



**HUCKLE HILL (AREA 4)
THE WIXAMS
BEDFORDSHIRE**

**ASSESSMENT OF POTENTIAL AND
UPDATED PROJECT DESIGN**

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Contents

List of Figures	4
List of Tables	5
Preface	6
Acknowledgements	6
Structure of the Report	7
Key Terms	7
Non-Technical Summary	8
1. INTRODUCTION.....	9
1.1 Project Background	9
1.2 Site Location and Geology	9
1.3 Archaeological Background	9
1.4 Purpose of this Report	9
2. ORIGINAL AIMS AND OBJECTIVES OF THE INVESTIGATION	11
2.1 Introduction	11
2.2 National Research Frameworks	11
2.3 Regional and County-based Research Agendas.....	11
2.4 Original Research Objectives.....	12
3. PROVISIONAL SUMMARY OF RESULTS	13
3.1 Introduction	13
3.2 Structural Illustrations	16
3.3 Assessment Phase 0: Pre-Pleistocene (Fig. 2).....	17
3.4 Assessment Phase 1: Early Iron Age (Fig. 3)	17
3.5 Assessment Phase 2: Late Iron Age (Fig. 3)	17
3.6 Assessment Phase 3: Late Iron Age (Fig. 4)	18
3.7 Assessment Phase 4: Early Roman (Fig. 5)	19
3.8 Assessment Phase 5: 2nd Century Roman (Fig. 6)	20
3.9 Assessment Phase 6: Late Roman (Fig. 7).....	21
3.10 Assessment Phase 7: Saxon (Fig. 8).....	22
3.11 Assessment Phase 8: Saxo-Norman (Fig. 8)	22
3.12 Assessment Phase 9: Medieval/post-medieval (Fig. 9).....	22
3.13 Assessment Phase 10: Modern (Fig. 9)	23
3.14 Assessment Phase 11: Unphased (Fig. 10).....	23
4. ANALYTICAL POTENTIAL OF THE DATA	24
4.1 Introduction	24
4.2 Contextual Data	24
4.3 Other Artefacts	25
4.4 Pottery	26
4.5 Ceramic Building Material.....	26
4.6 Human Bone	27
4.7 Animal Bone.....	27
4.8 Molluscan Remains	27
4.9 Plant Remains.....	28
4.10 Pollen	29
4.11 Potential of Datasets to Address Original Research Objectives.....	29
5. RESEARCH OBJECTIVES FOR ANALYSIS.....	31
5.1 Introduction	31
5.2 Character and Development.....	31
5.3 Society and Economy	32
5.4 Environment	33
5.5 Ritual Activity.....	33
5.6 Chronology.....	34



6.	UPDATED PROJECT DESIGN	36
6.1	Introduction	36
6.2	Analysis of Contextual Data	36
6.3	Analysis of Other Artefacts	39
6.4	Analysis of Pottery.....	40
6.5	Analysis of Ceramic Building Material	41
6.6	Analysis of Human Bone.....	41
6.7	Analysis of Animal Bone	42
6.8	Analysis of Molluscan Remains.....	42
6.9	Analysis of Plant Remains	43
6.10	Analysis of Charcoal Remains.....	44
6.11	Analysis of Pollen Remains.....	45
6.12	Overall Publication, Archiving and Project Management.....	45
6.13	Publication	47
6.14	Archiving.....	47
6.15	Summary of All Tasks.....	47
6.16	The Project Team	49
6.17	Timetable.....	49
7.	BIBLIOGRAPHY.....	51
8.	APPENDIX 1: OTHER ARTEFACTS.....	54
8.1	Methodology	54
8.2	Quantification	54
8.3	Variety and Date Range.....	54
8.4	Phasing and Provenance	56
9.	APPENDIX 2: POTTERY	60
9.1	Methodology	60
9.2	Quantification	60
9.3	Range and Variety: the Pottery Type Series.....	60
9.4	Provenance, Phasing and Date Range	61
10.	APPENDIX 3: CERAMIC BUILDING MATERIAL.....	68
10.1	Methodology	68
10.2	Quantification	68
10.3	Provenance.....	68
11.	APPENDIX 4: GEOARCHAEOLOGY	70
11.1	Introduction	70
11.2	Observations	70
11.3	Discussion.....	71
11.4	Conclusion.....	72
12.	APPENDIX 5: HUMAN BONE	73
12.1	Methods	73
12.2	Quantification and Assessment	73
13.	APPENDIX 6: ANIMAL BONE	74
13.1	Introduction	74
13.2	Methodology	74
13.3	Results	74
14.	APPENDIX 7: MOLLUSCAN REMAINS.....	76
14.1	Introduction	76
14.2	Methodology	76
14.3	Summary of Results	76



15.	APPENDIX 8: PLANT REMAINS	78
15.1	Methodology	78
15.2	Results	78
16.	APPENDIX 9: POLLEN	81
16.1	Introduction	81
16.2	Methods and samples	81
16.3	Results	81

List of Figures

- Figure 1:** Site location and all features plan
Figure 2: Assessment Phase 0 – Pre-Pleistocene
Figure 3: Assessment Phases 1 and 2 – Early Iron Age/Late Iron Age
Figure 4: Assessment Phase 3 – Late Iron Age
Figure 5: Assessment Phase 4 – Early Roman
Figure 6: Assessment Phase 5 – 2nd Century Roman
Figure 7: Assessment Phase 6 – Late Roman
Figure 8: Assessment Phases 7 and 8 – Saxon/Saxo-Norman
Figure 9: Assessment Phases 9 and 10 – Medieval/post-medieval/modern
Figure 10: Assessment Phase 11 – Unphased
Figure 11: The enclosures: multiphase

The figures are located at the end of the report.



