Crayford Town Hall, Crayford Road, London Borough of Bexley:

An Archaeological Evaluation Report

Planning Application Number: 08/03277/FULM

National Grid Reference Number: TQ 5161 7456

Site Code: CFF09

AOC Project No: 30508

Date: February 2011

AOC Archaeology Group

ARCHAEOLOGY | HERITAGE | CONSERVATION

Crayford Town Hall, Crayford Road, London Borough of Bexley:

An Archaeological Evaluation Report

On Behalf of:	**HFHA Limited** **C/O Robert Lombardelli Partnership** St Lukes House 5 Walsworth Road Hitchin Hertfordshire SG4 9SP **Higgins Construction** One Langston Road Loughton Essex IG10 3SD
National Grid Reference (NGR):	**TQ 5161 7456**
AOC Project No:	**30508**
Prepared by:	**Chris Clarke and Tara Fidler**
Illustration by:	**Jonathan Moller**
Date of Report:	**February 2011**

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

Author: Chris Clarke and Tara Fidler	**Date: February 2011**
Approved by: Melissa Melikian	**Date: February 2011**
Draft/Final Report Stage: Final	**Date: February 2011**

Enquiries to: AOC Archaeology Group
Unit 7
St Margarets Business Centre
Moor Mead Road
Twickenham
TW1 1JS

Tel. 020 8843 7380
Fax. 020 8892 0549
e-mail. london@aocarchaeology.com

AOC Archaeology Group

www.**aocarchaeology**.com

Contents

List of Illustrations

List of Plates

Non-Technical Summary

AOC Archaeology Group were initial commissioned by HFHA Limited to carry out an archaeological evaluation at the site of Crayford Town Hall, Crayford, London Borough of Bexley, with the subsequent post-excavation work commissioned by Higgins Construction. The evaluation was undertaken between 23rd and 30th November 2009, and comprised the machine excavation of five trenches measuring 20m by 2m. The aim of the evaluation was to establish the presence or absence of archaeological remains on the site.

The evaluation identified three principal phases of deposition in four of the five evaluation trenches. The earliest phase comprised alluvial deposition and a series of palaeochannels across the site which started to form during the Early Mesolithic period. From the base of one of the palaeochannels a large timber fragment of yew was recovered dating to the Late Neolithic period. This was followed by a second phase represented by the accumulation of peat, overlain by a sequence of medieval and post-medieval dumps. The final phase of activity was associated with large scale deposition of made ground deposits during the 19th and 20th centuries in order to facilitate extensive use of the site. Many of the structures built on this sequence have subsequently been demolished before constructing the current car park and yard areas.

Overall the archaeological evaluation identified the presence of naturally-accumulated alluvial and peat sequences. No archaeological features were identified during the course of the fieldwork although evidence of the medieval/post-medieval environment was identified.

It was recommended that further analysis of the fragment of yew be undertaken, consisting of radiocarbon dating, to determine a reliable date for the age of the wood. Due to the stratigraphic sequence that the wood was located in, it was provisionally dated to the Mesolithic period. However, the results of the radiocarbon dating indicate that the wood dates to the Late Neolithic period. It has, therefore, been agreed with the archaeology advisor, Mark Stevenson of GLAAS, that no further fieldwork or reporting is required.

1. Introduction

1.1 Site Location (Figures 1 & 2)

1.1.1 The site is located in the middle of Crayford town centre; centred on National Grid Reference TQ 5161 7456. The site is irregular in shape and measures approximately 1.2 hectares. It is bound to the north by Crayford Road, the Town Hall car park to the west and southwest and mixed housing and retail to the south and southeast.

1.2 Planning Background

1.2.1 Planning consent (Application Reference: 08/03277/FULM) for the proposed development has been granted, subject to conditions. Condition 9 states:

"*No development shall take place until the applicant has secured the implementation of a programme of archaeological works in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the Local Planning Authority. The development shall only take place in accordance with the detailed scheme pursuant to this condition. The archaeological works shall be carried out by a suitably qualified investigating body acceptable to the Local Planning Authority*"

"REASON: To ensure that adequate archaeological records can be made in respect of the site and the interests of the heritage of the area."

