Summary

- A programme of archaeological trial trenching was undertaken to comply with a condition attached to planning permission for a commercial development to the north-west of Reach Road in Burwell, Cambridgeshire.
- The site lies within a landscape of prehistoric and Romano-British activity, with Bronze Age funerary barrows and Romano-British villa sites identified close to the site.
- Two trenches were excavated in the footprint of the development area, exposing a series of archaeological features of prehistoric and Romano-British date, perhaps indicative of field systems associated with settlement.
- Lithic material indicated some activity in the area from the later Neolithic and/or early Bronze Age periods.
- A former channel was exposed that was probably open at the end of the Iron Age and possibly as early as the later Neolithic and/or early Bronze Age period. The part remains of at least two individuals were discovered at the edge of the channel. A sample of bone submitted for radiocarbon dating suggested a date of deposition in the late Iron Age.
- A rising water table caused abandonment of the area, probably in the later Roman period.



Figure 1: Site outlined in red at scale 1:25,000 © Crown Copyright 2006. All rights reserved. License Number 100047330

1.0 Introduction

- 1.1 Allen Archaeological Associates was commissioned by Armtrac Limited to carry out a programme of archaeological trial trenching in advance of an industrial development on land to the north-west of Reach Road in Burwell, Cambridgeshire.
- 1.2 The fieldwork, recording and reporting conforms to current national guidelines, as set out in the Institute for Field Archaeologists '*Standards and guidance for archaeological field evaluations*' (IFA 1999), and the regional standards defined in '*Standards for field archaeology in the East of England*' (Gurney 2003). The methodology for this project conforms to a brief prepared by Cambridgeshire Archaeology Planning and Countryside Advice (hereafter CAPCA) (Gdaniec 2007), and a specification prepared by this company (Allen 2007).
- 1.3 The archive will be submitted to Cambridgeshire County Archaeological Store within six months of the completion of the project.

2.0 Site location and description

- 2.1 The town of Burwell lies approximately 6km north-west of the centre of Newmarket and c.16km north-east of Cambridge. The site is an irregular block of agricultural land of approximately 1.5ha, to the south-west of Burwell, off Reach Road.
- 2.2 At the time of the trenching the site was agricultural land that had been taken out of crop production, and had a coverage of tall grasses and thistles. The site centres on NGR TL 5836 6601, and lies at a height of between 5m and 6m above Ordnance Datum.
- 2.3 The local geology comprises the West Melbury marly Chalk Formation (Gdaniec 2007).

3.0 Planning background

3.1 A planning application was submitted to East Cambridgeshire District Council (Ref. E/07/00082/FUM), for the construction of a new factory unit with associated access road and drainage. As one of the conditions of the planning permission, CAPCA (who advise East Cambridgeshire District Council on archaeological planning matters) recommended that an archaeological evaluation be carried out on the site in order to provide information concerning the potential impact of the development upon the archaeological resource. A brief was produced by CAPCA outlining the requirements of this evaluation (Gdaniec 2007).

4.0 Archaeological and historical background

- 4.1 The archaeological and historical background for the site and the surrounding area has been compiled mainly from records held at the Cambridgeshire Historic Environment Record (hereafter CHER), information provided within a brief by CAPCA (Gdaniec 2007), and the document '*Research and Archaeology: A framework for the eastern counties, Volume 1. resource assessment*' (Glazebrook 1997).
- 4.2 The earliest evidence of activity in the parish was the chance find of a Palaeolithic stone handaxe discovered during the digging of postholes near the castle, approximately 570m to the east of the development area (CHER No. 01775B). Closer to the site, less than 200m to the north, a scatter of Neolithic worked flints were recovered during the Fenland Survey (Hall 1996, CHER No. 04437). Approximately 800m to the south-east the CHER records the presence of two Bronze Age ring ditches, one with a diameter in excess of 30m, which have since been

ploughed out (CHER Nos. 06455 and 06456). A further two undated cropmark ring ditches are noted to the south-west, approximately 1km from the application area (CHER No. 09247). A middle Bronze Age bronze dagger was discovered during ploughing on a gravel ridge in Burwell Fen less than 450m to the north-north-west of the centre of the development area (CHER No. 06465), and a small hoard of later Bronze Age artefacts, comprising a socketed axe, a socketed spearhead and a tanged chisel, were found in the graveyard of the parish church of St Mary, c.600m to the east of the site (CHER No. 06769a).

- 4.3 At the time of writing, the CHER does not identify any Iron Age activity within 1km of the application area; however Iron Age pot sherds were discovered approximately 1km to the southwest during the Fenland Survey (Hall 1996; Site 6, 102).
- 4.4 The area is rich in remains of Romano-British date, mainly located along the fen-edge. A villa site is identified some 700m to the south of the application area, from cropmark evidence, with associated finds of pottery (including local Horningsea and imported samian wares), roof tiles and fragments from a glass bowl (Hall 1996; CHER No. 04298). At the same location a series of pits containing Roman pottery were identified during ditch cutting. In the 1970's ploughing c.200m to the east of the site brought to the surface large quantities of Roman pottery, including Horningsea and samian wares, and box and flue tiles suggestive of high status Roman settlement remains (CHER No. 04663). Excavations of an Anglo-Saxon cemetery approximately 700m to the north-east of the site revealed a large quarry pit that had been backfilled with Romano-British material such as pottery and box and flue tile fragments, suggesting that a substantial structure was located nearby (CHER No. 06764a). Further Roman material has been recovered from the vicinity of Burwell Castle (CHER No. 06807), including a Roman lead tank or vat (CHER No. 06787). Pottery from within the tank suggested it was probably of 4th century AD date.
- 4.5 The place-name Burwell is probably of Anglo-Saxon origin, and means 'spring by the fort or burg'. At the time of the Domesday Survey in 1086, land was owned by The Abbot of Ramsey, the nuns of the church of Chatteris and Count Alan (Williams and Martin 2002).
- 4.6 The Scheduled site of Burwell Castle (CHER No. 29382) that lies less than 300m to the east of the application area is believed to have been part of a chain of defences built by King Stephen in 1143 1144 as a measure to contain the rebellious Earl of Essex, Geoffrey de Mandeville.
- 4.7 The Fenland Survey shows that the majority of the parish, including the application area, was marshland during the medieval period (Hall 1996, 106).

5.0 Previous archaeological investigations

- 5.1 There have been a number of archaeological investigations within 1km of the proposed development area, the majority of which proved negative and are therefore not discussed further.
- 5.2 The discovery of human remains at Burwell Castle in the late 19th century led to the subsequent excavation of 127 burials of Anglo-Saxon date in the 1920's (Event Ref ECB614). The excavations also uncovered Roman remains and elements of the castle itself (Event Ref ECB555).
- 5.3 A scheme of works carried out in 1992 in advance of and during the groundworks for the Dullingham to Swaffham River Support Pipeline to the south of the site also exposed Romano-British settlement remains.

6.0 Methodology

- 6.1 The programme of trial trenching entailed the excavation of two trenches, each 1.6m wide. Trench 1 was 35m long running broadly north-west to south-east and Trench 2 was 60m long, running perpendicular to Trench 1 and forming a 'T'-shape. The locations of the trenches were agreed in advance with CAPCA and are shown on figure 2.
- 6.2 Machine excavation of the trenches was carried out using a JCB 3CX excavator fitted with a 1.6m wide toothless dykeing bucket. Topsoil and subsoil deposits were removed in spits not exceeding 0.1m in depth, under close archaeological supervision, until the first archaeologically significant horizon was exposed. Further excavation was then carried out by hand.
- 6.3 Archaeological features were sample excavated in order to determine their depth, profile, orientation and where possible, date and function. This comprised:
 - 1m wide slots across the full profile of all ditches, gullies and other linear features
 - A 50% sample of discrete features such as pits and postholes of up to 1m diameter
 - A 25% sample of discrete features such as pits and postholes in excess of 1m diameter
 - Intersections of all linear features, where the relationship was not visible in plan
- 6.4 A full written record of all archaeological features and deposits was made on standard Allen Archaeological Associates context sheets, accompanied by plan and section drawings at scales 1:50 and 1:20. A full colour photographic record was also maintained, and selected prints have been included as an appendix to this report (Appendix 1).
- 6.5 The fieldwork was carried out by a team of two experienced field archaeologists, supervised by the author. It was undertaken over a period of four days, Tuesday 15th to Friday 18th May 2007.

7.0 Results

7.1 Trench 1

- 7.1.1 The uppermost deposit in the trench was a 0.3 0.4m deep topsoil deposit, 100, comprising brown/grey silty clay with frequent roots, from which a late Neolithic/early Bronze Age flint core was recovered. In the eastern half of the trench the topsoil sealed a layer of brown silty clay, 101, identified as a probable former topsoil. This horizon appeared to peter out over linear [103] in the middle of the trench (see 7.1.3 below). Immediately to the west of the linear there was a series of deposits between the topsoil and natural chalky marl that are suggestive of wet or marshy ground. Immediately above the natural 102 was a layer of mixed pale grey silty clay with frequent lenses of dark grey/black silty clay, 107, identified as interleaving alluvial deposits probably formed in marshy conditions. Overlying this was an undulating dark grey/black silty clay, 108, probably representing a former ground surface that in turn was covered by mixed yellow/grey chalky marl 109, which was probably the result of a high energy flood event.
- 7.1.2 Towards the middle of the trench was an irregular spread of firm grey silty clay with very occasional sub-rounded chalk fragments, 105. The trench was extended to the north to reveal further elements of this, and excavation revealed it to be the fill of a shallow, irregular hollow, that was cut by a later linear feature, [103].
- 7.1.3 Linear [103] ran broadly east west measuring 0.84m wide and 0.19m deep, with gradual, concave sides and a flat base. The ditch had silted gradually with dark grey/brown silty clay with occasional charcoal flecks, 104. Three sherds of early Roman pottery (late 1st to early-mid

 2^{nd} century AD) were recovered from the fill, along with a late Neolithic/early Bronze Age flint flake and a bone fragment from a horse.