List of Tables

Table 1: Summary of original research objectives and themes	12
Table 2: Summary of provisional phasing.....	16
Table 3: Quantity records	24
Table 4: Number and size of charred plant assemblages and identifiable charcoal by Assessment Phase	28
Table 5: Potential of recovered datasets to address the original research objectives	30
Table 6: Research objectives for analysis and potential of datasets.....	35
Table 7: Summary of structural analysis tasks.....	39
Table 8: Summary of other artefacts analysis.....	40
Table 9: Summary of pottery analysis tasks.....	41
Table 10: Summary of CBM analysis tasks.....	41
Table 11: Summary of human bone analysis tasks	42
Table 12: Summary of animal bone analysis tasks	42
Table 13: Summary of molluscan remains analysis tasks	43
Table 14: Summary of plant remains analysis tasks.....	44
Table 15: Summary of charcoal analysis task.....	45
Table 16: Summary of pollen analysis tasks.....	45
Table 17: Overall publication, archiving and management tasks	46
Table 18: Summary of all tasks	49
Table 19: The project team	49
Table 20: Provisional timetable to complete the project	50
Table A1: Other artefacts by material.....	54
Table A2: Activities and artefact types.....	55
Table A3: Other Artefacts from Assessment Phases 2 and 3	56
Table A4: Other Artefacts from Assessment Phases 4–6	57
Table A5: Other Artefacts from Assessment Phase 7	58
Table A6: Other artefacts from Assessment Phase 9.....	58
Table A7: Other Artefacts from Assessment Phase 11.....	59
Table A8: Pottery quantification.....	60
Table A9: Pottery type series	61
Table A10: Assessment Phase 2 — pottery quantification by AL and AG.....	62
Table A11: Assessment Phase 3 — pottery quantification by AL and AG.....	63
Table A12: Assessment Phase 4 — pottery quantification by AL and AG.....	65
Table A13: Assessment Phase 5 — Pottery Quantification by AL and AG.....	65
Table A14: Assessment Phase 6 — Pottery Quantification by AL and AG.....	66
Table A15: Assessment Phase 7 — pottery quantification by AL and AG.....	66
Table A16: Ceramic building material by Assessment Phase and AL.....	69
Table A17: Summary of assessment results	73
Table A18: Colour of the burnt bone and overall potential.....	73
Table A19: Bone recovery by Assessment Phase	74
Table A20: Summary of faunal assemblage	75
Table A21: Number of samples by period	76
Table A22: Recovery of mollusc shells from hand-collection and wet-sieved samples	77
Table A23: Abundance of charred and waterlogged plant remains	80
Table A24: Description of column samples	81
Table A25: Frequency of pollen types, pollen concentrations and pollen preservation	82



Preface

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the brief and project design. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

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The evaluation was carried out by RPS, while the mitigation works (excavation) were carried out by Albion. The excavation was supervised by Alison Bell under the direction of Mark Phillips, with investigation and recording carried out by the following staff: Ben Barker, David Ingham and Mark Phillips (Project Officers); Jo Archer, Richard Gregson and Adam Lodoen (Archaeological Supervisors); Adam Howard, Jeremy Mordue and Jerry Stone (Assistant Archaeological Supervisors); and Kerry Ashworth, George Demetri, Stuart Heath, Naomi Jones, Orsolya Lazlo, Pawel Toms and Jennifer White (Archaeological Technicians). Processing of the ecofact samples was undertaken by Liz Davis, Sharon Gerber-Parfitt, Pawel Toms and Jennifer White. All Albion projects are under the overall management of Drew Shotliff.

We would also like to acknowledge the comments of both Rob Masefield, RPS (Archaeological Project Manager on behalf of Gallagher Estates) and Martin Oake, Bedfordshire County Council's Archaeological Officer (CAO), who monitored the site on behalf of Gallagher Estates and the Local Planning Authority, respectively.

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Structure of the Report

After an introduction (Section 1) detailing the planning and archaeological background, Section 2 presents the original research objectives of the project. Section 3 provides a provisional summary of the results. The potential of the data to address the original and new research objectives is discussed in Section 4, and these new research objectives are given in Section 5. Section 6 provides an Updated Project Design, which includes detailed method statements for analysis, publication and archiving. Section 7 is a bibliography. The Appendices (Sections 1–16) contain detailed technical information and discussion of the non-contextual datasets.

The addendum bound at the back of this report covers the remains excavated in Area 4e, which were assessed separately.

Key Terms

<i>Albion</i>	Albion Archaeology
<i>CAO</i>	Bedfordshire County Council's, County Archaeological Officer
<i>Client</i>	Gallagher Estates
<i>EH</i>	English Heritage
<i>IFA</i>	Institute of Field Archaeologists
<i>LPA</i>	Local Planning Authority
<i>MoLAS</i>	Museum of London Archaeology Service
<i>ULAS</i>	University of Leicester Archaeology Service
<i>WSI</i>	Written Scheme of Investigation



Non-Technical Summary

Between June and September 2007, Albion Archaeology undertook an archaeological investigation at Huckle Hill, near Elstow, ahead of the Wixams housing development. The site had previously been identified by geophysical surveying and trial trenching (National Power and Gallagher 1999), and Bedfordshire County Council's, County Archaeological Officer (CAO) advised that a programme of archaeological work was required as a condition of planning permission.

A Written Scheme of Investigation (WSI) (RPS 2007) in accordance with a Research Design and Outline Mitigation Strategy (RPS 2006) specified the work that would be undertaken to fulfil the condition. Albion Archaeology was commissioned by RPS on behalf of Gallagher Estates to undertake this programme of work.

Excavation of the site revealed the remains of a low status late Iron Age to late Roman farmstead, which contained linked enclosures, drove-ways, pits, structural features and cremations. Subsequent use of the farm compound in the Saxon period was represented by a number of wells/water pits, whilst a few small Saxo-Norman pits were also revealed. The remains of medieval/post-medieval agriculture were identified across the site.

This document presents an assessment of the archaeological remains revealed during the investigations, the data from which have the potential to address a number of national and regional research agendas. The document also contains proposals for further analysis and publication of the data, and the methodologies and resources required to complete the project. The end product will be the publication of the results in the county journal Bedfordshire Archaeology and the deposition of the project archive (Accession Number 2006/535) with Bedford Museum.

A supplementary assessment of the archaeological remains uncovered during excavation of Area 4e is provided at the back of this report.



1. INTRODUCTION

1.1 *Project Background*

Gallagher Estates has been granted planning permission by Bedfordshire Borough Council for the creation of four garden villages or neighbourhoods on land near Elstow, Bedfordshire. An archaeological evaluation of this land identified several areas of archaeological sensitivity; the main one was located at Huckle Hill (National Power and Gallagher 1999). As a result of this, Bedfordshire County Council's, County Archaeological Officer (CAO) advised that a programme of archaeological work would be required as a condition of planning permission.

A Research Design and Mitigation Strategy (RPS 2006) and a separate Written Scheme of Investigation (WSI) (RPS 2007) were produced for approval by the CAO, specifying the work that would be undertaken to fulfil the condition. Albion Archaeology was commissioned by RPS on behalf of Gallagher Estates to undertake this programme of work.

1.2 *Site Location and Geology*

The site at Huckle Hill, located 3km south of the village of Elstow, covers an area of *c.* 1.5ha (Fig. 1). It lies at a height of 37–41m OD, sloping gently down towards the south-east. The area was arable farmland prior to the fieldwork.

The geology of the area is Lower Oxford Clay (Marston Vale) overlain by a variable layer of Head Deposits. The Marston Vale comprises low-lying and poorly drained clay between the valley of the Great Ouse and the Greensand Ridge, which is located several kilometres to the south of the development site on a NE–SW alignment.

1.3 *Archaeological Background*

Little information was previously known about the area immediately surrounding the site at Huckle Hill, which was initially identified by geophysical surveying and trial trenching (National Power and Gallagher 1999). It has traditionally been thought that the underlying clay was not conducive to settlement activity, although excavation at Luton Road, Wilstead, revealed a late Iron Age to late Roman farmstead, along with traces of Saxo-Norman settlement (Luke and Preece in prep. b).