This condition has been required in accordance with Planning Policy Guidance: Archaeology and Planning (PPG 16) issued by the Department of the Environment in 1990 (DoE, 1990), and was recommended by the archaeological advisor to the Local Planning Authority.

1.2.2 The site is currently occupied by Crayford Town Hall, a library, clinic and adjacent car park. The proposed development comprises the construction of 186 residential units and the redevelopment of the town hall as a restaurant.

1.2.3 The site does not contain any listed buildings, but is situated in the Crayford Area of Archaeological Priority as defined by the Local Planning Authority. This is due to the close proximity of Roman Watling Street immediately to the north of the site.

1.2.4 AOC Archaeology Group Ltd were initially commissioned by HFHA Limited to carry out the field evaluation, and subsequently commissioned by Higgins Construction to undertake the specialist assessment work and reporting. The methodology was set out in a Written Scheme of Investigation (AOC, 2009). This document detailed how the evaluation, comprising of five trenches, would be undertaken.

1.3 Geology and Topography

1.3.1 The majority of the site is located on the Cray alluvial floodplain, but the south-eastern edge of the site is situated on the Upper (Cretaceous) Chalk bedrock of the valley side. Topographically, the south-eastern side of the site slopes up steeply rising to *c* 6.3m AOD (Above Ordnance Datum) at the clinic and to 10.2m AOD on Station Road to the eastern boundary of the site. To the west the ground is roughly flat at *c* 5.2m AOD (Soil Mechanics, 1998).

1.3.2 A geotechnical survey (Soil Mechanics, 1998) confirmed that the eastern third of the site lies upon chalk bedrock, while the remainder of the site lies upon alluvium underlain by river gravels. The survey revealed the presence of between 1m and 3m of made ground across the site, and confirmed the existence of peat deposits between 0.4m and 2.5m below ground level.

2. Historical and Archaeological Background

2.1 The following information is taken from the desk based assessment compiled for the site by the Museum of London Archaeological Service (MoLAS, 2007).

The Prehistoric Period (c. 500,000 BP – AD 43)

2.2 According to the SMR a large quantity of Palaeolithic flint artefacts, including 8 hand axes, 17 flint flakes, 1 flint core and 96 Levallois flakes, have been discovered in the general Crayford area with the site given as the findspot. Some of these artefacts may have come from the site, but this is uncertain.

2.3 Chance finds of Palaeolithic artefacts from Woolbrook road, 600m south of the site; and from gravel extraction sites at Wansunt Pit and Bowmans Lodge, have shown that the gravel terraces of the Crayford area contain Palaeolithic remains. Excavations at Wansunt Pit in 2000, revealed a thick layer of Palaeolithic deposits, which demonstrate the gravel terraces also have the potential to include *in situ* Palaeolithic strata as well as residual artefacts.

2.4 Undated prehistoric flint artefacts have been located within a clay pit 615m west of the site and (together with some animal remains) at the former Crayford Brickworks 580m north-east of the site. These remains may possibly be dated to the Palaeolithic period.

2.5 The Mesolithic hunter-gather communities of the postglacial period (*c* 10,000–4,000 BC) inhabited a still largely wooded environment. The Cray and Lower Thames valleys and coast would have been especially favoured in providing a reliable source of food (from hunting and fishing) and water, as well as a means of transport and communication. Evidence of human activity is largely characterised by finds of flint tools and waste rather than structural remains. These artefacts are often found in gravel terraces, such as those crossing the site along the Cray valley. No finds of this period are recorded from the site, but a Mesolithic flint axe was discovered at a gravel pit 700m south-west of the site and the undated prehistoric finds from the lay pit and former Crayford Brickworks may date to this period.

2.6 The Neolithic (*c* 4000–2000 BC), Bronze Age (*c* 2,000–600 BC) and Iron Age (*c* 600 BC–AD 43) are traditionally seen as the time of technological change; the establishment of farming, settled communities and forest clearance occurred for the cultivation of crops and the construction of communal monuments.

