Community Centre, High Lode, Ramsey, Cambridgeshire: An Archaeological Evaluation Report

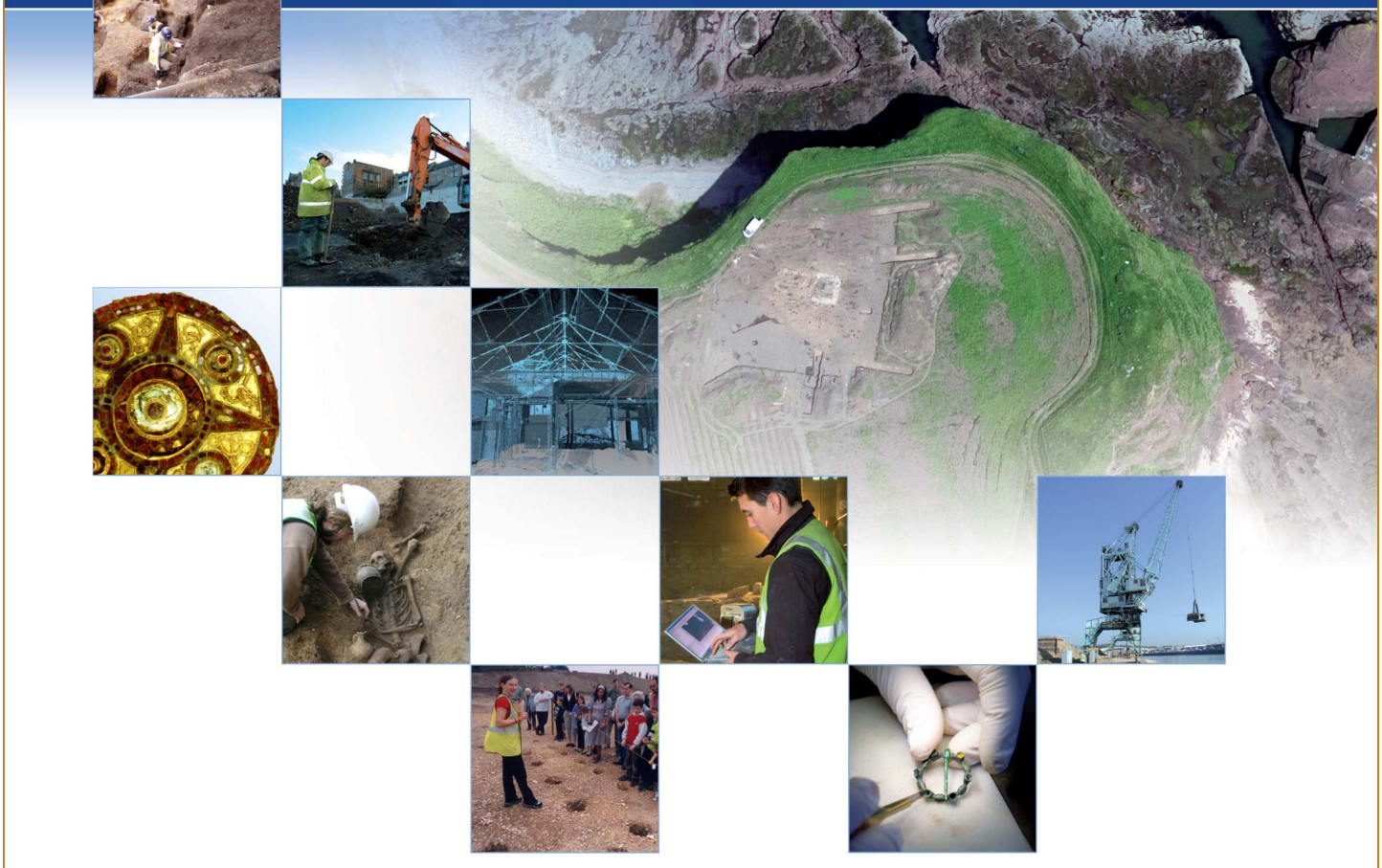
Planning Application Number: 0900192REM

National Grid Reference Number: TL 2852 8582

AOC Project no: 30417

Site Code: ECB 3160

November 2009



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Community Centre, High Lode, Ramsey, Cambridgeshire

An Archaeological Evaluation Report

On Behalf of:	**Pinnacle Consulting Engineers Ltd** Studio 4 37 Broadwater Road Welwyn Garden City Hertfordshire AL7 3AX
National Grid Reference (NGR):	**TL 2852 8582**
AOC Project No:	**30417**
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Date of Evaluation:	**23rd-27th March 2009**
Date of Report:	**November 2009**

This document has been prepared in accordance with AOC standard operating procedures.

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Non-Technical Summary

A three-trench archaeological evaluation of a site on the north edge of Ramsey, next to the High Lode was carried out to determine the presence or absence of archaeological material. The site was characterised by naturally lain sand and gravel with peat formed above. This sequence underwent sampling with subsequent environmental analysis and radiocarbon dating. Radiocarbon dating of tree bark recovered from the peat dated its deposition to within the early Bronze Age, specifically between 1690BC and 1520BC. During this period the archaeobotanical and zooarchaeological results indicate that the wetland environment contained damp fen carr (mainly alder with willow), semi-aquatic swamp and open water aquatic vegetation communities (Appendix B). There is some indication from the insect record that the wetland environment may have become increasingly stable (drier) throughout the duration of peat formation. The pollen-stratigraphic record indicates that during the period of peat formation the dryland contained areas of mixed deciduous woodland, but was mostly open in nature and supported rough grassland. However, the plant macrofossil and insect records also provide persuasive evidence for some level of anthropogenic activity near the site during the period of peat formation.

1. Introduction

1.1 Site Location

1.1.1 The site is situated to the north of the town centre, on the east side of High Lode; National Grid Reference **TL 2852 8582** (Figure 1). The development site is irregular in shape and measures a total area of approximately 1,624 square metres. It is bound to the west by High Lode, by industrial buildings to the north, Stocking Fen Road to the east and a car park to the south.

1.1.2 The site is currently open grassland. The proposed development comprises the construction of a single-storey community centre most probably built on deep pads approximately 2m below ground level.

1.1.3 The Evaluation was carried out in March 2009 and comprised the excavation of 3 trenches each 20m by 2m. The archaeological trenches were all excavated to Oxford Clay, generally 2m deep.

1.2 Planning Background

1.2.1 The local planning authority is Huntingdonshire District Council. Archaeological advice to the council is provided by Kasia Gdaniec of the Cambridge Archaeology Planning and Countryside Advice (CAPCA) team.

1.2.2 A planning application has been approved to develop the site, subject to conditions (Application No 0900192REM). The proposed development comprises the construction of a single-storey community centre.

1.2.3 CAPCA recommended that an archaeology condition be placed on planning permission to secure a programme of archaeological work. The excavation of three evaluation trenches was carried out in accordance with a Written Scheme of Investigation (AOC 2009). This document presents the results of these three trenches.

1.2.4 Due to a requirement for access to dredge the High Lode it was decided late in the process to move the location of the community centre approximately 20m to the east of the original location. Discussions with CAPCA during the fieldwork agreed that the trenching reported on in this document would be sufficient to satisfy the archaeology condition.

1.3 Geology and Topography

1.3.1 The British Geological Survey (1:50,000 Sheet 172) shows the area underlain by Nordelph Peat resting on Oxford Clay bedrock. Previous investigation at St Mary's Road to the west (Pinnacle 2008) found peat only in the western corner of the site. Elsewhere within the site, made ground was present overlying alluvial sands and clays.

1.3.2 The medieval settlement of Ramsey stood on a promontory to the south of the site. It is unlikely that the site was drained until the 17th century. The site may have stood above the water line in the prehistoric or Roman periods. Bury Brook) runs from Wistow and Bury in the south-west, and joins the High Lode which runs through Ramsey before joining the River Nene. The site lies directly on the east bank of the High Lode, with a raised bank as flood protection.

2. Historical and Archaeological Background

2.0.1 The following information is drawn from the Written Scheme of Investigation for the archaeological evaluation (AOC, 2009).

2.1 Prehistoric (before cAD 43)

2.1.1 Prehistoric activity and settlement was undoubtedly influenced by the natural topography and landscape of an area, as interpreted by prehistoric people both culturally and ritually and through the socio-economic utilisation of the natural resources. When addressing prehistoric archaeology within the Ramsey area it is important to note that the topography and landscape present today is likely to be dramatically different than that of the prehistoric periods; particularly the degree of land use and utilisation of the fenlands which would have been affected by climatic changes such as sea level falls and rises.

2.1.2 It is currently not known to what extent the area of Ramsey and the surrounding Fenlands were settled and/or utilised during the prehistoric periods. However, there is evidence that indicates some form of prehistoric presence in this area. A Desk Based Assessment carried out for a site at St Mary's Road, Ramsey (AOC 2008) identified a Palaeolithic hand axe found at the vicarage c. 1km to the south-east of this site, a Neolithic axe found at Ramsey North Station and several findspots of Bronze Age date though the exact location of these are unknown.

2.1.3 In the wider area, several Bronze Age Round Barrows (designated as Scheduled Monuments) have been recorded c.2km to the northeast, just south of the hamlet of Ramsey Forty Foot.

2.2 Roman (cAD 43 - 410)

2.2.1 The extent of settlement and degree of land use in Ramsey and the surrounding area during the Roman period is not fully known. The 2008 Desk Based Assessment (AOC 2008) identified four sites of Roman date including a Samian ware bowl found c.830m to the south of the site and the site of a Roman pottery kiln at Homersfield gravel pit, dated to the mid 3rd century. Further examples of Roman pottery have been found near Ramsey Abbey, c.1.1km to the southeast. A Roman pavement and coins were found in Ramsey by the antiquarian William Stukeley in 1724, but the location of these is unknown.

2.2.2 The available evidence suggests some degree of Roman activity in the Ramsey Area, possibly located around the peninsular of high ground (c. 800m – 1km) to the south of the site.

2.3 Early Medieval (AD 410-1066) and Medieval Periods (AD 1066-1539)

2.3.1 Ramsey lies within the lands which historically belonged to Æthelstan, 'Half Kyng', of the East Angles, who was living from AD 925 to AD 960. Ramsey Abbey was founded in AD 969 by his son Ailwin and the Bishop Oswald on a site c.1km to the south-east of the development site (VCH, 1926). Ramsey Abbey was one of several large religious houses founded/r e-founded upon the 'islands' or along the edge of the Fens, where the relative isolation of the fenland area was an attractive factor for the Christian orders (AOC 2009). The Abbey was one of the earliest and most important religious houses founded in Huntingdonshire and was largely prosperous and successful until the dissolution.

2.3.2 The Abbey was the largest land-owner in the period, owning the Manor of Ramsey itself, as well as numerous manors, estate and churches in the surrounding parishes, other parts of Huntingdonshire and other counties. The Abbey was also the socio-economic focus of the surrounding area; being a centre for trade, administration and religion.

2.3.3 The Abbey (and the later town of Ramsey) at this time was situated on a peninsular of high ground jutting out into the surrounding un-drained fenland to the north, east and south with further marshy land to the west; the Abbey standing on the highest part of the 'island' c.7m above ordnance datum (VCH, 1932) c. 1km south of the development site. Settlement during the early medieval (and medieval) period would have undoubtedly been focused on the Abbey and surrounding vicinity. The date of the founding of the settlement of Ramsey is currently unknown; it has been suggested that the town itself postdates the founding of the Abbey by almost two hundred years (Dewindt & Dewindt, 2005). This could be contemporary with the construction of a 12th century causeway linking the 'island' to the higher ground to the west. It has also been suggested that a Saxon settlement of Ramsey was located in close proximity to the Abbey along Hollow Lane, to the west and south of the Abbey (HDC, 2005).

2.3.4 It appears that the importance of Ramsey was relatively limited (apart from being the seat of an Abbey) until the end of the 12th century when it had grown to a sufficient size to warrant the grant of a market and a two-day fair on the vigil and feast of the Translation of St. Benedict in AD 1267 (VCH, 1932).

2.3.5 The town's position on the edge of Fens, off the major routes of trade and communication meant these markets would have been largely local affairs and predominantly agricultural. It is also a factor of why, in the medieval period, Ramsey never developed past the status of being a small market town; it did not become a borough and never returned a member to Parliament (VCH, 1932).

2.3.6 Evidence from the Abbey's court records highlight the mainly agricultural nature of Ramsey during this period, though fishermen, weavers, fullers and tanners are also mentioned and a high number of ale-houses; probably serving the need of the market and the traders etc. (VCH, 1932). It is thought that settlement during this period was concentrated along modern day High Street and along the approach to the Abbey to the large open space outside the Abbey gates.

2.3.7 The Market Place was situated between High Street and Little Whyte, and settlement expanded over these areas and along Great Whyte to the east (VCH, 1932); which was the main route northwards through the town and today leads onto St. Mary's Road.

2.3.8 The site itself lies outside the centre of Ramsey, within land that was fenland marshes. It may have been utilised in some form as part of the agricultural hinterland of the Abbey or settlement.

2.4 Post-Medieval (c. AD 1539 – 1900)

2.4.1 Ramsey Abbey was dissolved in 1539, and much of its land came under the ownership of the Cromwell family. The 16th and 17th centuries saw the Abbey's monastic building being robbed and sold off for building materials and it is suggested that material from Ramsey Abbey was used in the construction of the towers of Ramsey and Godmanchester parish churches, several nearby houses and several colleges in Cambridge. By the beginning of the 17th century, the Cromwells had built Ramsey Abbey House which currently occupies the site of the former Abbey (VCH, 1932).

2.4.2 Since the late 17th century, the Fenlands around Ramsey started to be drained on a large scale, and became used for agriculture. The earliest documentary evidence is dated to December 1656 and records the sale of *'3 acres & 3 roods in Mugdyke Fen, The Bill',* while a second record, from October 1660 records the exchange of *'a Bill Lot, Ramsey; the thirteenth lot abutting west upon the Bill Fen River or Load'* (AOC 2008).

2.4.3 The settlement of Ramsey expanded through the post medieval period; though this was piecemeal in nature and largely located within, or close to the town centre of the High Street, Little and Great

Whyte and surrounding streets. It was not until the early 19th century that expansion began in earnest following the Enclosure of Common land. This allowed the expansion of the town with creation of moderate sized plots for larger villas and private residences further out in the areas such as Newtown Road, Newtown green, Blenheim Road, Burry Road and Biggin Lane (HDC, 2005). Later in the 19th century, and the 20th century, development expanded out to the rural fringe of the town, comprising both suburban housing as well as industrial development such as Ramsey North Station (opened 1863) opposite the site to the south-west, Flowers steam mill c.200m to the south, and gas works south of the site.

2.4.4 The site is currently open grassland with light industrial developments in the vicinity. It is unlikely that there will have been any previous impacts on potential archaeological remains. The bank of the High Lode, on the west of the site has been raised as flood protection.

3. Strategy

3.1 Aims of the Investigation

3.1.1 The aims of the investigation were defined in the Written Scheme of Investigation:

- To establish the presence/absence of archaeological remains within the site.
- To determine the extent, condition, nature, character, quality and date of any archaeological remains encountered.
- To record and sample excavate any archaeological remains encountered.
- To assess the ecofactual and environmental potential of any archaeological features and deposits.
- To determine the extent of previous truncations of the archaeological deposits.
- To enable the Archaeological Advisor to Huntingdonshire District Council to make an informed decision on the status of the archaeology condition and any requirement for further mitigation work.
- To make available to interested parties the results of the investigation in order to inform the mitigation strategy as part of the planning process.