A series of archaeological investigations were undertaken between 1993 and 1995 on the line of the Bedford Southern Bypass, which traverses the Great Ouse valley 2km to the north of Huckle Hill. A number of Bronze Age, Iron Age, Roman and Saxon sites were revealed. Several Iron Age and Roman sites were also revealed by the Willington to Steppingley gas pipeline, which ran NE–SE on the north-west side of Elstow. A more detailed account of the archaeological background is provided within the Research Design and Mitigation Strategy (RPS 2006).

1.4 *Purpose of this Report*

This report presents an assessment of the results of all stages of the archaeological investigations. An Updated Project Design is included, listing all the tasks that will be required to analyse, publish and archive the results of the



fieldwork. The completion of these tasks will fulfil the criteria stipulated in the WSI (RPS 2007), enabling the discharge of the archaeological planning condition by the LPA.



2. ORIGINAL AIMS AND OBJECTIVES OF THE INVESTIGATION

2.1 Introduction

A series of research aims were established in the project-wide Research Design and Mitigation Strategy (RPS 2006) and were reiterated in the WSI (RPS 2007). These were necessary to ensure that the investigation was appropriately targeted in accordance with local, regional and national research priorities.

2.2 National Research Frameworks

At a national level, English Heritage's criteria for prioritising archaeological "sites" are evolving. Its funding criteria for rescue projects, as set out in *Exploring our past* (EH 1991), were similar to those it uses to define a "site" as being of schedulable quality. These included period, rarity, group value, survival/condition, fragility/vulnerability and potential. More recently a draft Research Agenda (EH 1997) built upon the earlier criteria, with the aim of developing an approach reflecting 'the greater determination to pursue research themes' and 'wider interests (e.g. in landscapes)'. These include goals such as advancing understanding of England's archaeology, supporting the development of national, regional and local research frameworks and promoting public appreciation and enjoyment of archaeology.

Although the Research Agenda was intended for projects seeking English Heritage resources, *i.e.* not those undertaken within the PPG 16 framework, its goals and objectives are relevant to the investigations occasioned by this development.

2.3 Regional and County-based Research Agendas

Broad national research priorities have been formalised by English Heritage in *Exploring our Past* (1991), updated in their draft Research Agenda (1997). On a regional level, a resource assessment and research agenda is now available in for Bedfordshire (Oake *et al* 2007) and is clearly of relevance to the development area.

The County Archaeologists of East Anglia have published a resource assessment (Glazebrook 1997) and a subsequent research agenda and strategy (Brown and Glazebrook 2000) for the eastern counties. This study covers the adjacent counties of Cambridgeshire and Hertfordshire, rather than specifically Bedfordshire. Nevertheless, topographical and historical similarities (at a regional level) between these counties make the document a useful tool for assessing the significance of the archaeological remains within the development area.

The Archaeology of the East Midlands: An Archaeological Resource Assessment and Research (Cooper 2006) covers the adjacent county of Northamptonshire. As with the above study of East Anglia, this region also possesses certain historical similarities with Bedfordshire.



The archaeology of the Chilterns was the subject of a conference in the early 1990s (Holgate 1995). A series of papers on the Archaeology of the Great Ouse Valley (Dawson 2000) is also of relevance, although the development area is peripheral to this region.

2.4 Original Research Objectives

A number of research objectives, both generic and period-specific, were considered relevant to the work at Huckle Hill. They are set out below.

Objective / Theme	Research Aims/Themes
1	Establish the date, nature and extent of activity or occupation in the development site.
2	Establish whether the current absence of firm evidence for farming and settlement on the clay of the Wixams development site reflects real avoidance or whether the traces are simply less tangible than in later periods. Does the LIA/early Roman settlement at Huckle Hill have a predecessor earlier in the Iron Age?
3	Establish the social and economic basis of the identified settlement, its sequence of development from a potential late Iron Age origin, its setting within contemporary landscape and its implications for farming in the period across the clay vale.
4	Establish when and why the identified settlement was abandoned, for example did the establishment of new markets, infrastructure and social obligations following the Roman invasion lead to the eventual abandonment or was the site likely to have been abandoned for other reasons.
5	Establish whether the landscape of the Wixams development site, as defined within the archaeological mitigation area, continued to be farmed in the late Roman period.
6	Establish, if possible, whether the landscape, as defined within the archaeological mitigation area, continued to be open and farmed/settled in the 5th–6th century and whether any Saxon period evidence represents newcomers or a continuation of farming by the 'British' community prior to <i>c.</i> AD571 and the victory of the West Saxons at <i>Biedcanford</i> .
7	Establish, if possible within the archaeological mitigation area, whether there is evidence for later Saxon and or Danish activity within the development site.
8	Establish the form of the ridge and furrow (both extant and plough levelled) at the Wixams development site, and whether it is representative of the medieval open field system or is purely post-medieval where physical traces survive. How does this arable relate to the medieval parishes?
9	Establish by documentary means and physical survivals of ridge and furrow, as defined within the archaeological mitigation area, the evolution of the Wixams development site's landscape from open fields to the enclosed landscape of the present day.

Table 1: Summary of original research objectives and themes



3. PROVISIONAL SUMMARY OF RESULTS

3.1 Introduction

3.1.1 Methodological approach to assessing contextual data

The contextual data were rapidly assessed in order to establish whether they would provide a coherent spatial and chronological framework. A total of 1,230 contexts were assigned to provisional Assessment Groups, *e.g.* boundary ditch, post-holes, bedding trenches, *etc.* (Table 2). The allocation of individual contexts to specific Assessment Groups contexts was made on the basis of the following criteria:

- Do the contexts form a coherent spatial unit *e.g.* ditch length, pit group *etc.*?
- Do the contexts represent key positions within the stratigraphic sequence?
- Do the contexts contain suitable dating material?

Assessment Groups were then assigned to a number of distinct Assessment Land-use areas, corresponding to larger coherent and contemporaneous spatial units. These Assessment Land-use areas were then assigned to a number of episodes (Assessment Phases) of human activity corresponding to broad, chronological periods, *e.g.* medieval or post-medieval, based on their artefactual assemblage. Where more than one distinct episode of human activity was apparent within a chronological period, they were assigned to separate Assessment Phases.

The text which follows is structured by chronological period, and discussed by Assessment Phase, Assessment Land-use area (AL) and, where relevant, Assessment Group (AG).