2.7 There have been no Neolithic, Bronze Age or Iron Age finds on the site, but the alluvial layers located in the geotechnical investigation have the potential to contain buried remains *in situ* from these periods. The peat strata, in particular, have the potential to contain preserved prehistoric timbers (as well as other organic remains) which were used to construct trackways or platforms in marshy areas and across streams during the Neolithic, Bronze and Iron Ages.

2.8 Artefacts of Neolithic and Bronze Age date have been discovered adjacent to the River Cray, 260m west of the site, while Bronze Age artefacts were discovered at Wansunt Pit earlier in the 20th century.

2.9 Iron Age features, consisting of postholes, a pit and a ditch, were revealed during archaeological investigations in 1992 at Green Walk, 450m north of the site. In 1936, remains of an Iron Age settlement were excavated 750 north-west of the site, at the Glebe Road Estate to the west of the Parish Church between Manor Road and Old Road. Limited excavation records were kept of the pits and ditches excavated, but the remains included local and foreign pottery, loom weights, querns, flint tools, animal remains and iron objects.

2.10 There is also the possibility that some of the undated prehistoric flint artefacts and animal remains discovered within the study area belong to the later prehistoric period.

Roman (cAD 43 - 410)

2.11 In AD 43, the Romans conquered Britain bringing with them a distinctive culture, building a network of roads linking planned towns and founding *Londinium* (London), which was to become the capital of the Roman province.

2.12 No Roman remains have been found on the site, but there is considerable evidence of Roman activity within Crayford as a whole. The site is adjacent to a Roman road and close to a probable Roman settlement. There are also a number of isolated finds recorded within the study area: A 1st century AD Roman potsherd was discovered at the Maxim gravel pit, 350m west of the site a 2nd century AD Roman coin came from 124 Station Road, 430m south of the site; and a 4th century Roman coin was located at the former Crayford Brickworks, 580m northeast of the site

2.13 The site is situated immediately to the south of Roman Watling Street which ran from London to Dover, approximating the line of modern Crayford Road which forms the northern boundary of the site. The precise route of the Roman road is uncertain, and it is possible that it passed through the northern part of the site. The road made use of a natural crossing over the River Cray, which was fordable at Crayford.

2.14 The River Cray, a larger tidal river than now, would also have formed a communication artery. In the mid 20th century a double deck Roman ship described as a 'war galley', was discovered close to the Galbraith's offices by Crayford Bridge, 270m northwest of the site.

2.15 The site appears to be located near a Roman settlement situated on the western side of Crayford, close to the River. In 1956, A. Rivet suggested that western Crayford is the right location for a road-station named *Noviomago* (possibly *Noviomagus Cantiacorum* meaning the New Market of the Cantiaci) that was listed in the early 3rd century Antonine Itinerary. The Antonine Itinerary places *Noviomago* ten miles from *Londinium* (London) and eighteen miles from *Vagniacis* (Springhead, Kent).

2.16 The area around the site appears to have been intensively settled during the Roman period. In the 19th century, Roman foundations and tiles were recorded, and in 1964 further evidence of Roman structures were discovered, at Swaislands Drive, 260m north of the site. In 1889, Spurrell mentioned, but did not record, a Roman building located 320m west of the site on the west bank of the River Cray, close to the Roman road. A Roman occupation layer was found at *c* 5.6m OD with chalk foundations, 3rd-4th century pottery, tiles, wall plaster and other artefacts during gravel digging in 1959 on the Crayford Recreation Ground, 640m south-west of the site. Tester suggested that this structure was part of a villa located close to the resources of the River Cray.

2.17 Roman cemeteries are usually to be found outside towns close to roads, as Roman law forbade the burial of human remains inside towns. A Roman cremation vessel was discovered in 1915 along the River Cray towpath, 500m northeast of the site, and, in 1931, a Roman cremation burial was located during the construction of the secondary school in Iron Mill Lane, 940m northeast of the site.

