

WWW08

**Archaeological Investigation, Recording, Analysis and Publication at Wadlow
Wind Farm, West Wrating, Cambridgeshire**

Updated Project Design and Assessment of Results

Client: RES Ltd

November 2011

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WADLOW WIND FARM, WEST WRATTING, CAMBRIDGESHIRE

Client	RES UK Ltd
National Grid Reference	TL 5733 5307
Address	Wadlow Farm, West Wrating, Cambridgeshire
Parish	West Wrating
Council	Cambridgeshire
Event Number	ECB3592
Planning Application No	S/1018/06/f
OASIS No	headland1-58235 / headland4-113482
NMR No	
HER No	
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Listing Category	
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Fieldwork	Evaluation: April 2009, Mitigation (Phase 1): August 2010, Mitigation (Phase 2): June – August 2011
Report	

A desk-based study was carried out for an Environmental Impact Assessment of the proposed development. The most significant features identified were extensive cropmarks thought to relate to prehistoric or Romano-British field systems and settlement remains. Following detailed aerial photograph plotting by Rog Palmer, a pre-determination archaeological evaluation by Headland Archaeology in April 2009 comprised excavation of trial trenches within a 50m radius of each proposed turbine location. Groups of features relating to Late Bronze Age or Early Iron Age settlement were identified at Turbines 10 and 11, and ditches were more widely distributed such as at Turbines 5, 7 & 8. A group of Neolithic flint quarry pits was also identified at Turbine 3. Minor alterations in the locations of turbine bases have been made on the basis of the evaluation results, to avoid impacts on archaeological remains wherever possible.

Planning consent for the windfarm was granted, subject to a condition requiring a scheme of archaeological investigation to be undertaken at the site. The requirements for this work are set out in the brief issued by Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA). Open area excavation in advance of construction

has been carried out at Turbines 3 and 10. Archaeological monitoring and recording was required in areas of ground reduction at Turbines 5, 7 and 8, and was also required in other areas of groundworks not previously subject to evaluation, depending on location and depth of disturbance.

Between August 2010 and August 2011, Headland Archaeology undertook a series of archaeological Mitigation investigations at Wadlow Windfarm, West Wrattling. This was in advance of construction of thirteen turbines and associated groundworks. A Written Scheme of Investigation (WSI) in accordance with a brief from CAPCA specified the work that would be undertaken to fulfil the condition. Headland Archaeology was commissioned by RES Ltd. to undertake this programme of work.

Excavations revealed evidence of a landscape which had been utilised from the Neolithic period through to the Anglo-Saxon period. Neolithic activity was represented by a group of flint quarry pits which contained primary flint reduction waste (a significant find in this area). Late Bronze Age-Early Iron Age field systems and a small part of an Iron Age settlement. A single Sunken Featured Building (SFB), typical of the Anglo-Saxon period, was identified in the south-western part of the site and contained ceramic loom weights; artefacts that support the interpretation of these structures as weaving sheds.

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 *Proceedings of the Cambridge Antiquarian Society* and the deposition of the project archive (Event Number ECB3592) with Cambridge County Council's repository.

1. INTRODUCTION

1.1 Project background

Cambridgeshire County Council granted RES UK Ltd. planning permission (S/1018/06/f) for the construction of a wind farm comprising thirteen wind turbines. As part of the process of considering the application, Cambridgeshire Archaeology Planning and Countryside Advice (CAPCA) advised that the development area (DA) had a high archaeological potential and an archaeological evaluation should be carried out in order to gain information on the potential of the site to contain sub-surface heritage assets.

An evaluation was carried out in April 2009 (Headland Archaeology 2009). This investigation recorded the presence of significant archaeological remains and CAPCA issued a brief (March 2010) to secure the implementation of a programme of fieldwork which was to comprise open area excavation in advance of construction as well as archaeological monitoring and recording of ground reduction in selected areas.

The fieldwork was carried out in stages, in both pre-construction and during construction, between August 2010 and August 2011. These works were in accordance with a Project Design prepared by Headland Archaeology (July 2010 & March 2011) and approved by CAPCA.

1.2 Site Location and Geology

The DA is centred on NGR TL 5733 5307 and lies approximately 15 km South-East of Cambridge. The village of West Wrattling lies immediately to the east and Balsham approximately 1.5km to the south.

The geology comprises New Pit Chalk Formation and Chalk Rock Member. This is characterised by chalk and clay/chalk mix directly below the topsoil (British Geological Survey Website). The development area can be characterised as slightly rolling open arable farmland.

1.3 Archaeological Background

The underlying geology of the DA is chalk and so the area is rich in flint, and lithic scatters have been identified throughout the region (Glazebrook 1997, 14). The earliest activity from the area surrounding the site comprises Palaeolithic hand axes and flint scatters found at Little Wilbraham and Rookery Farm. Neolithic hand axes have been recovered from Little Wilbraham and close to Dungate Farm. A possible Neolithic henge and a Neolithic causewayed enclosure lie to the north-west of the site and there are numerous Bronze Age round barrows and ring ditches, including a number on Allington Hill, 4km to the north of the site.

The Cambridgeshire HER details a number of sites in the area identified as cropmarks from aerial photography. These contain linear features, ring ditches and enclosures and are probably of late prehistoric to Romano-British in date. The field system at West Wrattling (HER 09339) lies within the site boundary and that of Great Wilbraham (HER

09345) lies immediately to the north-west. Settlements include an Iron Age settlement at Balsham (HER 06293) and a Romano-British settlement at Allington Hill (SAM 72). The Fleam Dyke (SAM6) runs to the south-west of the site with the Roman Worstead Street (SAM 26) running parallel roughly 3km to the south. There are also a number of deserted medieval settlements and earthworks in the area.

An assessment of the aerial photo evidence for the site was also undertaken (Palmer 2009) this identified cropmarks thought to relate to prehistoric or Romano-British field systems and settlement remains

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 (Headland Archaeology 2011), enabling the discharge of the archaeological planning condition by Cambridgeshire County Council.

2. ORIGINAL AIMS AND OBJECTIVES OF THE INVESTIGATION

2.1 Introduction

A series of research aims were established in the project-wide WSI (Headland Archaeology July 2010 & March 2011). 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). 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 Cambridgeshire and adjacent counties of Hertfordshire, Essex, Suffolk and Norfolk. This document is 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. This region possesses certain historical similarities with Cambridgeshire.

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 these works. They are set out below.

Objective / Theme	Research Aims/Themes	Source (Published or internally generated by Project Team)
1.	To characterise the nature and extent of Neolithic activity in the area, specifically the evidence for flint extraction and any evidence for on site tool manufacture, or lack thereof.	Design Brief for Archaeological Investigation, CAPCA, 2010
2.	To contribute to an understanding of the pattern of Neolithic land use in southern Cambridgeshire.	Design Brief for Archaeological Investigation, CAPCA, 2010
3.	To characterise the nature of Late Bronze Age – Early Iron Age activity in the area, including settlement core and field systems/agriculture.	Design Brief for Archaeological Investigation, CAPCA, 2010
4.	To contribute to an understanding of the pattern of settlement and agriculture for this period in southern Cambridgeshire.	Design Brief for Archaeological Investigation, CAPCA, 2010
5.	With the aid of environmental techniques, an attempt will be made to model the landscape and its transformation brought about by the settlement's inhabitants and due to natural events.	Design Brief for Archaeological Investigation, CAPCA, 2010

Table 1: Summary of original research objectives and themes

3. PROVISIONAL SUMMARY OF RESULTS

3.1 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 225 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 sub-groups of 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?

Fills and cuts were then assigned to sub-groups (*e.g.* primary fills of post holes in the sunken featured building (SFB) or Cuts of postholes within SFB) and sub-groups were then assigned to a number of distinct Groups (*e.g.* SFB), corresponding to larger coherent and contemporaneous spatial units. These Groups were then assigned to a number of Phases of human activity corresponding to broad, chronological periods, *e.g.* Phase 5 Anglo-Saxon settlement of the Anglo-Saxon Period. This phasing was based on their artefactual assemblage, character and stratigraphic position.

Period: Anglo-Saxon (AD410-AD1066)	
Phase 5 (Anglo-Saxon Settlement, AD650 – AD850)	
Group 2 – Sunken Featured Building (SFB) <i>(This document is generally structured at this level of the hierarchy)</i>	
Sub-Group – primary fills of post holes in SFB <u>or</u> Secondary fills of post holes in SFB <u>or</u> Cuts of postholes within SFB	
Fill (021) of posthole [020]	Cut of posthole [020]

The text which follows is structured by chronological period, and discussed by Group, and, where relevant for detail (by context and/or sub-group); where relevant for making broad interpretations, the discussion utilises Phase and Period groupings.

<u>Period</u>	<u>Phase</u>	<u>Group</u>	<u>Sub-Group</u>	<u>Description</u>	<u>No. of features</u>	<u>Context numbers</u>
Neolithic	1	21	26	Construction of intercutting pits	2	2
			26.1	Final fill of pit		1
			27	Construction of pit	1	1
			27.1	Final fill of pit		1
		22	28	Tree throw	1	3
			29	Construction of pits	12	12
			29.1	Final fill of pits		12

<u>Period</u>	<u>Phase</u>	<u>Group</u>	<u>Sub-Group</u>	<u>Description</u>	<u>No. of features</u>	<u>Context numbers</u>
Late Bronze Age/Early Iron Age	2	1	1	Construction of pit	1	2
			1.1	Final fill of pit		2
		23	30	Creation of gully/wear hollow	1	16
			30.1	Final fill of gully/wear hollow		13
			31	Creation of pits	3	3
			31.1	Final fill of pits		3
		24	32	Creation of pits	6	6
			32.1	Final fill of pits		7
			33	Creation of post holes	5	5
			33.1	Final fill of post holes		4
			34	Creation of pits	5	5
			34.1	Final fill of pits		5
			35	Construction of pit/animal burial	1	2
			35.1	Final fill of pit/animal burial		1
			36	Construction and primary fill of ditch	1	9
			36.1	Final fill of ditch		4
Iron Age	3	12	12	Construction of pits	4	4
			12.1	Final fill of pits		4
			13	Construction of ditch	2	2
			13.1	Final fill of ditch		2
		13	14	Construction of enclosure ditch	2	3
			14.1	Final fill of ditch		3
		14	15	Construction of ditch and pits	6	6
			15.1	Final fill of ditch and pits		6
	4	3	3	Construction of boundary ditches	2	2
			3.1	Final fill of ditches		2
		15	16	Construction of ditch and primary fill	1	2
			16.1	Final fill of ditch		1
			17	Construction of ditch terminus	1	1
			17.1	Final fill of ditch		1
		16	18	Construction of ditches and primary fill	4	6
			18.1	Final fill of ditches		4
		17	19	Construction of ditches	2	2
			19.1	Final fill of ditches		2
		18	20	Construction of ditches	2	2
			20.1	Final fill of ditches		2
			21	Construction of pit and primary fill	1	2
			21.1	Final fill of pit		1
			22	Construction of pit	1	1
			22.1	Final fill of pit		1
		19	23	Construction of ditch	1	1
			23.1	Final fill of ditch		1
		20	24	Construction of ditch and primary fill	1	2
			24.1	Final fill of ditch		1
			25	Construction of ditch and primary fill	1	2
			25.1	Filling up of ditch		3
Anglo-Saxon	5	2	2	Construction and primary fill of SFB and Postholes	3	4
			2.1	Final fill of SFB and postholes		3

<u>Period</u>	<u>Phase</u>	<u>Group</u>	<u>Sub-Group</u>	<u>Description</u>	<u>No. of features</u>	<u>Context numbers</u>
Modern	6	5	6	Construction and deposit of animal burial	1	2
			6.1	Final fill of burial		1
		10	10	Construction of pit and small ditch	2	2
			10.1	Final fill of pit and small ditch		2
Unphased	7	25	Topsoil		2	
		4	4	Construction and deposit of animal burial	1	3
			4.1	Final fill of burial		1
		6	5	Construction of pit	1	1
			5.1	Final fill of pit		1
		7	7	Tree throw	1	2
		8	8	Construction of pits and ditch	3	3
			8.1	Final fill of pits and ditch		3
		9	9	Construction of pit	1	1
			9.1	Final fill of pit		1
		11	11	Construction of pit	1	1
11.1	Final fill of pit			1		
Total					84	225

Table 2: Summary of provisional phasing

3.2 Structural Illustrations

A series of illustrations are enclosed which break the remains up by period and by area (due to the nature of the excavation). It is often the case that elements of remains from one period (e.g. Iron Age field boundaries) are present in later periods (e.g. Saxon). By showing remains from several periods together, it allows the reader to appreciate the effect (if any) that later features may have had on 'earlier' landscapes.