7.2 Trench 2

- 7.2.1 The topsoil in Trench 2, 200, was brown/grey silty clay measuring 0.35 0.40m deep. In the majority of the trench the topsoil sealed 201, brown silty clay subsoil, interpreted as a possible former plough zone. At the northern end of the trench machine excavation of the topsoil revealed a complex sequence of deposits within a large depression, identified as a palaeochannel.
- 7.2.2 Four slots were hand excavated through the palaeochannel, which for the purposes of the report will be discussed as a whole. The earliest deposit encountered was light grey/yellow coarse silt with abundant root matter, 217. This alluvial horizon is likely to have formed within the river under a moderate energy regime.
- 7.2.3 The layer above was 211/215/222/226, light grey silt containing fragments of animal bone, worked flints and fire-cracked flints. In Slot 2 the interface between 211 and silt 217 below was very disturbed, reminiscent of trampled ground at the edge of a watercourse, known as 'poached ground', caused by livestock coming to the edge of the channel to drink,, with the volume of cultural material suggesting the area may have also been utilised as a 'discard zone'. Embedded on the interface between 211 and layer 217 below were a number of pebbles, fire-cracked flints, worked flints and animal bone. A large fragment of worked stone from 215 was identified as a piece of a quernstone created from 'Hertfordshire Puddingstone'. Such material was used for quernstones in the 1st and 2nd centuries AD, although mainly in the period c.50 100 AD (Appendix 2). A small assemblage of worked and fire-cracked flints was recovered from layer 211, including a late Neolithic/early Bronze Age flint flake and a chunk of similar date. The animal bone assemblage included pig, horse and cattle bones, with gnawing evidence suggesting at least some of the bones may have been exposed to scavengers prior to burial.
- 7.2.4 Overlying 211 was a discrete spread of dark brown compact silt, 210, identified as a possible river mud. Two tiny fragments of late Iron Age pottery dating to around the 1st century BC were recovered from this deposit during excavation.
- 7.2.5 210 was overlain by a sporadic deposit of light yellow/buff chalky silt (contexts 209/214/221) that reflects a period of inwash, probably from erosion of the riverbank.
- 7.2.6 This was sealed by 220/208/213, mid brown crumbly silt, identified as a deflated and desiccated former peat layer. A single smashed cattle humerus was recovered from the layer (208). The upper surface of 220 was very irregular, with numerous V-shaped grooves filled by 219/207/212 light yellow/buff chalky silt. The chalky silt, a further period of inwash similar to 209/214/221 below, was sealed by subsoil 201.
- 7.2.7 On the north side of the channel the cut for a shallow ditch or hedge boundary was exposed, [218]. The feature was initially filled with 223, a mixed deposit of grey and light yellow coarse silt containing two horse teeth. The majority of the feature was filled with light grey silt 222 that was identified as being the same as layer 211/215/226.
- 7.2.8 At the southern edge of the channel a total of nineteen human bones from at least two individuals (227) was exposed on the surface of the natural chalky marl, within the grey silt 226. The remains include young adult or small female bones, with some juvenile bones also present (Appendix 5). A fragment of human bone was submitted for radiocarbon dating, and produced a result of 2050±40 BP (Beta-231823), placing the burials towards the end of the Iron Age (Appendix 8).

- 7.2.9 To the south of the former channel was large sub-oval pit [228]. The pit had vertical sides and a flat base, although weathering of the feature had resulted in the upper sides of the cut eroding. The lower fill of the pit was 231, a very compacted deposit of light brown silt with some organic matter. The initial fill seems to have formed through natural silting processes, and no artefacts were recovered from within. Sealing 231 was a lens of light yellow/buff chalky silt, 230. This deposit represented the erosion of the edge of the feature, probably after it had been abandoned. The upper fill, 229, comprised compact grey silt similar in composition to 226 identified in the trench section (see Figure 6, Section A − B), and is likely to represent the infilling of a hollow left by the feature following its episodes of silting and erosion. Although the feature remains undated the presence of the grey silt 229/226 sealing the fills indicates it pre-dates this deposit, and is therefore likely to pre-date Iron Age burial 227 that was found within the alluvial layer.
- 7.2.10 Approximately 10m to the south of pit [228], and lying beyond the extent of flooding associated with the former channel, was linear feature [232]. The ditch had a 45^o sloping southern edge and a steeper, slightly stepped north side, with a flat base. The ditch was filled with very compact grey silty clay with occasional small sub-angular chalkstones, 233. This naturally-formed silting event contained a single sherd of pottery of 2nd to 3rd century AD date and a large piece of fuel ash slag. Overlying 233 was 236, a fairly loose deposit of brown clayey silt, identified as the remnants of a former soil that has remained protected from modern ploughing by occupying a natural depression within the upper part of the ditch.
- 7.2.11 A further 10m to the south was a large feature of which only the eastern edge was exposed within the trench. Possible pond [203] had very steep sides, although shallowing towards the surface in places. It was filled with mid grey silty clay with occasional chalky marl lenses and chalk fragments, 204, probably formed through natural silting interspersed with occasional inwash events. A single bone from this deposit was identified as a long bone from a large mammal. A deposit of grey silty clay with frequent charcoal flecks and moderate chalk flecks, 237, overlying 204, along the edge of the cut may represent a single dumping event of burnt material. The feature then appears to have gradually silted with 205, dark grey compact silty clay. A total of four sherds of pottery were recovered from this upper fill; a single small fragment of Iron Age pottery that is probably residual, and three sherds of a Horningsea Ware storage jar of 2nd to 3rd century AD date. Two fire-cracked flints, two late Neolithic/early Bronze Age flint flakes and a cattle phalanx (foot bone) were also recovered from fill 205.
- 7.2.12Immediately to the south of the probable pond was a shallow rounded pit, [234]. The pit was c.0.65m in diameter and was up to 0.06m deep, with irregular edges and base. The sole fill of the pit was a mix of crumbly grey and black silt, 235, that contained eight pieces of fuel ash slag.

8.0 Discussion and conclusion

- 8.1 The evaluation exposed evidence of archaeological activity across the development area, dating from the early prehistoric periods to the modern.
- 8.2 The earliest evidence for activity was limited to one, or possibly two, worked flints of late Mesolithic or early Neolithic date. The lack of material however indicates that this transient activity is not significant.
- 8.3 The lithic assemblage indicates a further period of activity during the 3rd and 2nd millennia BC (late Neolithic and/or early Bronze Age). The assemblage is again small, however the material was mainly found within the former channel deposits. This suggests either the channel was in existence at the time or later erosion of bank deposits has washed the material in from upstream.

The quantity of burnt flint in the assemblage from the channel provides further evidence of prehistoric activity. It is possible that this material is derived from a burnt mound close to the channel, although there is little supporting evidence from the evaluation for the presence of such a feature.

- 8.4 Although the former channel was not fully excavated due to the depth of the profile, artefacts from the deposits encountered indicate the channel was open at least in the later Iron Age/Romano-British period, and probably earlier. Certainly if the burnt flints are evidence of a nearby burnt mound it would suggest water was present as far back as perhaps the 2nd millennium BC. The sequence of deposits indicate episodes of low-energy water movement interspersed by episodes of inwash probably caused by erosion of the riverbank, with a later formation of peat indicating the gradual formation of a ground surface over the silted up channel.
- The human remains that were exposed along the southern edge of the channel were from at least 8.5 two individuals, with a radiocarbon date from one surprisingly placing their disposal in the 2nd or 1st century BC, during the later Iron Age. Previous investigations in the region have shown that there was a tradition of disposal of human remains in wet places; however radiocarbon dating placed the remains exclusively within the early Bronze Age, in the 3rd millennium BC (Healey and Housley 1992). There is an increasing body of evidence for deliberate disposal of the dead in watery contexts later on in the Bronze Age, with a possible association with the disposal of weaponry, perhaps as a form of river burial tradition (Bradley 2007). This form of burial in wet places from the later Bronze Age onwards may have emerged as a shift away from the single grave tradition that was prevalent in the early Bronze Age (Bradley 2000). Human skeletal material has been recovered from Iron Age riverine sites such as Fiskerton in Lincolnshire, again with votive offerings (Field and Parker Pearson 2003); however the radiocarbon date for the remains at Burwell is surprisingly late, and indicates the tradition of burial within wet places continued later than was previously thought. Although the remains are of at least two individuals, the partial articulation of the bones suggests they may have been complete or partially complete skeletons when they were laid in the soft silts at the edge of the channel. The disturbance of the remains may have been a result of water movement. Although livestock trampling is not ruled out due to the 'poached ground' immediately to the north (See 8.6 below), the associated pollen assemblage indicated a tall herb community was in existence at this location, suggesting that the area may no longer have been grazed pasture and so was restricted to animals.
- 8.6 On the north side of the channel, heavy disturbance of the wet ground surface may have been caused by livestock such as cattle concentrating at the river's edge for access to water, a term known as 'poaching'. A number of animal bone fragments indicate that the locality was probably used for the disposal of domestic refuse at this time, with a fragment of an unusual quernstone indicating that this may have occurred around the 1st century AD (approximately 50 -100 AD).
- 8.7 Of similar date was a shallow linear running east west at the junction between Trenches 1 and 2 (Ditch [103]). The ditch silted up gradually and the lack of artefactual material from within perhaps suggests the ditch was located away from any settlement areas. The ditch cut across an earlier irregular hollow, [105], that may be evidence of a working hollow, although its exact date and formation process is unclear.
- 8.8 The edge of a large feature, [203], exposed in the southern half of Trench 2 was identified as a possible pond, with pot sherds dating the silting of the feature to the 2nd to 3rd centuries AD. It is possible the pond-like feature was initially a quarry or marl pit that was retained as a water-filled pond.

- 8.9 To the north of the possible pond was a moderately large ditch, [232], that was also dated to the $2^{nd} 3^{rd}$ century AD. The alignment differed to that of the earlier ditch to the south ([103]), running east-north-east to west-south-west. The changing alignments suggest several phases of activity during the Romano-British period, with changing orientations of the local boundary system at the time.
- 8.10 Shallow pit [234], although undated, was found to contain a small assemblage of fuel ash slag, indicating some industrial activity that is probably associated with the later Iron Age/Romano-British activity identified throughout both trenches.
- 8.11 The molluscan assemblage was relatively uniform for the later Iron Age and Romano-British contexts, suggesting a landscape primarily of short turfed open grassland, possibly with some shaded/overgrown areas. Freshwater species were also present, and were most prevalent around the large possible pond [203], and pit [228]. The almost complete lack of charred plant remains from the samples suggests that the site lies away from any settlement areas, although it is noted that the former channel at the north end of Trench 2 may have acted as a discard zone at the time.
- 8.12 Analysis of the pollen samples taken from deposits associated with the former channel confirm the general environmental background, of open grassland, with some shaded or wooded areas, while pollen from the goosefoot family suggests some disturbance of grassland by cattle. The pollen also illustrates a palaeoenvironmental sequence within the former channel indicating rising water levels. The earliest deposits, 211 and 226 exhibit a pollen assemblage suggestive of damp conditions on the side of a watercourse. It is significant that the assemblage from 226 is dominated by herbs, suggesting limited impact by grazing, whereas poached deposit 211 is clear evidence of cattle coming to the edge of the water course to drink. It is probable that the water course therefore served as a boundary delimiting functional and perhaps territorial zones.
- 8.13 Overlying 211 and 226, 210 is a river mud producing evidence of much wetter conditions. White-water lily within the pollen assemblage suggests standing water up to two metres deep in the channel. This would indicate a substantial water course, which gradually silted up over time. Pollen from the overlying peat horizon, 208, indicates a fen meadow, with few trees, and standing pools of water. The silting up of the channel would clearly have resulted in the widespread flooding of the area, forming this peat horizon.
- 8.14 The wet, marshy deposits exposed in section in Trench 1 remain undated; however they exhibit the same gradually rising water table indicated in the channel in Trench 2. The work of the Fenland Survey indicates that the site was marshy ground in the post-Roman period (Hall 1996), a date broadly confirmed by the pollen analysis, which indicates a rising water table beginning some time after the late Bronze Age, and probably in the Iron Age or Romano-British period. The sequence of interleaving peaty deposits and silty marl deposits indicate relatively high energy flood events, interspersed with more stable, marshy conditions that allowed a series of thin soil horizons to develop. It is possible the site was abandoned in the later Roman period due to this sequence of events causing the formation of marshy ground in the area.