2.18 There is also evidence of Roman industrial or construction activity in the area. In 1879, a denehole (small chalk mine) containing Roman pottery was recorded in Iron Mill Lane, 620m north of the site. These small chalk mines were very common features in Kent during the Roman period and the

inclusion of pottery in the backfill of the Iron Mill Lane example suggests there was some form of settlement in the vicinity.

The Anglo-Saxon Period (c. 451 – 1065)

2.19 Following the withdrawal of the Roman army from England in the early 5th century AD, the whole country fell into an extended period of socio-economic decline, and histories of the period record a series of battles for control of southern England. In AD457 the Anglo-Saxon Chronicle (*c* AD891–924) records that Jutish invaders lead by Hengist and Esc fought the Britons at *Cregganford* (Crayford), killing four thousand of them and causing the remaining Kentish Britons to flee to London. Carr, in his history of Crayford identifies Nod Hill, particularly the area of the Parish Church 700m north-west of the site, as the possible location.

2.20 No early medieval finds or features have been found on the site, but a number of early medieval finds in the area may attest to activity within Crayford or along the Roman road, which may pass just north of the site. The road was probably still extant during this period, although it is unlikely to have been maintained. The SMR records that an early medieval ornament was discovered in the 19th century near Crayford Station, 110m south of the site and an important early medieval inhumation including both human and horse bones and high status finds was discovered 170m north-west of the site in 1888. This burial was discovered sealed under a 1.2m thick layer of peat.

2.21 Around the 9th and 10th century, the local parochial system began to replace the earlier Saxon Minster system, with formal areas of land centred on nucleated settlement served by a parish church. St. Paulinus Church, the current Parish church 700m northwest of the site, was first recorded in Domesday Book of 1086, although the dedication to St Paulinus indicates that its origin is probably early medieval.

2.22 The village and site was located within the Manor (estate) of *Erhede* or *Earde*, which was established by AD960, and in AD970 St Dunstan, Archbishop of Canterbury, settled an important legal case in which the parish became the property of Christchurch Canterbury, ultimately becoming part of the Archbishop's property by the Norman Conquest.

The Medieval Period (c. AD 1066 - 1485)

2.23 The Domesday Book records that the Manor (estate) of *Erhede* was held by the Archbishop of Canterbury. The estate is listed as comprising 29 villagers, 2 smallholders, 5 servants and 388 hectares of cultivated land. It also included 4 hectares of meadow, enough woodland to feed 40 pigs, the church and 3 mills.

2.24 Although probably an early medieval foundation, the extant Parish Church of St. Paulinus, 700m north-west of the site, was first mentioned in the Domesday Book of *c* 1086. The church was rebuilt *c* 1100 and modified in *c* 1200 (when a south isle was added to the existing Norman nave), and in the early 14th century when the south isle was replaced by a second nave and a new chancel was built midway between the two naves. The tower, arcade, south porch, vestry and chapels to the north and south of the chancel were added in the 15th century.

2.25 There are no later medieval finds from the site or within the study area. The earliest historic map of 1769 shows Crayford as a linear roadside development. The site is located within the village, but towards the eastern side of it. However, it should be noted that this map is of 1769 and the village may have moved southeast to focus on the road and the Cray crossing by the time this map was created. The later medieval settlement was probably beside the church, almost 700m west of the

site. This would have been a part of the floodplain of the Cray, perhaps with marshy areas particularly to the east near the Stanham River. As the village moved eastwards the site may have undergone domestic development or been brought into cultivation.

The Post-Medieval Period (c. AD 1485 - modern)

2.26 The first map to show the area in detail is the Andrews, Drury and Herbert map of 1769. This map shows Crayford as a linear roadside settlement. The site is located at the eastern edge of the settlement, with buildings fronting onto the main road in the northern half of the site. It is probable that the focus of the settlement still lay to the west around the river crossing.