3.3 Summary of Contextual data results

Period: Neolithic (3500 BC – 1500 BC)

Phase 1: Neolithic quarrying

G21: Quarry pits (Illus. 3)

A concentration of pits, some of which were intercutting, measured on average 1.70m in width and 0.55m deep. They were filled by compacted re-deposited chalk (SG25.1) and contained a large amount of primary flint reduction waste. This perhaps, is suggestive of flint quarrying taking place, a topic which will be explored during analysis (see Flint in appendix 1).

G22: Pits and a tree throw (Illus. 3)

Seven small pits of a shallow nature all contained some worked flint. This is helpful in providing a broad date range for their infilling, although they remain enigmatic in function. They are physically close to pits G21 and may be associated. Therefore, a similar flint extraction function seems most plausible.

Period: Late Bronze Age / Early Iron Age (700BC – 300BC)

Phase 2: Late Bronze Age / Early Iron Age activity

G1: Large pit (Illus 5)

A pit measured 5.80m x 2.85m in plan and 0.49m deep. It was on a NNW-SSE alignment. Late Bronze Age/ Early Iron Age pot (see Appendix 1) was present in the backfill (SG1.1) which looked to be one event as opposed to a silting up. Characteristics of the pit would suggest a multi-use pit.

G23: Drip gully and pits (Illus 10)

A series of curvilinear features formed a sub-oval shape, close by two pits. These features shared similar silty clay deposits. The sub-oval gully was very shallow with a maximum depth of 0.13m and had the appearance of a drip gully or wear hollow. Lithics which showed signs of retouching and which included refitting pieces were recovered. These features are considered broadly contemporary with G24.

G24: Ditch, postholes and pits (Illus 10)

A concentration of shallow postholes and pits (SG32 & SG33) contained fragments of Late Bronze Age/Early Iron Age pottery and burnt clay with charcoal. These features have been plough truncated, reducing their original depth and possibly resulting in the loss of some related postholes. No recognisable structure type was present, although given the level of truncation the possibilities of occupation on this location will be considered during analysis.

Ditch SG36 aligned NNE-SSW had a depth of up to 1m. The deposit recorded within it was typical of one created by silting up over a period of time. As in G23, a high concentration of flint pieces typical of the Neolithic period were recovered. This assemblage included several blades and two scrapers. Several pieces of pottery datable to the Iron Age were also recovered. The presence of Neolithic flints in this later context suggests they are residual and given the quantity of Neolithic flint finds on the site, this is to be expected within many later deposits.

Five other pits were located nearby and were filled by a homogenous silty clay. They produced no datable material. A sixth pit contained a sheep burial.

Period: Iron Age (700 BC – AD 43)

Phase 3: Early Iron Age settlement

G12: Ditches and pits (Illus 11)

Interpretation of the ditch and pit features within G12 is limited as they were investigated only within the confines of an evaluation trench. However, the abundance of pottery and burnt plant remains contained within them (SG12.1 & SG13.1) are consistent with settlement activity, of which they are thought to represent a small part.

G14: Ditches and pit (Illus 10)

Ditches aligned NE-SW and NW-SE along with small pits represents settlement in the area. The pits contained flint-tempered pottery along with some animal bone (SG15.1) and may represent pits for food waste.

Phase 4: Iron Age field systems

G3: Boundary ditches (Illus 8)

The layout of two ditches with an alignment of NE-SW and NW-SE, and a lack of any other nearby features, suggested them to be boundary ditches. Together these ditches would have formed a T-Shape and are typical of Iron Age ditches used to separate land into fields. A single sherd of pottery was discovered but was fairly un-diagnostic so the ditches were presumed to be part of long lived field boundaries. Such a paucity of datable artefactual material is also typical of field systems of this date.

G15 – G20: Ditches and pits (Illus 3, 4, 5, 6, 7, 8)

Ditches with various alignments were present in groups across the site. G16 was diagnostic from pottery and dated to the Early Iron Age and whilst there was no solid dating evidence from other Groups, they were presumed to be part of the same long lived field systems across the site.

Within G18, a large pit (SG21) measuring 9.50m x 7.50m x 0.60m was thought to be a cistern for collecting rain water for cattle and suggested the ditches within this group to be potential animal enclosures.

Period: Anglo-Saxon (AD 410 – AD 1066)

Phase 5: Anglo-Saxon settlement activity

G2: Sunken Featured Building (Illus 7)

G2 is a sunken featured building (SFB), aligned N-S and measuring 3.24m x 2.40m. This contained loom weights deposited in a line and also in clusters; the clusters were situated in three out of the four corners of the SFB. The weights were contained in the uppermost (final) deposit [016]. Two post holes, both with a diameter of 0.35m, were associated with the SFB with one located on the northern edge and the other on the southern edge. This SFB was an isolated feature with no other remains dating to this period in the vicinity.

Period: Modern (AD1900-present)

Phase 6: Modern agricultural use

G5: Animal burial

A post-medieval burial was recorded in an area not covered by archaeological investigation. Deposit (SG 6.1) contained fragments of clay pipe.

G10: Pit and small ditch (Illus 13)

Agricultural use of the site continued into the modern period, with occasional plough scars and evidence of a pit and ditch terminus. Although these contained no datable material, it was thought they were relatively recent and connected to agricultural use.

Period: Unphased

Phase 7: Undated

G4: Animal burial (Illus 8)

The absence of both skulls in this shallow animal burial could suggest hunting activity with the removal of heads as trophies. No evidence within the fill (SG 4.1) could phase this burial.

G6, G8, G9 & G11: Pits and ditches (Illus 2, 7, 9, 12)

Although it was possible to assign a date to most of the features revealed on the site, a few isolated pits and ditches remain unphased. No datable artefactual material was present as an indicator of a conclusive date for these features and they displayed no characteristics or possessed any stratigraphic relationships which allowed for an inferred date to be assigned.

G7: Root disturbance (Not illustrated)

There were tree-throws spread across the site. Their date could not be determined.

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 loom weights, lithics 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

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, including digital mapping (a plan), a profile drawing through a feature and its fills (section), and photographs.

Contexts	Plan Sheets	Sections	Photographs
225	13	45	291

Table 3: Quantity records

Survival and condition of remains encountered

The most significant remains identified date from the Neolithic Period, the Iron Age and the Anglo-Saxon Period. Other remains of lower significance were dated to the Late Bronze Age / Early Iron Age. The remains had been truncated by extensive ploughing during the medieval/post-medieval period and in modern times. This was evident through plough marks visible at the level at which significant archaeological remains were encountered. The components of these landscapes that survived best were

relatively deeply cut negative features such as quarry pits, ditches and other types of pits.

The archaeological features comprise various activities in the landscape such as Neolithic quarrying which was represented by the discovery of pits which contained waste related to flint quarrying. A sunken floored building, typical of Anglo-Saxon Settlement, was found isolated from any other features and contained loom weights collapsed in situ. Evidence also remained of long lived agricultural use of the landscape with field boundaries visible as crop marks into the modern period.

A variety of ditches representing various phases of field boundaries were observed across the site. The representation of ditches across chronological periods implies that that boundaries have been variously retained/re-cut and/or infilled and replaced over time. That ancient field patterns survive as cropmarks and within extant field boundaries is not uncommon in this region and efforts will be made to recognise these patterns during analysis.

The distribution of certain types of artefact (*e.g.* flints and pottery) has assisted in identifying where settlement activity was focused. The presence of varying artefactual data from pottery to loom weights will provide further information on the use of the land from prehistory to modern times.

The presence of charred plant remains, charcoal fragments and molluscs across the site will assist in a reconstruction of the site's palaeoenvironmental conditions. However, conditions of preservation were generally such that few remains from these data-sets were recovered, limiting the interpretive value of these data sets.

4.3 Artefactual Data

Pottery

The pottery assemblage ranges in date from the late prehistoric to the Anglo-Saxon. The late prehistoric pottery has potential to add to knowledge of ceramics in the area. The assemblage consists of at least five carinated jars and the various forms present are similar to those illustrated from a Late Bronze Age site at Washingborough, Lincolnshire (Allen 2009). Analysis would allow for further comparisons with this site, and other published groups from the area such as the nearby site of Balsham. These comparisons would allow to more closely parallel the vessels present with other published examples from Cambridgeshire.

The Anglo-Saxon assemblage comprised a rim top of a small jar or bowl and sherds of another five vessels in different fabric, all recovered from the final fill of the sunken floored building. The lack of chronologically diagnostic features from the assemblage prohibits close dating of this group, however, analysis will provide dating evidence for the sunken floored building, as well as placing it in the region when compared with other groups in the area.

Ceramic Loom weights

The discovery of ceramic weights from a warp-weighted loom within the final fill of the sunken featured building would indicate either that a loom was left to decay within the

building or that the weights were cut off when the loom was removed and left where they fell. With this assemblage of weights being so well stratified, analysis would provide not only dating, but also information on the nature of the activity within the area where they were left.

Lithics

The lithic assemblage contains large quantities of primary reduction material from tasks such as nodule testing, decortication etc, and include a teardrop shaped scraper and several blades that support a Neolithic date. The assemblage also contains evidence to support flint extraction and potentially *in situ* working floors; the exact nature of the extraction is unclear, although nodules appear to be being extracted and reduced and this occurred on a potentially significant scale.

Further study of the assemblage could provide information on various activities such as the reasons behind particular reduction strategies; reasons the material was collected and prepared; which parts of the reduction sequence were taking place here; if tools were also produced on site; and finally to which period the technology was likely to belong.

A gap in the knowledge of production and distribution of lithics has already been identified in East Anglia (Brown and Murphy 2000, 9). As such this site has potential for furthering the study of lithic technology and production in the area. The assemblage also has the potential to show how this industry changed over time, and with clear evidence of later prehistoric exploitation and potentially extraction of flint, the site could provide useful information about the later industry.

Other Artefacts

A small fragment of probable iron slag from a recent animal burial and two fragments of daub from a pit were recovered but would not benefit from any further investigation.

4.4 Ecofactual Data

Animal Bone

The animal bone has some potential for further study with the assemblage producing evidence from two different phases; the Anglo-Saxon period and the undated phase. Bone from the Anglo-Saxon contexts is scarce and in a fair/poor condition, however, it is possible to determine some of the species present, including one bird and large and medium size mammals. Further study would allow for an analysis of the utilization of some of these animal species on the site during the Anglo-Saxon period when the site was occupied at the Sunken Floored Building.