3.1.2 The specific aims of the Evaluation were:

- Determine the presence / absence of remains relating to Prehistoric activity.
- Determine the presence / absence of remains relating to Roman activity on the site.
- Assess the impact that changing water levels have had on the site.

3.1.3 To make public the results of the investigation, subject to any confidentiality restrictions.

3.2 Methodology

3.2.1 Prior to the commencement of fieldwork, a unique site code & HER number (**ECB 3160**) was obtained and an OASIS online form was initiated.

3.2.2 The evaluation comprised the machine excavation of three trenches 20m by 2m at base (Figure 2).

3.2.3 The entire site was visually inspected before the commencement of machine excavation.

3.2.4 A 14 tonne tracked excavator fitted with a 2.0m wide toothless ditching bucket was used to excavate to the potential archaeological horizon. All machining was carried out under direct control of an experienced archaeologist.

3.2.5 On completion of the machine excavation, all trench faces that required examination or recording were recorded to the standards set out within the MoLAS Archaeological Field Manual (1994), and in accordance with the Written Scheme of Investigation. Written descriptions, comprising both factual data and interpretative elements were recorded on standardized pro–forma recording sheets. Plans were drawn of each trench at a scale of 1:20. Full sections of one long face of each trench were drawn at 1:20. A digital photographic and black and white photographic record was made.

3.2.6 Excavated material was examined in order to retrieve artefacts to assist in the analysis of spatial distribution.

3.2.7 A Temporary Bench Mark was set up on the site and levels were recorded for each deposit.

3.2.8 Trenches were stepped out for every 1.2m of vertical excavation to ensure safe access.

3.2.9 Under the guidance of the on-site geoarchaeological specialists, QUEST, monolith samples and environmental samples were taken from suitable organic and alluvial deposits for further assessment.

3.2.10 The evaluation work was undertaken over 5 days by Ian Hogg, Project Supervisor, under the overall project management of Andy Leonard, Project Manager.

3.2.11 The project was monitored by Kasia Gdaniec, CAPCA, on behalf of the Local Planning Authority.

4 Results

4.1 Trench 1 (Figure 3)

4.1.1 Trench 1 was located in the northern part of the site, oriented east-west.

Level (OD) of Top of Context	Thickness	Context	Description
2.25	1.20m	101	Earthen bank
0.11 to 0.03	0.54m	104	Peat horizon
-0.64 to -0.67	0.72m	106	Top of gravel sequence.
-1.49 to 1.48	N/A	111	Oxford Clay

4.1.2 Naturally-lain Oxford Clay lay at -1.48mOD, with a slightly undulating surface. This was sealed by a sequence of sand and gravels, probably of glacial origin. The clay dips to -1.70m in the west of the trench, and this hollow may represent the presence of a water channel.

4.1.3 The lowest deposit in the sequence was a layer of compact sub-rounded gravel in a very infrequent sand matrix (110). This was slightly thicker -0.29mOD deep at the eastern end of the trench. Overlying this was a layer of pale bluish brown sand (109), at around -0.90mOD, which lensed out eastwards against the slightly higher layer of gravel beneath. Above this was firm, fine yellowish brown sand with high gravel content (108) that was regularly 0.12m thick, though still dipping into a slight hollow at the west of the trench. A small patch of sand (107) lay in this still-present hollow at the western end of the trench, filling it to form a roughly level horizon at -0.81mOD.

4.1.4 A small patch of sand (113) was located atop the lower gravel (108) toward the east of the trench. This was considerably looser and less compact than any of the other layers revealed. This was sealed by the uppermost layer of gravel (106), which was firm sand with high gravel content and lay roughly level, at 0.64mOD.

4.1.5 All these gravel and sand deposits are laid down by fluvial action, and there may also be limited reworking. The next sequence marks alluvial deposition from slow-moving fluvial inundation, and the development of peat. The gravels were sealed by a layer of fine, light greyish blue clay up to 0.26m deep (105). The lack of inclusions in the layer indicate its origin in a slow-moving marine environment. Atop this alluvial clay was a layer of fine black clayey silt with high organic content (104), a peat horizon, indicating that the water flow was much reduced and may have been little more than stagnant pools among marshy ground. The peat had notable woody fragments inclusions.

4.1.6 The peat horizon was sealed by a thin layer of brown silty clay, also with high organic content (112), which lay at 0.04mOD, and may be a buried topsoil that had formed above the peat. Above this were layers that were of modern date. The lowest of these was very dark brown silt sand with fragments of brick and tile (103). This was sealed by a second layer of silt (102), also rich in building materials, which sloped from 0.80mOD in the west to 0.62mOD in the east. At the western end of the trench was a raised bank of recent (20th century) date (101), standing to 2.25m, over 1.40m above the general land surface

4.1.7 One column and six bulk samples were recovered from contexts (103), (112), (104) and (105). These samples underwent geoarchaeological analysis (Appendix B); including radiocarbon dating, pollen, wood, plant macrofossil and insect analysis. The Holocene sequence in Trench 1 comprised silty alluvial clays passing up into more organic sediments, with lenses of peat, follwed by made ground (Units 3-6). The main plant groups identified were alder, ash, hazel and elm, indicating a wetland plant community comprising alder woodland, with an understorey of grasses, sedges (Cyperaceae) and herbs. These taxa indicate the presence of damp woodland, growing within fen carr and/or on the margins of a river/stream. Charcoal and charred cereal grains in the samples suggest some limited human utilisation and exploitation of the natural environment. Insect remains were dominated by aquatic species, including water fleas, leaf beetles, and a tiny weevil which feeds on duckweed. Throughout the sequence several insect species provided evidence for the presence of trees close to the point of deposition. There were also remains of a dung beetle providing a suggestion that local, probably drier areas may have supported grazing animals.

4.1.8 Sample <6>, taken from the peat deposits contained waterlogged oak bark remains that were accelerator mass spectronomy (AMS) radiocarbon dated to between 1690BC and 1520 BC (Appendix C). This places the deposition of the peat sediment to within the early Bronze Age. Therefore the period of peat formation at High Lode, Ramsey, is contemporaneous with the development of the ‘upper peat’ elsewhere in the south-western Fens, and the lack of earlier Holocene deposits at the site is most likely the result of its elevation and position adjacent to the higher drier ground of the dryland edge.

Plate 1: Trench 1 sample section

4.2 Trench 2 (Figure 3)

4.2.1 Trench 2 was in the east of the site, oriented north-south.

Level (OD) of Top of Context	Thickness	Context	Description
1.15 to 0.84	0.38m	201	Ground level
0.47 to 0.23	0.56m	202	Peat horizon
-0.32 to -0.48m	0.78m	204	Top of gravel sequence.
-1.22m to -1.25m	N/A	207	Oxford Clay

4.2.2 The naturally-lain Oxford Clay (207) sloped down slightly southward, from -1.22m to -1.25mOD, and gravel and peat deposits above respected this slight slope. The clay was sealed by fairly compact grey sand with frequent gravel (206), including some large flint gravel. There were two shallow hollows in the top of this layer which may represent channels within the gravel: both were filled with very fine pale brown sand (205 and 208), which had a notable lack of gravel inclusions. A second layer of rounded gravel was recorded above this, a generally firm to hard mottled grey, blue and orange sand with high gravel content (204). Very thin, patchy lenses of sand within the layer suggest that this deposit may have derived from relatively short sequences of events laying down lenses of sand and gravel. The top of the gravel was at -0.48mOD.

4.2.3 The gravel sequence was sealed by a thick layer of fine pale grey silty clay of alluvial origin, representing a slow moving fluvial environment responsible for the next sequence of deposition (203). This is equated with the alluvium in Trench 1. The alluvium was sealed by a thick layer of peat (202), lying at between 0.23m and 0.47mOD, slightly lower than Trench 1. The peat was of the same constituents as in Trench 1, though with less wood fragments. A full Geoarchaeological Report is presented as Appendix B of this document.

4.2.4 The peat was sealed by topsoil 0.38m deep that may have been reworked (201): modern building materials were present, more so towards the top of the layer. This layer lay at 0.80m in the north of the trench, rising to 1.15m in the south, where it was deeper.

4.3 Trench 3 (Figure 4)

4.3.1 Trench 3 was located towards the west-centre of site, and oriented north-south.

Level (OD) of Top of Context	Thickness	Context	Description
1.01 to 1.21	0.65m max	301	Ground Level
0.26	0.20	303	Peat horizon
-0.07 to -0.14	0.80m	309	Top of gravel sequence.
-0.84 to 0.99	N/A	313	Oxford Clay

4.3.2 The naturally-lain Oxford Clay was present at -0.84m in the south of the trench, dropping to -0.99mOD in the north. This lay largely flat, with only subtle undulations. The lowest gravel deposit sealing the clay was very compact grey sand with high gravel content (312). This was up to 0.40m deep, and was sealed, in the centre of the trench, by a thin layer of sand (310). This was just 6m across, and may have been truncated to the north and south by erosion occurring while the next layer of gravel was laid down; a gravel layer up to 0.60m deep and containing sand lenses indicating varied deposition (309). The surface of this gravel layer is the last gravel event before alluvium was laid down and peat developed above. The surface of the gravel was at around -0.10mOD.

Plate 2: trench 3 sample section

4.3.2 Grey alluvium above the gravel was up to 0.40m deep (308) and represents silt deposited under slow-moving fluvial currents. This was sealed by a layer of peat (303), which was sampled for pollen analysis, and showed the same species as the sample from Trench 1: alder, ash, hazel and elm with an understorey of grasses, sedges, and herbs including members of the carrot family and mugwort. The peat lay at 0.26mOD.

4.3.3 The peat was cut by a tree pit [315], which may have been cut from higher, but the boundary of the feature was quite diffuse. The pit was 1.4m across, and continued beyond the trench width. It was 0.35m deep with an irregular rounded base, and was filled with loose very dark brown sandy silt and occasional pebbles (314), and probably derives from reworking of the peat and underlying gravels

through root action. The pit and peat were sealed by a topsoil-like deposit (302) of dark brown sandy silt.

4.3.4 The topsoil was cut by a deep linear feature at the very southern end of the trench. The linear feature [307] continued beyond the limit of excavation, and its base was not reached. Only one edge was present in the trench, the northern edge of the cut, and this dropped at around 60º. The lowest fill exposed was redeposited Oxford Clay, which was firm and sticky (306). The secondary fill was yellowish brown silty clay. Both of these fills contained fragments of modern building materials; brick and tile. The upper fill of the feature was soft dark brown sandy silt (305), and was probably topsoil put back in the cut to level the surface. This suggests that the feature may be a short lived event such as a geotechnical test-pit or possibly a service.

4.3.5 The entire sequence was sealed by a thick layer of dark brown sandy silt (301) which contained modern building materials. This was up to 0.65m thick at the south end of the trench, and was made ground.

4.3.6 A column sample <8> was taken from Trench 3 representing contexts (309) and (314). These samples were assessed (Appendix B) but did not warrant further analysis.

5. Finds

5.1 Finds of modern building materials in the made ground of each trench were not retained for specialist analysis, due to their recent date. No other finds were present.

5.2 Six bulk samples and a single column sample were taken from the deposits within Trench 1. The subsequent environmental analysis of the samples (Appendix B) revealed that the environment at the time of deposition comprised alder dominated woodlands, with grasses, sedge and marshy pools, and with limited human activity or influence on the landscape, represented by charcoal and cereals. Radiocarbon dating of bark from bulk sample <6> has dated the deposition of the peat sediment to the early Bronze Age (1690 – 1520 BC) (Appendix C).

6. Discussion

6.1 The Oxford Clay drops down north and east from -0.89m in the south of Trench 3 to -1.22mOD in Trench 2 and -1.48mOD in Trench 1. In all the trenches, this was sealed by a thin bed of gravel. This gravel was then sealed by a unit of sand and gravel up to 1.00m thick, forming sub-horizontal beds and lenses. As fluvial action slowed water flow could carry only fine-grained sediments, and when slowed sufficiently, the landscape appears to have become marshy, with peat forming and stagnant pools and alder woodland forming on slightly higher ground.

6.2 The lowest sand and gravel is typical of the sediments associated in southern Britain with fluvial deposition under periglacial climatic conditions. They represent deposition in a braided river in which the valley floor is occupied by numerous longitudinal gravel bars separated from one another by channels in which finer-grained, usually sandy deposits, accumulate. Such sandy bars may be represented in Trench 1 (107, 109, and 113), Trench 2 (205 and 208) and Trench 3 (312). These gravels near to the Fen edge have been interpreted as having been deposited in the last glacial period – the Devensian (71,000-8,000 BC). The uppermost sand and gravel layers probably represent a late reworking, leaving a very flat surface on which the fine-grained Holocene sediments accumulated, leading ultimately to peat formation.

6.3 The peat was located at 0.26mOD, considerably lower than the higher ground occupied by Ramsey, and this low level is responsible for the land never being occupied, or seemingly cultivated. The radiocarbon dating of bark found within the peat has identified its deposition to the Bronze Age,

specifically between 1690BC and 1520 BC. During this period the archaeobotanical and zooarchaeological results indicate that the wetland environment contained damp fen carr (mainly alder with willow), semi-aquatic swamp and open water aquatic vegetation communities (Appendix B). There is some indication from the insect record that the wetland environment may have become increasingly stable (drier) throughout the duration of peat formation; however, due the low number of remains recorded in the upper samples, this interpretation must be regarded with caution. The period of peat formation at High Lode, Ramsey is contemporaneous with the development of the 'upper peat' elsewhere in the south-western Fens, and the lack of earlier Holocene deposits at the site is most likely the result of its elevation and position adjacent to the higher drier ground of the dryland edge (Appendix B). The pollen-stratigraphic record indicates that during the period of peat formation the dryland contained areas of mixed deciduous woodland, but was mostly open in nature and supported rough grassland. However, the plant macrofossil and insect records also provide persuasive evidence for some level of anthropogenic activity near the site during the period of peat formation (Appendix B).

7. Further Work and Publication

7.1 The results of the evaluation will be published as a summary in the local archaeological journal and through the OASIS project (Appendix D). If further work is required in the light of these results, the suitable level of publication will be dependent on the significance of the further archaeological results, but as a minimum the basic requirements of Appendix 7.1 of *Management of Archaeological Projects* (English Heritage 1991) will be met.

8. Archive Deposition

8.1 The site archive will be prepared in the format agreed with the Cambridgeshire County Council Archaeology Store. The excavation archive will be security copied and a copy deposited with the National Archaeological Record (NAR).

8.2 The site archive will comprise all artefacts, environmental samples and written and drawn records. It will be consolidated after completion of the whole project, with records and finds collated and ordered as a permanent record. The archive will be prepared in accordance with Guidelines for the preparation of excavation archives for long-term storage (UKIC 1990) and Archaeological Archives; A guide to best practice in creation, compilation, transfer and Curation (Brown & AAF 2007). On completion of the project the Developer/Landowner will discuss arrangements for the archive to be deposited.

9. Bibliography

AOC Archaeology (2008). *St Mary's Road, Ramsey, Cambridgeshire: Archaeological Desk Based Assessment.*

AOC Archaeology (2009). *Community Centre, High Lode, Ramsey, Cambridgeshire: A Written Scheme of Investigation for an Archaeological Evaluation*

Armstrong, J.M. (1999). *Ramsey, Past and Present: Portraits of a Fenland Town, Ramsey*: Armstrong, Boon and Marriot

British Geological Society 1:50,000 series (1995). *Ramsey.*

Council for British Archaeology (1987). First Aid for Finds (Second Edition).