9.0 Effectiveness of methodology

9.1 The trial trenching methodology employed was appropriate to the scale and nature of the development. The trenching showed the development will be positioned over archaeological deposits dating from the prehistoric and Romano-British periods. The archaeological deposits are sealed beneath an archaeologically sterile ploughsoil horizon c.0.3m deep, and extend to in excess of 1.3m below the modern ground surface, and as such, a sympathetic foundation design will limit the impact of the groundworks on the archaeological resource.

10.0 Acknowledgements

10.1 Allen Archaeological Associates would like to thank Armtrac Limited for this commission, especially Mr Stephen Brown for his assistance. The author would also like to thank Kasia Gdaniec at Cambridgeshire Archaeology Planning and Countryside Advice for her swift action in providing a license for the removal of the human remains, and aid throughout the works.

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12.0 Site archive

12.1 The documentary and physical archive is currently in the possession of Allen Archaeological Associates. It will be submitted to Cambridgeshire County Archaeological Store within six months and stored under the archive code ECB2610.

Appendix 1: Colour Plates



Plate 1: Overall site shot, with excavation of Trench 2 in progress. Looking south-east

Plate 2: Trench 1 hollow 105 and linear [103] prior to excavation. Looking south

Plate 3: Trench 1 hollow 105 and linear [103] west facing section. Looking east

Plate 4: Trench 2 former channel at north end of trench, following excavation. Pit [228] is in the foreground. Looking north-east



Plate 5: Trench 2 human remains 227 lying at edge of former channel, looking south-west

Plate 6: Trench 2 pit [228] north-east facing section, looking south-west

Plate 7: Trench 2 ditch [232] north-west facing section, looking south-east



Plate 8: Trench 2 possible pond [203] south-east facing section, looking northwest

Appendix 2: Lithic assessment by Jim Rylatt

1.0 Introduction

This report concerns a small assemblage of lithic material recovered during an archaeological evaluation at Reach Road, Burwell. A total of 21 pieces of struck or modified flint were retrieved. Additionally, a fragment of a quern stone and one complete pebble were also retrieved. The flint artefacts with diagnostic traits are indicative of activity during the late Neolithic and early Bronze Age. The quern stone is a type manufactured during the early Roman period.

2.0 Method of study

All of the artefacts that were submitted were physically examined in order to create an archive catalogue. The attributes of each piece were noted to determine its position in the reduction sequence, any observable characteristics of the reduction technology and an assessment of its functional potential. The catalogue also records the presence of patination, cortex, and whether any piece has been burnt. Additionally, metrical data was recorded for complete flakes, and each piece was weighed. Selected artefacts were also examined with a x3 hand-lens to determine whether there was any evidence of localised modification indicative of use.

3.0 Worked flint

3.1 Raw materials

All of the struck lithic artefacts were produced from flint. Surviving cortical surfaces are thin and abraded indicating that the raw materials were derived from secondary deposits. The latter consist of water-transported pebbles and cobbles, which form river terrace gravels or glacio-fluvial sheet deposits.

3.2 Condition

The collection contains three pieces of flint with recorticated surfaces and another seven pieces that have some degree of patination. The only pieces of flint that have not been classified as having some patination are the eleven burnt pieces, the pre-existing thermal modification mitigating against the identification of any natural changes to surfaces. The consistent post-depositional formation of a surface patina is most likely to result from local soil chemistry. It probably indicates that there is either a relatively high concentration of chalk in surrounding sediments or that groundwater flowing across the site contains dissolved calcium carbonate.

The assemblage contains eleven pieces of burnt flint (52.4% of the flint). The fact that flint was being burnt provides an indication that hearths were created on, or in the immediate environs of, the evaluated area. All of this burnt material was recovered from Trench 2. In most cases the burning had significantly altered the micro-crystalline structure of the flint creating calcined (white opaque) fragments with a multitude of small, insipient fractures. This granular structure has resulted in the partial disintegration of ten pieces, probably as a result of weathering and agricultural activity; this element of the assemblage accounts for the majority of the pieces with evidence for post-depositional modification.

3.3 Composition of Assemblage

Insights into the chronology of prehistoric activity are provided by some elements of this collection. However, the small size of the assemblage minimises the data relating to the character of this activity, particularly as the 21 flint artefacts have not been retouched and show no evidence of use-related modification.

One artefact exhibits traits indicative of the bladelet production that characterises late Mesolithic and early Neolithic technologies. Morphological attributes of these lithic industries include the creation of parallel-sided pieces, structured removal from curated cores and careful platform edge preparation. The piece represents the medial fragment of a bladelet of blade-like flake; from context (211). A

second piece possibly represents the distal end of a narrow blade or blade-like flake, (210), but it is too small to provide any degree of certainty.

There are eight pieces of worked flint with morphological traits typical of later Neolithic to early Bronze Age industries. This group of artefacts includes an exhausted discoidal core, (100). This piece may have originated as a large core fragment, which was reutilised for the production of small hard hammer flakes. These flakes were detached from the edges of both of its principal surfaces, this process creating a sinuous 'pie-crust' margin. One of the large burnt fragments from (211) potentially formed part of a second discoidal core. The presence of a core and possible core fragments indicates core reduction was undertaken on or very near the site, but the small size of the present assemblage suggests that this was not a significant activity. The remainder of the identifiable late Neolithic to early Bronze Age lithic material is comprised of six flakes, which have traits associated with these industries. Such attributes include the use of hard hammers and the resulting creation of broad butts and, the tendency for pieces to be relatively short relative to their width.

4.0 Modified stone

The fragment of quern stone is manufactured from a natural conglomerate called Hertfordshire puddingstone. This puddingstone contains oval flint pebbles, which are water worn and poorly sorted (from 11x7mm up to 43x31mm). These pebbles are enveloped by a hard matrix consisting of wellsorted sub-angular quartz sand, which is bound together by silica cement. The fragment recovered from (215) preserves part of the grinding surface and the outer edge of the quern stone. The external surface of the quern is fairly irregular and pockmarked due to the evident difficulty of dressing the flint pebbles. Nonetheless, it exhibits a convex profile (running perpendicular to the grinding surface). When viewed in plan it also has a slight curvature suggestive of a quern stone approximately 400 -450mm in diameter. Both the pebbles and the matrix of this external surface show signs of rubbing and wear that potentially result from the finishing and use of the piece. This wear is particularly evident when the external surface is compared to the angular 'internal' surfaces created by the smashing of the quern. The flat upper surface has clearly been modified by use. The sandy matrix is harder than flint and as a consequence does not have any visible scoring. In contrast some of the flint pebbles have a flattened and abraded surface. This abrasion consists of scores and scratches that run parallel to the circumference of the outer edge, confirming that this piece formed part of a rotary quern. Rotary querns were manufactured from Hertfordshire puddingstone during the early Roman period. Production had ceased prior to the end of the 2nd century AD, but recent work at Heybridge has suggested that manufacture of these querns was largely restricted to the 1st century AD (43 – 100AD: PAS find SF-385927 -

http://www.findsdatabase.org.uk/hms/pas_obj.php?type=finds&hmsstatus=preserve&id=181819&_ne xtid=181820&_itempos=157087.158547).

The collection also contained a large sub-rounded sandstone pebble. This pale grey sandstone is comprised of well-sorted quartz sand with a silica cement, the pebble exhibiting evidence of bedding structures. One of the two larger surfaces is slightly dimpled, but the opposite side is smoother and slightly convex raising the possibility that it may have been utilised as a stone rubber. However, there is no clear evidence of use-wear, as the quartz and silica cement are very hard and resistant to abrasion.

5.0 Discussion

This small collection of worked flint is a palimpsest reflecting activity that could span several millennia. One or two artefacts provide an indication of that there was some form of human activity during the late Mesolithic to early Neolithic period, although the small number of pieces suggest that this was very ephemeral.

Another eight pieces indicate that this part of the landscape was visited during the late Neolithic and/or early Bronze Age. The limited quantity of worked lithic artefacts from this period again suggests that there was no sustained activity or occupation on the site during the 3rd and earlier 2nd millennia BC.

The fact that a significant proportion of this small collection consists of burnt flint could provide a counterpoint to the image of relatively minimal activity in the Bronze Age. Concentrations of heavily burnt and shattered flint have been identified along sections of the eastern fen edge of Cambridgeshire (Edmonds, *et al.* 1999). Two or three burnt flint mounds were identified along the margins of the Eye Hill peninsula located to the north of Soham (c. 10.5km to the north of Reach Road, Burwell). They were all situated at the foot of sloping ground adjacent to peat inlets, proximity to water potentially being the major determining factor in their location. These mounds of burnt flint could be analogous to the burnt mounds of 'pot boilers' found elsewhere in Eastern England and there are tentative indications that they were formed during the 2^{nd} millennium BC (*ibid*.). Each of the Eye Hill mounds had been denuded and spread by subsequent agricultural activity, the burnt flint being distributed over an area of up to 40 x 70m. Consequently, if any further archaeological intervention is commissioned at the Reach Road site, it would be prudent to consider the possibility that the burnt lithic material recovered from the northern end of Trench 2 (contexts (211)/(215)/(226)) may represent dispersed material at the periphery of a burnt flint mound.