Period	Assessment Phase	AL	AG	Description	No. Contexts		
Pre-Pleistocene	0	1	16	Periglacial features	71		
			17	Periglacial features	7		
			151	Periglacial features	6		
Early Iron Age	1	2	21	Pit	2		
Late Iron Age	2	3	56	Enclosure ditch	6		
			58	Enclosure ditch	4		
			60	Enclosure ditch	22		
			63	Enclosure ditch	4		
			64	Enclosure ditch	14		
			109	Enclosure ditch	6		
			4	32	Enclosure ditch	13	
			34	Construction of enclosure ditch	24		
			35	Enclosure ditch	4		
			36	Enclosure ditch	7		
			40	Construction of enclosure ditch	9		
			71	Construction of enclosure ditch	13		
			90	Pit	2		
			3	1.01	17.03	Infilling of periglacial features	5
			4.01	32.03	Disuse of enclosure ditch	1	
			34.03	Disuse of enclosure ditch	2		
40.03	Disuse of enclosure ditch	1					



Period	Assessment Phase	AL	AG	Description	No. Contexts	
		5	53	Construction of enclosure ditch	7	
			71.03	Disuse of enclosure ditch	3	
			23	Construction of enclosure ditch	3	
			26	Enclosure ditch	6	
			48	Enclosure ditch	6	
			54	Pit	2	
			57	Construction of enclosure ditch	37	
			62	Construction of enclosure ditch	18	
			66	Enclosure ditch	9	
			98	Construction of pit	6	
			105	Pit	2	
			114	Enclosure ditch	6	
			116	Pit	4	
			119	Pit	2	
			Early Roman	4	1.02	151.02
4.02	38	Construction of enclosure ditch			18	
	49	Enclosure ditch			6	
	53.02	Infilling of enclosure ditch			5	
	73	Enclosure ditch			12	
	79	Enclosure ditch			16	
	86	Enclosure ditch			13	
	133	Pit			2	
	134	Cremation			5	
	175	Enclosure ditch			9	
	5.01	23.02			Infilling of enclosure ditch	2
		24			Enclosure ditch	8
		29			Enclosure ditch	2
		55			Pit	2
		57.03			Disuse of enclosure ditch	2
		62.03			Disuse of enclosure ditch	2
		67			Enclosure ditch	22
		98.03			Disuse of pit	1
		99			Cremation	7
		101			Cremation	6
		106			Pit	3
		107			Enclosure ditch	9
		108			Enclosure ditch	10
		113			Enclosure ditch	8
		171			Construction of enclosure ditch	11
2nd century Roman	5	4.03	38.03	Disuse of enclosure ditch	1	
			41	Enclosure ditch	9	
			42	Enclosure ditch	4	
			43	Construction of pond	2	
			44	Enclosure ditch	17	
			50	Enclosure ditch	16	
			74	Enclosure ditch	28	
			75	Hollow created by erosion	2	
			78	Layer/spread of material	5	
			85	Enclosure ditch	20	
			89	Enclosure ditch	10	
			91	Enclosure ditch	7	
			92	Enclosure ditch	16	
			93	Enclosure ditch	13	
				130	Pit	2
	145	Enclosure ditch	6			



Period	Assessment Phase	AL	AG	Description	No. Contexts
			146	Enclosure ditch	6
			175.03	Disuse of enclosure ditch	1
		5.02	27	Enclosure ditch	24
			59	Enclosure ditch	12
			120	Pit	5
			171.03	Disuse of enclosure ditch	1
Late Roman	6	4.04	43.02	Infilling of pond	6
			44.02	Infilling of enclosure ditch	13
			80	Construction of pond	4
			81	Well	2
			82	Well	2
			83	Well	3
			85.03	Disuse of enclosure ditch	3
			87	Pit	4
			89.03	Disuse of enclosure ditch	2
			92.03	Disuse of enclosure ditch	2
			93.03	Disuse of enclosure ditch	2
			147	Enclosure ditch	11
			148	Pits	6
			157	Features associated with AG159	33
			159	Construction of pond	13
		5.03	25	Construction of pond	12
			27.03	Disuse of enclosure ditch	20
			39	Pit	8
			68	Construction of pond	10
			69	Well	3
			70	Ditch	2
			117	Pit	6
			120.03	Disuse of pit	1
			172	Pit	3
			173	Pit	2
			174	Pit	3
Saxon	7	6	22	Pit	3
			25.03	Disuse of pond	6
			31	Pit	2
			37	Pit	9
			43.03	Disuse of pond	1
			68.03	Disuse of pond	4
			84	Layer associated with pond AG80	1
			131	Pit	8
			159.03	Disuse of pond	3
Saxo-Norman	8	7	61	Pit	3
			100	Pit	5
			112	Pit	3
			136	Pit	7
Medieval/post-medieval	9	8	2	NE-SW furrows	42
			3	NW-SE furrows	31
			4	NW-SE furrows	10
			5	NE-SW furrows	16
			6	Layer associated with furrows	1
			7	Layer associated with furrows	4
			8	Layer associated with furrows	2
Modern	10	9	11	Modern land drains	8
			170	Plough scars	4
		10	9	Post-holes	6



Period	Assessment Phase	AL	AG	Description	No. Contexts
Unphased	11	11	30	Pit	2
			33	Ditch	2
			45	Pits	4
			47	Pit	2
			51	Pit	2
			52	Pit	2
			65	Pit	2
			72	Pit	4
			76	Pit	2
			77	Post-hole	2
			94	Pit	2
			95	Pits	4
			97	Gully	6
			110	Pit	2
			111	Pit	3
			115	Pit	4
			118	Pit	2
			121	Pit	3
			122	Pit	5
			123	Pit	2
125	Pits	4			
127	Pit	5			
129	Pit	2			
132	Pit	2			
135	Pit	3			
138	Pit	2			
140	Pit	2			
141	Pit	4			
166	Pit	2			
		12	28	Root disturbance	45
			88	Root disturbance	2
			103	Root disturbance	4
			104	Root disturbance	3
			142	Root disturbance	5
			169	Root disturbance	6
Total					1,229

Table 2: Summary of provisional phasing

3.2 Structural Illustrations

It is highly likely that elements of the original ditches in the earlier Assessment Phases were subsequently re-cut, in many cases removing all trace of the earlier features. The ditches shown on Figures 3–7 are unlikely to entirely reflect the actual layouts, for which reason dashed lines have been used to indicate the possible original layouts. Conversely, some of the earlier phases of enclosure ditches had apparently silted up by the later phases, but their associated banks and hedges must have remained in use for the enclosures to have operated as functional entities — this is reflected in the text below and in the figures.



3.3 Assessment Phase 0: Pre-Pleistocene (Fig. 2)

3.3.1 AL1: Periglacial features

The geological deposits on the site comprised Glacial Tills, dating to the Anglian cold stage and fluvial or glacio-fluvial gravels. These deposits have been deformed and overprinted by periglacial processes, which took place in subsequent cold stages. It is likely that the majority of these features were infilled during this period. Some of the deeper features could have remained as slight hollows and infilled during the late Iron Age (AL1.01) and the Roman period (AL1.02); however, this assumes the features remained open for a very long period prior to their final silting. An alternative possibility is that the glacial features were reworked in the Iron Age and then infilled with domestic debris. Why the features were re-cut and how they were identified in the first place to enable their re-cutting is uncertain; various possibilities (such as the quarrying of Head deposits such as cobble-sized gravel found within the geology) will be investigated during further analysis.