2.27 By 1801 the village had spread westwards towards the church. Mudge's map of 1801 shows two buildings within a single plot of land present on the site. A single, long east-west aligned building is depicted on the site in the 1820 Crayford Enclosure Map. The building is located at the north end of the site and the long north frontage fronts onto the Crayford Road. The Enclosure map records that the plot belonged to an individual named Pepe. The western and southern parts of the site were in fields belonging to Tucker. The map also shows a part of the Stanham river flowing east-west across the centre of the site and turning north-south along the eastern boundary. The course of this stream is still evident in the topography of the site, with the former eastern bank of this stream sloping up dramatically. The stream formed the boundary between the plot of Pepe and that of Feaspees or Fieaspees. The southern part of the latter plot falls within the site boundary and occupies the corner between Crayford Road, and what is now Station Road. The Feaspees plot contained buildings fronting onto Crayford Road and a small building to the south, set back from Station Road and appears to be almost within its own plot. This building appears on historic maps until 1933.

2.28 From the 19th century, Crayford became increasingly built up with a number of local industries including silk printing, cloth bleaching, tanning, iron milling and armament manufacture. The Ordnance Survey 1st edition 25" mile map of 1869 shows a row of terraced buildings at the north end of the site, fronting onto Crayford Road. Behind these, within associated garden plots are a row of small buildings that probably constituted external sanitary arrangements. The Stanham river remained the south and east boundary of these plots, but appears to have been culverted. The west and southern parts of the site remained open fields, crossed by the Stanham river. The Ordnance Survey 2nd edition 25": mile map of 1897 and the Ordnance Survey 3rd edition 25": mile map of 1909 show no change in occupation, but the Stanham river is no longer depicted.

2.29 The Ordnance Survey 25":mile map of 1933 shows that the housing along the Crayford Road had been demolished, apart from two small structures in the north-east corner of the site. The extant, locally listed Town Hall is shown fronting onto Crayford Road in the western part of the site. The Town Hall was originally built by Vickers in 1915 as a mess for those who worked in the factory on the north side of the Crayford Road. In 1929, it was bought by Crayford Urban District Council and used as a Town Hall until 1965, when Crayford became part of the Borough of Bexley. A tower, apparently for a lift, was constructed at the back of the building on the south-east corner. This tower was not present in the 1983 Ordnance Survey map, and was probably constructed within the last five years. Care has been taken to ensure the new build is in the same style as the original building, indicating an awareness that the building would or already had been locally listed. The recommendation for local listing was made in 2006, with the Town Hall as reference 384.

2.30 The Ordnance Survey 25": mile map of 1933 also shows a large polygonal building to the south of the Town Hall, annotated as F.E Stat (Fire Engine station). Subsequent maps show this building had

been subdivided and extended to the east by 1962. There were also structures to the south of the main building according to the 1962 Ordnance Survey map. which had been removed by 1972. The building itself was removed after 1983, and the area has since been used as a car park.

2.31 The extant purpose-built Crayford Library, located next to the Town Hall in the north of the site, was built just before the Second World War, but not opened until 1945. The Ordnance Survey 1:2500 scale map of 1962 shows that by 1962 the extant clinic had been constructed on the east side of the site, and a building parallel with the library on the north side was under construction. The latter building was removed 1983–2007 as it is not shown on the Ordnance Survey 1:10,000 scale map of 1983, although the area of the car park where it stood is currently composed of broken asphalt. It was probably at the same point that the adjacent building, 108 Crayford Road, was demolished, leaving traces of concrete and an area of pink floor tiles along the north boundary of the site.

2.32 The Ordnance Survey 1:1250 scale map of 1972 depicts a large shed, built to the north of the clinic on the eastern side of the site.

3. Strategy

3.1 Aims of the Investigation

3.1.1 The aims of the evaluation were defined as being:

- 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 the London Borough of Bexley to make an informed decision on the status of the archaeology condition and the possible requirement for any further 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 Specific aims of the evaluation were:

- Determine the presence / absence of remains relating to Palaeolithic and Mesolithic activity.
- Determine the presence / absence of remains relating to Iron Age Activity on the site.
- Determine the presence / absence of remains relating to Roman activity on the site.
- To investigate the geoarchaeological potential of the site to inform on the past landscape.