The fragment of the rotary quern from (215) can be viewed as a residue of the continuum of Iron Age to Romano-British agricultural activity revealed during the archaeological evaluation. It is most likely to be indicative of activity during the second half of the 1st century or the first half of the 2nd century AD. Comparable Hertfordshire Puddingstone querns are found throughout East Anglia and the east Midlands and have been classified as the 'East Anglian-type' (Watts 2002). Recent finds from Cambridgeshire include a fragment from Little Wilbraham, 8km to the south-west of the site, and another from Weston Colville, 13km to the south (PAS database – http://www.findsdatabase.org.uk/hms/home.php?publiclogin=1).

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Red. Seq.	(reduction sequence)	
	(P)	Primary
	(S)	Secondary
	(T)	Tertiary
Date	Mes	Mesolithic
Duto	E Mes	Early Mesolithic
	L.NES M.Moo	Middle Megalithia
	L.Mes	
	E.Neo	Early Neolithic
	L.Neo	Late Neolithic
Size		complete – (if so, dimensions given*)
	no	Incomplete
Recort	(recorticated)	Yes
		Partly
Cortex	t	Thin
	r	Rounded
	а	Abraded
Burnt		Yes
Sann	noss	Possible
	poss	1 USSIDIE
Retouch		yes
	u/w	use-wear
	poss	possible
	prob	probable
Platf	(platform)	
	comp	complex
	cort	cortical
Bulb	pron	pronounced
	sm.pr	small pronounced
	v.sm.pr	very small pronounced
Torm	(termination)	
Term	(termination) feath	feathered
	binge	binged
	step	stepped
P don damaga	(nost donositional damago)	
F-uep uamage	(post-depositional damage)	Vec
		No
Comments	dep	deposition/depositional
	dist	distal
	frag	fragment
	irrea	irregular
	lat	latoral
	Idl	naterial
	platt/platts	platform/platforms
	poss	possible/possibly
	prob	probable/probably
	prox	proximal
	recort	recortication/recorticated
	signif	significant
	V	very
		-

BURR 07: Catalogue of worked and modified lithic materials - key to abbreviations

*Measurements are given only for complete flakes and complete tools. The first figure relates to the maximum length, measured perpendicular to the striking platform; the second to maximum breadth, measured at a right angle to the length. The maximum thickness is also given for cores. Figures for the percentage of cortex relate to the total area of the dorsal surface and platform.

Context No.	Reduct. Seq	Type	Date	Weight	Complete	Cortex	Recort.	Burnt	Retouch	Platform	Bulb	Termination	Post-dep damage	Comments
100	Т	core	L.Neo/EBA	29.7	46x38x18		yes						no	discoidal core - irreg, exhausted flake core; scars suggest it may have originated as a large core fragment, poss detached from a single platf flake core - subsequently, has had small hard hammer flakes detached from c. 30% of surface with earlier platf & c. 90% of the other side - part of perimeter has serrated 'pie-crust' margin individual core and the part of perimeter has serrated 'pie-crust' margin
100	Т	flake	L.Neo/EBA	1.4	no		yes						yes	dist frag of flake, dorsal scars indicate similar removals - controlled, but not quite parallel-sided; tip distend snapped off in antiquity; prox truncation more recent damage, but beginning to develop slight milky patina: grevish-brown trans flint
104	S	flake	L.Neo/EBA	2.0	28x14	20 t.a	partly			cort	sm.pr	hinge	no	irreg elongated flake, dorsal scars indicate removal of hard hammer flakes from 2 obligue platfs: brownish-grey trans flint
200	Т	flake	L.Neo/EBA	1.2	20x14		partly			flat	diffuse	feath	no	small flake, with scars of removals from 3 platfs; prob small trimming flake; grevish-brown trans flint
205	Т	flake	L.Neo/EBA	4.5	26x22		yes			comp	pron	feath	yes	hard hammer flake with scars of removals from 2 perp platfs; grevish-brown traps flint
205	S	flake	L.Neo/EBA	2.9	no	20 t.r.a	partly			cort	sm.pr	feath	yes	frag of squat flake, scars of removals from 2 oblique platfs; 1 lat edge detached - scar has some patination, but not as developed as rest of flake, suggesting (non-modern) post-dep damage:
205	S	chunk		24.1	no	30 t.r.a		yes					yes	frag with 4+ flake surfaces; burnt after flaking - calcined, with granular structure & insipient cracks, 2 surfaces have dark discolouration, surfaces & 1 and have begun to disintegrate: flint
205	S	chunk		32.3	no	30 t.r.a		yes					yes	(3x refitting) frag with 3 surviving flake surfaces; burnt after flaking - calcined, with cortex-like modification to flake surfaces (c. 3mm thick), granular structure & insipient cracks - 2 ends are truncated/disintegrated - 2 frags from 1 end recovered - weighed & recorded as 1 piece; flint
210	Т	chip		0.1	no		partly						no	v. small frag, poss dist end of bladelet or b-l flake, scars of comparable small parallel-sided removals; truncated by snapping; poss L.Mes/E.Neo, but too small to for affirmation; brownish-grey trans flint
211	S	flake	L.Neo/EBA	6.4	25x24	30 t.r.a	partly			flat	diffuse	feath	no	irreg flake with scars indicating removals from 2 perpendicular platfs; 2 insipient cones of percussion at centre of butt, suggesting miss-hits or irreg hammer surface; surfaces have 'greasy lustre' as though piece has been thermally altered, but no sign of burning; grey semi-trans flint

Context No.	Reduct. Seq	Type	Date	Weight	Complete	Cortex	Recort.	Burnt	Retouch	Platform	Bulb	Termination	Post-dep damage	Comments
211	Т	flake		0.2	12x16		partly			crushed	sm.pr	feath	yes	small squat flake with scar of similar removal - poss trimming flake;
211	S	b-l flake	(L.Mes/E.Neo)	0.3	no	30 t.a	partly						no	greyisn-brown trans finit medial frag of bladelet or b-l flake, with scars of 2 similar parallel- sided removals from same platf; both ends truncated by snapping; all surviving attributes suggest L.Mes/E.Neo, but interestingly, has little patination in comparison to later pieces: arey trans flipt
211	S	chunk		72.6	no	40 t.r.a		yes					yes	large frag with 5+ flake surfaces; burnt after flaking - calcined, with granular structure, 2 ends truncated/disintegrated & other scar ridges friable; flint
211	S	chunk	L.Neo/EBA	50.2	no	30 t.r.a		yes					yes	frag with 6+ flake surfaces - some of flake surfaces large & suggest piece may have been discarded discoidal core; burnt after flaking - calcined, with granular structure & insipient cracks, pot- lids detached, much of periphery truncated/disintegrated, similar damage to some other scar ridges; flint
211	S	chunk		41.4	no	30 t.r.a		yes					yes	frag with 4+ flake surfaces; burnt after flaking - calcined, with granular structure, 2 surfaces have dark discolouration, 2 ends truncated/disintegrated; flint
211	S	chunk		15.6	no	30 t.r.a		yes					yes	frag with 7 flake surfaces; burnt after flaking - calcined, with granular structure & insipient cracks, 1 surface have dark discolouration, part of cortical surface has disintegrated; flint
211	Т	chip		4.5	no			yes					yes	frag with flake surfaces; burnt after flaking - calcined, with granular
211	Т	chip		4.0	no			yes					yes	irreg frag with flake surfaces - piece has 3 irreg surfaces suggesting it is a fire-shattered fragment (of larger flaked piece), subjected to further burning after shattering; burnt after flaking - calcined, with granular structure, margins have begun to disintegrate: flint
215	S	chunk		39.7	no	20 t.r.a		yes					yes	frag with 3+ flake surfaces; burnt after flaking - calcined, with granular structure & insipient cracks, some surfaces have dark discolouration, parts of surface truncated/disintegrated; flint (with prob fossil cast)
215	S	chunk		25.4	no	30 t.r.a		yes					yes	frag with 4+ flake surfaces; burnt after flaking - calcined, with granular structure & insipient cracks, 2 ends truncated/disintegrated; flint
215		quern fragment	R-B	354.8	no									irreg frag of conglomerate representing the edge of a quernstone manufactured from Hertfordshire puddingstone; the side of the quernstone is fairly irreg due to chipping/dressing flint pebbles, but overall exhibits a convex profile (at least 59mm deep, centre

Context No.	Reduct. Seq	Type	Date	Weight	Complete	Cortex	Recort.	Burnt	Retouch	Platform	Bulb	Termination	Post-dep damage	Comments
226 227	т	chip pebble		0.8 834.0	no 162x98x40			yes					no no	projecting 17mm from chord between top & projected base) - curvature suggests quernstone was a disc approx 400 - 450mm in diameter - some rubbing & wear to matrix of this face in comparison to angular internal surfaces; there are 2 internal surfaces both angular with casts left by small pebbles, matrix rough & sparkly; upper surface - flat surface, matrix flat, but harder than flint - some of flint pebbles have flattened & abraded surface - abrasion takes form of scores and scratches that run parallel to the circumference of the outer edge; Hertfordshire pudding stone with poorly sorted oval flint pebbles from c. 11x7mm up to 43x31mm - matrix consists of well-sorted sub-angular quartz grains with silica cement; R-B quern dating broadly 1st - 2nd century AD, but probably manufactured in second half of 1st century AD frag with flake surfaces; burnt after flaking - with partially granular structure; flint poss stone rubber - large sub-rounded pebble - pale grey sandstone, appears to be well-sorted quartz sand with a silica cement - relatively tabular piece with some evidence of bedding structures & spheroidal weathering; 1 of larger surfaces is slightly dimpled, but opposite surface is smooth and slightly convex raising poss that this piece has been utilised as a stone rubber, no clear evidence to support this, as quartz & cement very hard and resistant to abrasion

Appendix 3: Pottery and Ceramic building material and hearth lining assessment By Alice Lyons

The Pottery

A total of ten sherds, weighing 0.066kg, of Iron Age and Early Romano-British pottery were recovered during recent archaeological works at Reach Road, Burwell. The pottery has an average sherd size of only *c*. 7g and is extremely abraded, due to natural post-depositional processes that clay soils and water erosion cause. The original surfaces of the pottery have been lost, along with any signs of wear or use (such as soot deposits or lime-scale).

This area in South Cambridgeshire forms the southern chalkland border of the fens where the very early Roman settlement pattern was similar to that of the pre-Roman Iron Age, occupation being confined primarily to the river valleys and the edges of the chalklands (Browne 1977, 11). By the 2nd century occupation was expanding as the Fens were drained and came under Imperial ownership and administration (Gurney 2005, 28). In the later Roman period a number of villas are known in the vicinity at Isleham, Landwade, Fordham, Burwell and Reach (Browne 1977, 20).

The pottery retrieved during this project, however, dates to the Iron Age and earlier Romano-British period (Table 1).