Molluscan Remains

Undiagnostic molluscan remains were recovered. There is not a suitable quantity of these remains from datable contexts to provide a useful data-set for analysis and no further work is recommended.

Plant Remains

The small quantities of charred plant remains recovered offers little interpretative value to the features discovered and the poor condition of the grain suggests that some reworking or re-deposition of material has occurred. Further analysis is of very little

interpretative value and would add little to the information already gained. There is, however, some material, primarily charcoal fragments that could be used to provide radiocarbon dating evidence for features at the site that may aid our understanding of the chronology and phasing of the site as a whole. Whether a radiocarbon date is sought will be decided upon:

- whether a specific context would add value to our understanding if it were datable using this method;
- whether that context contained suitable material, with the potential for such dating;
- whether that material was recognisably in-situ (e.g. placed on the base of a pit rather than located more randomly throughout a disuse fill within a pit).

Only when material passes these tests will a radiocarbon date be sought, where such conditions do exist, multiple dates would be sought in order to obtain the most reliable dating sequence.

4.5 Potential of Datasets to Address Original Research Objectives

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

Objective	Contextual	Other Artefacts	Pottery	Ceramic weights	loom	Lithics	Animal Bone	Molluscan Remains	Plant Remains	Charcoal
1 To characterise the nature and extent of Neolithic activity in the area, specifically the evidence for flint extraction and any evidence for on site tool manufacture, or lack thereof.	Medium	-	Low	-		High	-	-	-	-
2 To contribute to an understanding of the pattern of Neolithic land use in southern Cambridgeshire.	Low	-	-	-		Medium	-	-	-	Low
3 To characterise the nature of Late Bronze Age – Early Iron Age activity in the area, including settlement core and field systems/agriculture.	Medium	-	Medium	-		-	-	-	-	Low
4 To contribute to an understanding of the pattern of settlement and agriculture for this period in southern Cambridgeshire.	Medium	-	Medium	-		-	-	-	-	Low
5 With the aid of environmental techniques, an attempt will be made to model the landscape and its transformation brought about by the settlement’s inhabitants and due to natural events.	Low	-	-	-		-	-	Low	Low	Low

- High Dataset is able to contribute direct, significant data which can expand our knowledge in this area.
- Medium Dataset can contribute direct data which will be relatively standard for this chronological period and region.
- Low Dataset has a relatively low potential to augment our knowledge of this subject. It may be of only minor relevance to the research aim, or may help to add to a database of ‘less significant evidence’ which, when combined, is useful in recognising patterns, e.g. pottery assemblages, settlement types.
- Dataset has no potential to provide useful information on this subject.

Table 5: Potential of recovered datasets to address the original research objectives

5. RESEARCH OBJECTIVES FOR ANALYSIS

5.1 Introduction

Following assessment of the various datasets, it has been possible to refine and add to the original objectives (Table 5). The ways in which these research objectives will be addressed are listed below, with reference to national and regional research frameworks. Original research objectives 2, 4 and 5 have not been retained due to insufficient evidence to undertake substantial analysis; however aspects of these objectives have been incorporated in the revised versions.

5.2 Revised research objectives

Table 6 summarises the potential (Low, Moderate, High) of each dataset to contribute to the revised research objectives for analysis.

What is the nature and extent of Neolithic activity in the area and specifically, what evidence is there for flint extraction and on-site tool manufacture?

Further analysis of contextual, documentary and particularly artefactual data (high potential) would provide useful identification and dating information for evidence of flint quarrying discovered at Wadlow. Furthermore, this information would advance knowledge of potential flint mines in the region which at present is lacking (Brown and Murphy 2000). Analysis of the flint assemblage (high potential) will focus on identifying evidence for production, technology and distribution of lithics in East Anglia, whilst comparison with similar sites nearby in the region will place the findings in their wider context within that region.

What is the nature of Late Bronze Age to Iron Age landscape in the area?

Our investigations revealed evidence of field boundaries throughout the site. These are thought to be parts of a Late Bronze Age-Early Iron Age landscape with the possibility of boundaries continuing into later periods. The contextual data, along with artefactual data (medium potential) will be analysed in order to better understand the field systems in the landscape and how they remained constant and/or how they changed over time.

What is the nature of the Anglo-Saxon remains identified? Is there any significance in their location compared to the Fleam Dyke?

A Sunken Featured Building (SFB) or *Grubenhäuser* was identified in the south-western part of the site which is typical of Anglo-Saxon settlement. Analysis of the contextual data (high) along with artefactual and ecofactual data (medium) will aid in establishing the nature of the SFB whilst more specific analysis of artefacts such as the ceramic loom weights and pottery will aid in the understanding of activities that took place within and around the SFB. Its situation close to the Fleam Dyke will be analysed to establish whether or not there is any significance in their comparative locations.

How do the various phases of activity in this landscape compare with contemporary sites in the surrounding area?

Analysis will aim to establish how contemporary settlements in the region interacted throughout the periods. Comparator sites will be sought for each period, these sites will be used to look for patterns of similarity and areas of difference. A first stage in our analysis will be designed to approach the Cambs HER and other organisations working in that area in order to seek out useful 'type sites'. For Neolithic remains, higher status sites from further afield, such as Grimes Graves, will be touched on for comparison with Neolithic flint mining and manufacturing. Associations between Anglo-Saxon settlement activity recorded on the development area with nearby contemporary settlement sites will be considered; as will the location of our SFB in proximity to the Fleam Dyke and Devil's Dyke. Contextual, documentary (high) and artefactual (medium) data will aid in these various analyses.

Objective	Contextual	Documentary Data	Other Artefacts	Pottery	Ceramic Loom	Lithics	Animal Bone	Molluscan Remains	Plant Remains	Charcoal
• What is the nature and extent of Neolithic activity in the area and specifically, what evidence is there for flint extraction and on-site tool manufacture?	High	High	-	Medium	-	High	-	Low	Low	Low
• What is the nature of Late Bronze Age to Iron Age landscape in the area?	Medium	Medium	-	Medium	-	-	-	Low	Low	Low
• What is the nature of the Anglo-Saxon remains identified? Is there any significance in their location compared to the Fleam Dyke?	High	High	-	Medium	High	-	Medium	Low	Low	Low
• How do the various phases of activity in this landscape compare with contemporary sites in the surrounding area?	High	High	-	Medium	High	High	-	-	-	-

- High Dataset is able to contribute direct, significant data which can expand our knowledge in this area.
- Medium Dataset can contribute direct data which will be relatively standard for this chronological period and region.
- Low Dataset has a relatively low potential to augment our knowledge of this subject. It may be of only minor relevance to the research aim, or may help to add to a database of 'less significant evidence' which, when combined, is useful in recognising patterns, e.g. pottery assemblages, settlement types.
- Dataset has no potential to provide useful information on this subject.

Table 6: Research objectives for analysis and potential of datasets

6. UPDATED PROJECT DESIGN

6.1 Introduction

This section provides a task list for the analysis, publication and archiving programme. Table 7 provides a description of the tasks associated with analysing each dataset and summarises the tasks associated with publication, archiving and overall project management. Table 8 describes the project team and lists their initials, and Table 9 details the proposed timescale for completion of each key stage in the project.

6.2 Publication Synopsis

An article will be submitted to the editors of *Proceedings of the Cambridge Antiquarian Society* for inclusion in that journal. It will contain the following sections. These are derived from the Revised Research Objectives in Section 5.2, Table 6 (this document). Analysis and the written report which is the product of this work is an iterative task, therefore, the following outline is subject to change as ideas evolve and new ideas are generated.

Section	Pages	Illus
Introduction		
• Project background	¼	
• Site location and description (including geology and topography)	¼	1
• Archaeological and historical background	1	
Results of investigation		
• Neolithic (flint extraction pits and potential on-site tool manufacturing)	2	3
• Late Bronze Age to Iron Age landscape (field systems)	1	1
• Anglo-Saxon (Sunken Featured Building and its surroundings)	2	3
Discussion	3	
Conclusions	1	
Acknowledgements	½	
References	1	
Appendices		
• <i>Artefactual assemblage</i>	3	
○ <i>Pottery</i>		1
○ <i>Ceramic Looms</i>		1
○ <i>Lithics</i>		1
• <i>Ecofactual assemblage</i>	3	
○ <i>Animal bone</i>		
○ <i>Plant Remains</i>		
○ <i>Molluscs</i>		

Table 7: Summary of all tasks associated with Analysis, Publication and Archiving

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
Structural analysis liaison/meetings	On-going discussion will take place between the principal members of the project team throughout the analysis and publication stages. These will involve discussion over the nature of the work required, as well as commissioning the work and addressing any queries that arise during the course of the analysis.	PO/HA	2
Analysis of HER and historical maps	The Cambridgeshire Historic Environment Record will be visited to provide background information on archaeological sites in the vicinity. The focus will mainly be on Neolithic and Anglo-Saxon sites in the vicinity. All relevant maps, photographs and other documents will be examined including the aerial photographic survey (Palmer).	PO/HA	2
Contextual, Sub-Group and Group analysis	<p>Each context will be assigned to a single Sub-Group, consisting of one or more (usually several) contexts that are closely related both stratigraphically and interpretatively. The Sub-Group to which each is assigned will be determined by analysis of the primary contextual information, specifically context sheets and sections/plans that were produced on site.</p> <p>The fills of features will be assigned to separate Sub-Groups from their cuts. The only exceptions to this are for deposits interpreted as packing or lining, and for primary fills that formed only a short time after the feature was constructed. For deep features that may have filled up over a long period of time, more than one Sub-Group will be used in order to separate their lower and upper fills. However, to ensure that their spatial location is easily identifiable, they will be issued a Sub-Group number comprising a decimal point of the ‘containing’ Sub-Group. For example, the non-primary lower fills of enclosure SG7 would be assigned to SG7.1, and the upper fills to SG7.2. When assigning contexts to Sub-Groups, the artefactual and ecofactual assemblage recovered from each context will be considered. This will identify any that contained significant assemblages which may need to be referred to in detail in the descriptive section of the publication text. Such contexts will also be separated out at Sub-Group level.</p> <p>Groups will be composed of Sub-Groups that are stratigraphically similar, and which combine to form a coherent unit of contemporary activity. Sub-Groups containing non-primary fills may be assigned to separate Groups, in order to reflect the possibility that they are considerably later in date than the construction/primary fill Sub-Groups, and would therefore need to be analysed separately. However, to ensure that their spatial location is easily identifiable, they will be issued a Group number comprising a decimal point of the ‘containing’ Group. For example, the non-primary fills of farmstead G7 would be assigned to G7.1.</p>	PO/HA	1
Phase analysis	Each Group will be assigned to a higher level of interpretation known as a Phase, which may contain one or more Groups. Each Phase will represent a chronological period. A plan will be produced for each Phase, with the location	PO/HA	2

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
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of all relevant Groups marked.

The following example allows us to tell the *story* of some postholes which were created to hold timbers for a building in use in an Iron Age settlement. That building was abandoned and the postholes became infilled during the early Roman Period, when the land was part of an arable field. To tell that story means that fills and cuts unified within one, and more, postholes need to be divided according the Period they were created and the Phase of activity which caused that. In order to achieve those, it was necessary to divide them amongst different Groups and sub-groups.

This system has the flexibility to discuss Features where that is useful and to separate elements of those same Features and discuss those where that adds value to our *story*.

Example 1: How do the Primary Fills of postholes in Structure 1 fit in?