3.4 Assessment Phase 1: Early Iron Age (Fig. 3)

3.4.1 AL2: Early Iron Age pit and residual early/middle Iron Age pottery

A single pit represents the earliest identifiable human activity on the site. It contained a relatively large amount (forty-six sherds) of early/middle Iron Age pottery (Appendix 2), and probably represents the partial remains of a small, unenclosed settlement. In addition, thirty-five further sherds of early/middle Iron Age pottery have been identified within later features (Appendix 2; Table A9). These suggest the possibility of low levels of activity over a potentially longer period of time.

3.5 Assessment Phase 2: Late Iron Age (Fig. 3)

3.5.1 AL3: Oval enclosure

An irregular ditch alignment with an entrance gap was located in the south-western part of the site. It comprised two ditches (AG60 and AG63/AG64) which terminated opposite each other leaving an entranceway of 4.2m. Both ditches contained pottery dating to the late Iron Age (Appendix 2). Three small gullies (AG56, AG58 and AG109) are believed to have been associated with this enclosure, based on artefactual evidence and their stratigraphic relationships with a later enclosure (AL5).

The dashed lines on Figure 3, indicating the possible original layout of the enclosures, reflect the likelihood that elements of the original ditches of this phase were subsequently re-cut, in many cases removing all trace of the earlier ditches.

3.5.2 AL4: Rectilinear enclosure

Two contemporary linked rectilinear enclosures were located within the central part of the site. They were composed of ditches AG32, AG34, AG35/AG36, AG40 and AG71.



The eastern enclosure was formed by ditches AG34 and AG35, the latter of which was re-cut by AG36 and was *c.* 35m long and 15m wide. In later phases ditch AG34 continued its line as a boundary eastwards to a possible terminal end at AG49, in use by at least the early Roman Assessment Phase 5. It is likely that ditch AG34 had been present in Phase 3 between the identified early section and an earlier version of AG49. The western enclosure, sub-divided by ditch AG40, comprised ditches AG32 and AG71, with AG34 marking its eastern extent. The full extent of each enclosure was not revealed, due to probable re-cutting of its western side by AG171 in Assessment Phase 4. Assuming this was the case, the enclosure would have been a 35m square with probable entrance gaps in the north-west and south-east corners.

A single pit (AG90) containing late Iron Age pottery was identified 9.5m north-west of boundary ditch AG36.

3.6 Assessment Phase 3: Late Iron Age (Fig. 4)

3.6.1 AL1.01: Infilling of periglacial features

Some of the features created by periglacial processes during the Anglian and subsequent cold stages appear to have survived as hollows until the late Iron Age, when they were filled by material produced from the development of the farmstead (AL4.01), possibly after being re-cut or quarried (see Assessment Phase 0).

3.6.2 AL4.01: Development of AL4

AL4.01 represents the continued use/development of enclosure AL4. The ditches constructed within AL4 were in their final phase of silting (AG32.03, AG34.03, AG40.03 and AG71.03) within this period, although the enclosure must have continued in use in later periods to provide the link between Assessment Phase 4 enclosures AL4.02 and AL5.01, to the east and west respectively.

Just within the corner formed by ditch AG34.03 was a sub-rectilinear ditch (AG53), which could represent a drainage gully for a rectangular building associated with the enclosure. The gully dimensions suggest a width of *c.* 5m and a length of *c.* 8m or more for the possible structure. Pit AG116 to the south of the enclosures measured 2.6m by 1.65m in plan, and contained animal bone and late Iron Age pottery (Appendix 2).

3.6.3 AL5: Rectilinear enclosure

The Assessment Phase 2 ditches identified within AL3 were replaced at this point by a *c.* 48m square rectilinear enclosure. The southern and eastern sides (AG67 and AG171 respectively), whilst dated artefactually to Assessment Phase 4, were almost certainly present at this time for the enclosure to have operated as an effective whole. Internal divisions are represented by ditches AG23/AG26 and AG62. The artefacts recovered from the lower fills within this enclosure suggest a late Iron Age date.



A small gully (AG66) extended south-west of the enclosure's western boundary. No datable artefacts were recovered from this gully, but it was stratigraphically contemporary with the enclosure ditch.

Two pits, one within the enclosure (AG105) and one (AG98) adjacent to the north-western corner of the enclosure, also produced late Iron Age artefacts.

3.7 Assessment Phase 4: Early Roman (Fig. 5)

3.7.1 AL1.02: Infilling of periglacial features

Several features (AG151) created by periglacial processes during the Anglian and subsequent cold stages appear to have survived as hollows until, or were re-cut in, the Roman period, when they were filled by material produced from the development of the farmstead (AL4.02).

3.7.2 AL4.02: Continued development of AL4

AL4.02 represents the continued development of the central and north-eastern part of the site, with the creation of a large enclosure measuring 73m east–west and 50m north–south.

The small rectilinear enclosure seen in AL4 and AL4.01 was thus expanded in this period. The western boundary was re-cut by ditches AG38 and AG175 and the northern boundary was defined for the first time by ditches AG86 and AG79. The southern boundary can be seen most clearly in Assessment Phase 5, but its former existence in this phase is strongly inferred. Although the eastern boundary of the enclosure AL4.02 was dated ceramically to a later phase, the juxtaposition of ditches AG73 and AG79 (probably either side of a drove-way leading into the enclosure from the east) suggests that it was also in existence at this time. Its traces are likely to have been re-cut or raked out in the following phase (where the ditch is represented as AG74 and AG75). The eastern boundary of the enclosure was not identified. The internal gully (AG53) seen in AL4.01 continued to be used in this period.

A single un-urned cremation (AG134) with an associated vessel was located within a pit (AG133) 4.8m to the north of ditch AG79.

3.7.3 AL5.01: Development of AL5

AL5.01 represents the development of the south-western part of the site, where a single rectilinear enclosure had been established in AL5. The northern and western edges were in their final phase of use (AG57.03), but were re-cut in their eastern length as ditch AG29.

The southern and eastern edges were marked by ditches AG67 and AG171, creating a larger enclosure than that seen in AL5. Internal divisions were created within the enclosure by the continued use of earlier ditches (AG62.03 and AG23.02) and the creation of ditches AG24 and AG113 on a similar alignment in the south-west corner of the enclosure. The presence of these latter ditch lengths in this phase strongly implies that the Assessment Phase 5 ditch AG27 originally connected with AG24 from the north. These sub-divisions created a



series of stock selection droves/enclosures, with stock-sorting opportunities created by the complex of 'stock funnels' in the south-west corner.

A small internal gully of unknown purpose (AG108) was created near the western edge of the enclosure, which was subsequently re-cut (AG107). A pit (AG106) was located to the south of the gully, while another pit (AG55) was located next to the northern boundary ditch AG57.03.