The Iron Age pottery

The Iron Age fragments found are tiny (3 sherds, weighing 2g) with an average sherd weight of less than 1g. It is likely that these sherds are not in their primary site of deposition and are residual.

The Iron Age fabrics from this region fall into three groups; a coarse, flint-tempered fabric, a shell-tempered (Percival *pers. comm.*) and a finer 'sandy' fabric with quartz temper (Percival 2000, 215). The flint-tempered fabrics dominate the earliest Iron Age assemblages, such as West Harling (Clarke and Fell 1953) and continue in use until the mature middle Pre-Roman Iron Age (*c.* 200BC). The two tiny fragments from river mud deposit [210] are consistent with this flint-tempered material of this date (6th to 2nd centuries BC) and are similar to Iron Age pottery found at Stonea (Rigby 1996, 260).

Sandy fabrics are established by the 3rd century BC (Gregory 1991) and are current alongside the flint-tempered or 'gritty' fabrics. The single sherd found in the fill [205] of a large irregular feature is consistent with this later Iron Age material, dated between the 3^{rd} and 2^{nd} centuries BC.

Trench	Context	Context	Pottery	Pottery Fabric	Vessel type	Sherd	Sherd	Context
		Description	Era			count	weight (g)	date
1	104	Sole fill of	Early	Micaceous	Undiagnostic body sherds	1	1	Late 1 st to
		ditch [103]	Roman	sandy grey				early-mid
				ware				2 nd century
			Early	Sandy grey	Grooved body sherd from	1	6	AD
			Roman	ware	a wide mouthed jar			
			Early	Sandy oxidised	Undiagnostic body sherd	1	1	
			Roman	ware				
2	205	Secondary	Iron Age	Flint tempered	Undiagnostic body sherd	1	1	2^{nd} to 3^{rd}
		natural		sandy reduced				century
		silting of a		ware				AD
		large	Romano-	Horningsea	Undecorated body sherds	3	49	
		irregular	British	reduced ware	from a storage jar			
		feature						
		[203]						
	210	A river mud	Iron Age	Flint tempered	Undiagnostic body sherds	2	1	1 st century
		horizon in		reduced ware				BC
		former						
		channel?						
	233	Silting of	Romano-	Sandy oxidised	Undiagnostic body sherd	1	7	2^{nd} to 3^{rd}
		ditch [232]	British	ware				century
								AD
Total						10	66	

Table 1.

The Romano-British pottery

A total of seven sherds of Romano-British pottery, weighing 0.064kg were retrieved, these sherds have an average sherd size of *c*. 9g.

A single sherd (broken in two) of micaceous sandy grey ware was recovered from the fill of ditch [103]. This is an unsourced fragment, but micaceous clay beds are known around the north Suffolk settlement of Wattisfield (Tomber and Dore 1998, 184) c. 45 km to the east of Burwell. A single sherd of a low-fired sandy grey ware sherd from a wide-mouthed jar was also recovered from this deposit. Although unsourced it is likely that this sherd is of local production typical of mid 1st to mid 2nd century. Early Roman pottery production in the area has been recorded c. 15km to the south-west at Greenhouse Farm (Gibson and Lucas 2002, 95-128) and is discussed in detail within that report.

Two sherds of Sandy oxidised wares were found in two separate deposits ([104] and [233]). These sherds are unsourced and undiagnostic, but of probable local manufacture (similar to that found on the Fen-edge of west Norfolk, produced at kilns in the Nar Valley; Tomber and Dore 1998, 171) between the 1st and 3rd centuries AD.

Three sherds (0.049kg) from a Horningsea reduced ware storage jar were all found within one deposit ([205]). This ware was made at Horningsea (and other related kiln sites) located to the north-east of Cambridge (Evans 1991), only *c*. 12km to the south-west of Burwell. These distinctive wares (Tomber and Dore 1998, 116) were produced between the late 1st and mid 4th century AD (Gibson and Lucas 2002, 115). Horningsea products were a relatively common import around the Fen-edge during the 3^{rd} centuries AD (Cameron 1996, 452), but almost certainly reached some Fen-edge communities at an earlier date during the 2^{nd} century AD (Lyons 2007).

Statement of Potential

The results of this assessment should be incorporated into the archive, to allow for refined dating of the features and understanding of pottery supply to the site.

The small size and poor condition of this assemblage limits its potential for analysis and no further work is necessary.

The Ceramic Building Material

A single Romano-British roof tile fragment (18g), possibly from an Imbrex (curved roof tile) was recovered from the topsoil ([100]) within Trench 1. This is a hard-to-soft slightly sandy orange and cream fabric with numerous voids, similar to F14 from Stonea (Cooper 1996, 505). At Stonea this fabric type was also mostly occurring as roof furniture.

Statement of Potential

This material has no potential for further analysis.

Other Material

A single fragment of ?Romano-British vitrified fired clay (2g) was recovered from the topsoil ([200]) within Trench 2. Material of this type is associated with hearths or kilns where the clay has been heated to a high temperature and the metal silicate within the clay has melted to form a hard 'glassy' surface.

Statement of Potential

This material has no potential for further analysis.

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Appendix 4: Animal Bone Assessment by Jen Kitch

Introduction

A total of 46 (711g) fragments of animal bone was recovered by hand during archaeological works undertaken by Allen Archaeological Associates on land to the north-west of 60, Reach Road, Burwell, Cambridgeshire.

The majority of the assemblage was recovered from undated alluvial silt deposits associated with a possible palaeochannel. The remainder of the assemblage was recovered from a ditch and possible pond dated to the Roman period and from an undated possible hedge/boundary and a desiccated peat layer.

Methodology

Identification of the bone was undertaken at Archaeological Project Services with full use of a reference collection and published guides. Each fragment was counted and weighed. Where possible the bones were identified to species, element, side and zone (Serjeantson 1996). Ageing criteria, butchery marks, pathologies, gnawing and burning were noted when present. Undiagnostic bones, vertebra and ribs were recorded as small (rabbit/ cat size), medium (sheep/pig size) or large (cattle/horse size). The separation of sheep and goat bones was undertaken using the criteria of Boessneck (1969) and Prummel and Frisch (1986). Where distinctions could not be made, the bone was recorded as sheep/goat (S/G).

The quantification of species was carried out using the total fragment count, where the total number of fragments of bone and teeth was calculated for each taxon. Where fresh breaks were noted, fragments were refitted and counted as one.

Tooth eruption and wear stages were measured using a combination of Halstead (1985) and Grant (1982). Measurements of fully fused, adult, bones were taken according to the methods of von den Driesch (1976).

The bone condition was recorded in accordance with criteria outlined by Lyman (1996). Grade 0 being the best preserved bone and grade 5 indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable.

Results

The remains were of moderate condition, averaging at grade 3 on the Lyman criteria (1996).

The assemblage is too small to provide a true representation of animal husbandry and utilisation on site. Cattle remains are predominant within the assemblage, followed by Equid (horse family) and pig.

Cntxt No	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z 7	Z 8	Prox	Dist	Path	Butch	Burnt	Gnaw	Fresh Break	Assoc'd	Measured	Tooth Wear	Surface	Condition	No	(g)	Notes
223	Equid	Tooth	L	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	Y	х	2	1	49	Upper M2=61mm
223	Equid	Tooth	L	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	Y	х	2	1	45	Upper M3=57mm
211	Equid	Tooth	L	N	N	N	N	N	N	Ν	N	x	x	N	N	N	N	N	N	N	N	x	2	1	12	Lower 3rd insicor Ntch worn into front occlusial surface
211	Pig	Tibia	L	N	N	Y	Y	Y	Y	Y	Y	Х	F	N	N	N	N	N	N	Y	N	Х	3	1	44	
205	Cattle	Phalanx (I)	R	Y	N	N	N	N	Ν	N	N	F	Х	N	N	N	N	N	N	N	N	R	4	1	4	
104	Equid	Nav-Cuboid	R	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	N	A	4	1	13	
208	Cattle	Humerus	R	N	N	N	N	Y	Y	N	N	Х	Х	N	N	N	N	N	N	N	N	R	3	1	57	Smashed? Midshaft
204	Large Mammal	Long Bone	Х	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	N	х	3	5	22	
211	Large Mammal	Scapula	R	N	N	N	Y	N	N	N	N	Х	Х	N	N	N	N	Y	N	N	N	х	3	1	27	
211	Pig	Tooth	L	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	N	R	4	1	11	lower male canine
211	Cattle	Tibia	L	N	N	N	N	Y	Y	Y	Y	x	F	N	Y	N	Ν	N	N	Y	N	x	3	1	53	possible cuts on the distal posterior shaft
211	Equid	Phalanx (I)	R	Y	Y	Y	Y	Y	Y	Y	Y	F	F	N	N	N	Y	N	N	Y	N	X	4	1	38	Possible carnivore gnawing on the distal end
211	Cattle	Tooth	R	N	N	N	N	N	Ν	N	N	Х	Х	N	N	Ν	Ν	N	N	N	N	Х	2	1	22	Upper PM
211	Equid	Tooth	L	N	N	N	N	N	N	N	N	Х	Х	N	N	N	N	N	N	N	N	Х	3	1	37	Upper PM2

Event Number ECB2610

Cntxt																		Fresh			Tooth					
No	Taxon	Element	Side	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8	Prox	Dist	Path	Butch	Burnt	Gnaw	Break	Assoc'd	Measured	Wear	Surface	Condition	No	(g)	Notes
211	Cattle	Humerus	R	N	N	N	N	Y	Y	N	N	Х	х	N	I N	N	N	N	N	N	N	Х	3	1	67	
211	Cattle	Horncore	Х	N	N	N	N	N	N	Ν	N	Х	Х	N	I N	N	N	N	N	N	N	х	3	1	3	Tiny fragment
211	Large Mammal	Long Bone	Х	N	N	N	N	N	N	Ν	N	Х	Х	N	I N	N	N	N	N	N	N	x	3	3	68	
211	Large Mammal	Long Bone	Х	N	N	N	N	N	N	N	N	Х	Х	N	I N	N	N	N	N	N	N	R	4	1	8	
211	Pig	Mandible	R	N	N	N	N	N	Ν	N	Y	X	X	N	I N	N	Y	N	N	N	N	x	4	1	16	Carnivore gnawing on the goneal angle
211	Unidentif ied	Unidentified	Х	N	N	N	N	N	N	N	N	Х	Х	N	I N	N	N	N	N	N	N	х	3	2	3	
215	Large Mammal	Long Bone	Х	N	N	N	N	N	N	N	N	Х	Х	N	I N	N	N	N	N	N	N	х	3	12	37	
215	Large Mammal	Innominate	R	Y	N	N	N	N	N	N	N	Х	Х	N	I N	N	N	N	N	N	N	х	3	1	21	
215	Cattle	Skull- occipital	В	N	N	N	N	N	N	Ν	N	Х	Х	N	I N	N	N	N	N	N	N	х	3	1	19	
215	Large Mammal	Skull	X	N	N	N	N	N	N	N	N	Х	Х	N	I N	N	N	N	N	N	N	x	3	4	13	
215	Large Mammal	Innominate	x	N	N	Y	Y	Y	Ν	Y	N	Х	x	N	I N	N	N	Y	N	N	N	x	3	1	22	

Phase	Late 1st - Early 2nd Century AD	2nd - 3rd Century AD			Undated		
Feature Type	Ditch	Possible Pond	Alluvial Silt	Desiccated peat	Former Hedge or Boundary	Trampled or "poached" -alluvial silt	Total
Equid	1				2	3	6
Cattle		1	1	1		4	7
Pig						3	3
Large Mammal		5	18			5	28
Unidentified						2	2
Total	1	6	19	1	2	17	46

Table 1, Summary of hand collected bone, by feature.