Period – Iron Age (700BC-AD43)	
Phase 1 (Settlement 1, late Iron Age 100BC – AD43)	
Group G1 – Structure 1	
Sub-Group SG1.1 – primary fills and cuts of post holes in Structure 1 (G1)	
<i>Starting with the following contextual data</i>	
Primary Fill (301), Secondary Fill (302) of posthole [300]	Cut of posthole [300]
Primary Fill (304), Secondary Fill (305) of posthole [303]	Cut of posthole [303]
Primary Fill (307), Secondary Fill (308) of posthole [306]	Cut of posthole [306]

Example 2: How do the Secondary (and final) fills of postholes in Structure 1 fit in?

Period – Roman Period (AD43-AD410)
Phase (Field Systems, early Roman period AD43-AD150)
Group G2 – Remains related to the abandonment of Iron Age Settlement
Sub-Group 1.2 – Secondary fills of post holes in Structure 1 (G1)

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days						
	<p><i>Starting with the following contextual data</i></p> <table border="1"> <tr> <td>Primary Fill (301), Secondary Fill (302) of posthole [300]</td> <td>Cut of posthole [300]</td> </tr> <tr> <td>Primary Fill (304), Secondary Fill (305) of posthole [303]</td> <td>Cut of posthole [303]</td> </tr> <tr> <td>Primary Fill (307), Secondary Fill (308) of posthole [306]</td> <td>Cut of posthole [306]</td> </tr> </table>	Primary Fill (301), Secondary Fill (302) of posthole [300]	Cut of posthole [300]	Primary Fill (304), Secondary Fill (305) of posthole [303]	Cut of posthole [303]	Primary Fill (307), Secondary Fill (308) of posthole [306]	Cut of posthole [306]		
Primary Fill (301), Secondary Fill (302) of posthole [300]	Cut of posthole [300]								
Primary Fill (304), Secondary Fill (305) of posthole [303]	Cut of posthole [303]								
Primary Fill (307), Secondary Fill (308) of posthole [306]	Cut of posthole [306]								
Assistance with structural analysis	The Project Manager will discuss the process of contextual analysis (Sub-Grouping, Grouping, Phasing) with the PO on a regular basis in order to ensure this iterative process benefits from a range of ideas/experiences brought in from other projects.	PM/HA	0.5						
Pottery liaison & transportation		HA	0.5						
Site phasing and finds spot dating	Liaison with site staff over site phasing, and groups, establishing site stratigraphy and spatial distribution of finds.	FM & PO/HA	1.5						
Pottery quantification and recording (Prehistoric)	Amendments to quantification, identification and dating of pottery completed at assessment stage.	FS/ Freelance	1						
Pottery Quantification and recording (Saxon)	Amendments to quantification, identification and dating of pottery completed at assessment stage	FS/ Freelance	1						
Lithic artefacts identification & technical catalogue	Each object will be examined, identified and fully recorded. The following features will be noted: material; colour; type; primary/secondary/inner; percussion; retouch; condition; dimensions; and dating. Assemblage to be thoroughly worked for joining flakes and chips. Finds recommended for illustration will be selected at this stage. Based on assemblage for analysis of 1293 pieces	FS/HA	6						
Ceramic loom-weights quantification and recording	The loom-weights will be individually recorded as regards dimensions, weight, percentage represented.	FM/HA	2						
Ceramic loom-weights technical report	The data recorded will be analysed and assessed as regards the likely original size of the assemblage	FM/HA	1.5						
Animal bone	Analysis of the animal bone highlighted in the assessment.	OA/HA	0.5						

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
quantification and recording			
Animal bone technical report	Technical report and tables to be produced to include phasing of the site, with the aim to be ready for publication.	OA/HA	1
Plant remains liaison and transportation	Transport of material back to the Home Office and production of archive lists.	ED/HA	0.25
Charcoal quantification and recording	Charcoal analysis of the samples with the greatest potential for study. Analysis will inform on taxa present, former woodland change and composition, potential woodland exploitation and management. A maximum of 20 fragments per sample will be analysed.	ED/HA	3
Keystage 1: completion of analysis			
Structural phasing/publication liaison	Once the final phasing has been established, the various specialists will be informed. Each will receive detailed phasing information, the required format of their publication text, and any other information that they may require.	PO/HA	1
Pottery publication liaison		FM/HA	1
Pottery publication text (Prehistoric)	Publication search to contrast this pottery with other groups from the area notably the group from the nearby site of Balsham. Checking illustrations of the 1-2 vessels suitable for drawing.	FS/ Freelance	1.5
Pottery publication text (Saxon)	Publication search to contrast this pottery with other groups from the area	FS/ Freelance	1
Pottery illustration	3 vessels appear suitable for illustration	GD/HA	2
Lithics analysis by context & spatial distribution	Lithic types to be plotted on site plan, patterns to be established to identify knapping floors and testing areas. Based on assemblage for analysis of 1293 pieces	FS/HA	2
Lithics publication text	Research into similar sites and other local flint exploitation sites, liaison with lithics illustrator, report text & editing. Based on assemblage for analysis of 1293 pieces	FS/HA	8
Lithics artefacts illustration	Illustration of selected finds to be carried out in consultation with the artefact analyst, an preliminary estimate of 15 finds is suggested.	GD/HA	7.5
Ceramic loom-weights illustration	A representative sample of three loom weights should be illustrated by line drawing. A group photograph and a site photo showing them in situ are also recommended.	GD/HA	3
Ceramic loom-weights publication text	The text will cite typological dating evidence and place the assemblage in perspective by comparing it to that from similar sites	FM/HA	2
Combined finds report	Editing different finds reports together to provide technically and stylistically consistent report	FM/HA	2

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
editing			
Animal bone phasing/publication liaison	Direction given on overall phasing of the site and publication layout.	OA/HA	0.25
Animal bone publication text	Any references to be added to place site in wider context and how this information ties in with research frameworks within the area. Publication text and tables to be written as to direction given above.	OA/HA	1
Plant remains phasing/publication liaison	Direction given on overall phasing of the site and publication layout.	EM/HA	0.25
Plant remains publication text	Any references to be added to place site in wider context and how this information ties in with research frameworks within the area. Publication text and tables to be written as to direction given above.	EM/HA	0.5
Charcoal phasing/publication liaison	Direction given on overall phasing of the site and publication layout.	ED/HA	0.25
Charcoal publication text	Any references to be added to place site in wider context and how this information ties in with research frameworks within the area. Publication text and tables to be written as to direction given above.	ED/HA	1
Keystage 2: completion of all specialist text			
Structural illustration	The digitised plan and section data will be interrogated via the relational database tables to produce mock-up publication illustrations. Plans will be produced to show all features in each Phase with Groups identifiable.	PO & GD/HA	3
Assistance with structural illustration	The Project Officer will advise and assist the Graphics section in order to ensure illustrations are as helpful to the reader and integrated with the text as is possible.	PO/HA	1
Production of site narrative and integration of all specialist publication reports to create site narrative report	The site narrative will form the basis of the descriptive section of the publication text. It will be organised by Period, Phase, Group and, where appropriate, Sub-Group and context number. A report will be submitted to the AO that is suitable for inclusion in an approved archaeological journal, in this case Proceedings of the Cambridgeshire Antiquarian Society. The chronological phased development of the site will provide the basic structure for the site narrative. Within each Phase text will be organised by Group, with artefactual and ecofactual information integrated into the text as appropriate. Evidence from documentary, cartographic and photographic sources will be integrated into this chronological framework.	PO/HA	5
Assistance with site	The Project Manager will assist the Project Officer where necessary. Input may be given by other individuals with	PM/HA	1

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
narrative report	experience of similar sites etc.		
Amendments and queries in consultation with specialists during article preparation	The Project Officer will work in consultation with specialists in integrating reports into the article. The synthetic narrative of the article will set the tone and direction with specialist contributions serving this aim. Certain technical data may be saved to the project archive rather than appear in print in order to ensure an un-cluttered and interesting narrative.	PO/HA	1
Production of synthesis	The assessment suggests that the discussion will concentrate on the evidence from the Neolithic, Late Bronze/Early Iron Age, and Anglo Saxon periods. In particular, it will focus on what seems to be flint extraction pits, field systems and evidence of Anglo-Saxon settlement, with the focus lying on the related research objectives identified in Section 5.2. Remains from the other represented periods will form a smaller part of the discussion. Further analysis of the material relating to those periods will be guided by the data presented in this assessment.	PO/HA	1
	The outline of the publication should be considered as only a guideline, and may be altered during the analysis and pre-publication stages if the results warrant it.		
Editing publication text		PO & PM/HA	2
Keystage 3: completion of 1st Draft			
Headland's refereeing process		-	1
Keystage 4: Submission to ***			
Submission to <i>Proceedings of the Cambridgeshire Antiquarian Society</i>			
Amendments resulting from editor's comments		PO/HA	0.5
Proof reading		-	0.25
Printing		-	-
Archive preparation	On publication of the final report the archive of materials (subject to the landowner's permission) and accompanying	PO/HA	1

Task Names divided by Key Stage	Description of Task	Title/ Organisation initials	Person Days
(Structural)	records will be deposited with Cambridge County Council's repository, Event Number: ECB3592.		
Archive preparation (Artefacts)	In accordance with guidelines (Ref HER 2004/1) 'Deposition of Archaeological Archives in the Cambridgeshire County Council Archaeology Store'	FS/HA	1
Archive preparation and liaison with Museum		PO/HA	1
Archive microfiching		-	-
Archive transfer (storage costs)		-	-
Archive transfer		-	0.5
Project management (Overall)		PM/HA	0.5
Project management (Headland)	The management of the project includes monitoring the task budgets, programming tasks, checking timetables, and liaising with all members of the project team.	PM/HA	0.5
Keystage 5: end of project			

6.3 The Project Team

To ensure a consistency of approach, the same specialists will be used (as far as possible) who have been involved in the assessment stage of the project.

Task	Organisation, Title and Name	Initials of Title
Daily management	Headland Archaeology (HA), Project Manager, Joe Abrams and Project Officer, Nuala Marshall-Woodley	PM/PO
Structural analysis	HA, Project Officer, Nuala Marshall-Woodley	PO
Pottery analysis (Prehistoric)	Freelance, Finds Specialist, Ian Rowlandson	FS
Pottery analysis (Saxon)	Freelance, Finds Specialist, Jane Young	FS
Ceramic Loom weight analysis	HA, Finds Manager, Julie Franklin	FM
Flint analysis	HA, Finds Specialist, Julie Lochrie	FS
Animal bone	HA, Osteoarchaeologist, Claudia Tommasino Suárez	OA
Plant remains	HA, Environmental Department	ED
Charcoal	HA, Environmental Manager, Scott Timpany	EM
Illustration	HA, Graphics Department	GD
Archiving	HA, Project Officer, Nuala Marshall-Woodley	PO

Table 8: The project team

6.4 Timetable

Following acceptance by the client and CAO of the assessment and Updated Project Design, Headland would like to proceed rapidly with analysis and publication of the results. This would ensure that project momentum is maintained.

Table 9 sets out the five key stages within the analysis and publication programme. An indication of the time required to reach the first three key stages is indicated, and these could serve as appropriate monitoring points, if required.