Two cremations AG99 and AG101 were associated with this enclosure. Both were urned cremations; AG99 was located north of boundary ditch AG57 and had three associated vessels, while AG101 was located south of boundary ditch AG29 and had two associated vessels.

3.8 Assessment Phase 5: 2nd Century Roman (Fig. 6)

3.8.1 AL4.03: Continued development of AL4

AL4.03 represents the continued development of the central and north-eastern part of the site.

The enclosure initiated in AL4.02 continued into this period; its western ditch was in its final phase of use (AG38.03 and AG175.03), although it is likely that an associated bank and hedge survived into the following period.. The eastern boundary was marked by ditch AG74; a layer of material (AG78) spread over its central part may represent a trampled area around the ditch as it silted up. A further trampled area at the corner of AG74 was marked by an eroded hollow (AG75). The northern boundary of the enclosure was re-cut by ditches AG85/AG89/AG91, and by now formed a drove-way to the north with AG92/AG93. The re-cut southern boundary (AG41/AG44) also formed a drove-way with ditch AG50 and the southern portion of AG74; it was aligned NE–SW, but turned to the south-east at its eastern end, where its line was traced running south-east for at least a further 50m via two trial trenches.

Two internal features existed within this enclosure, one represented by related ditches AG145 and AG146, and one by ditch AG42. The former, located south-west of, and perpendicular to, AG74, represent possible remnants of the drainage gully along one side of a building; the break between the two ditches could represent an entrance. Both contained artefacts dating to the Roman period. AG42 was probably a leat running into a stock pond AG43, which appeared to truncate both AG42 and the enclosure's southern ditch. The pond measured 10.8m by 13.60m and was 1.32m deep. A sub-circular pit (AG130) just beyond the southern boundary of the enclosure was *c.* 1.9m in diameter and 0.52m deep.

3.8.2 AL5.02: Continued development of AL5

AL5.02 represents the continued development of the south-western part of the site.

The western boundary of the enclosure identified within AL5.01 was replaced by AG59, while the internal subdivision and northern edge were re-cut by ditch AG27. It is presumed that the western length of the northern edge of the



enclosure, between AG59 and AG27, was defined by a bank and hedge in this period for the enclosure to have remained closed. The eastern edge of the enclosure was marked by AG38.03 and AG175.03 within AL4.03, with ditch AG171 continuing to mark an internal boundary in its final phase of use. The southern boundary for the enclosure was not ditched at this point, but was probably still defined by a bank and hedge.

A single pit (AG120) was located to the east of ditch AG171. It measured 3.3m by 5.5m in plan and was 0.84m deep.

3.9 Assessment Phase 6: Late Roman (Fig. 7)

3.9.1 AL4.04: Final use of enclosure AL4

AL4.04 represents the final use of the north-eastern part of the site within the 3rd and 4th centuries AD.

Evidence of only the southern (AG44.02) and northern enclosure ditches (AG85.03, AG92.03 and AG93.03) survived into this period. However, the construction of a possible drainage gully for a building (AG147) suggests that the enclosure was still in use, with the boundaries marked by banks and hedges. AG147 was an L-shaped gully with three associated pits or post-holes (AG148), which were too truncated to allow for further interpretation. It is suggested on Figure 7 that the boundaries and drove-ways of AL4.03 remained largely in use, partly still defined by ditches but otherwise by hedges, which have few archaeological traces (apart perhaps from ecofacts from soil samples suggesting the presence of the hedge/tree species blackthorn/sloe; see Appendix 8).

Pond AG43 from AL4.03 continued to be used, and was accompanied by two further ponds (AG157/AG159 and AG80/AG81/AG82/AG83), the former within the centre of the enclosure and the latter to the north-east. A single pit (AG87), measuring 2.9m by 1.80m in plan and 0.93m deep, truncated the upper fills of ditch AG86.

3.9.2 AL5.03: Final use of enclosure AL5

AL5.03 represents the final use of the enclosure ditches in the south-western part of the site within the 3rd and 4th centuries AD.

The northern and western extents of the enclosure were marked by ditch AG27 in its final phase of use. The southern and eastern boundaries for the enclosure were no longer ditched, although hedges or banks may still have defined them.

Pit AG120 was in its final phase of use within this period, whilst two further pits (AG39 and AG117) were created along the eastern boundary. In addition two ponds (AG25/AG172/AG173/AG174 and AG68/AG70) are dated by ceramics to this phase, although it is possible they were originally cut at an earlier stage. The former was located at the southern extent of boundary ditch AG27, while the latter, which included a possible well shaft (AG69), lay within the centre of the enclosure.



3.10 Assessment Phase 7: Saxon (Fig. 8)

3.10.1 AL6: Pits and disuse of Roman ponds

The upper fills of the late Roman ponds created in Assessment Phase 6 (or perhaps earlier), as well as a layer (AG84) that overlay pond AG80, contained artefactual material dating to the 6th–7th centuries (Appendix 2), suggesting that they survived as earthwork hollows until at least this period. Further information on the dating and extent of these ponds is contained within a separate assessment of Area 4e (see addendum).

Four other pits (AG22, AG31, AG37 and AG131) contained artefacts which suggest a Saxon date of origin. The largest of these pits measured 5.7m by 5.2m in plan and was 1.44m deep. Their presence may suggest continued or new occupation of the site in this period.

3.11 Assessment Phase 8: Saxo-Norman (Fig. 8)

3.11.1 AL7: Pits

Four pits (AG61, AG100, AG112 and AG136) contained artefacts dating to this period. The largest pit (AG136) was 3.17m by 2.47m in plan and 0.86m deep. AG100 was 2m by 1.7m in area and 0.65m deep, and contained a large amount of animal bone, including a cow skull with its horns intact. The forty-eight sherds of Saxo-Norman pottery recovered may also suggest low-level occupation on the site, or perhaps just temporary use by shepherds. The evidence from both Assessment Phases 7 and 8 suggests that the enclosures remained visible and useable features in the landscape, again suggesting that some of the enclosure boundaries remained hedged.

3.12 Assessment Phase 9: Medieval/post-medieval (Fig. 9)

3.12.1 AL8: Furrows and associated layers

AL8 comprised four sets of furrows (AG2, AG3, AG4 and AG5) and three layers/spreads of material (AG6, AG7 and AG8) associated with the furrows' development. The layers/spreads are likely to have formed at the edges of field boundaries as the result of plough disturbance. The assemblage of non-ceramic artefacts recovered from the furrows suggests they may be post-medieval in origin; those in AG2 were at least extant as earthworks until the early modern period, as shown by the placement of land drains along the base of the furrows.

The furrows in AG2 and AG5 were aligned NE–SW and were spaced 4.5–8m apart, while those in AG3 and AG4 were aligned NW–SE and were spaced *c.* 6–8.5m apart.

The layout of the furrows is slightly oblique to the layout of the former enclosures, indicating that any hedge/bank remnants of the enclosures had been (largely) removed by this time.