Two fragments of bone from the "poached" alluvial silt displayed evidence of carnivore gnawing, suggesting the remains were left open to scavengers as part of or after the disposal process. A single fragment of bone also recovered from the poached alluvial silt displayed evidence of cut marks possibly representing disarticulation and meat removal from the carcass.

The assemblage is small and therefore provides little information on animal husbandry or diet economy, save the presence of the species. The remains probably represent a mixture of food and butchery discard.

Jennifer Kitch Archaeological Project Services May 2007

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Key:

Codes and references used in cataloguing animal bone:

Taxon:	Species, family group or size category. Non-species specific codes: - : Equid- Horse Family : Gadidae- Cod Family : Passer- <i>Passerine</i> , Small songbirds i.e. Sparrow or Finches : Turdid- <i>Turdidae</i> , Blackbird/Thrush family : Corvid- <i>Covidae</i> , Crow family i.e. Crow, Rook or Jackdaw : Galliform- Fowl or Pheasant : Large Mammal – Cattle, Horse, Red Deer size : Medium Mammal- Sheep/Goat, Pig, Dog, Roe Deer size : Small Mammal- Cat, Rabbit size : Micro Mammal- Mouse sized : Unidentified- Not identified to species
Element:	Skeletal element represented. :Unidentified- Not identified to element
Side:	L-Left, R- Right, B- Both
Zones:	Records presence/absence of individual areas of the bone. Based on Zone illustrations in Serjeantson, D, 1996 The Animal Bones, in <i>Refuse and Disposal at Area</i> <i>16, East Runnymede: Runnymede Bridge Research Excavations,</i> Vol. 2, (eds) E S Needham and T Spence, British Museum Press, London.
Prox & Dist:	Fusion of proximal and distal epiphyses : X- Not present, F- Fused, U- Unfused, B- Unfused diaphysis and epiphysis present, V- Fusion Line visible.
Age Range:	Age range based on age at fusion. Based on Silver, I, A, 1969, The Ageing of Domestic Animals, in D. Brothwell and E.S. Higgs, <i>Science in</i> <i>Archaeology</i> , Thames and Hudson.
Path:	Presence of pathology, details in notes column.
Butch:	Presence of butchery, details in notes column.
Burnt:	Presence of burning, details in notes column.
Gnaw:	Presence of gnawing, details in notes column.
Worked:	Fragment shows evidence of working, details in the notes column.
Fresh Break:	Fresh break noted, fragments re-fitted as one bone.
Associated:	Articulating or adjoining bones.
Measured:	Measurements taken as according to Von den Driesch, A, 1976 <i>A Guide to the Measurement of Animal Bones from Archaeological Sites</i> , Peabody Museum.
Tooth Woom	Teach waar soors for aging data taken as according to:

Tooth Wear: Tooth wear score for aging data, taken as according to:

- Grant, A, 1982 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', in B Wilson *et al. Ageing and Sexing Animal Bones from Archaeological Sites*, BAR British Series 109, 91-108, Oxford
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Surface:	Taphonomies noted on the bone surface: W- Weathered A-Abraded R- Rootlet etched D- Chemical etching from digestion
Condition:	Grades 0-5, where 0 = pristine and 5= indicating that the bone had suffered such structural and attritional damage as to make it unrecognisable. Based on Lyman, R L, 1996 <i>Vertebrate Taphonomy</i> , Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge
No.:	Number of individual bones/fragments
(g):	Weight in grams
Notes:	Notes on observed taphonomies, differences and associations.

Appendix 5: Human Bone Report by Jen Kitch

Introduction

A total of nineteen fragments of commingled human bone was recovered during archaeological works undertaken by Allen Archaeological Associates at the land to the north-west of 60, Reach Road, Burwell, Cambridgeshire.

The remains were recovered from an alluvial silt deposit (226) adjacent to a palaeochannel. The bones were not in anatomical position when excavated; the alluvial deposit had been heavily disturbed, possibly through animal trampling. Represented skeletal elements suggest the remains may have originally been from complete or partially complete articulated burials when originally deposited.

Methodology

The remains were individually catalogued, with all available scores for sex, age, pathology and metrical traits noted on this primary record. All of the remains were assessed visually for completeness and preservation.

Age Estimation

The determination of the age at death was assessed employing several ageing techniques. Dental wear (Miles 1963 Fig 10, Brothwell 1981:72, fig 3.9), dental development (Gustafson & Koch 1974), pubic symphysis phase (Brooks & Suchey 1990), auricular surface phase (Meindl & Lovejoy 1989), ectocranial suture closure (Meindl & Lovejoy 1985) and the sternal end of rib (İşcan and Loth 1986) were utilised where the relative skeletal elements were present. As a multi-factorial approach produces a range of ages, age categories are used for generalisation and comparison purposes. These age categories are listed below (Table 1).

Metric Traits

Measurements were taken from the skull and post-cranial elements, where completeness allowed. Measurements were recorded using the criteria outlined by Brothwell (1981:80-1) and Howells (1973). Stature estimations were based upon the equations by Trotter and Gleser (1952, 1958 as cited in Brothwell 1981:101). The measurements were taken from the available fully fused long bones dependant on preservation.

Pathology

All pathological lesions and morphological abnormalities were described using standard clinical terminology. The anatomical locations of these pathological conditions were noted on a pictorial reference with accompanying description in an attempt to provide a diagnosis for the possible cause.

Dentition and Dental Pathology

Tooth representation was recorded where possible. Carious lesions and hypoplasia were recorded as according to Lukacs (1989) where present. Prevalance rates of calculus build up and periodontal diseases were recorded as according to Brothwell (1981).

Category	Age Range
Foetal	9-39 week gestation
Neonate	Birth- 5 Months
Infant	6 Months – 2 Years
Child	3 - 6 Years
Older Child	7 – 15 Years
Juvenile	Below 15 Years
Adolescent	16 - 20 Years
Young Adult	21 - 35 Years
Middle Adult	36 – 45 Years
Old Adult	45 – 60 Years
Senile	61+Years
Adult	Over 25 Years

Table 1. Summary of Age Categories

Results

The full catalogue of remains is outlined within Table 2. Condition of the bone was moderate to poor and slightly fragmentary. The bone appears to have been subject to a certain amount of leaching and chemical etching from rootlet growth.

The skeletal remains represent a minimum of two individuals. Most of the remains appeared quite gracile, possibly suggesting the presence of a relatively young adult or small female individual. The skull vault, radius and mandible are probably all from a juvenile individual. No sex scorable traits were identified within the remains.

Due to the nature of commingled fragmentary remains it is difficult to identify individuals accurately unless striking variation occurs such as large robust individuals mixed with small individuals or children. Therefore, there is a possibility that more than two individuals are represented within the assemblage.

No evidence of post mortem modification was identified and no evidence of pathology was noted on any of the bone. A single second upper incisor displayed a dental cary on the mesial surface of the tooth at the cemento-enamel junction. Dental caries are relatively common within archaeological material.

As limited ageing and sexing information is present, little information can be gained on population demography. Also as the remains have been disturbed from the original burial position, little information can be gained about funerary rites.

Examples of the burial of individuals along river banks/ palaeochannels are not well recorded. However, human remains have been recovered from river deposits through dredging of the river Thames in London and Oxfordshire (Bradley and Gordon 1988), incorporated into a log jam within a palaeochannel deposit of the former river Trent channel at Langford Lowfields, Nottinghamshire (Knight and Howard 2004) and in peat deposits associated with the River Witham, Lincolnshire. It is theorised that these remains may have originated from riverside burials which may have eroded and washed into the river channels or may have been a result of riverside mortuary rituals. It is possible that these remains may have been heavily disturbed/eroded burials positioned on the side of the palaeochannel or possibly washed up remains from a mortuary ritual.

Jennifer Kitch Archaeological Project Services May 2007

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Appendix 6: Plant Macrofossil and Mollusc Shell Assessment Report by Val Fryer

Val Fryer, Church Farm, Sisland, Loddon, Norwich, Norfolk, NR14 6EF June 2007

Introduction and method statement

Excavations to the rear of 60, Burwell Road, undertaken by Allen Archaeological Associates, revealed features of Late Iron Age to Roman date, with some evidence of earlier Bronze Age activity. Samples for the retrieval of the plant macrofossil and mollusc shell assemblages were taken from a channel fill, a pond, ditches, pits and other discrete features, and seven were submitted for assessment.

The samples were processed by manual water flotation/washover and the flots were collected in a 500 micron mesh sieve. The dried flots were scanned under a binocular microscope at magnifications up to x 16 and the plant macrofossils, mollusc shells and other remains noted are listed on Table 1. Nomenclature within the table follows Stace (1997) for the plant macrofossils and Macan (1977) and Kerney and Cameron (1979) for the molluscs. Both charred and de-watered plant remains were recorded. Tabulated plant material is charred unless otherwise indicated.

The non-floating residues were collected in a 1mm mesh sieve and will be sorted when dry. Any artefacts/ecofacts will be retained for further specialist analysis.

Results

Plant macrofossils and other materials

Plant macrofossils were exceedingly scarce and were entirely absent from two assemblages (samples 4 and 7). Preservation was generally very poor, with most of the charred remains being severely abraded and very fragmented. A single wheat (*Triticum* sp.) spikelet base from sample 3 and a large grass (Poaceae) fruit (possibly a severely abraded cereal grain) from sample 8 appeared to be the only remains of cultivated crops. A fragmentary onion couch (*Arrhenatherum* sp.) tuber was noted within sample 8 and individual goosegrass (*Galium aparine*) seeds were present within samples 3 and 8. Dewatered dock (*Rumex* sp.) fruits were recovered from sample 5 along with a single de-watered sedge (*Carex* sp.) nutlet. Charcoal/charred wood fragments were present at a very low density. Other material types were also generally scarce, although a very high density of mineral concretions was recorded within sample 8 from the fill of pond [203].