Task	Anticipated date of completion
Structural Analysis	January 2012
Quantification and recording by specialists	February 2012
Completion of KEY STAGE 1	
Compilation of specialist reports	March 2012
Completion of KEY STAGE 2	
Compilation of 1st draft	April 2012
Completion of KEY STAGE 3	
Refereeing	May 2012
Completion of KEY STAGE 4	
Publication of report*	Mid-Late 2012
Deposition of archive	Late-2012
Completion of KEY STAGE 5	

Table 9: Provisional timetable to complete the project

*Publication, and therefore deposition of the archive with Cambridge County Council's repository, will be dependant on the publication timetable of *Proceedings of the Cambridge Antiquarian Society*.

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APPENDIX 1: Finds Assessment

by Julie Franklin, Ian Rowlandson, Jane Young, Julie Lochrie, Barry Bishop

Introduction

This report identifies, quantifies and interprets the hand-collected and wet-sieved finds from all the excavations undertaken by Headland Archaeology at Wadlow Windfarm.

A summary of the assemblage is shown in Table 1. Tables of the pottery and lithic finds are included in the text. A complete catalogue of all the finds is available in archive.

Table 1 Summary of the finds assemblage by phase and group, quantified by number of finds

Phase	Group	Pottery (LBA-EIA)	Pottery (Saxon)	Pottery (Other)	Loom Weights	Lithics	Other Finds
1	21	-	-	-	-	687	-
1	22	-	-	-	-	415	-
2	1	6	-	-	-	654	2
2	23	-	-	-	-	112	-
2	24	12	-	-	-	803	1
3	12	312	-	-	-	194	-
3	13	-	-	-	-	2	-
3	14	60	-	-	-	51	-
4	3	-	-	1	-	512	-
4	16	1	-	-	-	3	-
4	18	2	-	-	-	4	-
4	19	-	-	-	-	43	-
4	20	-	-	-	-	191	-
5	2	1	15	-	45	111	-
6	Topsoil	-	1	-	-	84	-
7	4	-	-	-	-	33	1
7	6	-	-	-	-	29	-
7	8	-	-	-	-	3	-
7	11	14	-	-	-	-	-
Total	-	408	16	1	45	3931	4

Methodology

Hand-collected and wet-sieved finds were processed and recorded on an Access database. The pottery assemblage was quantified by three measures: number of sherds, weight and vessel count within each context. Fabric identification of some sherds was undertaken by x20 binocular microscope. This information was put in a database using fabric codenames. The finds were quantified by sherd count, though joining sherds from the same artefact were counted as one. The finds were labelled and packaged appropriate to their material types according to guidelines laid out by Cambridgeshire County Council Archaeology Store (HER 2004/1).

Results

Pottery

The pottery assemblage comprised 425 sherds, representing 257 vessels (1.148kg). The pottery ranges in date from the late prehistoric to the Anglo-Saxon or high medieval periods.

The pottery is in an abraded to fairly fresh condition. Sherd size mostly falls into the small to medium size range (between 1 and 20 grams) with the exception of larger fragments from Group 12, Phase 3. Eighteen vessels are represented by more than one sherd and there are possibly cross joining vessels between different Group 12 pit fills (context 035 and 084). No cross-context joining vessels were identified at this stage.

With one exception, the assemblage splits into two discreet groups; a prehistoric element and an Anglo-Saxon group. Few vessel forms were identifiable.

Table 2 Pottery types with total quantities by phase, group and context

Phase	Group	Context	Sample	Fabric	Fabric details	Form	Sherd	Vessels	Weight	Part	Date
2	1	4		FLCC	Flint-common coarse	-	1	1	8	body	Late Bronze Age -Early Iron Age
2	1	4		FLMC	Flint-moderate coarse	-	1	1	3	body	Late Bronze Age -Early Iron Age
2	1	4		FLMC	Flint-moderate coarse	-	1	1	1	body	Late Bronze Age -Early Iron Age
2	1	6	2	FLAC	Flint-Abundant coarse	-	2	1	11	body	Late Bronze Age -Early Iron Age
2	1	6		FLSM	Flint- sparse medium	-	1	1	3	body	Late Bronze Age -Early Iron Age
2	24	72		GRMC	Grog-moderate coarse	-	9	1	53	body	Late Bronze Age -Early Iron Age
2	24	72		QUCM/FLMC	Quartz-common medium; Flint-moderate coarse	-	3	1	3	body	Late Bronze Age -Early Iron Age
3	12	33		QUSM/FLSM	Quartz-sparse medium; Flint- sparse medium	-	2	1	6	body	Late Bronze Age -Early Iron Age
3	12	35		FLMC/QUSM	Flint-moderate coarse; Quartz-sparse medium	jar carinated	20	1	128	rim	Late Bronze Age -Early Iron Age

Phase	Group	Context	Sample	Fabric	Fabric details	Form	Sherd	Vessels	Weight	Part	Date
3	12	35		FLMC/QUSM	Flint- moderate coarse; Quartz- sparse medium	jar carinated	20	1	128	rim	Late Bronze Age -Early Iron Age
3	12	35		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	-	2	1	9	body	Late Bronze Age -Early Iron Age
3	12	35		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	-	1	1	6	body	Late Bronze Age -Early Iron Age
3	12	35		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	-	9	9	26	body	Late Bronze Age -Early Iron Age
3	12	35		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	-	2	1	12	body	Late Bronze Age -Early Iron Age
3	12	35		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	-	2	1	20	body	Late Bronze Age -Early Iron Age
3	12	35		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	-	4	1	17	body	Late Bronze Age -Early Iron Age
3	12	35		QUSM	Quartz- sparse medium	-	1	1	2	body	Late Bronze Age -Early Iron Age
3	12	37	7	MISC	Misc uncatagorised	-	2	2	1	body	Late Bronze Age -Early Iron Age
3	12	84	7	FLMC/QUSM	Flint- moderate coarse; Quartz- sparse medium	JER	1	1	4	rim	Late Bronze Age -Early Iron Age
3	12	84	7	FLMC/QUSM	Flint- moderate coarse; Quartz- sparse medium	JER	1	1	4	rim	Late Bronze Age -Early Iron Age
3	12	84		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	jar	1	1	1	rim	Late Bronze Age -Early Iron Age
3	12	84		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	-	5	5	15	body	Late Bronze Age -Early Iron Age

Phase	Group	Context	Sample	Fabric	Fabric details	Form	Sherd	Vessels	Weight	Part	Date
3	12	84		FLSC/QUSM	Flint- sparse coarse; Quartz- sparse medium	-	2	1	13	body	Late Bronze Age -Early Iron Age
3	12	84		MISC	Misc uncatagorised	-	176	176	32	?	Late Bronze Age -Early Iron Age
3	12	84		QUCM	Quartz- common medium	jar?	2	1	22	body	Late Bronze Age -Early Iron Age
3	12	84	7	QUCM	Quartz- common medium	-	7	1	6	body	Late Bronze Age -Early Iron Age
3	12	84	7	QUCM	Quartz- common medium	-	15	1	22	base	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar carinated	8	1	172	rim	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar everted	1	1	2	rim	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	-	14	14	60	body	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar carinated	1	1	8	body	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar	1	1	2	rim	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar everted rim	1	1	1	rim	Late Bronze Age -Early Iron Age
3	12	84		QUCM/FLSC	Quartz- common medium; Flint- sparse coarse	jar carinated	8	1	76	body	Late Bronze Age -Early Iron Age
3	12	84		QUSM/FLSM	Quartz- sparse medium; Flint- sparse medium	jar carinated?	3	1	22	body	Late Bronze Age -Early Iron Age
3	14	40		FLCC	Flint- common coarse	-	1	1	6	body	Late Bronze Age -Early Iron Age
3	14	40		SHSM/QUSM	Shell sparse medium; Quartz- sparse fine	-	1	1	4	body	Late Bronze Age -Early Iron Age

Phase	Group	Context	Sample	Fabric	Fabric details	Form	Sherd	Vessels	Weight	Part	Date
3	14	50		QUCM	Quartz- common medium	-	2	1	3	body	Late Bronze Age -Early Iron Age
3	14	52		FLSC/QUSF	Flint- sparse coarse; Quartz- sparse fine	-	1	1	27	body	Late Bronze Age -Early Iron Age
3	14	52		FLSM/QUSF	Flint- sparse moderate; Quartz- sparse fine	-	11	1	54	body	Late Bronze Age -Early Iron Age
3	14	52		MISC	Misc uncategorised	-	4	1	1	body	Late Bronze Age -Early Iron Age
3	14	52		QUCM/FLMC	Quartz- common medium; Flint- moderate coarse	-	40	1	11	body	Late Bronze Age -Early Iron Age
4	3	8		MISC	light oxid;fine sandy	closed	1	1	12	body	Roman/medieval
4	16	59		QUMC	Quartz- moderate coarse	-	1	1	5	body	Late Bronze Age -Early Iron Age
4	18	10		SHSM/QUSF	Shell- sparse medium; Quartz- sparse fine	-	2	1	7	body	Late Bronze Age -Early Iron Age
5	2	16	5	ERRA	fine mixed sandy	jar ?	3	1	20	body	Anglo-Saxon
5	2	16		ERRA	fine mixed sandy	small jar	7	1	26	rim & body	Anglo-Saxon
5	2	16		ERRA	fine mixed sandy	jar/bowl	1	1	4	body	Anglo-Saxon
5	2	16		ERRA	fine mixed sandy	jar/bowl	1	1	11	body	Anglo-Saxon
5	2	16		ERRA	fine mixed sandy	jar	1	1	11	neck	Anglo-Saxon
5	2	16	5	FLMC	Flint- moderate coarse	-	1	1	1	body	Late Bronze Age -Early Iron Age
5	2	16		SST	-	small jar/bowl	1	1	2	rim	Anglo-Saxon
5	2	23		SST	-	jar/bowl	1	1	17	body	Anglo-Saxon
6		0		SST	-	jar ?	1	1	15	body	Anglo-Saxon
7	11	30		SHSM	Shell- sparse medium shell	-	4	1	7	body	Late Bronze Age -Early Iron Age
7	11	30		SHSM	Shell- sparse medium shell	-	10	1	5	body	Late Bronze Age -Early Iron Age

Abbreviations: *ERRA* Anglo-Saxon Erratic-tempered; *FLAC* Flint- Abundant coarse; *FLCC* Flint- common coarse; *FLMC* Flint- moderate coarse; *FLSC* Flint- sparse coarse; *FLSM* Flint- sparse medium; *GRMC* Grog- moderate coarse; *MISC* Unidentified types; *QUCM* Quartz- common medium; *QUMC* Quartz- moderate coarse; *QUSF* Quartz- sparse fine; *QUSM* Quartz sparse medium; *SHSM* Shell- sparse medium shell; *SST* Early to mid Saxon sandstone-tempered

Prehistoric

The prehistoric pottery consists of 314 handmade sherds and a further 94 small fragments. On the basis of the diagnostic carinated forms from Group 12, Phase 3 the pottery dates to the Late Bronze Age or perhaps earlier Iron Age. The pottery present is predominantly quartz and flint gritted with a few sherds showing signs of sparse calcareous inclusions, which may be from the parent clay. A small quantity of grog-tempered pottery is also present. Late Bronze Age to Iron Age pottery in this region is commonly flint tempered (Glazebrook 1997, 22). The pottery firing colours range from completely 'black' or reduced through to oxidised; many vessels have an irregular patchy firing colour ranging from dark grey to a dark red. It appears likely that the rest of the assemblage is also contemporary with the Group 12 finds although the fragmentary condition of many of the sherds makes this uncertain.