Department of the Environment (1990). *Planning Policy Guidance: Archaeology and Planning (PPG16).*

Dewindt, A.R. and Dewindt E.B. (2006). *Ramsey: The Lives of an English Fenland*

English Heritage (1991). *Management of Archaeological Projects.*

English Heritage (1988a). *Archaeological Guidance Paper 3: Standards and Practices in Archaeological Fieldwork*

English Heritage (1998b). *Archaeological Guidance Paper 4: Standards and Practices in Archaeological Reports*. (English Heritage London Region).

English Heritage (2002). *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation.*

Gelling, M. (1984). *Place-Names in the Landscape*. London: Dent & Sons Ltd

Huntingdon District Council (2005). *Ramsey Conservation Area Character Assessment*

Institute of Field Archaeology (1992). *Standards and Guidance and Guidelines for Finds Work*.

Institute of Field Archaeologists (1994, revised 2001). *Standard and Guidance for Archaeological Field Evaluation*.

Institute of Field Archaeologists (1997). *Code of Conduct.*

Museum of London (1994) *Archaeological Site Manual* (Third Edition)

United Kingdom Institute for Conservation (1983). *Conservation Guidelines No 2.*

United Kingdom Institute for Conservation (1990). *Guidance for Archaeological Conservation Practice.*

VCH (Victoria County History), (1926). A History of the County of Huntingdon: Volume 1, downloaded from http://www.british-history.ac.uk on 20th November 2008.

VCH (Victoria County History), (1932). A History of the County of Huntingdon: Volume 2, downloaded from http://www.british-history.ac.uk on 20th November 2008.

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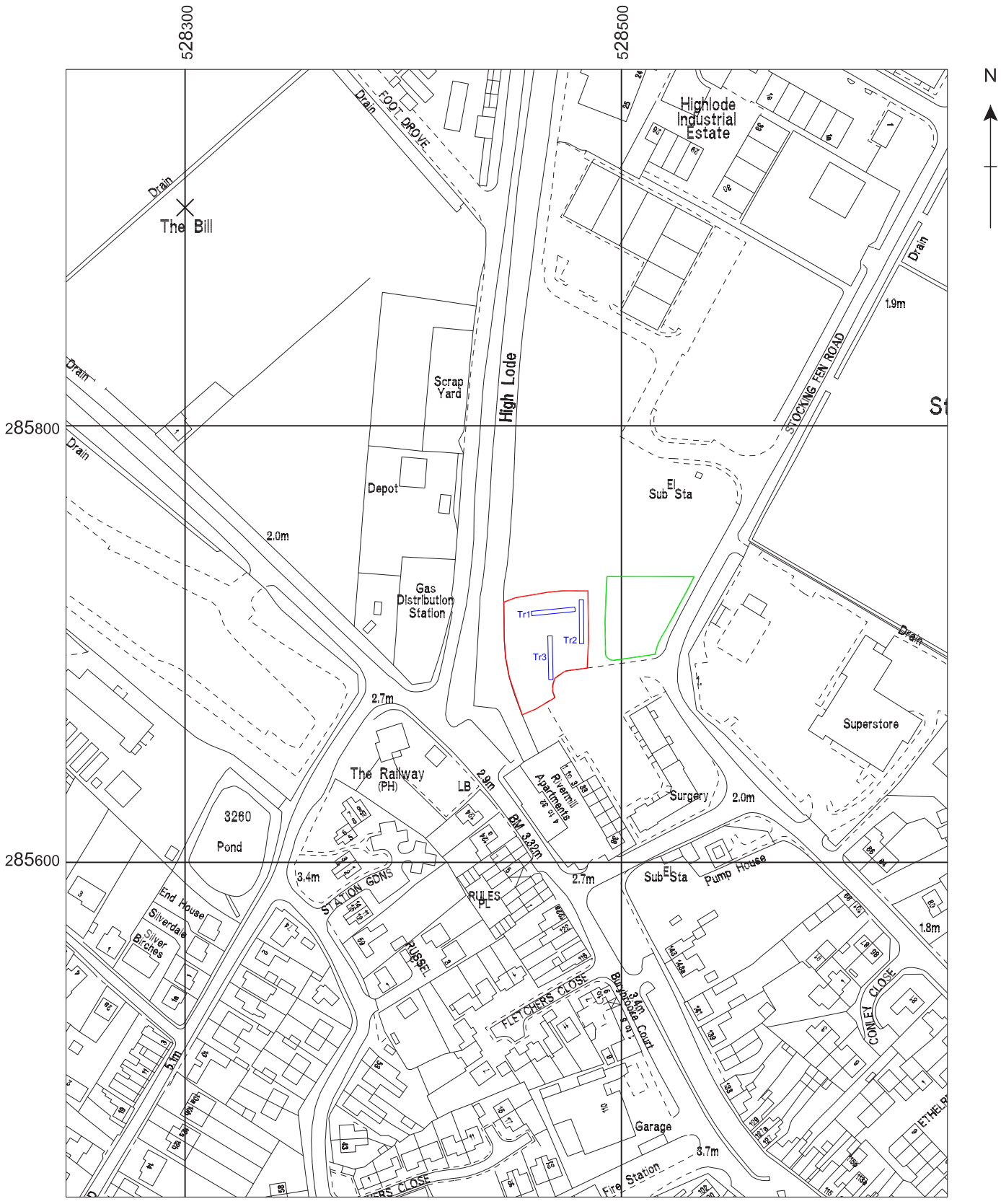
500m 0 2 km

1:50 000

Figure 1: Site Location

AOC Archaeology Group



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Evaluation Area Outline Community Centre Outline

Figure 2: Detailed Site Location / Trench Location Plan

50m 0 100m

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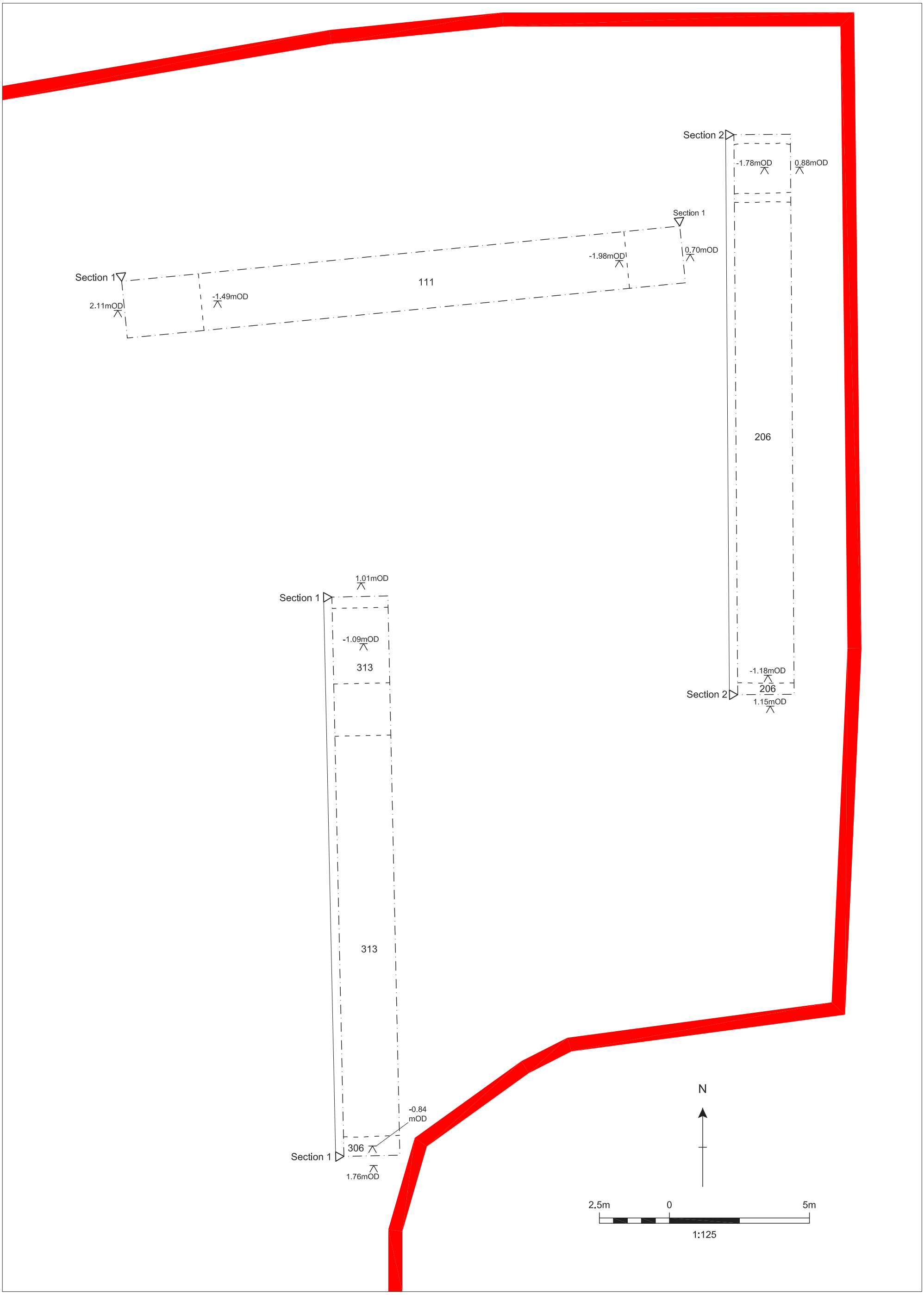

Figure 3: Detailed Trench Plans

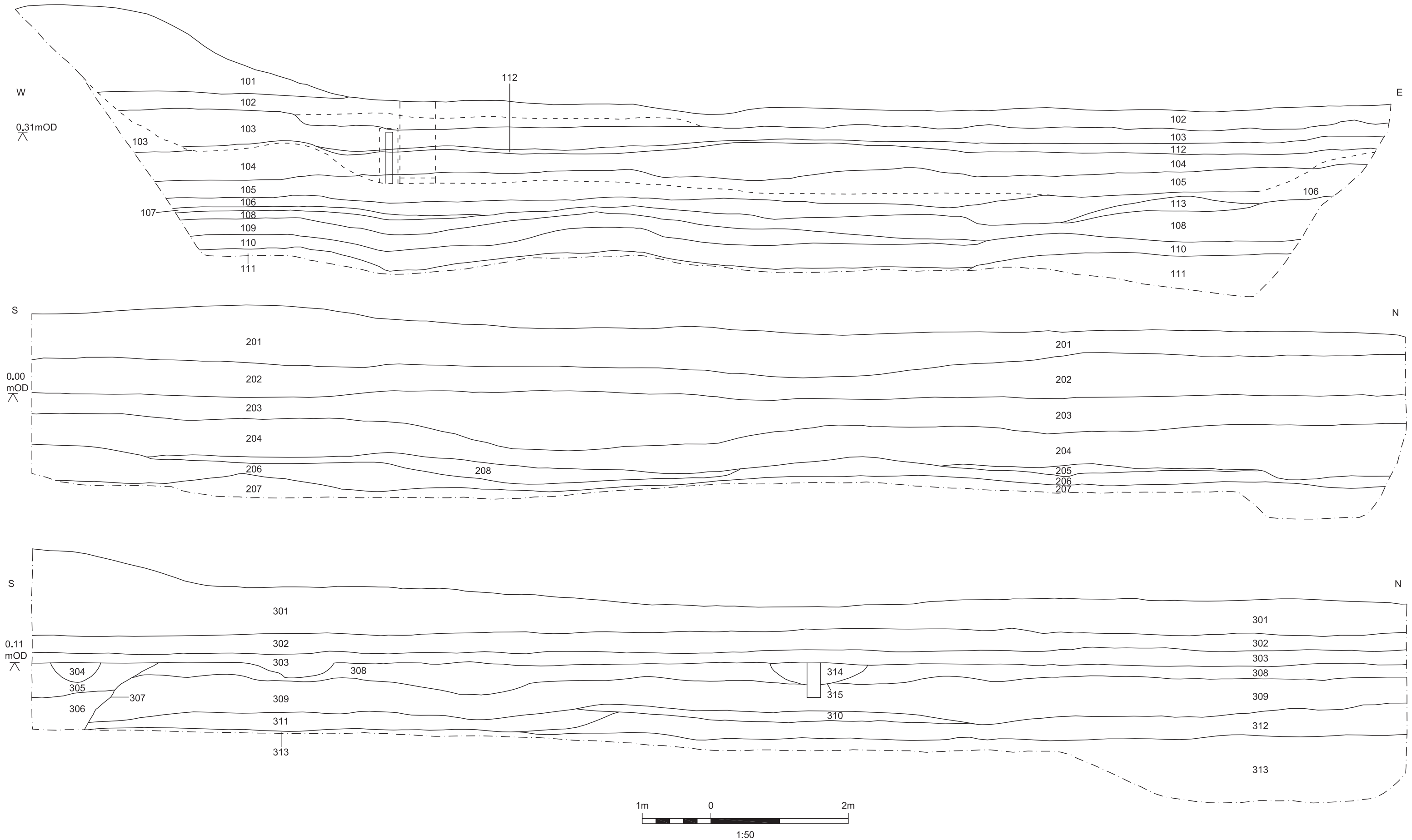

Figure 4: Trench Sections

Appendices

Appendix A – Context Register

Context	Description	Length/m	Width/m	Depth/m
101	Made ground, forming a bank	4.80	2.00	1.20
102	Dark brown silty sand, CBM, made ground	18.90	2.00	0.25
103	Bark brown silty sand, occ CBM, made ground	18.70	2.00	0.34
104	Peat	18.10	2.00	0.54
105	Pale bluish clay alluvium	17.70	2.00	0.26
106	Sand and gravel	17.00	2.00	0.14
107	Mottled sand	4.50	2.00	0.06
108	Sand and gravel	16.80	2.00	0.12
109	Mottled sand	11.60	2.00	0.24
110	Gravel and sand	16.40	2.00	0.20
111	Oxford Clay	16.30	2.00	>0.10
112	Dark brown sandy clay	16.00	2.00	0.06
113	Sand	3.10	2.00	0.22
201	Topsoil/ made ground	20.00	2.00	0.38
202	Peat	20.00	2.00	0.56
203	Pale bluish clay alluvium	20.00	2.00	0.40
204	Sand and gravel	20.00	2.00	0.64
205	Sand	20.00	2.00	0.16
206	Sand and gravel	20.00	2.00	0.20
207	Oxford Clay	20.00	2.00	0.40
208	Sand	20.00	2.00	0.16
301	Dark brown modern made ground	20.00	2.00	0.65
302	Dark brown soil horizon	20.00	2.00	0.30
303	Peat	20.00	2.00	0.20
304	Upper fill, 307	0.70	2.00	0.30
305	Secondary fill of 307	1.40	2.00	0.50
306	Primary fill of 307	1.20	2.00	0.60
307	Linear intrusion	1.60	2.00	1.33
308	Pale grey clay alluvium	18.20	2.00	0.40
309	Sand and gravel	18.60	2.00	0.60
310	Sand	6.00	2.00	0.15
311	Gravel and sand	8.60	2.00	0.30
312	Gravel	12.80	2.00	0.40
313	Oxford Clay	19.20	2.00	NFE
314	Fill of 315	1.40	2.00	0.35
315	Tree pit	1.40	2.00	0.35

Appendix B – Geoarchaeological Assessment Report

THE COMMUNITY CENTRE, HIGH LODE, RAMSEY: ENVIRONMENTAL ARCHAEOLOGICAL ANALYSIS

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1.0 INTRODUCTION

This report summarises the findings arising out of the environmental archaeological analysis undertaken by Quaternary Scientific (QUEST), University of Reading in connection with the proposed development at the Community Centre, High Lode, Ramsey (National Grid Reference: TL 2852 8582; Figures 1 and 2). The site is on the northern outskirts of the town of Ramsey on the southwestern edge of the Fen Basin (Figure 1). The ground surface is generally between 0.16m and 0.60m OD, rising to 1.80m OD adjacent to the High Lode Road on the eastern margins of the site. The British Geological Survey (1:50,000 Sheet 172) shows the area underlain by Nordelph Peat resting on Oxford Clay bedrock. Previous investigation at St Mary's Road to the west (Pinnacle 2008) found peat only in the western corner of the site. Elsewhere within the site, Made Ground was present overlying alluvial sands and clays.