Mollusc shells

Mollusc shells formed the major component of all seven assemblages. All four of Evans (1972) ecological groups of terrestrial snails were represented, with open country and catholic species occurring most frequently. A number of shells of freshwater obligate molluscs were also recorded, most notably those indicative of semi-permanent damp marsh conditions and those living in small bodies of water prone to seasonal drying.

Conclusions and recommendations for further work

The composition of the mollusc assemblages appears to indicate that during the later Iron Age and earlier Roman periods, the site primarily consisted of tracts of short turfed, open grassland, although some shaded/overgrown elements may have been present. Marginal damp areas occurred at the edges of the waterfilled features, a number of which appear to have been sufficiently wet to sustain a range of freshwater obligate molluscs. The extreme low density of charred plant remains and other materials probably indicates that this area was entirely removed from any settlement, and may have been part of a pastoral landscape with only minimal human intervention.

Although the mollusc assemblages are reasonably comprehensive, quantification would probably contribute little additional data to that included within this assessment. Therefore, no further analysis is required at this stage. However, it is recommended that a written summary of this report should be included within any publication of data from the site.

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Key to Table

x = 1 - 10 specimens xx = 10 - 50 specimens xxx = 50 - 100 specimens xxxx = 100+ specimens cf = compare w = de-watered D.fill = ditch fill ss = sub-sample

Sample No.	1	3	4	5	6	7	8
Context No.	226	210	208	223	231	104	204
Feature No.		Channel		218	228		203
Feature type	Layer	Fill	Layer	D. fill	Pit	Ditch	Pond
Plant macrofossils							
Triticum sp. (spikelet base)		х					
Arrhenatherum sp. (tuber frag.)							х
Carex sp.				XW			
Galium aparine L.		Х					х
Large Poaceae indet.							х
Ranunculus sp.	xcf						
Rumex sp.				XW			
Charcoal <2mm	х	xx			Х		х
Charcoal >2mm				х			х
Charred root/stem		х					
Waterlogged root/stem				Х			
Other materials							
Black porous 'cokey' material	х	x		х		х	
Black tarry material			х	х			
Bone	х						х
Mineralised concretions							XXXX
Small coal frags.	х		Х	х	х	х	
Small mammal/amphibian bone		х					
Molluscs							
Woodland/shade loving species							
Aegopinella sp.	х						
Carychium sp.			х				
Discus rotundatus	х						х
Oxychilus sp.	X		х			х	
Punctum pygmaeum			х	х	х		
Vertigo pusilla		xcf					
Vitrea sp.	XX						
Zonitidae indet.	X						
Open country species							
Helicella itala	х	x		х		x	х
Pupilla muscorum	XXXX	xxxx	х	X	XX	XX	
Vallonia sp.	XXX	XXXX	XXX	X	XX	XX	
V. costata	XXXX	xx	XXX	х	х	x	
V. excentrica	XX	X				x	
V. pulchella	х	xx					
Vertigo pygmaea	XX	x	х	х	XX		ХХ
Catholic species							
Cepaea sp.				х			
Cochlicopa sp.	ХХХ	XX	XXXX	XXXX	х	ХХ	ХХ
Nesovitrea hammonis	ХХ	х	ХХ	х		х	х
Trichia hispida group	xxxx	xxxx	XXXX	хххх	ххх	xx	ххх
Marsh/freshwater slum species	70000		70001	70001	7001	701	7001
Vertigo sp.			X		XX		
Vertigo angustior	x		-				
Freshwater obligate species							
Anisus leucostoma	x			X	XX	x	XX
						•	

A. vortex type	х						
Sample No.	1	3	4	5	6	7	8
Context No.	226	210	208	223	231	104	204
Feature No.		Channel		218	228		203
Feature type	Layer	Fill	Layer	D. fill	Pit	Ditch	Pond
Armiger crista	х						х
Bathyomphalus contortus	хх			ХХ		х	хх
<i>Bithynia</i> sp.							х
(operculi)	х					х	
B. leachi	х					х	
B. tentaculata						х	
Gyraulus albus			xcf				
Hippeutis complanata		Х					
<i>Lymnaea</i> sp.	х	XX	XXX	х	Х	х	XXX
L. glabra			xcf	xcf		х	
L. palustris			xcf				
L. truncatula	х	XX	ХХ		Х	х	ХХ
Physa sp.	xcf						
<i>Pisidium</i> sp.	х		ХХ	х		хх	ххх
Planorbarius corneus	х					х	
Planorbis sp.	х	х		х		хх	х
P. planorbis		Х		х		ххх	XX
Succinea sp.	хх	х	XXX				х
Valvata cristata	ххх		х			ххх	хх
Sample volume (litres)	20ss	20	20ss	20ss	20ss	20ss	20ss
Volume of flot (litres)	<0.1	<0.1	0.2	<0.1	<0.1	0.2	0.2
% flot sorted	100%	100%	50%	100%	100%	50%	50%

Appendix 7: Pollen Analysis and Assessment Report

Chris Rolfe BSc.

Introduction

This assessment presents the results of pollen analyses from four samples of sediment taken from an archaeological trench (Trench 2) at a site "North West of 60 Reach Road, Burwell, Cambridgeshire". The four samples were taken from contexts 208, 210, 211 and 226 respectively. Context 208 comprised a brown silty peat. Context 210 comprised a dark brown silty clay. Underlying this, context 211 comprised a mottled grey silt with charcoal and occasional gravel clasts. Context 226 comprised a light grey silt and is located approximately 5 metres to the southwest of the samples taken from contexts 208, 210 and 211.

The four samples were prepared using the standard hydrofluoric acid technique, and counted for pollen using a high-power stereomicroscope. The percentage pollen data from these 4 samples is presented in Appendix 1.

Pollen Analyses

Pollen concentrations varied widely between 4,148 and 20,947 grains per ml. Pollen was counted at x400 with a high power stereomicroscope. For most pollen samples, the concentration was variable with rather poor preservation of the fossil pollen grains (palynomorphs). For the sample taken from context 208 at the top of the section a total pollen count of 102 was obtained after counting two slides. Even after counting two slides for each of the other three contexts the pollen concentration and preservation was considerably poor. Counts of 47 and 60 were achieved for contexts 210 and 211 respectively. Context 226 to the southwest of the main profile had a count of 59 pollen grains. It should be noted that for statistically reliable data, pollen sums of at least 300 are generally recommended. Therefore care should be taken in the interpretation of these pollen assessment results.

Trench 2 context 211

Basal sample produced a poor pollen signal of 60 grains with a concentration of 10,335 pollen grains per ml. The sample from context 211 was dominated by grass (23.3%), mugwort (15.0%), Asteraceae (10.0%) and other herbs including the goosefoot family (10.0%), strapwort plantain (6.7%), sedge (5%), meadow sweet (3.3%), pink family (1.7%). Arboreal taxa included birch (*Betula*) (5.0%) willow (*Salix*) (8.3%) and hazel (*Corylus*) (6.7%). Also present was cereal (1.7%). The only spores present were the spores of ferns (1.7%).

Trench 2 context 210

The sample from context 210 produced a rather poor pollen signal with a main sum of only 47 pollen grains counted, giving a concentration of 4,148 pollen grains per ml. Arboreal taxa are represented by pine (*Pinus*) (4.3%) and spruce (*Picea*) (4.3%). The sample was dominated by fern spores (29.8%). Also present are the herb pollen Asteraceae (23.4%), thistle family (2.1%), grass (14.9%) and strapwort plantain (12.8%). Other herbs include goosefoot family (6.4%) and Mugwort (2.1%). No shrub pollen was counted. The aquatics are present in White water-lily (6.4%).

Trench 2 context 208

Context 208, the top sample, provided the best pollen signal with a count of 102 pollen grains, giving a concentration of 20,947 pollen grains per ml. The sample was dominated by herb pollen of Asteraceae (33.3%), grass (22.5%), strap-wort plantain (6.9%), mugwort (4.9%) and goosefoot family (2.0%) with pink family and meadowsweet. The sedge family was also present (1.0%). Arboreal taxa are represented by birch (*Betula*), pine (*Pinus*) and spruce (*Picea*). No shrub pollen was present. Spores of ferns (22.6%) were also present. Aquatic plants are represented by Yellow water-lily (1.0%).

Trench 2 context 226

This sample produced a rather poor pollen signal with a main sum of only 59 pollen grains, giving a concentration of 10,679 pollen grains per ml. The sample was dominated by herbs of mugwort

(16.9%), Asteraceae (11.9%), grass (11.9%), thistle family (10.2%), strap-wort plantain (8.5%), meadowsweet (6.8%), the goosefoot family (5.1%), pink family (3.4%) and sedge (1.7%). Arboreal taxa are represented by birch (*Betula*) (3.4%), oak (*Quercus*) (1.7%), spruce (*Picea*) (1.7%), willow (*Salix*) (6.8%) and hazel (*Corylus*) (5.1%). Also present are spores of ferns (5.1%).

Discussion & Conclusions

In general the pollen assemblages from each of the contexts analysed are rather similar with grass, thistle and fern dominated spectra, and arboreal taxa such as hazel, willow, birch, pine and spruce. However, differences exist which indicate very different palaeoenvironments. The elevated proportions of fern spores and resistant Asteraceae pollen should be noted and may potentially suggest that the sediment particularly in contexts 208 and 210 has been partly dessicated and oxidised by soil processes. Strap-wort plantain for each of the contexts implies some degree of soil disturbance throughout the sequence.

At the base, context 211 and context 226, approximately five metres southwest along Trench 2, indicates a similar age but very different palaeoenvironments . Stratigraphically context 226 is below 208 and similar to context 211. The presence of the less hardy pollen grains of birch and willow would indicate that post depositional oxidation processes has occurred to a lesser extent. There is some evidence for hazel scrub and heathland. Willow suggests a damp woodland nearby. Members of the goosefoot family are abundant, and this plant is typical of pastures and meadows disturbed by cattle, and as a weed of arable fields. The assemblages for context 226 is not particularly diagnostic and great care should be given that interpretations are being based on one or two grains of a particular type being present.