The pottery from Group 32 consists of at least five carinated jars (D1 and D2 in the archive). One of these jars appears to have been burnt and reoxidised over the break. Another vessel present in the assemblage may also be from a carinated form. A further three jar rims, two from thin walled everted rimmed jars and another with a rounded profile are also present in the assemblage. A further nearly complete neat pinched out base is present in this group. The forms present are similar to those illustrated from a Late Bronze Age site at Washingborough, Lincolnshire (Allen 2009) although close dating of pottery of this period is notoriously difficult (Knight 2002).

Roman or medieval

A single abraded oxidised sherd from Group 3, Phase 4 in an oxidised light firing sandy fabric, may conceivably date to the early Roman or medieval periods. The sherd is wheel thrown, but relatively undiagnostic and cannot be positively attributed to either period.

Anglo-Saxon

Sixteen sherds from eight different vessels are of Anglo-Saxon date. One of the three sandstone-tempered vessels (SST) was recovered from a topsoil deposit towards the centre of the site. This abraded sherd probably comes from a jar and has a mixed fabric with sparse to moderate medium-sized aggregated quartz grains.

Other finds were all from the final fill of the sunken floored Group 2 building. The first of these was a rim top of a small jar or bowl. This vessel is in a coarse sandstone-tempered fabric that also contains carbonised vegetable matter, sparse calcareous grains and fragments of vesicular slag or grog. Another sherd is from either a jar or bowl. The fabric of this vessel mainly consists of fine quartz with moderate aggregated grains, but a few fragments of vesicular slag or grog are also present.

The other five vessels are in a very mixed fabric that has a fine quartz background with a variety of other inclusions in variable quantities. Amongst these inclusions are fragments of biotite granite, coarse angular quartz grains, flint and feldspars. Three sherds, probably from a single jar have an external burnished surface and the neck of another jar is slightly polished, otherwise the vessels are undecorated. Seven of the sherds are from a single

vessel, a small necked-jar with a baggy profile and a simple rounded rim that has been slightly flattened on top. The vessel has external sooting and a partial internal carbonised deposit. The remaining sherds could come from jars or bowls.

The lack of chronologically diagnostic features prohibits close dating of this group and only a general date of between the 5th and 8th centuries can be suggested. The vessels however are most likely to be of early Anglo-Saxon 5th to 7th century date.

Ceramic Loom Weights

There were 45 individual finds of ceramic weights from a warp-weighted loom. Of these 17 are complete or near complete, representing a minimum of 33 weights. These were all found deposited in a line within the final fill of the Group 2 sunken floored building. This would indicate either that a loom was left to decay within the building or that the weights were cut off when the loom was removed and left where they fell. It certainly implies that they were all contemporary. Typologically, loom weights are distinguished by the diameter of the central hole in relation to the ring thickness. These weights are a mixture of annular and intermediate which implies an early to middle Saxon (5th to 9th century) date.

Lithics

The lithic assemblage numbers 3931 pieces. These can be separated into two main groups: those from around the chalk flint pits, representing mining and primary reduction; and those often abraded and patinated pieces from various features across the excavated areas. The bulk of the assemblage represents primary reduction debris, from tasks such as nodule testing, decortication etc. Preliminary examination has also identified possible blanks, cores, core/platform trimming flakes and some retouched pieces which suggests some secondary technology in discrete areas. The tools are mostly miscellaneous edge retouched pieces but there are a few well-made scrapers. One scraper from Group 24, a large teardrop shaped piece, likely dates to the Neolithic. Group 24 also includes several blades and evidence for single platform reduction also supporting a Neolithic date.

Most of the flint appears to have been sourced directly from the surrounding chalk seams although some examples are slightly less chalky and somewhat abraded suggesting they were sourced from gravels derived from the chalk seams. The assemblage includes material from the whole sequence of reduction; split pebbles, chunks, cores, flakes, blades, retouched pieces and a small amount of chips.

The material falls into three groups, defined by spatial area. From the north of the site, the material from Groups 20, 21 and 22 amounts to 1293 pieces. This is made up almost exclusively of primary testing and reduction, representing the first step in identification and preparation of the raw material. The majority of this (Phase 1, Groups 21 and 22, 1102 pieces), appears to be in situ in quarry pits, following the seam of chalk which could be traced in the pit side. The remainder is residual, in a Phase 4 ditch (Group 20, Sub-Groups 25, 25.1, 191 pieces).

At this stage it is unclear if there was an intention to manufacture specific implements but a number of broken pieces had been bifacially worked and these may relate to the earlier stages in axe manufacture. There were also a smaller number of useable flakes present, many of which were quite narrow and some blade-like. The technological characteristics of the flakes indicate a Neolithic date for these finds, tentatively Earlier Neolithic rather than Later.

A similar assemblage of material was retrieved from Groups 12, 13, 14, 16, 23 and 24 in the south-western part of the site, numbering 1165 pieces. With evidence of primary reduction, this material includes greater examples of cores, trimming flakes, blanks and retouch, particularly in Group 12. This indicates a greater emphasis on tool making rather than just mining and primary reduction work. This material seems to be of broadly similar date to the Group 21 and 22 material described above, and includes the only specifically diagnostic piece, a teardrop shaped scraper of Neolithic date (Group 24, Phase 2), though it is at present unclear to what extent this material is in situ. The patination on some but not all flake scars seems to indicate that there have been long periods between some of the removals suggesting old flint lying around was picked up at a later period and knapped. This could indicate a long-lived site or re-occupation at a later period. The material was more abraded than that from Groups 21 and 22 but examples of refits were found across all six of these groups suggesting that though there has been some redeposition, the material has not moved far before being deposited in these pits and ditches, possibly these were dumps of material cleared from a working floor. Dating evidence comes from associated pottery which has been preliminarily dated to the late Bronze Age or early Iron Age, a date which is likely to be later than the majority of the lithic material. However, the only pottery associated with the large lithic assemblage from Group 24 amounts to 12 undiagnostic body sherds, and there is no pottery at all associated with the Group 23 material. The groups have been assigned to Phase 2 (Groups 23 and 24) and Phase 3 (Groups 12, 13 and 14), though it is possible that some of these may in fact be earlier (particularly Groups 23, 13 and possibly 24). Further work is needed to define the full range of dating for the site, particularly in view of the possible long lived nature of activity there.

The lithics retrieved from the central part of the site (Groups 1, 2, 3, 4 and 6) are mostly residual. They number 1339 pieces, including cores, tools, flakes, chips and chunks. Almost all are patinated and many suffer abrasion. A denticulate tool found in the topsoil was the most distinctive piece and is of probable Bronze Age date. The lack of diagnostic pieces and the large number of irregular cores, flakes and chunks indicate the assemblage is very unlikely to date much earlier than the Bronze Age and may even be later. The high proportion of chips and flakes indicates knapping in the vicinity. About half of this part of the assemblage was assigned to Phase 2 (Group 1, 654 pieces) and it may be contemporary with the apparent later prehistoric dating of this phase. Similar dating is potentially indicated for as yet unphased features, Groups 4 and 6 (62 pieces). The remainder of the finds are apparently residual in later contexts (Groups 3, 2, Phases 4 and 5), associated with Saxon and possibly Roman or Medieval pottery.

Table 3 Flint assemblage by phase, group and context

Phase	Group	Context	Sample	Number of Pieces	Description	Date
1	21	Unstrat	-	52	1 bag of chalk flint debitage	-
1	21	8	-	142	2 bags of chalk flint debitage; one interesting piece shows four longitudinal removals along the same lane, some are step terminated, poss blade production	-
1	21	83	-	431	3 bags of chalk flint debitage	-
1	21	83	5	62	Spilt pebble, blade, small irregular flakes and chips	-
1	22	5	-	1	Black flint with chalky cortex; some corticated; chunk	-
1	22	7	-	30	Blue black with chalky cortex, patinated and fresher breaks; flakes and chunks; at least 4 refits	-
1	22	13	-	30	Blue-black white with v. chalky cortex; flakes, split pebbles, chunks and one retouched piece (probable burin)	-
1	22	15	-	12	Blue black flint with chalky cortex, some patination; Flakes and chunks;	-
1	22	17	-	85	Grey white ; flakes, chunks, and blades. In two bags	-
1	22	17	7	4	Grey white, patinated; small flakes and chips	-
1	22	20	-	158	Grey white with v. chalky cortex; flakes, chunks, and blades	-
1	22	22	-	14	Blue white with chalky cortex, patinated; flakes and chunks	-
1	22	26	-	22	Blue white with v. chalky cortex; flakes and chunks	-
1	22	28	-	59	Blue black with chalky cortex, patinated white; flakes, cores, chunks and two pieces with possible retouch	-
2	1	4	1	289	Cores, chunks, flakes chips, and a few blades	-
2	1	6	2	365	1 edge retouched piece; lots of flakes and some cores; several burnt pieces	-
2	23	37	-	40	Blue white with chalky cortex; flakes, core, chunks, blades and Four pieces with retouch, including quite a large scraper with wide platform and double bulb	-
2	23	42	-	21	Blue black flint with chalky cortex; chunks, flakes and one retouched piece (inverse concave retouch to lateral edge)	-
2	23	52	-	7	Blue white with chalky cortex, patinated; flakes and chunks	-
2	23	54	-	17	Blue white with chalky cortex, patinated; flakes, chunks and blades; one blade has edge damage or possible edge retouch	-
2	23	54	18	10	White grey flakes and chips	-
2	23	56	-	4	Grey white with chalky cortex, patinated; flakes, three refit	-
2	23	58	-	1	Blue white, patinated flake	-
2	23	60	-	5	Blue white with chalky cortex, patinated; flakes and chunks	-
2	23	62	-	4	Blue white with chalky cortex, patinated; flakes, blade and one minimally retouched distal fragment	-
2	23	64	-	1	Blue white, hard, abraded cortex, patinated; flakes and chunks	-
2	23	71	-	2	Blue white flint; inner flakes	-
2	24	29	-	74	Blue white with chalky cortex, patinated; flakes, split pebbles, chunks and a broken scraper (missing distal end, rectangular, fairly large convex distal end scraper)	-
2	24	31	39	11	White grey with an abraded chalky cortex, patinated white; small flakes, blades, chips and chunks	-
2	24	31	-	1	Small patinated flake	-
2	24	34	-	57	Blue white with cortex, patinated; flakes, cores, chunks and four retouched pieces	-
2	24	35	-	51	Blue white with chalky cortex and a few examples of small	-