3.13 Assessment Phase 10: Modern (Fig. 9)

3.13.1 AL9: Modern land drains and plough scars

Agricultural use of the site continued into the modern period, with the insertion of land drains for drainage, and occasional plough scars.

3.13.2 AL10: Post-holes

Three post-holes in the north-western corner of the site marked the edge of a boundary associated with the World War II bomb-making factory.

3.14 Assessment Phase 11: Unphased (Fig. 10)

3.14.1 AL11: Pits, post-hole and gullies

Although it was possible to assign a date to most of the features revealed on the site, a few isolated pits, a post-hole and two small gullies remain unphased. Some of the pits contained a small amount of pottery suggesting that they were Roman in date, but there was not enough of it for this to be conclusive.

3.14.2 AL12: Root disturbance

These tree-throws (AG28, AG88, AG103, AG104, AG142 and AG169) were spread across the site. Their date could not be determined, although those in AG28 were formed earlier than Roman enclosures AL3 and AL4.



4. ANALYTICAL POTENTIAL OF THE DATA

4.1 Introduction

For the following discussion, the datasets recovered during the investigations have been divided into three main classes: contextual; artefactual; and ecofactual.

- **Contextual** data relate to the identification of individual events such as the digging of a ditch, its primary infilling *etc.* These have been recorded as context records during the evaluation and open area excavation. All contexts have a detailed record sheet; many have a plan and section drawing along with photographs.
- **Artefactual** data comprise manmade objects recovered during the open area excavation. These have been divided for ease of discussion into pottery, ceramic building material and other artefacts (including registered artefacts and bulk finds, such as industrial residues).
- **Ecofactual** data comprise natural materials found within excavated deposits. These are able to yield information on the nature of past human activity and its environmental setting. They include animal bones and information obtained from environmental samples (*e.g.* plant remains).

Contextual data are discussed first in the following sections, as they have provided the framework for the preceding summary of results and the subsequent dataset discussions. The methodological approach taken with each dataset is discussed, followed by sections dealing with quantification, provenance (spatial and chronological) and also condition. All these factors are important in deciding the potential of the material for analysis.

4.2 Contextual Data

4.2.1 Quantity of records

Table 3 presents a breakdown of the total quantity and type of contextual records. These comprise the written description/interpretation of a deposit/feature (context sheets), a map-like drawing showing the location and inter-relationship between features (a plan), a profile drawing through a feature and its fills (section), and photographs.

Contexts	Plan Sheets	Sections	Photographs
1229	51	242	489

Table 3: Quantity records

4.2.2 Survival and condition of remains encountered

The majority of the significant remains identified were from the Iron Age or Roman period; a smaller number were early Iron Age, Saxon or Saxo-Norman in date. The remains comprise a low status Iron Age/Romano-British farmstead, on a site which remained in agricultural use into the Saxon to Saxo-Norman period.



The archaeological remains had been truncated by ploughing during the medieval/post-medieval period and in modern times, and the components of these landscapes that survived best were relatively deeply cut negative features such as ditches and pits. Few smaller, shallower features such as post-holes survived, as a result of which there is no opportunity to study spatial arrangements of post-holes within roundhouses and other structures. Instead, structural remains comprised rainwater gullies or possible beam slots for the late Iron Age (AG53, Assessment Phase 3) and the Roman period (AG145/146, Assessment Phase 5 and AG147, Assessment Phase 6). No positive features such as hearths, floor layers, and banks to accompany the deep ditches survived. The spatial relationships of ditches through the phases implies that that some earlier versions must have been re-cut away or raked out in later phases, whilst some boundaries, though absent in the archaeological record, can be reasonably inferred to have remained as hedges in later phases.

The distribution of certain types of artefact (*e.g.* nails, pottery and coins) has also assisted in identifying where settlement activity was focused. The presence of several Roman cremation burials may help to identify concentrations of funerary activity, and will provide further information on the site's occupants.

The presence of deep water pits / wells enabled the preservation of waterlogged deposits, floral assemblages and pollen macrofossils from which will assist in a reconstruction of the site's palaeoenvironmental conditions. However, conditions of preservation were generally such that few plant remains could be recovered, limiting any attempt to examine the site's arable economy.

4.3 Other Artefacts

The assemblage has moderate potential to assist in developing a chronological framework for the site, in particular for the Roman period. Full identification of the coins will help refine the dating and indicate a *terminus post quem* for when coinage ceased to be used within the settlement. Although the majority of coins were residual in later deposits, a profile of coin usage has the potential to help define the nature of the site (*cf.* Reece 1995). The remainder of the assemblage indicates occupation from the first half of the 1st century AD, continuing into at least the mid-3rd century.

The composition of the Roman assemblage does not suggest a high-status settlement. There is some evidence for a degree of 'disposable' wealth in the presence of traded goods, such as vessel glass and non-utilitarian items (*e.g.* the enamelled brooch), but this is limited in quantity. Comparison with assemblages from contemporary nearby settlements such as Brickhill, Wilstead, Kempston, and along the routes of the Bedford Southern and Western Bypasses, will assist in determining the site's relative social standing. This assemblage, however, has low potential to assist in establishing the economic basis of the Roman occupation due to a paucity of craft- and subsistence-related artefacts.

Although Saxon and Saxo-Norman pottery was recovered, there is little evidence in the non-ceramic assemblage to support the suggestion of continued occupation during these periods.



The assemblage recovered from Assessment Phase 9 deposits, comprising a combination of residual Roman artefacts and artefacts dating to the 16th–19th centuries, suggests that the ridge and furrow cultivation may be post-medieval, rather than medieval, in origin.

4.4 Pottery

Analysis of the pottery assemblage will allow the establishment of a chronological framework for the site extending from the late Bronze Age/early Iron Age to the post-medieval periods, highlighting ceramic continuity or hiatus between chronological periods. Of particular interest will be an attempt to define the significance of the early to middle Iron Age material with regard to possible early occupation of the clay uplands.

The majority of the assemblage is late Iron Age or Roman, and is primarily local in character. The assemblage is largely low-status and domestic, indicated by the basic, utilitarian types present, coupled with the relatively small amount of both regional and continental imports. The transitional nature of the date of much of this assemblage makes it important in determining to what extent, and at what date, Romanisation penetrated to the native rural population, and how long native traditions continued alongside the Roman.

The Roman assemblage comprises a comparable range of wares to those recovered from contemporary nearby settlements such as Wilstead, Kempston, and along the routes of the Bedford Southern and Western Bypasses. It also generally reflects the typical composition of assemblages from Romano-British rural sites in the Great Ouse Valley. This material can be usefully compared with these sites to place the Wixams in a local and regional context. Most of the assemblage comprises coarse wares, represented by a standard range of locally manufactured, reduced, sand-tempered wares and a smaller quantity of shell-tempered vessels. A comparison with known kilns and their products will throw light upon the distribution of these wares and help to determine economic activity in terms of marketing patterns. The pottery will have some potential to determine the status and cultural associations of the occupants, with the presence or absence of particular pottery types indicating status and socio-economic development.