Context 211 could be interpreted as a marginal edge of pasture/arable field. However great care must be taken as interpretation is solely being based on one cereal pollen grain being present. There is no evidence of post depositional modification and the pollen is well preserved. The material was not laid down under deep water, as no aquatic plants are present. Willow indicates an edge of a water course. The birch and willow could form an isolated scrub. Woodland clearance has occurred and the assemblage would fit into Iron Age, late Bronze Age or indeed Roman.

Context 226 pollen assemblage is well preserved. Not dominated by grass but by herbs. There is the pasture weed of mugwort and the bank side herb of Meadowsweet. The pollen from context 226 shows a tall herb community. Tall herb communities occur when grazing pressure on meadowland is reduced. The pasture has possibly been abandoned. There is no arable signal as no cereal pollen grains. Birch, hazel and willow signal are similar between contexts 211 and 226.

In the middle of the section post-depositional modification is still evident with the large proportion of Asteraceae. The presence of aquatics would suggest a body of water and with White water-lily present this could very well be with a water depth up to two metres. Willow has been cleared or drowned so pushed to grow elsewhere. Although the Romans planted spruce for ornamental purposes the pollen grains of pine and spruce are ubiquitous and are blown around easily. With no cereal pollen grains this would suggest an abandoning of the field so best for grazing. Strap-wort plantain indicates there has been lots of disturbance. With the increased water level the land could now be that of pastoral land use. Post clearance and potentially Bronze Age onwards.

The uppermost sample (context 208) in the section provides a modified signal with very little in the way of trees. It suggests a eutrophic fen peat overlying the whole site. Post-depositional modification (oxidation) has occurred, indicated by the strong presence of the resistant pollen Asteraceae with a strong signal of 33.3% of the main sum of pollen. Meadow land is suggested by the presence of weed species. Strap-wort plantain could indicate disturbance. Evidence of some pools of water because of the presence of Yellow water lily. No cereal so flooding of the area is wet fen. Therefore the land cannot be farmed for cereal crops.

The pollen analysed would possibly imply dry land before a river and then fen. May have been a small swale area or seasonal pool. This could be Iron Age going into Roman with locally rising water level. The assessment count can't rule out cereal in context 226 or even 210 as the main sums are so low. If counting continued may very well find more evidence of arable activity.

From the limited number of samples analysed and the low pollen counts obtained it is very difficult to give an exact date for the section studied. From the evidence obtained from Trench 2 it is suggested post-clearance. The pollen data could easily indicate dates anywhere within the late Bronze Age, Iron Age or Roman periods.

Analysis of a similar sequence undertaken by the author from archaeological trenches 500 metres northeast of the current site indicated a rising water level. Spring fed streams in the area flooded with the fen spreading out. This was based on the study of molluscs present.

Chris Rolfe 13-07-07.

Appendix 1

BURWELL 2007 Pollen percent data	ch 2	2	2	2	
Botanical name	English name	211	210	208	226
Betula	Birch	5.0	0.0	1.0	3.4
Pinus	Pine	0.0	4.3	1.0	0.0
Quercus	Oak	0.0	0.0	0.0	1.7
Picea	Spruce	0.0	4.3	1.0	1.7
Corylus	Hazel	6.7	0.0	0.0	5.1
Salix	Willow	8.3	0.0	0.0	6.8
Poaceae	Grass family	23.3	14.9	22.5	11.9
Cereal type	Cereals	1.7	0.0	0.0	0.0
Cyperaceae	Sedge family	5.0	0.0	1.0	1.7
Asteraceae (Asteroidea/Cardueae) undif.	Aster family	10.0	23.4	33.3	11.9
Artemisia	Mugwort	15.0	2.1	4.9	16.9
Caryophyllaceae	Pink family	1.7	0.0	1.0	3.4
Chenopodiaceae	Goosefoot family	10.0	6.4	2.0	5.1
Cirsium	Thistle	1.7	2.1	2.0	10.2
Filipendula	Meadowsweet	3.3	0.0	1.0	6.8
Plantago lanceolata type	Strap-wort plantain	6.7	12.8	6.9	8.5
Pteropsida (trilete) undif.	Ferns	1.7	4.3	2.0	0.0
Pteropsida (monolete) undif. Filicales	Ferns	0.0	25.5	20.6	5.1
Nuphar	Yellow water-lily	0.0	0.0	1.0	0.0
Nymphaea	White water-lily	0.0	6.4	0.0	0.0
Sphagnum	Aquatic moss	0.0	2.1	0.0	0.0
Sum aquatics		0.0	6.0	1.0	0.0
Sum trees		5.0	8.5	2.9	6.8
Sum shrubs		15.0	0.0	0.0	11.9
Sum herbs		78.3	61.7	74.5	76.3
Sum spores		1.7	29.8	22.5	5.1
Main Sum		60	47	102	59
Concentration (grains per ml)		103 35	4148	20947	10679
KEY:					
trees					
shrubs					
herbs					

lower plants aquatics

Appendix 8: Radiocarbon date

Mr. Mark Allen

Report Date: 7/19/2007

Allen Archaeological Associates

Material Received: 6/21/2007

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)				
Beta - 231823 SAMPLE : BURR07-227	1980 +/- 40 BP	-20.6 0/00	2050 +/- 40 BP				
ANALYSIS : AMS-Standard delivery MATERIAL (PRETREATMENT : (hope collagen): collagen extraction: with alkali							
SIGMA CALIBRATION : Cal BC 170 to Cal AD 30 (Cal BP 2120 to 1920)							

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS



Beta Analytic Radiocarbon Dating Laboratory

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • E-Mail: beta@r adiocarbon.com

Trench 1							
Context No.	Туре	Description	Interpretation				
100	Layer	Brown/grey compact silty clay	Modern topsoil				
101	Layer	Brown silty clay, fairly firm	Remnants of former plough zone				
102	Layer	Light yellow/grey chalky clay	Chalky marl (natural geology)				
103	Cut	E-W linear with shallow sides and slightly concave base	Linear boundary of possible Iron Age date				
104	Fill	Dark grey/brown silty clay with occasional charcoal flecks	Sole fill of [103], caused by silting				
105	Spread	Irregular in plan and very shallow with irregular sides	Possible working area, predates [103]				
106	Fill	Firm grey silty clay with very occasional sub-rounded chalk fragments	Silting of [105]				
107	Layer	Mixed horizon of pale grey silty clay with frequent lenses of dark grey/black silty clay with organic content	Interleaving alluvial deposits probably representing marshy area				
108	Layer	Undulating layer of dark grey/black silty clay with organic component	Possible former ground surface				
109	Layer	Mixed deposit of yellow/grey chalky marl with organic component	Probable flood horizon overlying layer 108				

Appendix 9: List of Archaeological Contexts

Trench 2

THENCH	2		
Context No.	Туре	Description	Interpretation
200	Layer	Brown/grey compact silty clay	Modern topsoil
201	Layer	Brown silty clay, fairly firm	Remnants of former plough zone
202	Layer	Light yellow/grey chalky clay	Chalky marl (natural geology)
203	Cut	Large irregular feature partially exposed in trench. Very	Probable man-made 'pond'
		steep sides, more gradual at top of feature	feature of ?Iron Age date
204	Fill	Compact grey silty clay with occasional chalk marl	Primary silting of [203]
		lenses and fragments of chalk	
205	Fill	Dark grey compacted silty clay	Secondary natural silting of [203]
206	Layer	Loose brown clayey silt	Upper fill of [203] or possible
			buried soil
207	Layer	Light yellow/grey chalky clay – Slot 2	In-wash from riverbank
208	Layer	Brown crumbly silt – Slot 2	Deflated desiccated peat horizon
209	Layer	Light yellow/grey chalky clay - Slot 2	In-wash from riverbank
210	Layer	Dark brown silty clay, fairly compact – Slot 2	A river mud horizon in former
			channel?
211	Layer	Mixed light grey silt with animal bone, worked lithics,	Alluvial silt containing prehistoric
		thermally-altered flints, pebbles, and some charcoal	artefactual material and possibly
		flecking	re-worked by livestock – a
			'poached' horizon
212	Layer	Light yellow/grey chalky clay – Slot 3	In-wash from riverbank
213	Layer	Brown crumbly silt – Slot 3	Deflated desiccated peat horizon
214	Layer	Light yellow/grey chalky clay – Slot 3	In-wash from riverbank
215	Layer	Light grey silt with animal bone and thermally-altered	Alluvial silt containing prehistoric
		flints – Slot 3	artefactual material
216	Layer	Compact grey/brown silt – Slot 3	Alluvial silt in former channel
			predating cultural horizon 215
217	Layer	Light grey/yellow coarse silt with abundant roots – Slot	Alluvial silt in former channel
		3	
218	Cut	Broadly east – west shallow linear with gradual sides	Former hedge or ditch boundary
		and an uneven base – Slot 1	of probable prehistoric date
219	Layer	Light yellow/grey chalky clay – Slot 1	In-wash from riverbank
220	Layer	Brown crumbly silt – Slot 1	Deflated desiccated peat horizon

Context No.	Туре	Description	Interpretation
221	Layer	Light yellow/grey chalky clay – Slot 1	In-wash from riverbank
222	Layer	Light grey silt with animal bone and thermally-altered flints – Slot 1	Alluvial silt containing prehistoric artefactual material
223	Fill	Mixed grey and light yellow coarse silts, with two animal teeth recovered – Slot 1	Initial alluvial silting of [218]
224	Layer	Light yellow/grey chalky clay – Slot 4	In-wash from riverbank
225	Layer	Brown crumbly silt – Slot 4	Deflated desiccated peat horizon
226	Layer	Light grey silt with animal bone and worked lithics – Slot 4	Alluvial silt containing prehistoric artefactual material
227	Skeleton	Articulated human remains at edge of former channel	Individual laid at edge of channel in prehistoric period
228	Cut	Vertically sided pit with flat base	Probable well pit of prehistoric date
229	Layer	Compact grey silt	Alluvial silt similar to 211, 216, 222 and 226
230	Fill	Light yellow/grey chalky clay	Secondary fill, in-wash from erosion of pit [228] edge
231	Fill	Very compact light brown silt with organic component	Primary silting of pit [228]
232	Cut	NW-Se aligned linear with steep sides and slightly concave base	Boundary feature of possibly Iron Age date
233	Fill	Very compact grey silty clay with occasional small sub- angular stones	Silting of ditch [232]
234	Cut	Shallow gradually sloping cut with relatively flat base	Shallow pit containing industrial waste of unknown date
235	Fill	Mix of crumbly grey and black silt with some fuel ash slag	Backfill of pit [234]
236	Layer	Loose brown clayey silt	Probable buried soil
237	Fill	Thin lens of grey silty clay with frequent charcoal flecks and moderate chalk flecks	Secondary fill of pond [203], probably a backfilling event