Phase	Group	Context	Sample	Number of Pieces	Description	Date
					rolled pebbles of honey brown flint; patinated, one has a small bivalve fossil impression; flakes, cores, chunks and five pieces with edge retouch	
2	24	44	-	10	Blue black flint with chalky cortex, patinated; chunks and flakes	-
2	24	48	-	11	Blue white with chalky cortex, patinated; flakes and chunks; several refits	-
2	24	72	-	60	Blue white with slightly chalky cortex and small blue white pebble examples with a hard abraded cortex; some burnt; Flakes, chunks, blades and one small oval scraper	-
2	24	76	36	16	Blue grey with chalky cortex; small flakes and chips	-
2	24	76	36	9	Blue white with chalky cortex; chunks, a flake and a core	-
2	24	87	-	96	Grey white with chalky slightly abraded cortex; some burnt pieces; flakes, blades, chunks, platform and core trimming flakes and 4 retouched pieces	-
2	24	89	-	6	Grey white with chalky cortex; flakes	-
2	24	94	-	60	Blue grey flint with chalky cortex, patinated white; flakes, split pebbles, cores, chunks, a platform trimming flake and two pieces with concave lateral retouch. In two bags	-
2	24	97	-	28	Blue white with chalky cortex, patinated; flakes, chunks and blades	-
2	24	97	-	73	Blue grey with chalky cortex, patinated white, flakes, chunks, blades. In two bags	-
2	24	98	-	137	Blue grey with chalky cortex, patinated white; flakes, chunks, blades, cores (possible bifacial technology, blanks), platform trimming flake and about 6 probable examples of retouch. In two bags	-
2	24	109	-	82	Grey white, chalky cortex, patinated; cores, flakes, blades, chunks, a scraper (large, teardrop shaped) and at least six pieces with edge retouched	Neolithic
2	24	109	49	21	White, grey and brown, some patination; small flakes, chunks and chips	-
3	12	35	-	1	Inner flake	-
3	12	37	6	56	Mostly cores chunks and flakes; also a different source for flint, there are several small abraded pebbles	-
3	12	84	7	136	Mixture of flint debitage; mostly small irregular cores; flakes, chips and indeterminate pieces; some burnt	-
3	12	84	-	1	Small brown indeterminate piece	-
3	13	42	-	2	Primary flake and proximal end of secondary flake	-
3	14	50	-	1	Secondary hard hammer flake	-
3	14	52	3	50	Mixture of flint debitage; Small flakes and chips	-
4	3	8	10	467	7 possible edge retouched pieces; mostly patinated flakes and chunks; 9 burnt pieces	-
4	3	8	4	45	Possible, cores, flakes and chunks	-
4	16	59	-	3	Two severely patinated irregular cores; burnt and broken inner flake with one abruptly retouched edge, inverse left lateral edge.	-
4	18	10	-	4	Irregular core; Secondary flake; Inner bipolar flake with abrupt distal end retouch; Inner flake with inverse edge-retouch to left lateral edge	-
4	19	26	-	43	Large flakes and blades; higher instance of blades than other contexts	-
4	20	2	-	1	Primary flake	-
4	20	4	1	190	Mixture of flint debitage; mostly flakes	-

Phase	Group	Context	Sample	Number of Pieces	Description	Date
5	2	16	5	63	Some multi platforms cores, chunks and flakes (some may be natural)	-
5	2	21	7	48	Patinated flakes and chips	-
6		Unstrat	-	1	Grey blue with chalky cortex, patinated; large chunk, probable irregular core	-
6		Topsoil	-	1	Denticulate tool; direct, denticulate retouch to right lateral edge	Bronze Age?
6		1	-	82	Blue grey with v. chalky cortex, patinated white; split pebbles, chunks and flakes. In two bags	-
7	4	12	-	3	Corticated/patinated edge retouched piece, flake and chunk	-
7	4	13	-	1	Corticated chunk	-
7	4	14	3	29	Small patinated flakes and chips	-
7	6	18	9	29	Chunk, small flakes and chips	-
7	8	72	-	3	Three severely patinated hard hammer flakes.	-

Other Finds

The only other finds recovered were a small fragment of probable iron slag from a recent animal burial (Group 4) and two fragment of daub from the Group 1 sunken building.

Summary

Three phases are visible in the finds assemblage, though it is unclear to what extent these are distinct as opposed to continuous at this stage. The earliest finds are of flint and represent the mining, testing and preparation of this material during the Neolithic period, possibly continuing into the Bronze Age. The best undisturbed evidence for this is at the north of the site, with further evidence at the south-west.

The next phase is represented by the deposition of pottery in the late Bronze Age or early Iron Age, almost exclusively at the south-west of the site. There is also some evidence for flint production and use contemporary with this, though the presence of so much earlier material make this difficult to define at present.

The next definite phase of activity is during the early Saxon period, between the 5th and 7th centuries. This is evidenced by pottery and loom weights, concentrated exclusively to the central part of the site, around the Group 2 sunken floored building.

Potential & Recommendations

Lithics

Though the lithic assemblage may not include a high number of tools or immediately iconic and identifiable pieces, it does contain large quantities of primary reduction material and potentially *in situ* working floors. This makes for an important assemblage with potential for understanding the initial processes of mining, testing, selection and reduction of the raw materials. Preliminary examination of the material indicates there

are many instances of conjoining flakes, allowing nodules to be reconstructed and the sequence of removals to be studied. Much can be learned from this, such as: the reasons behind particular reduction strategies; reasons the material was collected and prepared; which parts of the reduction sequence were taking place here; if tools were also produced on site; and finally to which period the technology was likely to belong.

The exact nature of the flint extraction is unclear, but nodules were being extracted and reduced and this occurred on a potentially significant scale. County and regional parallels will be sought during analysis. The assemblage also has the potential to show how this industry changed over time. Late prehistoric activity at the south-west of the site led to some disturbance of earlier material and also to the reworking of some older flint debris. The use of flint in later prehistory is little understood compared to that from earlier periods. It is typically characterized as a debased industry, with few diagnostic tools types and poor workmanship. Nonetheless, flint was clearly still part of the material culture and tool kits of late prehistoric peoples. This site, with clear evidence of later prehistoric exploitation and potentially extraction of flint could provide useful information about the later industry.

A gap in the knowledge of production and distribution of lithics has already been identified in East Anglia (Brown and Murphy 2000, 9). As such this site has great potential for furthering the study of lithic technology and production in the area. Analysis will focus attention on a detailed study of one area; the assemblage from the northern part of the site (Groups 20, 21 and 22). This assemblage totals 1293 pieces and includes the best evidence for Neolithic flint extraction. The material in Groups 21 and 22 lies in situ in flint extraction pits and study of this undisturbed material provides the best statistical evidence for the early industry. The material from Group 20 should be included, though found in ditch fills preliminarily assigned to Phase 4, the nature of the material indicates it is of early date, and the lack of associated finds suggests that these too may be undisturbed early deposits. Either way, the material adds to the statistical make up of the early material.

Pottery

The prehistoric pottery is a small but interesting collection that adds to our knowledge of ceramic use in the area. Two vessels appear suitable for illustration. A final report would benefit from further comparisons with other published groups from the area, notably the group from the nearby site of Balsham, to more closely parallel the vessels present with other published examples from Cambridgeshire.

The sherd from the final Group 3 ditch fill of possible Roman or high medieval pottery is abraded, undiagnostic and inconclusive. No further work is recommended for this sherd.

The Saxon pottery is a small assemblage, lacking in diagnostic features, but nonetheless provides useful dating evidence for the sunken floored building. The pottery should be compared to other groups from the area. The largest of the Saxon pottery rim forms could also be illustrated.

Ceramic Loom weights

Again these finds are well stratified within the sunken floored building, providing evidence not only for the dating, but also the nature of the activity within it. A more detailed study should be made of these weights, their fabric, dimensions and weights should be catalogued and a detailed search for comparative material should be undertaken. A representative sample of three loom-weights should be selected for illustration.

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APPENDIX 2: Palaeoenvironmental Assessment

By Sarah-Jane Haston

Introduction

The samples were collected from a series of features including the fills of pits, postholes, and ditches along with a number of deposits from an Anglo Saxon SFB. The assessment aims to look at what the palaeoenvironmental potential of the material is and what evidence this material is showing us for the activities which once took place at the site.

Method

Samples were processed in laboratory conditions using a standard floatation method (cf. Kenward *et al*, 1980). All plant macrofossil samples were analysed using a stereomicroscope at magnifications of x10 and up to x100 where necessary to aid identification. Identifications were confirmed using modern reference material and seed atlases including Cappers *et al* (2006). Any charred plant remains were recorded using a simple four-point scale as follows: + = rare, ++ = occasional, +++ = common, ++++ = abundant. Notes were also made on the condition of the charred plant remains. All bone fragments recovered from the sample processing will be discussed in a separate report along with the bone hand-collected on site.

Results and Discussion

The concentration of charred plant remains recovered from the samples was very low and only amounted to the occasional charred cereal grain and very small quantities of wood charcoal. The discussion follows the chronology of the site and includes the results of the first and second phases of palaeoenvironmental assessment and follows the sub-grouping (SG) given in the main report text.

Phase 1: Neolithic

One sample (007) from SG.28 was assessed from the Neolithic phase. The sample was taken from the fill [017] of a tree throw [016]. No charred plant remains were recovered from the sample (Mynett 2010). The absence of any plant macrofossils inhibits any interpretation. Mollusc remains were noted as being common with a minimum of three species of terrestrial shell able to be differentiated (Mynett 2010).

Phase 2: Late Bronze Age/Early Iron Age

Five samples were assessed from the Late Bronze Age/Early Iron Age phase; Sample 036 from SG.33.1, Sample 037 from SG.33 and samples 001 and 002 from SG.1.1. The samples from SG.33 and SG.33.1 were taken from the fill [076] of posthole [077] (Sample 036) and the fill [031] of pit [032] (Sample 037) respectively. These samples contained only small quantities of charcoal fragments identified as non-oak and less than 1cm in size. The charcoal was also noted to be heavily abraded suggesting it may be redeposited

material transported across the site by mechanisms such as windblow and surface run-off. Both samples contained rare terrestrial shell and occasional lithics (Mynett 2010).

Samples 001 and 002 from SG1.1 were taken from fills [004] and [006] from the final fill of pit [002]. Sample 002 contained a small quantity of charred cereal grain including naked barley and hulled barley, together with indeterminate cereal grain. The presence of both naked and hulled barley is indicative of the later Bronze Age period when the use of naked barley gradually gives way to the cultivation of the hulled form (Hillman, 1981). Both samples also contained rare quantities of small-sized charcoal (<0.5cm), which again may represent redeposited material. Other material recovered from these pit fill included: lithics, prehistoric pottery sherds and daub, together with unburnt bone and marine shell, suggesting the discard of food and domestic waste into the pit.

Sample 049 from SG.36.1 was taken from the fill [109] of ditch [111] and the only material of archaeological significance it was found to contain was a common amount of lithic material (Mynett, 2010). Terrestrial snail shell was also recovered but may represent intrusive modern material.

Phase 3: Iron Age

Four samples were assessed from this phase. Three samples (003, 006, and 007) were taken from the fills [052, 037 and 084] of pits [051, 083 and 085] from SG.12.1, SG.13 and SG.15.1. A further sample (018) from SG.15.1 was taken from the fill [054] of gully [053]. Charred cereal grain was present in only one sample (007) and comprised a single grain of club/bread wheat (*Triticum aestivo-compactum*) and an indeterminate grain. Both of the charred grains were broken and poorly preserved. The sample also produced a single, broken knotgrass (*Persicaria* sp.) fruit. Club/bread wheat was one of the earliest crops brought to the British Isles during the Neolithic and has been cultivated throughout prehistory and into modern times. Having such a broad date span the grain itself cannot add any further dating information to the pit feature (Timpany 2009). Three samples (003, 006 and 007) contained charcoal fragments but in only one sample (007) were there fragments of a size (1.5cm) that might suggest *in-situ* burning or deliberately dumped fire waste. Sample 018 from gully [053] also contained an occasional amount of lithic material and terrestrial snail shell; the latter of which may again represent intrusive material.

Phase 4: Iron Age

Three samples were assessed from this phase. Sample (001) from SG.25 was taken from the primary fill [004] of ditch [005] assessed in 2009 and samples (004 and 008) from SG.3.1 taken from the fills [008 and 010] from the final fill of the ditches assessed during this third phase of assessment. The only charred plant remains recovered from the samples was very small flecks of charcoal found in a rare amount in Sample 001. Sample 001 was found to contain common terrestrial shell. Other finds recovered were common to abundant fragments of lithics in all three samples.