During recent archaeological excavations at the Community Centre, High Lode, QUEST and AOC Archaeology recorded the sedimentary sequences in three Trenches and obtained column and bulk samples through natural alluvium and peat (Figures 2 and 3). Subsequent environmental archaeological (geoarchaeological, archaeobotanical and zooarchaeological) assessment work carried out on the site (Batchelor *et al*., 2009) focussed on the potential of the collected sediments to reconstruct the environmental history of the site and its environs. The results of geoarchaeological assessment indicated that the basal Oxford Clay was overlain by sands and gravels of probable Devensian Age, passing into Holocene fine-grained alluvial sediments (including peat), and finally Top Soil/Made Ground. Almost all the archaeobotanical and zooarchaeological assessment results were accumulated from the Holocene alluvial and peat sediments. The pollen and waterlogged plant macrofossil data indicated the presence of alder dominated woodland possibly with ash, hazel and elm, and an understorey of sedges and grasses growing on the wetland. This community was

surrounded by dryland vegetation, also possibly comprising ash, hazel and elm. The insect record indicated the presence of woodland, but more dominantly shallow freshwater communities. However, significantly, the presence of dung beetles in the insect assemblage, and possible charcoal and charred grain in the plant macrofossil assemblage strongly indicate the local occurrence of human activity.

The overall results of the environmental archaeological assessment indicated that further investigations of the alluvial and peat sediments should be carried out as they may provide valuable information on the nature of both the wetland and dryland environments (including human activity. Environmental archaeological analysis was therefore recommended to include the following:

(1) AMS radiocarbon dating of one identified waterlogged wood sample to provide an approximate date for the accumulation of the peat.

(2) Pollen analysis of at least 4 samples (column sample <7>), and species identifications on waterlogged wood from bulk samples <2> to <6> to provide a reconstruction of vegetation cover adjacent to the site;

(3) Analysis of the possible charcoal and charred cereal grains in bulk samples <2> to <6> to provide information on human utilisation and exploitation of the natural environment

(4) Insect analysis to provide valuable information on past environments and human activity.

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Figure 1: Location of the Community Centre, High Lode, Ramsey

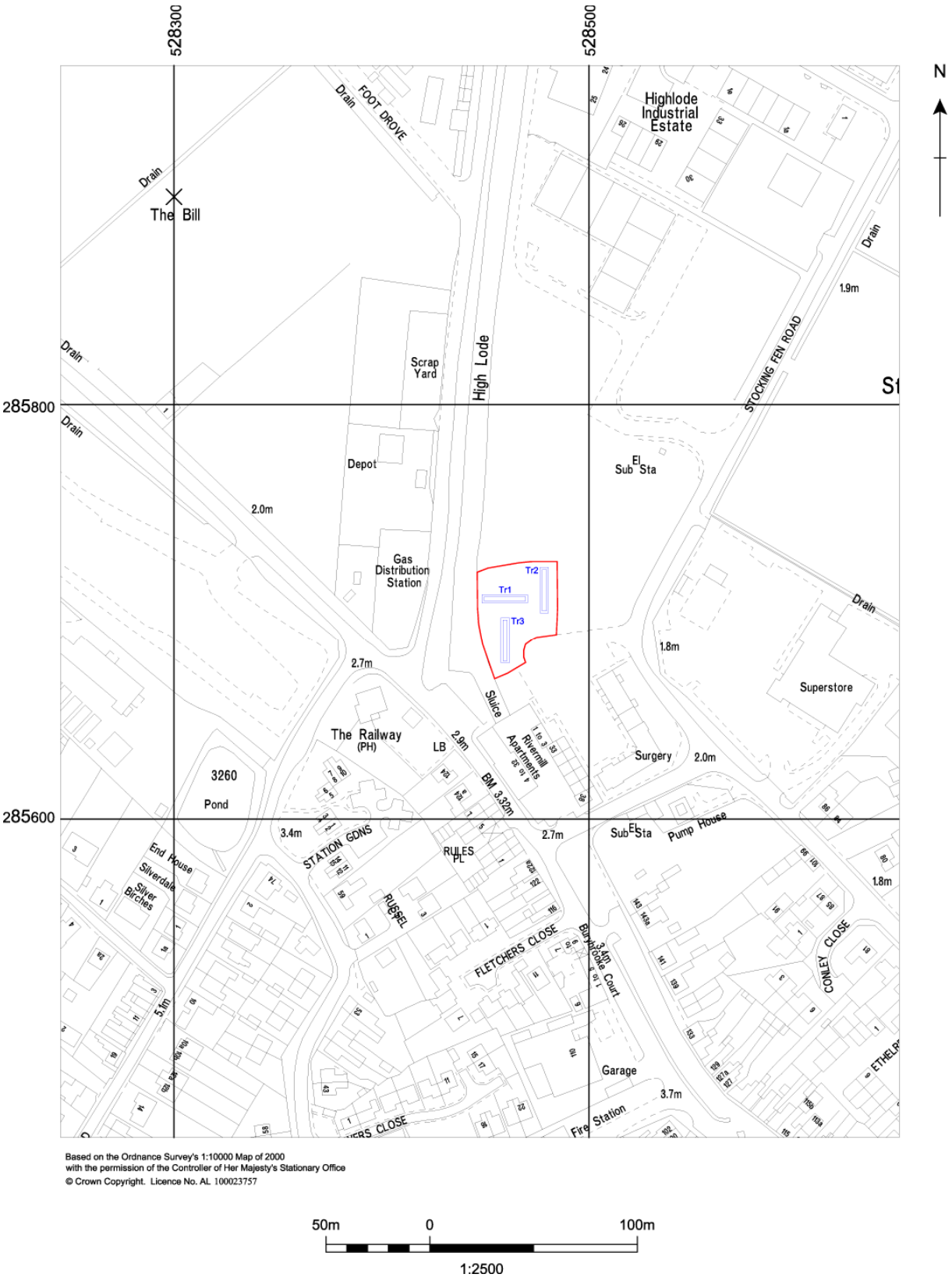

Figure 2: Location of the three archaeological trenches at the Community Centre, High Lode, Ramsey

2.0 METHODS

2.1 Field investigations

During the excavations, three trenches were put down at intervals across the site and section drawings and sediment descriptions were prepared in the field by AOC Archaeology Group (Figure 3). The sediments were examined in the field by Quaternary Scientific and column and bulk samples were recovered from Trenches 1 (column sample <7>; bulk samples <1> to <6>) and 3 (column sample <8>) (Figure 3). The samples were collected from specific archaeological contexts that would enable a rapid assessment of the potential of the deposits to address the site-specific research aims.

2.2 Lithostratigraphic descriptions

The lithostratigraphy of the two column samples <7> (Trench 1) and <8> (Trenches 3) were described in the laboratory using standard procedures for recording unconsolidated sediment and organic sediments, noting the physical properties (colour), composition (gravel, sand, clay, silt and organic matter) and inclusions (e.g. artefacts) (Troels-Smith, 1955). The procedure involved: (1) cleaning the samples with a spatula or scalpel blade and distilled water to remove surface contaminants; (2) recording the physical properties, most notably colour using a Munsell Soil Colour Chart; (3) recording the composition; gravel (Grana glareosa; Gg), fine sand (Grana arenosa; Ga), silt (Argilla granosa; Ag) and clay (Argilla steatoides); (4) recording the degree of peat humification and (5) recording the unit boundaries e.g. sharp or diffuse. The results are displayed in Tables 1 and 2, and Figure 4.

2.3 Radiocarbon dating

Extracted waterlogged wood from the base of the peat sequence (sample <6>) was identified as bark cf *Quercus* (oak) and submitted for radiocarbon dating to the Scottish Universities Environmental Research Centre (Table 3). The results have been calibrated using OxCal v4.0.1 (Bronk Ramsey, 1995, 2001 and 2007) and IntCal04 atmospheric curve (Reimer *et al*., 2004).

2.4 Pollen analysis

Six sub-samples were extracted from column sample <7> for pollen analysis. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) deflocculation of the sample in 1% Sodium pyrophosphate; (3) sieving of the sample to remove coarse mineral and organic fractions (>125µ); (4) acetolysis; (5) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm^3); (6) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and

assembling sample batches from various depths to test for systematic laboratory effects. Pollen grains and spores were identified using the University of Reading pollen type collection and the following sources of keys and photographs: Moore *et al* (1991); Reille (1992). Plant nomenclature follows the Flora Europaea as summarised in Stace (1997). The analysis procedure consisted of counting the prepared slides to a minimum of 300 terrestrial land pollen species per level. Pollen percentages are calculated based on terrestrial plants. Aquatic and fern spores are calculated as a percentage of terrestrial pollen plus the sum of the component taxa within the respective category. Identification of cereal pollen followed the criteria of Andersen (1979). Indeterminable grains were recorded according to Cushing (1967). The pollen diagram was produced using Tilia and TGView software (Grimm, 2004; Figure 5).

2.5 Waterlogged wood and plant macrofossil analysis

Six bulk samples (<1> to <6>) recovered from Trench 1 were processed and analysed for waterlogged seeds and wood. A 1-litre subsample was extracted from each of the bulk samples and was processed by wet-sieving using 300 micron and 1mm mesh sizes and stored in water in airtight containers. Both fractions from each sample were viewed under a stereozoom microscope at x7-45 magnifications and their contents recorded. Large wood fragments extracted from sample <5> were also submitted for analysis and identification. Botanical remains have been identified using modern comparative material and reference atlases (Cappers *et al.* 2006, Hather 2000, Schweingruber 1990, Schoch *et al*. 2004). Nomenclature used follows Stace (1997). The results are displayed in Table 4.

2.6 Insect analysis

Six bulk samples (<1> to <6>) recovered from Trench 1 were processed for insect analysis. Samples were processed by paraffin flotation following the methodology of Atkinson *et al.* (1987).

1. Wash bulk peat samples through a 5mm mesh using hot water to remove larger wood fragments
2. Wash remaining fraction onto a 300 micron mesh
3. Wash twice with hot water to remove the fine fraction, and two cold water washes to remove the possibility of a thermal gradient forming during the subsequent flotation
4. Drain well and mix with paraffin in a large bowl for 5 minutes
5. Decant excess paraffin back into the stock bottle through an 80 micron mesh
6. Add cold water to the organic fraction, mixing thoroughly
7. Leave to stand for 15 minutes

8. Decant the oil overlying the bulk material onto a 300 micron mesh and wash gently with detergent and hot water
9. Rinse with distilled water, dehydrate in 95% ethanol, and transfer to a sealed container for storage in 95% ethanol
10. Save remaining bulk material for further extraction of other fossil material.

The flots were examined for the presence of insects and other invertebrates. Remains of beetles and bugs were removed onto moist filter paper for identification using a low-power stereo zoom microscope (x10 – x45). Identification was made by comparison with modern insect material and by reference to standard published works. Numbers of individuals and taxa of beetles (Coleoptera) and bugs (Hemiptera) were recorded, and taxa were assigned to ecological groups following Kenward *et al.* (1986) and Kenward (1997). Nomenclature of beetles and bugs follows Duff (2008) and Kloet and Hincks (1964-77) respectively. Other groups of invertebrates were noted if present and their abundance estimated on a three-point scale (see Table 5). The main statistics of the Coleoptera and Hemiptera assemblages is shown in Table 6. The insect material recovered from the samples is stored with the rest of the paraffin flots in plastic jars in 95% ethanol.

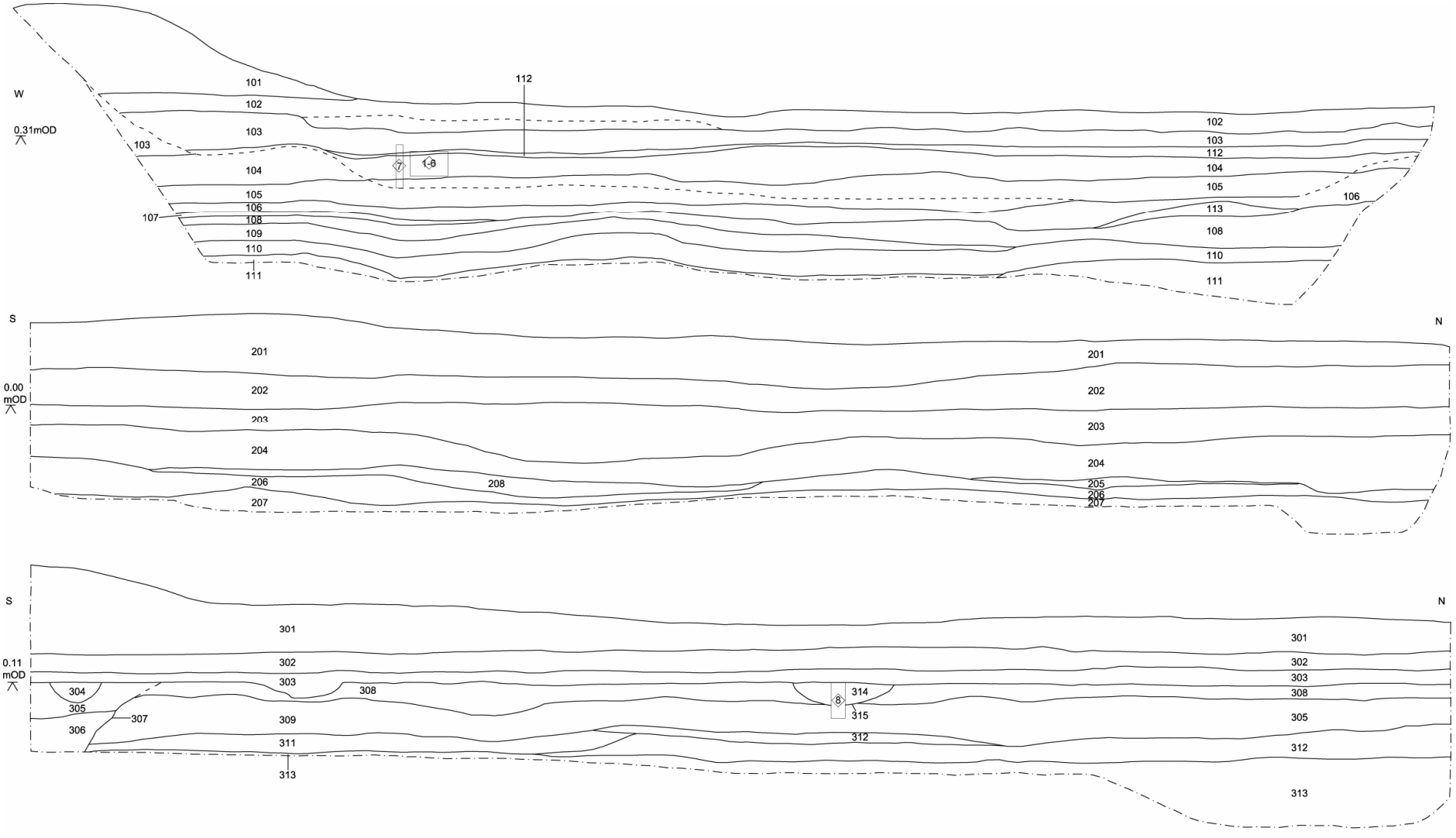

Figure 3: Trench sections illustrating the locations of column (<7> and <8>) and bulk samples (<1> to <6>) in Trenches 1 and 3, the Community Centre, High Lode, Ramsey

3.0 RESULTS AND INTERPRETATION OF THE GEOARCHAEOLOGICAL INVESTIGATIONS

3.1 Results of the field investigations

The bedrock Oxford Clay was recorded in all three Trenches and was seen to have a gently undulating surface. Sediments of Pleistocene and Holocene age overlying the Oxford Clay were rather consistently 1.5m to 2.0m thick and comprised a generally consistent sequence across the whole of the site, and was analogous with that recorded nearby at St Mary's Road (Green and Young, 2009).