4.5 Ceramic Building Material

The small assemblage of Roman brick and tile (1.8kg) has low potential to assist in dating features or determining the nature, form and status of activity. The presence of brick and tile is interesting, given that no masonry structures were identified during excavation. Assuming that brick and tile is unlikely to have travelled far from its original point of use, it can be inferred that the material derived from a mainly timber-framed building or from an agricultural or domestic feature, such as a corn drier or domestic oven, where tile was re-used.

Fired clay fragments weighing approximately 5.4kg were recovered from late Iron Age, Roman and post-Roman deposits, the majority deriving from Roman enclosures AL4 and AL5. Certain types such as daub or ‘Belgic brick’ may have



derived respectively from wattle and daub structures and/or late Iron Age ovens, and the location of the finds relative to possible structures, as inferred by drainage gullies, will be studied. As all the material is redeposited and cannot be directly associated with the use of the features from which it was recovered, however, there is in general only moderate to low potential for significant analysis.

4.6 Human Bone

The potential of the assemblage is limited due to sample size and fragmentation. The bone from AG101 has poor potential for further work, although some data on fragmentation would be obtained by fractionated sieving. The bone from AG99 and AG134 has moderate potential for obtaining further health and demographic data. Identification of fragments to body area or element will also enable examination of any apparent selection for burial, and although this is compromised by the small amount of bone present, preliminary scanning revealed identifiable pieces of long bone shaft, articular surface and tooth root. It will be possible to make observations on pyre temperature from the colour of the burnt bone and to comment on fragmentation following further separation of the remains.

Roman cremation burials are noted across the county. The potential for interpreting local funerary practices will be increased by drawing upon examples from sites that form part of the same archaeological landscape, such as those uncovered along the route of the nearby Bedford Western bypass (Powers 2007). Although the burnt bone appears fairly typical of Iron Age to Romano-British burials, the small quantities of charcoal present suggest that the bone was carefully sorted from the pyre, and comparison with contemporary sites will indicate how often such well-sorted burials are found.

4.7 Animal Bone

The dated assemblages have considerable potential for study of the carcass-part representation, age-at-death, butchery and, to a lesser extent, stature and build of the major mammalian domesticates. It may be possible to consider the relative proportions of the main domesticates through time and comment on continuity or change in stock-rearing practices. The lack of recovery of fish, amphibians, wild birds and small mammals prevents any comment on the characteristics of local habitats. Variations in sample size indicate that the potential of the bone group lies mainly with the late Iron Age, Roman, Saxon and Saxo-Norman assemblages, with comparatively little potential from the other periods.

4.8 Molluscan Remains

The terrestrial and freshwater assemblages have some potential for further analysis, particularly in terms of accurate species identification. This will provide information on the character of the local environment, particularly in the Roman period, and will allow some interpretation of the background terrestrial environment in terms of soil chemistry, vegetation and drainage. The generally very small size of each sample group effectively precludes any quantitative study beyond comment on the relative species abundance seen in the larger, mainly freshwater, groups. More detailed comment may be possible in terms of



the permanence, seasonality, substrate, vegetation and chemistry of water bodies within the ditches and ponds. The marine/estuarine assemblage has no potential for further analysis.

4.9 Plant Remains

4.9.1 Charred plant remains

The limited quantity and quality of the charred plant remains (Table 2) restricts the extent to which they may be used to investigate aspects of crop husbandry and processing, and the character of human activities taking place at the site through time. Only very basic data on crop husbandry (*i.e.* the range of cereals used on the site) can be extracted for the Iron Age and Saxon / Saxo-Norman period, although the material from the Roman deposits may potentially provide a little more data. However, given the general paucity of weed seeds, this information may relate more to spatial analysis of the remains and potential areas of human activity (crop-processing, cooking *etc.*) rather than an investigation into more detailed aspects of crop husbandry.

Assessment Phase	Period	1–10 items	11–50 items	50+ items	Identifiable charcoal
1	Early Iron Age	1			
2	Late Iron Age		1		1
3	Late Iron Age	4	1		1
4	Early Roman	8	1		1
5	2nd century Roman	3	2		1
6	Late Roman	9	6	1	8
7	Saxon	5	1		3
8	Saxo-Norman	2	2		2
11	Unphased	2		1	4
Total		34	14	2	21

Table 4: Number and size of charred plant assemblages and identifiable charcoal by Assessment Phase

Collectively, the data may allow examination of whether there are any changes in the range of cereals used between the different periods (including possible changes within the Roman period). Additional information may be forthcoming if the rich undated charred plant assemblage from the site can be dated, and from the processing of retained soil from the productive samples, which may increase species diversity.

4.9.2 Charcoal

Identification of the charcoal may provide an indication of the range of woods being used as fuel, and, by implication, information on woodland resources and the environment at the time, particularly during the Roman period. There is little potential for examination of changes in woodland between periods, due to the small number of samples from the prehistoric and post-Roman phases of the site.

Many of the charcoal fragments that are potentially identifiable were part of only small quantities of charcoal, and were found together with roots and rootlets.

The possibility that some of the material is intrusive should therefore be considered on a sample-by-sample basis before proceeding with analysis.

Consideration should also be given to whether the small numbers of potentially



identifiable fragments in most of the samples are sufficient for significant conclusions to be reached.

4.9.3 Waterlogged plant remains

Analysis of the waterlogged plant remains, as represented by fruits and seeds, can potentially contribute significant information on the character of the local environment, but this is dependant on its being contemporary with the sampled features. Many of the flots contained large amounts of roots and rootlets, and it is possible that some of the waterlogged material is intrusive. It is therefore recommended that waterlogged assemblages with moderate species diversity should be analysed, while examination of the other deposits with large numbers of waterlogged seeds should await consideration on a sample-by-sample basis as to whether the remains are likely to be contemporary or intrusive.

4.10 Pollen

The predominantly clayey late Roman deposits (Phase 6, AL4.04, AG159) provide little potential for further analysis. In the middle sample from 443(2), pollen preservation is so poor that the pollen would be uncountable. In the lowest sample from 443(2), the pollen is very degraded and could only be counted with difficulty. If counted, such data would be biased in favour of resistant pollen types and would contribute little to the understanding of the site and its surroundings. Therefore, no further work on the samples from 443(2) is recommended.

In contrast, the samples from the possible relict organic remains, 443(1) and the upper sample from 443(2), contain high concentrations of generally well-preserved pollen. There is therefore good potential for meaningful analysis of these two samples. This may contribute to an understanding of the environment of the site, and may permit interpretation as to the nature of the relict organic matter itself.

4.11 Potential of Datasets to Address Original Research Objectives

The potential of for each dataset to contribute to the project's original research objectives is summarised in Table 5.