular weights) and freeze-drying. Photographic records and drawings of these objects and their respective tool signatures will be necessary both before and after any proposed conservation treatment.

4.20.2. Stratigraphic and Context Data

The paper record of the excavations is currently being stored in normal office accommodation within lever arch files. An equivalent computerised database is also being maintained, with appropriate backup facilities. The material is stable in the medium term and no special procedures or further storage media are necessary at this stage. Archive boxes and provision for microforming will be necessary at the end of the project.

A cross-referenced slide archive has been created and is stored in archive-stable hangers in filing cabinets.

Site plans and sections are being maintained in accordance with local curatorial guidelines; equivalent context outline digitised plans are also being maintained, with appropriate backup.

No context data will be discarded, though the level of analysis expended on contexts will be related to their value in addresing the update Research Aims; some contexts will only be included in the archive report, others (particular the natural features) will not be analysed in any further detail.

4.20.3. Pottery

The pottery is generally in a stable condition, and can be stored in general museum stores as boxed with no special storage conditions. Fragmentary material collected from the spoilheaps was discarded during the course of fieldwork.

4.20.4. Metal Small Finds

The condition of the metal small finds is generally good and all necessary cleaning and stabilisation has been undertaken at conservation. However, it is clear that the acidic sand conditions of the site have affected the preservation of bone artefact assemblages which would normally make up a sizable part of the assemblage. The overall potential for storage is good.

No material should be discarded at this stage, though no further work is envisaged for around 90% of the metal small finds (See Table xx for details of quantities required for detailed analysis)

4.20.5. Iron Working Residues

The slag is relatively stable and can be stored in general Museum stores as it is boxed. The tuyeres are extremely fragile, and of particular interest and should therefore be boxed generously with supporting padding material.

4.20.6. Wood

Two unparalleled bowl blanks and one moulded plank are already with the conservation department at Norwich Castle Museum and should be conserved. A pair of complete rafters 3 metres long and two other roof timbers should also be conserved. A the sapwood of the rafters will be more decayed than the heartwood care will need to be exercised in conservation, as these differences in decay may cause excess cracking if the timber if to be treated with PEG and air dried.

Reused timbers from a Well in Area 7 contain good examples of lap dovetail joints, and also preserve nails, and should be conserved. Ideally the nails would be removed during treatment then replaced. Ipswich museum has expressed initial interest in the curation of this structural wood.

One hundred other pieces of timber (each c. 1 x 0.2 x 0.1 metres) are at present in storage at the Rural Life Museum, Gressenhall, Norfolk. Although all could be conserved, not all need to be retained after production of the publication archive report. Those that are kept will need active conservation within the next year, and consideration should also be given to long-term storage of the large pieces.

One entire well has been kept for possible conservation and display, and individual timbers in excellent condition from other wells have also been retained. It is to be hoped that the best of these will be conserved to retain a record of the conversion techniques and joints used. Even if these timbers are not required for display some of them would merit a place in a reference collection of worked wood: samples from all parts of the site should be considered for this. Any further well timbers not required for display or educational purposes may be discarded on completion of the archive report. It is possible that these timbers may be of use to others and this should be assessed before timbers are destroyed.

A group of timbers with clear felling cuts have been kept so that felling techniques may be studied. These should be discarded after analysis.

A further group of timbers and stakes have been retained after recording as they have well preserved distinct tool signatures surviving. These have been retained for use in dating contexts by cross matching. Whether they are used for this purpose or not they may be discarded when the report is complete as the signatures would be lost on conservation.

Wood from a pit revetment included one plank with a series of slots near to the sap edge and across each end. It may be the complete side of a cart. Although all surface features

have been lost it remains an attractive display item and requires conservation. Despite careful packaging this piece has been damaged and needs urgent treatment.

There are also two bench halves which may be considered for conservation. The remaining timbers from this revetment are broken lengths of plank, which may well be reused scrap and there would be no point in conserving them after the end of the project.

Discard Policy

The majority of the wood with decayed surfaces was discarded during fieldwork or assessment. The policy had four criteria:

- To discard unworked residual wood immediately
- To discard heavily degraded worked wood after recording
- To discard poorly preserved wood with sawn or hewn surfaces (but without joints) after recording, unless tool signatures or blade-edge profiles survived. Tree ring study sections were taken before discard if the information could not be recorded
- To retain for further study, then conservation or discard all worked pieces with well preserved surfaces and/or joints.

4.21. SUMMARY OF IMPORTANCE OF RECORDED DATA

4.21.1. NATIONALLY IMPORTANT ASPECTS

The following summary list identifies the aspects of the recorded site data which are of *national importance.* Detailed analytical work is of the utmost importance as a contribution to national research priorities. The items emphasised are considered to be of even greater, ***international importance.***

- Process of change between Iron-Age and Roman
- Activity at the very end of the Roman period
- Degree of settlement planning and zoning within Romano-British settlement
- Duration and continuity of activity within the settlement
- Degree of specialisation /mobility of Romano-British smithies
- Identification of grape pollen within waste pit
- Dark Earth formation processes
- Virtually unparalled Woodworking techniques
  esp. unfinished bowl blanks, Ovolo moulded plank, and cart side
- **Complete Roof Timbers**
- **Funerary pyre deposits**
- Ritual deposition of horse heads in water channel and well construction pit.
- Deposition patterns within grey soil and earthfast features
- Patterns of coin loss and distribution of findspots
- Possible radiate coin production at Scole
- Dating of fallow deer antler from Romano-British well
- Probable malting complex in Area 6

4.21.2. REGIONALLY IMPORTANT ASPECTS

The following summary list identifies the aspects of the recorded site data which are of less than national importance, but are still vital in a *regional context.* Detailed analytical work is important in relation to an understanding of the archaeology of East Anglia and in providing comparisons with other sites in the region.

- Similarities between Scole and Billingford, Brampton, Hacheston, Pakenham, and other less-excavated small towns
- Establishment of a regional type series for medieval buckles
- Definition of a chronology for the Wattisfield pottery industry products (also for other Waveney valley sources such as Needham)
- Post-Roman landscape changes
- Dating of burnt mound deposit
- UncommonWoodworking techniques eg. Roundwood common rafter, lap dovetail jointed planks, half bench pair, complete well lining plus other individual pieces
- The unusual 'Scole' well-building technique
- Demography, Pathology, and Ritual associated with cremation burials and comparison with inhumations
- Range of plants processed in medieval retting pit
- Range of Household artefacts esp. weights, spoons, toilet instruments
- Range of metal Personal adornments esp. Brooch group, intaglio rings
- Composition of burnt flint mound
- Abnormally late coin use/loss in Areas 1-4

4.21.3. LOCALLY IMPORTANT ASPECTS

The following summary list identifies the aspects of the site which are of considerable, though only local, importance. Analysis will relate the 1993 excavations to the other research in the area

- Environmental history of Waveney valley
- Range of goods/ services provided by smithies
- Source of clay for Iron working hearths/tuyeres
- Source of raw materials for industrial / manufacturing processes on site.
- Source of Tile and Brick
- Source of raw materials for structures (clay, wood etc.)

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