At the base of the sediment sequence in all the trenches the Oxford Clay was overlain by a thin (<30cm) bed of gravel (Unit 1). This unit was succeeded upward by a unit of sands and gravels (Unit 2), *ca*. 1.0m thick, forming sub-horizontal beds and thin lenses, generally no more than 0.3m thick and in places, discontinuous. Overlying Unit 2 in all the trenches was a bed of fine-grained mineral-rich (silty clay) up to 0.4m in thickness (Unit 3) interpreted as alluvium. Unit 4 comprised very dark greyish brown to black, soft silt with mineral-rich peat, up to 0.5m thick. This horizon was overlain by a thin layer of mineral-rich deposits (sands, silts, clays; Unit 5) and finally Made Ground/Top Soil (Unit 6). Units 4 to 6 were all penetrated by modern root systems.

3.2 Results of the lithostratigraphic descriptions

Two column samples were taken through the upper part of the sedimentary sequences in Trenches 1 and 3 (Table 1 and 2; Figure 4) so that detailed laboratory lithostratigraphic descriptions could be carried out.

Column sample <7> (Trench 1) consists of Top Soil/Made Ground (context (103)), passing down into a thin layer of inorganic silty clay (context (112)). This rests on a *ca*. 25cm thick layer of organic-rich silty clay containing frequent lenses of highly organic-rich wood peat (context (104)), and concludes with a 20cm thick layer of fine-grained mineral-rich silty clay (context (105)). This sequence represents the Units 3 to 6 that were recorded during the field investigations.

Column sample <8> (Trench 3) consists of silty clay (context (309)) overlain by a *ca*. 35cm thick layer of organic-rich silty clay containing frequent lenses of highly organic-rich wood peat (context (303)). This sequence represents Units 2 and 4 that were recorded during field investigations. Unit 3 is missing in this sequence as it was cut (most likely by a tree-bowl) and subsequently infilled by Unit 4.

3.3 Interpretation of the geoarchaeological investigations

The sediments described in the field and in the two column sequences are generally similar to those recorded nearby at St Mary's Road (Green and Young, 2009). At the base of the sequence Oxford Clay (Unit 1) is overlain by sands and gravels (Unit 2) that are typical of the sediments associated in southern Britain with fluvial deposition under periglacial climatic conditions. They represent deposition in a braided river in which the valley floor is occupied by numerous longitudinal gravel bars separated from one another by channels in which finer-grained, usually sandy deposits, accumulate. Waller (1994) notes that such gravels close to the Fen edge are now usually regarded as having been deposited in the last glacial period - the Devensian. The uppermost sand and gravel layers of Unit 2 appear to represent a late reworking, leaving a very low relief surface on which fine-grained Holocene sediments accumulated. Holocene sedimentation is represented by Units 3 to 6 of the generalised sequence and comprise silty alluvial clays (Unit 3) passing up into more organic sediments (Unit 4), with lenses of peat generally thicker than those recorded at St Mary's Road site (Green and Young, 2009). The final horizons recorded were a thin layer of silty clay (Unit 5) passing up into Top Soil/Made Ground (Unit 6).

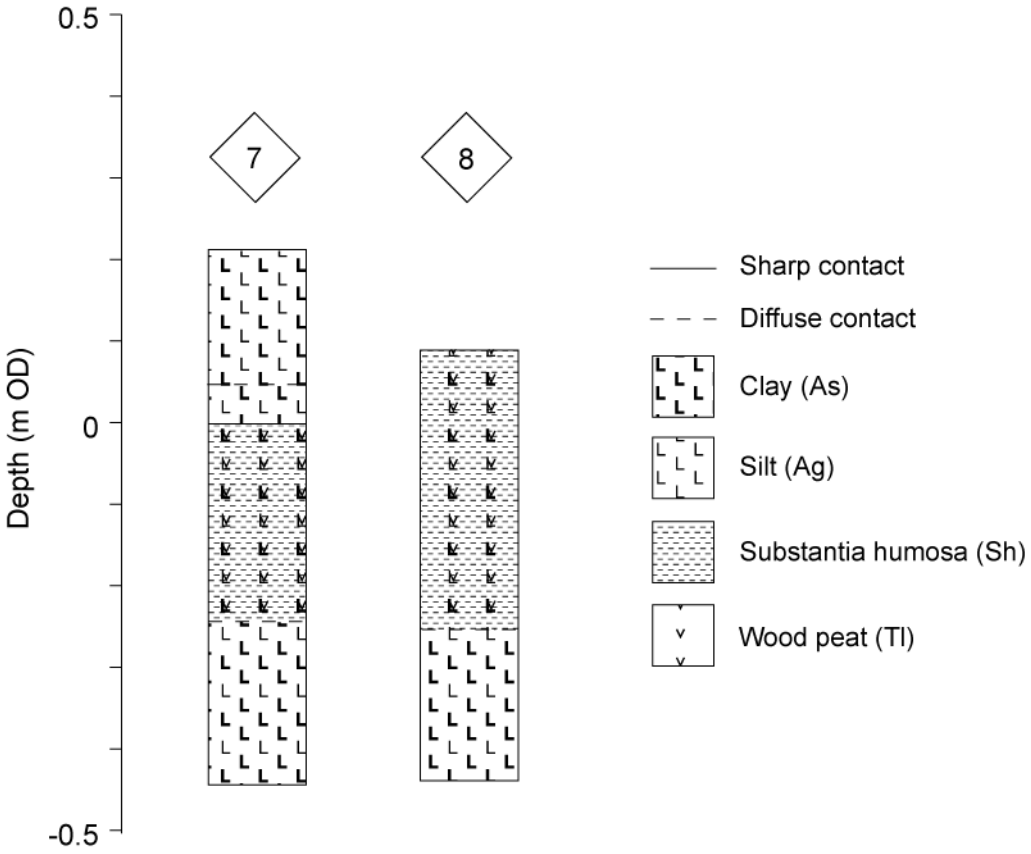

Figure 4: Lithostratigraphic descriptions of column samples <7> (Trench 1) and <8> (Trench 3), the Community Centre, High Lode, Ramsey

Table 1: Lithostratigraphic descriptions of column sample <7>, Trench 1, the Community Centre, High Lode, Ramsey

Depth (m OD)	Unit number	Context number	Description
0.21 to 0.05	6	(103)	10YR 3/2; As2 Ag2 Sh+; Very dark grayish brown silty clay with organic matter and modern roots. Diffuse contact into:
0.05 to 0.00	5	(112)	2.5 Y 5/2 mottled 10YR 4/4; As3 Ag1; Grayish brown mottled dark yellowish brown silty clay with modern roots. Sharp contact into:
0.00 to -0.24	4	(104)	7.5YR 3/1; Tl1 Sh1 As1 Ag1; with lenses 10YR 2/1 Sh3 Tl1; Very dark gray silty clay and organic matter with lenses of black organic material and wood remains. Diffuse contact into:
-0.24 to -0.44	3	(105)	2.5Y 5/2 mottled 7.5YR 4/6 to 10YR 4/4; As3 Ag1; Grayish brown mottled strong brown to dark yellowish brown silty clay.

Table 2: Lithostratigraphic descriptions of column sample <8>, Trench 3, the Community Centre, High Lode, Ramsey

Depth (m OD)	Unit number	Context number	Description
0.09 to -0.26	4	(314)	10YR 3/1; As1 Ag1 Tl1 Sh1 Dl+ with lenses 10YR 2/1; Sh3 Tl1+. Very dark gray organic-rich silty clay with detrital wood and lenses of black well humified peat and detrital wood remains. Above -0.35m OD modern roots are present. Diffuse contact into;
-0.26 to -0.43	2	(309)	2.5Y 5/2 mottled 10YR 4/4 to 7.5Y 3/1; As3 Ag1 Gg+; Grayish brown mottled dark yellowish brown to very dark gray silty clay with gravel.

4.0 RESULTS AND INTERPRETATION OF THE RADIOCARBON DATING (GEOCHRONOLOGY)

Waterlogged wood identified as bark of cf *Quercus* (oak) from the base of the peat in Trench 1 (sample <6>; context (104)) has been radiocarbon dated to **1680 to 1520 cal BC** (equating to the Bronze Age cultural period; Table 3). The δ13C (‰) values of the waterlogged wood are consistent with that expected, and there is no evidence for mineral or biogenic carbonate contamination.

Table 3: Results of the radiocarbon dating, bulk sample <6>, Trench 1, the Community Centre, High Lode, Ramsey

Laboratory	Sample	Description	Material/	Un-calibrated	Calibrated age	δ13C

Code / Method	**number**		**species identification**	**Radiocarbon Years Before Present (yrs BP)**	**BC / AD (BP) (2-sigma, 95.4% probability)**	**(‰)**
SUERC-24954 (GU-19360) AMS method	<6>	Base of peat	Bark cf *Quercus*	3320 ± 30	1680 to 1520 cal BC (3630 to 3470 cal BP)	-25.5

5.0 RESULTS AND INTERPRETATION OF THE POLLEN ANALYSIS (ARCHAEOBOTANY)

5.1 Results of the pollen-stratigraphical analysis (Figure 5)

The pollen diagram taken from the peat of Trench 1 (column sample <7>) is characterised by high arboreal pollen values (60-80%): *Alnus* (40-60%) dominates with *Quercus* (10%), *Fraxinus*, *Betula*, *Tilia* and *Pinus* (all <5%); cf *Ulmus* is also recorded at the base of the sequence. Shrub pollen values (5-10%) are dominated by *Corylus* type (up to 10%) with *Salix* (up to 10%) and occasional *Hedera* (<2%). Herb pollen values are high in percentage (averaging 20-40%) and diversity: Poaceae dominates (up to 40%) with Cyperaceae (up to 10%) with *Ranunculus* type, *Sinapis* type, *Chenopodium* type, Apiaceae, *Plantago lanceolata*, *Aster* type, *Artemisia*, Lactuceae (all <5%) and sporadic occurrences of Caryophyllaceae, *Potentilla* type, *Filipendula* type, *Galium* type and *Anthemis* type (all <3%). Aquatic pollen values are relatively high (up to 10% of Total Land Pollen (TLP)): *Sparganium* type dominates (up to 10%) with *Myriophyllum* type, cf *Menyanthes trifoliata* and *Potamogeton* type (all <2%). Spores are dominated by *Dryopteris* type (up to 20%) with *Pteridium aquilinum* (*ca*. 3%) and occasional *Polypodium vulgare* (<2%).

5.2 Interpretation of the Trench 1 pollen-stratigraphical analysis

The results of the pollen-stratigraphical analysis indicate that during the period of peat formation, *Alnus* (alder) dominated the wetland environment with *Salix* (willow) and possibly *Hedera* (ivy) and *Corylus* type (e.g. *C. avellana* – hazel), with an understorey comprising Poaceae (grass family), Cyperaceae (sedge family), *Ranunculus* type (e.g. *Ranunculus* sub-genus Batrachium – water crowfoot) and aquatics such as *Sparganium* type (bur-reed), *Myriophyllum* type (water milfoil), *Potamogeton* type (pondweed) and *Menyanthes trifoliata* (bog-bean). These taxa indicate the presence of damp woodland, growing within fen carr and/or on the margins of a river/stream. *Quercus* (oak), *Betula* (birch) and *Fraxinus* (ash) may have accompanied *Alnus* on the peat surface, but are more likely to have been growing on the adjacent dryland forming mixed deciduous woodland with *Tilia* (lime) and probably also *Corylus* type (e.g. *C. avellana* - hazel). However, the low pollen values of dryland woodland taxa (in particular lime and oak woodland), combined with the presence of a wide variety of herbs such as Poaceae (grasses), Lactuceae (dandelion family), *Chenopodium* type (e.g. fat hen), Apiaceae (carrot family), *Plantago lanceolata* (ribwort plantain) and *Sinapis* type (e.g. white mustard) suggest a relatively open dryland environment, supporting rough grassland with stands of woodland.

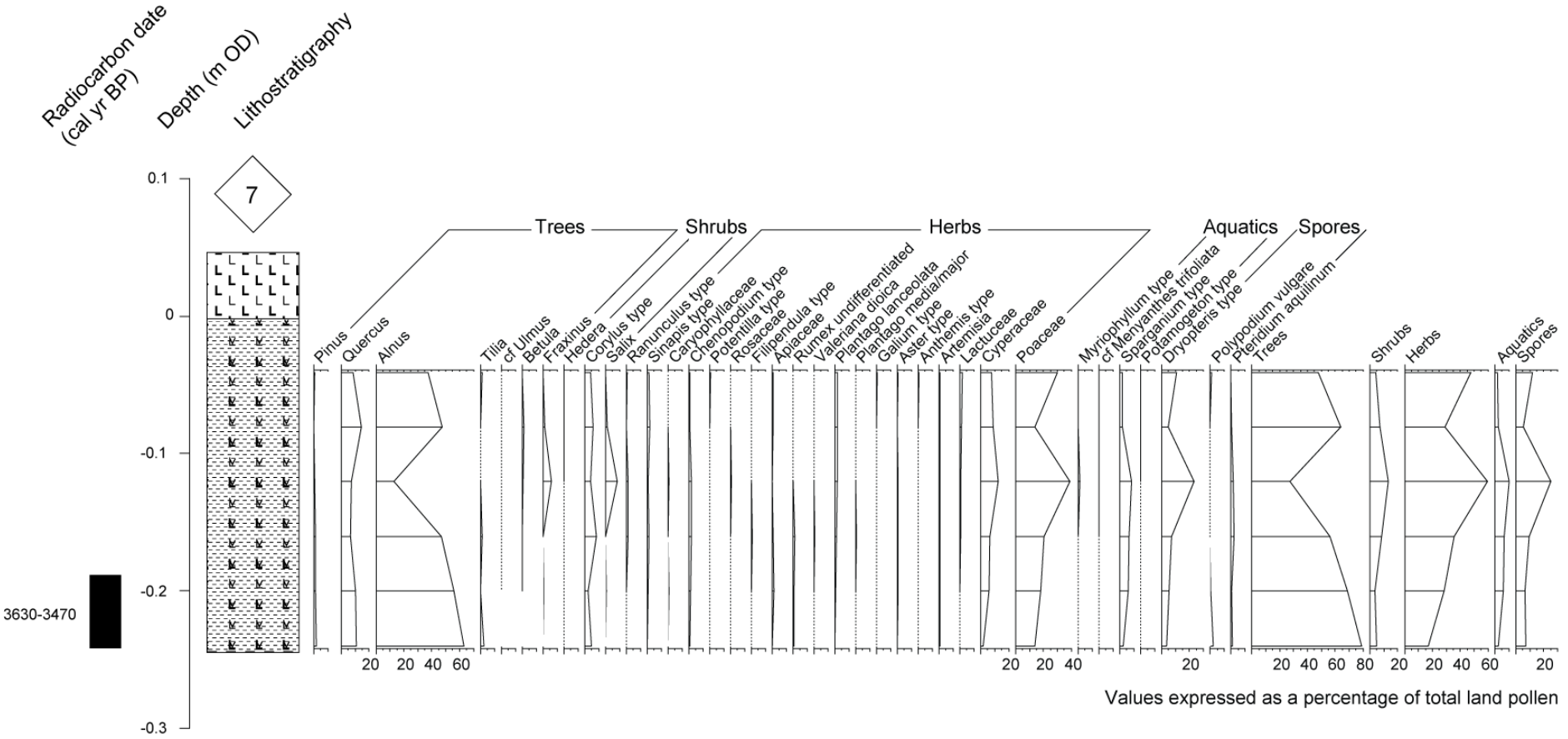

Figure 5: Pollen diagram for column sample <7> (Trench 1) the Community Centre, High Lode, Ramsey

6.0 RESULTS AND INTERPRETATION OF THE PLANT MACROFOSSIL ANALYSIS (ARCHAEOBOTANY)

6.1 Results of the waterlogged plant macrofossil analysis

As identified during the environmental archaeological assessment (Batchelor et al., 2009) these samples contained very few waterlogged macrobotanical remains however several additional taxa were identified in the analysis (Table 4). On the whole waterlogged macrobotanical remains were fairly poorly preserved and all of the samples contained indeterminate fragments of fruiting structures. It has however been possible to provide some identifications for the better preserved, more diagnostic taxa. In addition to buttercup (*Ranunculus* sp.), noted during assessment, taxa identified include possible mugworts (cf. *Artemesia* sp.), mallow (cf. *Malva* sp.), penny-cress/ pepperworts/ candytuft (*Thlaspi/ Lepidium/ Iberis* sp.) brambles (*Rubus* sp.), dead-nettle (cf. *Lamium* sp.) and goosefoots (*Chenopodium* sp.) all of which are common on disturbed or waste ground. Some of these taxa such as mallow can be found in areas of grassland and some such as mugwort grow in understorey of alder dominated woodland. Grass (Poaceae) florets were noted in samples <1> and <6> from the upper and lower most samples in the sequence. Sedges (*Carex* sp.) and rushes (cf. *Juncus* sp.) common to damp ground were also recorded albeit in small quantities. Sample <1> from the top of the sequence contained remains that are thought to be spores but have not been identified.