Phase 5: Anglo Saxon

Three samples were processed from this phase. Sample 005 from SG.2.1 was taken from fill [016] from the final filling of the sunken house building. One sample (006) from SG.2 was taken from the fill [019] relating to the construction and primary fill of the sunken house building and postholes. A further sample (007) from SG.2.1 was taken from the fill [021] relating to the final use of this construction. The samples contained a poor assemblage of charred cereal grain and a small quantity of charcoal fragments, unburnt mammal bone and marine shell. The cereal grain was identified as hulled barley, which barley is generally associated with the later Prehistoric, Anglo Saxon and Medieval periods in England (Hillman 1981). The majority of the charcoal fragments were less than 0.5 cm in diameter, again suggesting that they may have been become incorporated in the sampled deposits by mechanisms such as windblow and surface run-off. Also recovered from these samples were rare fragments of unburnt mammal bone and rare amounts of marine shell, together with a small quantity of prehistoric pottery, which may indicate the presence of earlier activity (see Table 1). Lithic material was also recovered from Sample 007. In the absence of any obvious conflagration deposits the likely source of the small amount of charred material is from the domestic hearth from which burnt food debris, charred during preparation or small-scale crop processing has subsequently been re-worked and re-deposited into the sampled deposits.

Un-phased contexts

Two samples were assessed from un-phased contexts. Sample 003 was taken from the fill [014] of an animal burial from SG.4, while Sample 009 was taken from the final phase of pit fill [018] from SG.5.1. Both have been assessed as part of this third phase of palaeoenvironmental assessment. The samples contained a very low quantity of organic material comprising a single poorly preserved and unidentified cereal grain in Sample 003 and wood charcoal fragments in Sample 009. Only Sample 009 contained any abundance of charcoal fragments, which were also of a size suitable for identification and radiocarbon dating; being between 0.5-1cm. The quantity and size of the charcoal fragments recovered in Sample 009 are suggestive of *in-situ* primary refuse or deliberately dumped fire debris within the pit feature. A significant quantity of unburnt animal bone was recovered from animal burial [014]. The samples also contained lithic materials as well as fragments of marine shell, while a small amount of MWD was also recovered from Sample 003. These materials indicate that small-scale industrial and domestic waste has been incorporated within these features.

Recommendations

The small quantities of charred plant remains recovered from the site offers little interpretative value to the features discovered. The poor condition of the grain present within the samples suggests that some reworking or re-deposition of material has also occurred at the site. Thus no further analysis of this material is recommended.

The charcoal fragments recovered from the site show good palaeoenvironmental potential to inform us deliberate selection of woods for fuel sources. Some samples contained material suitable for radiocarbon. However, the fact that these charcoal pieces were

incorporated into 'disuse' fills within features means that any date attributed to the charcoal/grain dates only that ecofact and not the activity associated with the pit/ditch within which they eventually became incorporated. The date ranges typical of radiocarbon dates are considered unlikely to significantly advance our understanding of the date/s of activity at the site. Therefore, no radiocarbon dates are considered necessary. A species table will be created listing the charcoal quantities; this will be drawn into the integrated narrative in order to add detail on local fuel sources.

Mollusc remains were present in some of the samples and these remains were generally recovered from features containing a single homogenous fill. These features were infilled via natural processes and the fills are considered to be 'disuse'. Therefore, the Molluscs recovered from them will not advance understanding of the 'use' of these features and no further analysis is recommended.

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Table 1: WWWW08 Flotation Sample Results

Cont ext	Sam ple	Total flot	Cer eal	<i>Horde um vulgar e</i>	<i>cf. Hordeum vulgare var nudum</i>	<i>Cere alia</i> indet.	Other Plant Remains	Charc oal Quant ity	Charco al Max size (cm)	Material available for AMS	Comments
Phase 1 - Neolithic quarrying											
83	5	<10						++	<1		V small flecks of charcoal
017	007	75									Molluscs +++, Modern roots +++++
Phase 2 - Late Bronze Age/Early Iron Age											
031	039	25						+	0.2		Molluscs +, Beetle +, charcoal is oak.
054	018	5									Molluscs +
076	036	5									Molluscs +
109	049	15									Molluscs +++++, Modern Roots ++
Phase 3 - Iron Age Settlement											
4	1	60					Modern root material	+	<0.5	-	
6	2	40		+	+	+	Modern root material	+	<0.5	Charred cereal +	Grain is very poorly preserved
52	3	<10						+++	<1		
37	6	<10						++	<1cm		
84	7	20			+	+	<i>Persicaria</i> sp. +	+++	1.5	Charcoal +	Grain preservation poor.
Phase 4 - Iron Age field systems											
8	4	180					Uncharred wood, twigs and leaves			-	Archaeologically sterile
10	8	70					Modern root material			-	Archaeologically sterile

4	1	10						+	<1		V small flecks of charcoal
Phase 5 - Anglo Saxon											
16	5	200					Modern root material	++	<0.5	-	
19	6	30		+			Modern root material			-	Grain is very poorly preserved
21	7	70					Modern root material	+	<0.5	-	
Phase 7 - Unphased											
14	3	40				+	Modern root material			-	Sample contains unburnt bone +
18	9	40					Modern root material	+++	1	Charcoal +	
<p>Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant</p> <p>NB charcoal over 1cm is suitable for identification and AMS dating</p>											

Table 2: WWWW08 Retent Sample Results

Context Number	Sample Number	Sample Vol (l)	Ceramic		Stone	MWD	Unburnt bone	Shell		Material available for AMS Dating	Comments
			Pottery	CBM				Lithics	Stone		
			Prehistoric	Daub							
Phase 1 - Neolithic quarrying											
83	5	10			++++				+		
17	7	20			+				++		
Phase 2 - Late Bronze Age/Early Iron Age											
54	18	5			++				++++		
76	36	10			++	++			+		

31	39	10			++				+		
109	49	5			+++				+		
Phase 3 - Iron Age Settlement											
4	1	40	+		++++			+	+++		Pottery is possibly Anglo-Saxon. Marine shell not retained
6	2	40	+	+	++++			+	++	Unburnt Bone +	Coarse pottery of unknown date. Marine shell not retained
4	1	10			++++				+++		
52	3	10	+++		+++			++	+		
37	6	10	++		++++		++	++	+		
84	7	10	++++		++++		+		+		
Phase 4 - Iron Age field systems											
8	4	40			+++						
10	8	40			++++						
Phase 5 - Anglo saxon											
16	5	40	+					+	+	Unburnt Bone +	Pottery is possibly Anglo-Saxon. Marine shell not retained
19	6	3									Archaeologically sterile
21	7	10			+++						
Phase 7 - Unphased											
14	3	10			+++		+	+++	+	Unburnt Bone +++	Marine shell not retained
18	9	10			+++				++		Marine shell was not retained
Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant NB charcoal over 1cm is suitable for identification and AMS dating											

APPENDIX 3: Faunal Assessment

By Claudia Tommasino Suárez

Methodology

Identification and quantification

The assemblage was retrieved by hand collection and soil sampling was assessed broadly by class and species where possible. This was determined through assessment of parts of the carcass, preservation of the bones, epiphyseal fusion, measurable bones or genus according to Schmidt (1972) and using modern animal bone reference material. The mammal specimens that could not be assigned to a species were recorded using the categories “large mammal” (lm), “medium mammal 1” (mm1), “medium mammal 2” (mm2) and “small mammal” (sm) (Harland *et al.* 2003). The specimens categorised as “large mammal” could belong to cattle, horse or a big cervid such as red deer. The “medium mammal 1” category refers to sheep, goat, pig or small cervids. The skeletal elements were divided into the four parts of the skeleton for the purposes of discussion: cranial (skull, mandible); axial carcass or trunk (vertebrae and ribs); meaty bones or upper limbs (scapulae, pelvis and its respective limb); and feet or lower limbs (metapodials, phalanges and carpals/tarsals).

The assessment of the assemblage was recorded using the York System (Harland *et al.* 2003) and quantified by TFN (Total Number of Fragments).

<i>Context</i>	<i>Weight</i>	<i>TFN</i>	<i>% of TNF</i>	<i>Phase</i>
4	0.0032	1	0.26	Phase 5: Anglo Saxon
6	0.0207	3	0.77	Phase 5: Anglo Saxon
12	0.5835	144	37.11	Phase 7: Unphased
13	2.4	184	47.42	Phase 7: Unphased
14	0.0324	24	6.19	Phase 7: Unphased
16	0.1064	32	8.25	Phase 5: Anglo Saxon
Total	3.1462	388	100	

Table 1 - Bone recovery by context

Results

The animal bone assemblage from West Wrating came from six different contexts and includes an estimate of 388 animal bones (see Table 1). The total weight of the assemblage is approximately 3.1462 kg. of which only 0.0438 came from retent. The bones retrieved came from two different phases. The main phase relates to the Anglo-Saxon period and included thirty-six bones with a total weight of 0.13kg. The preservation of the Anglo-Saxon assemblage is poor to fair with the majority of the bones present between 21-40% complete, with the vast majority unidentifiable to species. The remaining bones, weighing a total of 3.0159 kg, came from unphased contexts and are in

very good state of preservation. The majority of these bones are between 80-100% complete with the exception of ribs, pelvises and scapulae.

Birds and large mammals were retrieved in the assemblage. The majority of elements, however, derive from medium size mammals (see Table 2). Small mammals, fish and amphibians seem to be absent. Most parts of the animal carcass are present with very limited representation of the cranial elements. Therefore, age data could be gathered from approximately 114 post-cranial bones' epiphyses, but no dental wear could be assessed due to the absence of mandibular tooth rows. The good preservation of the bones would allow for the collection of metrical evidence from 31 post-cranial bones.

<i>Context</i>	<i>Phase</i>	<i>TFN</i>	<i>Large mammals</i>	<i>Medium size mammals</i>	<i>unidentified mammal</i>	<i>Birds</i>	<i>Mandibles</i>	<i>Measurable</i>	<i>Epiphyses</i>	<i>Complete bones</i>
4	5	1	0	0	1	0	0	0	0	0
6	5	3	1	2	0	0	0	0	0	0
12	7	144	0	144	0	0	0	12	49	21
13	7	184	0	184	0	0	0	19	62	21
14	7	24	0	24	0	0	0	0	2	5
16	5	32	5	9	17	1	0	0	1	2
Total		388	6	363	18	1	0	31	114	49

Table 1 – Summary of faunal assemblage

Discussion

The assemblage dating from the Anglo-Saxon contexts is scarce and in a fair/poor condition. However, it is possible to determine some of the species present, including one bird and large and medium size mammals, and attempt to discuss the species retrieved in the context of other Anglo-Saxon sites. Birds such as chickens and mammals including cattle, sheep, pigs, horses, dogs and cats were commonly consumed and/or kept during the Anglo-Saxon period (Lapidge *et al* 2001) and some of these species are likely to be identified amongst the remains. Therefore, further work on the Anglo-Saxon assemblage would allow for an analysis of the utilization of some of these animal species on the site, although the detailed discussion of animal husbandry practices would not be possible due to the size of the assemblage and its preservation.

Regarding the unphased bones, the characteristics of the assemblage would allow for a reliable identification of the species represented and the age of the specimens. Furthermore, the important amount of metrical data would permit the calculation of withers heights for the animals, a process that can assist with temporal interpretations. Finally, a closer analysis of the characteristics of bones from contexts 012, 013 and 014 would allow for the exploration of the possibility that articulated specimens are present in the assemblage. However, from the preliminary assessment of the bone characteristics there is a possibility that these articulated bones are non-archaeological in origin.

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