Charred botanical remains were not common within any of the deposits although small charcoal fragments and indeterminate charred remains that may be of organic origin were recorded in each sample. A single grape pip was recorded in sample <2> during the insect analysis (Alison pers. comm.) and this provides clear evidence for anthropogenic activity in the site vicinity. Grapes were introduced to Britain during Roman occupation and it can therefore be suggested that this deposit is of Roman date or younger. Samples <1> and <2> contained some possible clinker/coal-like fragments that together with the wood charcoal fragments present in each sample provide further evidence for human activity and perhaps settlement in the area. No further charred or waterlogged plant macros that can be associated with this activity were recorded in these samples.

Two samples <4> and <5> produced sufficient wood fragments to merit analysis. Alder/hazel (*Alnus/Corylus* sp.) were recorded in both samples. Unfortunately anatomical structures necessary to refine the identifications were not always sufficiently clear due to poor preservation of some of the wood fragments and associated difficulties in obtaining thin sections. Nevertheless some specimens in sample <5> could be positively identified as alder, and bark of possible oak was recorded in sample <6>.

Table 4: Plant macrofossil sample quantification from bulk samples <1> to <6> (Trench 1), the Community Centre, High Lode, Ramsey

Sample Number	1	2	3	4	5	6
Sample Depth in [104]	0-5cm	5-10cm	10-15cm	15-20cm	20-25cm	25-30cm

Sample fractions viewed	300 & >1mm	300 & >1mm	300 & >1mm	300 & >1mm	300 & >1mm	300 & >1mm
Wet Sieved Sample Volume litres	2	1	2	1	2	1
Uncharred macrobotanicals						
cf. *Carex* sp.			*		*	*
Chenopodium sp.	*					
Malva sp.		1	3	1		
Asteraceae cf. *Artemesia* sp.			1			
Thlaspi/*Lepidium*/*Iberis* type	*					
Ranunculus sp.	*		*	1		
Rubus idaeus/*fructicosa* L.	2					
Poaceae floret	1					3
cf. *Melissa*/*Lamium* Lamiaceae	3					1
cf. *Juncus* sp.		**				
Unidentifiable fruit fragments	***	**	**	**	*	**
Possible spores	***					
Charred Wood						
Charcoal >4mm	1	*				*
Charcoal <4mm	*	**	*	*	*	**
Charcoal <2mm	**	**	**	**	**	**
Waterlogged wood						
Uncharred Wood >4mm	*	*	*	**	**	*
Uncharred Wood 2-4mm	**	**	**	***	****	**
Uncharred Wood <2mm	**	**	***	***	****	***
Alnus/Corylus sp.				<10	20	
Alnus glutinosa (L.) Gaertn.					5	
Indeterminate taxa					2	

*Key: Frequencies: *=1-10, ** = 11-50, *** = 51-250, **** = >250*

6.2 Interpretation of the waterlogged plant macrofossil analysis

The radiocarbon date from the base of the sequence and the grape pip in the upper layers suggest that this organic rich deposit accumulated over an extended period. Unfortunately the small quantities of taxa present in these samples have not provided sufficient data to reflect changes within the vegetation that are likely to have occurred. Wood fragments within this assemblage suggest that alder and perhaps hazel grew in the immediate vicinity of the site. Although the pollen corroborates the presence of both taxa the macrobotanical assemblage does not lend direct support to this. Peat deposits frequently preserve hazel nut shell fragments as well as alder fruits and cones and therefore their absence from this assemblage is interesting. Taxa present in this instance are predominantly derived from waste or disturbed ground although many are also consistent with understorey vegetation present in damp alder woodland. It is possible, given the general scarcity of macrobotanicals that preservation has influenced the range of taxa present although it remains difficult to explain the absence of alder fruits. The small charcoal fragments present in each sample suggest human activity and perhaps settlement near the site throughout the accumulation of these organic rich deposits. Although the samples provide no evidence for anthropogenic influences upon this woodland it is likely to have been used as a source for both fuel and food resources.

7.0 RESULTS AND INTERPRETATION OF THE INSECT ANALYSIS (ZOOARCHAEOLOGY)

7.1 Results of the insect analysis

Insect remains were present in all six samples and were more common in the lower three. Preservation was very poor throughout the sequence however: fragmentation was very high and most fragments were eroded and rotted to a greater or lesser degree. This presented problems with close identification of some taxa and particularly with quantification. Despite this it was possible to identify some very distinctive taxa from even very small scraps of cuticle. A few sclerites in some of the samples were much better preserved than the rest of the remains, probably indicating contamination from modern habitats during excavation or sampling. These included *Cartodere bifasciatus*, a mould beetle that originated in Australia but is now well established in Britain, which was recorded from two samples and is an obvious contaminant.

The results of the analysis are described below in chronological order from the base of the deposit upwards. A list of taxa recorded from each sample is given in Table 5, and the main statistics of the assemblages in Table 6.

Sample <6>, Context (104)

The numerous remains of a variety of aquatic invertebrates clearly indicated that the deposit was waterlain. Resting eggs (statoblasts) of the bryozoan *Lophopus crystallinus* were particularly abundant. *L. crystallinus* colonies are usually found in lowland running water habitats (Wood and Okamura 2005, 96). Statoblasts are resistant to decay and they can survive in deposits where other taxa are poorly preserved or absent (e.g. Hall *et al*. 2003). Resting eggs (ephippia) of water fleas (Cladocera) were also quite common.

Aquatic and waterside beetles together accounted for over half of the beetle and bug assemblage (33% and 28% respectively). The most numerous taxa were *Cyphon* (probably two species) which are typical of swamp-like conditions with areas of shallow water in which the larvae live, and waterside vegetation and accumulations of litter. The range of water beetles was indicative of still or slowly flowing, rather shallow, permanent water. *Ochthebius minimus* typically found in mud at the edges of predominantly still water bodies (Friday 1988, 150) was the most common aquatic beetle. Several other species were indicative of well-vegetated conditions: *Hydrochara caraboides* for example generally breeds in pools and ditches with a floating raft of densely matted vegetation and areas of shallow, open water with isolated stands of emergent vegetation. Insects found on aquatic and waterside vegetation included donaciine leaf beetles, *Bagous* (an aquatic weevil), *Tanysphyrus lemnae* found on duckweed (*Lemna*), and *Prasocuris phellandrii* which feeds on marsh marigold (*Caltha palustris*) but may also be found on other Ranunculaceae and some other waterside plants including umbellifers (Cox 2007, 144).

There were several indications for trees growing close to the water. *Grynobius planus* and *Anobium* are both associated with wood, and *Scaphisoma* is found on fungi, especially tree fungi. Small elytral fragments with a distinctive violet colour were comparable with *Agelastica alni* the alder leaf beetle.

Poor quality grassland somewhere in the vicinity was indicated by the chafer *Phyllopertha horticola*, and the probable presence of grazing animals by three species of scarabaeid dung beetles (*Onthophagus* and two *Aphodius* species). Most *Aphodius* species are associated with dung although some also exploit foul vegetable material such as might accumulate in a swampy location and some hibernate in flood debris. Decomposer taxa in general were poorly represented (9% of the assemblage).

A specimens of *Cartodere bifasciata* was a modern contaminant, and possibly also a Latridiidae species.

Sample <5>, Context (104)

The invertebrate assemblage was similar in many ways to the previous sample (<6>) in that statoblasts of *Lophopus crystallinus* were abundant, water flea ephippia quite common, there were occasional ostracod carapaces, and aquatic and waterside taxa accounted for over half of the beetle and bugs recorded.

By comparison with the other samples examined, this sample produced a substantially larger insect assemblage (142 individuals of 88 taxa). The most numerous beetles were *Cyphon* species indicative of swampy conditions, and these and other waterside and damp ground taxa accounted for 30% of the assemblage. *Dryops* suggests that there were areas of waterside mud. Aquatic beetles were somewhat less well-represented than in the previous sample accounting for 25% of the assemblage, although they were indicative of very similar water conditions with still or slowly flowing, rather shallow water that was well-vegetated at least in places and rich in detritus. *Noterus* species are usually found in permanent stagnant water bodies with much decaying vegetation (Holmen, 1987, 149) and *Coelostoma orbiculare* is a typical fenland species being found in damp detritus-rich sites at shallow water margins and in damp litter and moss (Denton 2007, 134; Hansen 1987, 127-8). *Prasocuris phellandrii* which feeds on marsh marigold provides some information on aquatic and waterside vegetation.

Trees including alder were indicated by *Grynobius planus* and *Anobium* and the fragmentary remains of *Agelastica alni*. A nymph of *Trioza urticae* implies that there were stands of nettles (*Urtica*) close by but remains of most other plant feeding taxa were too fragmentary for identification. Three species of chafer were represented: *Phyllopertha horticola* indicating grassland areas, *Hoplia philanthus* which is found on flowering shrubs and plants (Jessop 1986, 29) and metallic fragments of another species.

Scarabaeid dung beetles were represented by at least two species each of *Onthophagus* and *Aphodius*. *O. joannae* is found in sheep or horse dung, usually on light soils, and has also been recorded from deer dung (Jessop 1986, 25; Skidmore 1991, 149). *Aphodius ater* is found in various types of dung preferably in exposed habitats, but it is also found in decaying vegetable matter and in flood debris in the winter months (Jessop 1986, 25-6).

A specimen of *Cartodere bifasciata* was a modern contaminant, and probably also a very well-preserved *Gyrohypnus angustatus* pronotum.

Sample <4>, Context (104)

Cyphon species were by far the most abundant beetles, indicating shallow standing water and swampy ground conditions. These and several other damp ground and waterside taxa accounted for 39% of the assemblage. The group included *Notaris* ?*acridulus* found on aquatic grasses including *Glyceria* (Morris 2002, 38) and two species of donaciine leaf beetles found on aquatic and waterside plants. Aquatic beetles made up a further 21% of the assemblage and indicated similar water conditions to the previous two samples. *Lophopus crystallinus* statoblasts were well represented but were less common than in the two earlier samples. A few water flea ephippia were noted. The decline in abundance of aquatics may point to a reduction in the amounts of open water in favour of a more marshy environment.

Trees including alder were indicated by *Grynobius planus* and *Anobium* and a few fragments of *Agelastica alni*. Apart from a nymph of *Trioza urticae* found on nettles, remains of other terrestrial plant feeding insects were not identified closely. The scarabaeid dung beetle *Onthophagus* again provided an indication of grazing animals nearby.
A well preserved *Bembidion* elytron may be a recent intrusion.

Sample <3>, Context (104)

Insect remains were particularly poorly preserved in this sample. Statoblasts were common but they were in a much poorer condition than in any of the other samples. The majority were *Lophopus crystallinus* but there were smaller numbers of *Cristatella mucedo*. Colonies of the latter are found in sheltered areas in standing or lightly running water where there is low wave action and current (http://www.bryozoans.nl/sooten/en/cristatella_mucedo.html).

The proportion of damp ground and waterside insects was substantially reduced by comparison with all of the previous three samples (14% of the assemblage) which may indicate a reduction in marshland in this location, but since the number of beetles and bugs recovered was small (35 individuals of 30 taxa)

any statistics produced must be regarded with great caution. Aquatic beetles made up a further 20% of the assemblage and they included *Tanysphyrus lemnae* found on duckweed.

Two taxa indicated the presence of trees or wood: *Grynobius planus* and *Trixagus* which is found in litter on the ground and on low plants, generally in woodland situations associated with wood with bark and tree stumps. *Phyllopertha horticola*, *Onthophagus joannae* and *Aphodius* provided continuing indications of local grassland supporting grazing animals.

A very well preserved *Platystethus arenarius* head may be a recent intrusion.

Sample <2>, Context (104)

A small assemblage of beetles was recovered (20 individuals of 19 taxa). Almost a third of the beetle taxa identified were aquatics and they included *Ochthebius*, *Hydrobius fuscipes*, *Colymbetes fuscus* and *Helophorus*. There were also fragments of caddis fly (Trichoptera) larval cases and statoblasts of *Lophopus crystallinus*. Damp ground and waterside taxa were particularly poorly represented by comparison with other samples from the sequence although the assemblage is too small to know if this is significant. A donaciine leaf beetle found on aquatic and waterside vegetation was present but remains of other plant feeding taxa were too fragmented for close identification. Terrestrial beetles included *Grynobius planus* providing evidence for the presence of deciduous trees and an *Aphodius* dung beetle.

Sample <1>, Context (104)

Beetles and bugs were rather better represented in uppermost sample. Aquatic taxa accounted for 20% of the assemblage and the range of taxa suggested still, permanent water conditions. *Noterus* is typically found where there is much decaying vegetable matter in the water and *Coelostoma orbiculare* is found in damp detritus and moss both in and beside shallow water. Statoblasts of *Lophopus crystallinus* were common suggesting an input of flowing water into stiller areas. There were smaller numbers of less well-preserved *Cristatella mucedo* statoblasts.

Damp ground and waterside taxa accounted for 20% of the assemblage. *Cyphon* was common and there were four species of donaciine leaf beetles. Some fragments of the latter with a distinctive white pubescence were identified as *Donacia cinerea* the adults of which are usually found on bulrushes (*Typha*) (Menzies and Cox 1996; Cox 2007, 63).

A nymph of *Trioza urticae* and a small fragment of ?*Heterogaster urticae* the nettle ground bug indicate that nettles grew close by. Other weedy vegetation is suggested by *Chaetocnema concinna* usually found mainly on *Polygonaceae* (Cox 2007, 270). Three taxa associated with trees were tentatively identified from small elytral fragments, namely two bark beetles (Scolytini) and ?*Crepidodera* usually associated with poplars (*Populus*) and willows (*Salix*) (Cox 2007, 255-9).

The proportion of decomposer taxa was substantially higher than in all of the previous samples (22% of the assemblage) although none were species typically associated with human occupation and activity. Four taxa associated with foul organic matter and particularly herbivore dung were present (*Onthophagus* and *Aphodius* species) pointing to the continuing use of local grassland for grazing. Several of the *Aphodius* were *A. contaminatus* which is found in various sorts of dung.

Table 5: Insects and other invertebrates recorded from bulk samples <1> to <6> (Trench 1), the Community Centre, High Lode, Ramsey. Ecological codes for Coleoptera and Hemiptera are given in square brackets and listed in the key below

Sample Number	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Sample volume (litres)	**8**	**8**	**6**	**6**	**6**	**6**
Oligochaeta sp. (earthworm egg capsules)	++	+	+++	-	-	+
Cladocera spp. (ephippia)	++	++	+	-	-	-
Ostracoda spp.	-	+	-	+	-	-
Dermaptera sp.	-	+	-	-	-	-
?*Heterogaster urticae* (Fabricius) [oa-p]	-	-	-	-	-	1
Lygaeidae spp. [oa-p]	1	1	-	-	-	-
Heteroptera sp. [u]	1	1	2	1	-	-
Auchenorhyncha spp. [oa-p]	2	5	3	2	-	1
Trioza urticae (Linnaeus) (nymphs) [oa-p]	-	+	+	+	-	+
Trichoptera sp. (larval case fragments)	-	-	-	-	+	-
Diptera spp. (puparia)	-	+	-	-	-	-
Haliplus spp. [oa-w]	1	-	-	-	-	-
Haliplidae sp. [oa-w]	-	-	1	-	-	1
Noterus sp. [oa-w]	-	1	-	-	-	1
Agabus bipustulatus (Linnaeus) [oa-w]	-	1	1	-	-	-
Agabus or *Ilybius* spp. [oa-w]	-	1	2	-	1	-
Colymbetes fuscus (Linnaeus) [oa-w]	1	1	1	-	1	-
?*Rhantus* sp. [oa-w]	1	-	1	-	-	-
Hygrotus inaequalis (Fabricius) [oa-w]	1	-	-	-	-	-
Hydroporinae spp. [oa-w]	3	1	-	-	-	-
Dytiscidae spp. [oa-w]	1	4	-	-	-	-
?Dytiscidae spp. [oa-w]	2	-	-	-	-	-
Notiophilus sp. [oa]	-	-	-	-	-	1
Bembidion sp. [oa]	-	1	1	-	-	-
Carabidae spp. [ob]	2	4	2	1	1	2
Helophorus grandis Illiger [oa-w]	-	-	-	1	-	-
Helophorus spp. [oa-w]	-	7	1	-	1	4
Hydrochus sp. [oa-w]	1	3	2	-	-	-
Hydrobius fuscipes (Linnaeus) [oa-w]	3	1	-	1	1	1
Hydrochara caraboides (Linnaeus) [oa-w]	1	1	-	-	-	-
Hydrophilinae spp. [oa-w]	1	1	2	1	-	2
Coelostoma orbiculare (Fabricius) [oa-w]	-	2	1	-	-	1
Cercyon tristis group [oa-d]	5	5	1	2	-	1
Cercyon sp. [u]	-	-	1	-	-	-
Megasternum concinnum (Marsham) [rt]	1	1	1	2	1	5
Hydrophilidae sp. [u]	-	-	1	-	-	-
Hydraena testacea Curtis [oa-w]	2	-	-	-	-	-
Hydraena ?*testacea* Curtis [oa-w]	-	1	-	-	-	-
Hyd*raena spp. [oa-w]*	1	3	2	-	-	-
Ochthebius minimus (Fabricius) [oa-w]	8	5	-	-	-	-
Ochthebius sp. indet. [oa-w]	-	-	2	1	2	1
Ptenidium sp. [rt]	-	1	-	-	-	-
Acrotrichis sp. [rt]	1	2	-	-	-	-
Acidota crenata (Fabricius) [oa]	-	1	-	-	-	-

Omaliinae spp. [u]	-	1	-	-	-	-
?Omaliinae spp. [u]	-	2	-	-	-	-
Metopsia clypeata (Müller) [rt]	-	1	-	-	-	-
Pselaphidae spp. [u]	-	1	1	1	-	-
Sample Number	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Sample volume (litres)	**8**	**8**	**6**	**6**	**6**	**6**
Tachinus rufipes (Linnaeus) [u]	-	-	-	-	1	-
Tachinus sp. indet. [u]	-	-	-	1	-	-
Tachyporus sp. [u]	1	1	-	-	-	1
Aleochariinae spp. [u]	1	2	-	-	1	2
Scaphisoma sp.[u]	1	-	-	-	-	-
Anotylus rugosus (Fabricius) [rt]	-	1	1	-	-	-
Anotylus sculpturatus group [rt]	1	-	-	-	-	-
Platystethus arenarius (Fourcroy) [rf]	-	-	-	1	-	-
Stenus spp. [u]	-	-	-	-	-	2
Gyrohypnus angustatus Stephens [rt-st]	-	1	-	-	-	-
Staphylininae spp. [u]	-	1	1	-	-	-
Aphodius ater (De Geer) [oa-rf]	-	1	-	-	-	-
Aphodius contaminatus (Herbst) [oa-rf]	-	-	-	-	-	3
Aphodius spp. [ob-rf]	2	2	-	1	1	2
Oxyomus sylvestris (Scopoli) [rt]	-	-	-	-	-	1
Onthophagus joannae Goljan [oa-rf]	-	2	-	1	-	-
Onthophagus sp(p). (yellow) [oa-rf]	1	2	1	-	-	1
Hoplia philanthus (Füessly) [oa-p]	-	1	-	-	-	-
Phyllopertha horticola (Linnaeus) [oa-p]	1	1	-	1	-	-
Melolonthinae sp. (chafer) [oa-p]	-	1	1	-	1	-
Cyphon spp. [oa-d]	15	31	29	2	-	7
Byrrhidae sp. [u]	-	-	1	-	-	-
Dryops sp. [oa-d]	-	2	-	-	-	-
Trixagus sp. [oa]	-	-	-	1	-	-
Elateridae spp. [ob]	1	2	1	1	-	-
Grynobius planus (Fabricius) [l]	2	1	1	1	1	-
Anobium sp. [l]	2	1	1	-	-	-
?*Atomaria* sp. [rd]	-	-	-	-	-	1
Corylophidae sp. [rt]	-	1	1	-	-	-
Cartodere bifasciata (Reitter) [u]	1	1	-	-	-	-
Latridius minutus group [rd-st]	-	1	-	-	-	-
Corticariinae spp. [rt]	1	-	-	-	-	-
Latridiidae sp. [u]	1	-	-	-	-	-
Donacia cinerea Herbst [oa-p-d]	-	-	-	-	-	1
Donacia spp. [oa-p-d]	-	2	-	-	-	-
Donaciinae spp. indet. [oa-p-d]	3	1	2	1	1	3
Prasocuris phellandrii (Linnaeus) [oa-p-d]	1	1	-	-	-	-
Agelastica alni (Linnaeus) [oa-p]	1	1	1	-	-	-
?*Crepidodera* sp. (Fabricius) [oa-p]	-	-	-	-	-	1
Chaetocnema concinna (Marsham) [oa-p]	-	-	-	-	-	1
Alticini sp. [oa-p]	-	1	-	-	-	-
Chrysomelidae sp. [oa-p]	-	2	1	1	-	-
Apion spp. [oa-p]	-	1	1	2	-	3
Notaris ?*acridulus* (Linnaeus) [oa-p-d]	-	-	1	-	-	-

Bagous spp. [oa-p-w]	1	2	2	2	-	1
Ceutorhynchus spp. [oa-p]	-	-	-	-	-	-
Ceutorhynchinae sp. [oa-p]	1	-	-	-	-	-
?Scolytini spp. [l]	-	-	-	-	-	2
Tanysphyrus lemnae (Paykull) [oa-p-w]	1	-	-	1	-	-
Curculionidae spp. [oa-p]	2	6	5	3	3	2
Coleoptera spp. [u]	6	9	5	2	3	4
Sample Number	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Sample volume (litres)	8	8	6	6	6	6
Acarina spp.	+	++	-	+	-	++
Aranae sp.	-	-	-	-	-	+
Cristatella mucedo Cuvier	-	-	-	++	-	+
Lophopus crystallinus (Pallas)	+++	+++	++	++	++	++
TOTAL INDIVIDUALS BEETLES AND BUGS	**87**	**142**	**85**	**35**	**20**	**60**

Key: Ecological codes used in analysis of the insect assemblages, based on Kenward (1986): d – damp ground and waterside taxa; g – grain associated taxa; l – wood associated taxa; oa – outdoor taxa (unable to live and breed either in buildings or in man-made accumulations of organic matter); ob – probable outdoor taxa; m – moorland taxa; rt – generalized decomposers; rd – dry decomposers; rf – foul decomposers; p – strongly plant associated taxa; w – aquatics. Synanthropic taxa have been categorized as follows following Kenward (1997): ss – strong synanthropes; st – typical synanthropes; sf – facultative synanthrops

Table 6: Main statistics of the Coleoptera and Hemiptera assemblages from bulk samples <1> to <6> (Trench 1), the Community Centre, High Lode, Ramsey

Sample	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Total individuals	87	142	85	35	20	60
Total taxa	52	88	54	30	19	44
Number of RT individuals	8	17	4	5	2	13
% RT individuals	9%	12%	5%	14%	10%	22%
Number of RT taxa	8	13	4	4	2	7
% RT taxa	15%	15%	7%	13%	11%	16%
Number of rd individuals	1	2	0	0	0	1
% rd individuals	1%	1%	0%	0%	0%	2%
Number of rd taxa	1	2	0	0	0	1
% rd taxa	2%	2%	0%	0%	0%	2%
Number of rf individuals	3	7	1	3	1	6
% rf individuals	4%	5%	1%	9%	5%	10%
Number of rf taxa	3	4	1	3	1	4
% rf taxa	6%	5%	2%	10%	5%	9%
Number of rt individuals	4	8	3	2	1	6
% rt individuals	5%	6%	4%	6%	5%	10%
Number of rt taxa	4	7	3	1	1	2
% rt taxa	8%	8%	6%	3%	5%	5%

%rd/RT individuals	13%	12%	0%	0%	0%	8%
%rf/RT individuals	38%	41%	25%	60%	50%	46%
%rt/RT individuals	50%	47%	75%	40%	50%	46%
Number of g individuals	0	0	0	0	0	0
% g individuals	0%	0%	0%	0%	0%	0%
Number of g taxa	0	0	0	0	0	0
% g taxa	0%	0%	0%	0%	0%	0%
Sample	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Number of l individuals	4	2	2	1	1	2
% l individuals	5%	1%	2%	3%	5%	3%
Number of l taxa	2	2	2	1	1	2
% l taxa	4%	2%	4%	3%	5%	5%
Number of w individuals	29	35	18	7	6	12
% w individuals	33%	25%	21%	20%	30%	20%
Number of w taxa	19	21	16	6	5	9
% w taxa	37%	24%	30%	20%	26%	21%
Number of d individuals	24	42	33	5	1	12
% d individuals	28%	30%	39%	14%	5%	20%
Number of d taxa	5	8	6	3	1	7
% d taxa	10%	9%	11%	10%	5%	16%
Number of p individuals	14	26	17	13	5	14
% p individuals	16%	18%	20%	37%	25%	23%
Number of p taxa	12	24	15	11	5	13
% p taxa	23%	27%	28%	37%	26%	30%
Number of m individuals	0	0	0	0	0	0
% m individuals	0%	0%	0%	0%	0%	0%
Number of m taxa	0	0	0	0	0	0
% m taxa	0%	0%	0%	0%	0%	0%
Number of oa individuals	63	104	65	23	11	38
% oa individuals	72%	73%	77%	66%	55%	63%
Number of oa taxa	34	53	34	19	10	27
% oa taxa	65%	60%	63%	63%	53%	61%
Number of oa+ob individuals	68	112	68	26	13	42
% oa+ob individuals	78%	79%	80%	74%	65%	70%
Number of oa+ob taxa	39	60	37	22	12	31
% oa+ob taxa	75%	68%	69%	73%	63%	71%
Number of S individuals	0	2	0	0	0	0
% S individuals	0%	1%	0%	0%	0%	0%
Number of S taxa	0	2	0	0	0	0
% S taxa	0%	2%	0%	0%	0%	0%

Number of ss individuals	0	0	0	0	0	0
% ss individuals	0%	0%	0%	0%	0%	0%
Number of ss taxa	0	0	0	0	0	0
% ss taxa	0%	0%	0%	0%	0%	0%
Number of st individuals	0	2	0	0	0	0
% st individuals	0%	1%	0%	0%	0%	0%
Number of st taxa	0	2	0	0	0	0
% st taxa	0%	2%	0%	0%	0%	0%
Sample	**<6>**	**<5>**	**<4>**	**<3>**	**<2>**	**<1>**
Number of sf individuals	0	0	0	0	0	0
% sf individuals	0%	0%	0%	0%	0%	0%
Number of sf taxa	0	0	0	0	0	0
% sf taxa	0%	0%	0%	0%	0%	0%

Key: RT - total decomposers (rd+rf+rt); S - total synanthropic taxa (ss+st+sf). For ecological codes see Table 5

7.2 Interpretation of the insect analysis

Insect remains were most common in the lower three samples, although only one of the assemblages (sample <5>) contained over 100 individuals. Environmental data produced from the samples, especially on terrestrial conditions, was limited by the poor preservation of the remains. The small size of the assemblages in the upper half of the sequence in particular means that interpretations based on the relative proportions of various ecological groups must be viewed with caution.

The invertebrate remains from all of the samples imply that the sequence of deposits making up context (104) was laid down in a wetland environment. By far the most numerous beetles in the lower half of the sequence were *Cyphon* species which are typical of swamp-like conditions with areas of shallow water in which the larvae live, waterside vegetation and accumulations of litter. The beetle and bug assemblage from the base of the sequence (sample <6>) was the most aquatic in character, with the proportion of aquatic taxa declining somewhat in subsequent samples suggesting that the immediate locality may have progressively become more swamp-like with a reduction in the extent of open water (there was an increase in the proportion of aquatic taxa in sample <2> but this was a particularly small assemblage and the statistics may be misleading). Still or slowly flowing, permanent and well-vegetated water was indicated and these conditions appear to have remained basically the same throughout the period represented by the deposits. Statoblasts of *Lophopus crystallinus* suggest that there was an input of material from running water.

Insects found on aquatic and waterside vegetation included donaciine leaf beetles, *Bagous* (an aquatic weevil), *Tanysphyrus lemnae* found on duckweed (*Lemna*), and *Prasocuris phellandrii* which feeds chiefly on marsh marigold (*Caltha palustris*) but may also be found on other Ranunculaceae and some other waterside plants including umbellifers.

Insects from damp, marshy ground and waterside habitats were numerous throughout the sequence but there appears to be a reduction in relative numbers from sample <3> upwards. In the lower three samples they accounted for 28 – 39% of the assemblages compared with 14 – 20% in the upper three samples (excluding sample <2> which may be anomalous). This may indicate significant local environmental changes although the smaller sizes of the upper assemblages means that no firm conclusions can be made without other forms of evidence.

Throughout the sequence several insect species provided evidence for the presence of trees close to the point of deposition. Remains of the alder leaf beetle *Agelastica alni* were identified from the lower three samples. The lack of its remains in the upper half may also be related to local environmental change midway through the sequence, and may represent a reduction in the numbers of alder trees present locally - *A. alni* appears to require extensive tracts of alder woodland for its survival and it is currently believed to have become extinct from Britain.

Few other terrestrial plant feeding insects could be identified closely but insects associated with nettles were consistently recorded from sample <5> upwards. A slightly greater range of identifiable phytophages were present in the uppermost sample including bugs found on nettles, *Chaetocnema concinna* found mainly on *Polygonaceae*, and *Donacia cinerea* usually found on bulrushes (*Typha*). Trees appear to have still been present and ?*Crepidodera* is usually associated with poplar and willow species.

The presence of the chafer *Phyllopertha horticola* in several samples implies that poor quality grassland existed in the area. This must have been on drier land since the larvae which live and feed on the roots of turf would be unable to survive in waterlogged soils. Consistent records of the scarabaeid dung beetles *Onthophagus* and *Aphodius* suggest that the grassland supported grazing animals. *Onthophagus* species are particularly closely associated with dung and at least two species were noted including *O. joannae* which is usually found in sheep or horse dung on light soils. Most *Aphodius* species are associated with dung but some will exploit foul vegetable matter and a number of species hibernate in flood debris.

There were no significant signs of insects typically associated with human occupation and man-made accumulations of organic waste in any of the samples.

DISCUSSION AND CONCLUSIONS

The results of the environmental archaeological analysis (geoarchaeological, geochronological, archaeobotanical and zooarchaeological) indicate that peat formation commenced at the site during the Bronze Age cultural period (3630-3470 cal yr BP), and may have continued into the historic period as suggested by the presence of a single grape pip. During this period the archaeobotanical and zooarchaeological results indicate that the wetland environment contained damp fen carr (mainly alder with willow), semi-aquatic swamp and open water aquatic vegetation communities. There is some indication from the insect record that the wetland environment may have become increasingly stable (drier) throughout the duration of peat formation; however, due the low number of remains recorded in the upper samples, this interpretation must be regarded with caution.

The Community Centre, High Lode, Ramsey is located near the wetland/dryland edge in the south-western Fens. In other areas of the south-western Fens, the sequence of Holocene deposition may be summarised as: (1) basal peat supporting eutrophic fen woodland and sedge fen (recorded earliest at Holme Fen from 7920-7440 cal yr BP; *ca*. 8km northwest); (2) fen clay deposited as a result of marine inundation (recorded earliest at Glass Moor from 5300-4630 cal yr BP; *ca*. 7km north); (3) upper peat formation during the Bronze Age supporting fen carr, sedge fen, reedswamp and *Sphagnum* bog (Waller, 1994). Therefore the period of peat formation at High Lode, Ramsey is contemporaneous with the development of the 'upper peat' elsewhere in the south-western Fens, and the lack of earlier Holocene deposits at the site is most likely the result of its elevation and position adjacent to the higher drier ground of the dryland edge.

The Community Centre, High Lode, Ramsey pollen-stratigraphic record indicates that during the period of peat formation the dryland contained areas of mixed deciduous woodland (including oak and lime), but was mostly open in nature and supported rough grassland. The transition from mixed deciduous woodland to more open communities (including the well documented lime decline) is typical of Bronze Age land clearance for both arable and pastoral farming practices (see Turner, 1962). However, the plant macrofossil and insect records also provide persuasive evidence for some level of anthropogenic activity near the site during the period of peat formation. The insect record provides the most persuasive evidence with scarabaeid dung beetles representative of domesticated animals, whilst the continual presence of small charcoal fragments in the plant macrofossil record suggest human activity and perhaps settlement near the site.

REFERENCES

Anderberg, A-L. (1994) *Atlas of Seeds: Part 4*, Swedish Museum of Natural History, Risbergs Trycheri AB, Sweden: Uddevalla.

Atkinson, T. C. Briffa, K. R. And Coope, G. R. (1987) Seasonal temperatures in Britain during the past 22, 000 years, reconstructed using beetle remains. *Nature* 325, 587-592.

Batchelor, C. R., Allison, E., Young, D. and Morgan, P. (2009). *The Community Centre, High Lode, Ramsey: Environmental Archaeological Assessment*. Quaternary Scientific (QUEST) Unpublished Report.

Cappers, R.T.J., Bekker R.M. & Jans J.E.A. (2006). *Digital Seed Atlas of the Netherlands. Groningen Archaeological Series 4*. Barkhuis, Netherlands.

Cox, M. L. (2007) *Atlas of the seed and leaf beetles of Britain and Ireland*. Newbury: Pisces.

Denton, J. (2007) *Water bugs and water beetles of Surrey*. Woking, Surrey: Surrey Wildlife Trust.

Duff, A. (ed.) (2008) *Checklist of beetles of the British Isles*. Wells, Somerset: Privately printed.

Green, C.P. and Young, D.S. (2009) *St Mary's Road, Ramsey, Cambridgeshire: fieldwork and column sample report*. Quaternary Scientific (QUEST) Unpublished Report March 2009; Project Number 006/09.

Hall, A. R., Kenward, H. K. and McComish, J. M. (2003) Pattern in thinly-distributed plant and invertebrate macrofossils revealed by extensive analysis of occupation deposits at Low Fisher Gate, Doncaster, U. K.. *Environmental Archaeology* **8**, 129-144.

Hansen, M. (1987). The Hydrophiloidea (Coleoptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica* **18**, Leiden: Brill.

Hather, J. G. 2000. *The Identification of the Northern European Woods: A Guide for archaeologists and conservators.* Archetype Publications Ltd, London.

Holmen, M. (1987) The aquatic Adephaga (Coleoptera) of Fennoscandia and Denmark I. Gyrinidae, Haliplidae, Hygrobiidae and Noteridae. *Fauna Entomologica Scandinavica* **20**. Leiden: Brill.

Jessop, L. (1986). Dung beetles and chafers. Coleoptera: Scarabaeoidea. *Handbooks for the identification of British insects* **5** (11). London: Royal Entomological Society.

Kenward, H. 1997. Synanthropic decomposer insects and the size, remoteness and longevity of archaeological occupation sites: applying concepts from biogeography to past 'islands' of human occupation. In Ashworth, A. C., Buckland, P. C and Sadler, J. T. (eds) *Studies in Quaternary Entomology: an inordinate fondness for insects*. Quaternary Proceedings **5**, pp. 135-152.

Kenward, H. K. Hall, A. R. and Jones, A. K. G. (1986). Environmental evidence from a Roman well and Anglian pits in the legionary fortress. *Archaeology of York* **14** (5), 241-288. London: Council for British Archaeology.

Kloet, G. A. and Hincks, W. D. (1964-77) *A checklist of British insects*, 2nd edn. London.

Menzies, I. S. and Cox, M. L. (1996) Notes of the natural history, distribution and identification of British reed beetles. *British Journal of Entomology and Natural History* **9**, 137-162.

Moore, P.D., Webb, J.A. and Collinson, M.E. (1991) *Pollen Analysis* (2nd Ed.). Oxford: Blackwell.

Morris, M. G. (2002). True weevils (Part 1). Coleoptera Curculionoidea (Subfamilies Raymondionyminae to Smicronuchinae). *Handbooks for the identification of British insects* (**17**b). London: Royal Entomological Society.

Pinnacle Consulting Engineers Ltd (2008) *Engineering site appraisal for Tesco at The Bill, St Mary's Road, Ramsey* (unpublished report).

Reille, M. (1992) *Pollen et Spores d'Europe et d'Afrique du Nord*. Marseille : Laboratoire de Botanique Historique et Palynologie.

Skidmore, P. (1991) *Insects of the British cow dung community*. Field Studies Council Occasional Publication No. **21**.

Schoch, W., Heller, I., Schweingruber, F.H., & Kienast, F. (2004) *Wood anatomy of central European Species.* Online version: www.woodanatomy.ch.

Schweingruber, F.H. (1990) *Anatomy of European woods. Eidgenössische Forshungsanstalt für Wald, Schnee und Landschaft, Birmensdorf (Hrsg.).* Haupt, Bern und Stuttgart.

Stace, C. (1997) *New Flora of the British Isles* (2nd ed.). Cambridge: Cambridge University Press.

Troels-Smith, J. (1955) Karakterisering af løse jordater (Characterisation of unconsolidated sediments), *Danm. Geol. Unders.,* ***Ser IV*** **3**, 73.

Turner, J. (1962) The *Tilia* decline: an anthropogenic interpretation. *New Phytologist* **61**, 328-341.

Waller, M. (1994) *The Fenland Project, Number 9: Flandrian Environmental Change in Fenland*. East Anglian Archaeology, Report No. 70. Fenland Project Committee, Cambridgeshire County Council.

Wood, T. S. and Okamura, B. (2005) A new key to the freshwater bryozoans of Britain, Ireland and Continental Europe, with notes on their ecology. *Freshwater Biological Association Scientific Publication* **63.**

Appendix C– Radiocarbon Dating Results

Scottish Universities Environmental Research Centre
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RADIOCARBON DATING CERTIFICATE

07 September 2009

Laboratory Code	SUERC-24954 (GU-19360)
Submitter	Melissa Melikian AOC Archaeology Unit 7, St. Margaret's Business Centre Moor Mead Road Twickenham TW1 1SJ
Site Reference	Ramsey Community Centre
Sample Reference	ECB3160 <6>
Material	Wood Bark (Waterlogged) : Quercus
$\delta^{13}C$ relative to VPDB	-25.5 ‰
Radiocarbon Age BP	3320 ± 30

N.B. 1. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

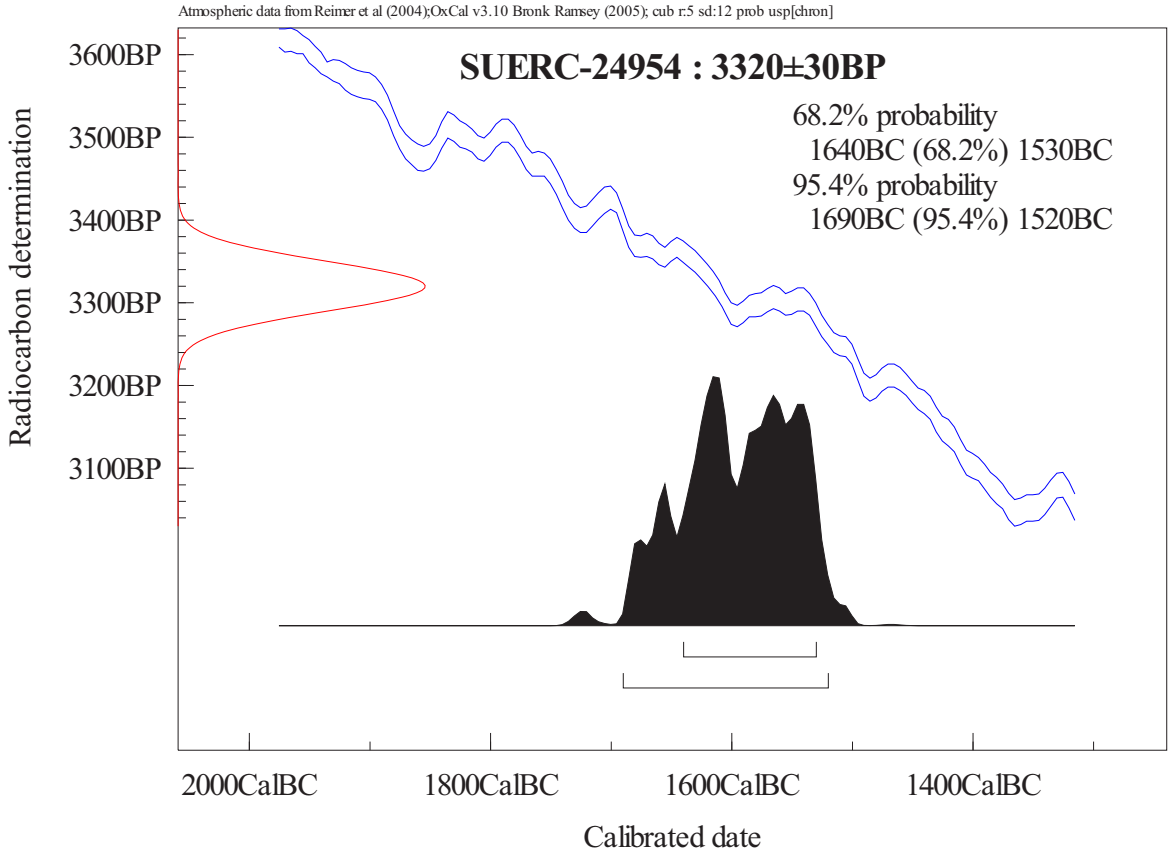
2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).

3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email g.cook@suerc.gla.ac.uk or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot


Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]
SUERC-24954 : 3320±30BP
68.2% probability
1640BC (68.2%) 1530BC
95.4% probability
1690BC (95.4%) 1520BC
Radiocarbon determination
3600BP
3500BP
3400BP
3300BP
3200BP
3100BP
2000CalBC
1800CalBC
1600CalBC
1400CalBC
Calibrated date

Appendix D – OASIS Form

OASIS ID: aocarcha1-59357

Project details

Project name	High Lode, Ramsey
Short description of the project	An archaeological evaluation of a site on the north edge of Ramsey, next to the High Lode was carried out . The site was characterised by naturally lain sand and gravel with peat formed above. The peat contained evidence for alder woodland and an understorey of grasses and sedges.
Project dates	Start: 23-03-2009 End: 27-03-2009
Previous/future work	No / Not known
Any associated project reference codes	ECB 3160 - HER event no.
Any associated project reference codes	ECB 3160 - Sitecode
Type of project	Field evaluation
Current Land use	Wetlands
Monument type	NONE None
Significant Finds	NONE None
Methods & techniques	'Sample Trenches'
Development type	Public building (e.g. school, church, hospital, medical centre, law courts etc.)
Prompt	Direction from Local Planning Authority - PPG16

Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	CAMBRIDGESHIRE HUNTINGDONSHIRE RAMSEY High Lode
Postcode	PE26
Study area	1624.00 Square metres
Site coordinates	TL 2852 8582 52.4548043249 -0.108411965317 52 27 17 N 000 06 30 W Point
Height OD / Depth	Min: -0.67m Max: -0.14m

Project creators

Name of Organisation	AOC Archaeology
Project brief originator	CAPCA
Project design originator	AOC Archaeology
Project director/manager	Andy Leonard
Project supervisor	Ian Hogg
Type of sponsor/funding body	Developer

Project archives

Physical Archive recipient	Cambridgeshire County Council Archaeology Store
Physical Archive ID	ECB 3160

Physical Contents	'Environmental','other'
Physical Archive notes	held at AOC until transfer
Digital Archive recipient	Cambridgeshire County Council Archaeology Store
Digital Archive ID	ECB 3160
Digital Contents	'Environmental','Stratigraphic'
Digital Media available	'Images raster / digital photography','Images vector','Text'
Digital Archive notes	held at AOC until transfer
Paper Archive recipient	Cambridgeshire County Council Archaeology Store
Paper Archive ID	ECB 3160
Paper Contents	'Environmental','Stratigraphic'
Paper Media available	'Context sheet','Photograph','Plan','Report','Section','Unpublished Text'
Paper Archive notes	held at AOC untiul transfer

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Community Centre, High Lode, Ramsey, Cambridgeshire
Author(s)/Editor(s)	Capon, L.
Date	2009

Issuer or publisher	AOC Archaeology
Place of issue or publication	London
Description	A4, 9 pages text, 4 figures, 2 plates, appendices
Entered by	les capon (les.capon@aocarchaeology.com)
Entered on	12 May 2009

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