3.1.3 The final aim is to make public the results of the investigation, subject to any confidentiality restrictions.

3.2 Research Design

3.2.1 The location and size of Trenches 1, 2, 3 and 5 remained unaltered. The only modification of the original trench plan was the re-orientation of Trench 4 due to the presence of localised obstructions (Figure 2).

3.2.2 Site procedures were defined in the Written Scheme of Investigation (AOC, 2009). All work was undertaken in accordance with local and national guidelines.

3.3 Methodology

3.3.1 Prior to commencing work a unique code for the project was obtained from the Museum of London (**CFF09**).

3.3.2 On site field work was undertaken between 23rd and 30th November 2009.

3.3.3 Levels for each context were established relative to Ordnance Datum, taken from a Bench Mark on the Town Hall (5.95m Above Ordnance Datum). Temporary Bench Marks (TBM) were established in the northern area of site at 5.46m AOD, and in the southern area at 4.54m AOD.

3.3.4 The evaluation was conducted by the author under the overall management of Andy Leonard. The site was monitored by Mark Stevenson and Rob Whytehead, of the Greater London Archaeological Advisory Service. On-site geoarchaeological advice and sampling was undertaken by Quaternary Scientific (QUEST).

4 Results

4.1 Trench 1 (Figure 3)

Plate 1. General View of Trench 1 Looking Northwest

4.1.1 Surface of Trench = 5.38m

Level (OD)	Depth BGL	Context Number	Description
5.38-5.23m	0.00m	(105)	Tarmac and gravel formation.
5.23-4.78m	0.15m	(106)	Made ground. Concrete and brick rubble.
4.78-4.28m	0.60m	(109)	Made ground. Firm, grey, mixed deposit and CBM.
4.28-4.08m	1.10m	(110)	Soil horizon. Soft, dark brown, clayey silt.
4.08-3.48m	1.30m	(103)	Soil horizon. Soft, dark brown, silty clay.
3.48-3.06m	1.90m	(102)	Soil horizon. Soft, dark brown, silty clay.
3.28-3.06m	2.10m	(118)	Alluvial deposit. Soft, mid grey, silty clay.
3.25-3.05m	2.13m	(119)	Alluvial deposit. Soft, light grey, clayey sand.
3.08-2.98m	2.30m	(120)	Alluvial deposit. Soft, mid grey, silty clay.
3.06-2.85m	2.32m	(101)	Alluvial deposit. Soft, dark grey, silty clay.
3.10-2.80m	2.28m	(121)	Alluvial deposit. Loose, yellowish brown, sandy gravel.
2.98-3.85m	2.40m	(122)	Alluvial deposit. Soft, light grey, silty chalk.
3.08-2.88m	2.30m	(123)	Alluvial deposit. Soft, dark grey, clayey silt.
3.10-2.80m (NFE)	2.28-2.48m	(124)	Alluvial deposit. Loose, orangey brown, sandy gravel.

4.1.2 Trench 1 was located in the northwest area of the site, orientated northwest-southeast. The earliest deposit was a loose, orangey brown, gravel with a sandy matrix (124), which at its highest was at 3.10m AOD.

4.1.3 Two alluvial deposits, limited in extent, overlay the sandy gravel. A dark grey, clayey silt (123) layer was located at the southeast end of the trench, with a lighter grey silty (122) deposit containing a significant quantity of fine chalky material, located centrally in the trench. Both deposits contained frequent small stony inclusions, and were approximately 0.20m thick. Overlying layer (122), and extending for 5.30m in the central area of Trench 1, was a loose, yellowish brown, alluvial sandy gravel (121). The sandy gravel was up to 0.30m thick. Sealing (121) and (123) was a 0.20m thick layer of soft, dark grey alluvial silty clay (101), which contained occasional fragments of animal bone. The silty clay deposit (101) was extensive, recorded for a distance of 9.40m before continuing beyond the southeast limit of the trench. In the middle of the trench deposit (101) was overlain by a small layer of grey, silty clay alluvial material (120), 1.90m in extent and 0.10m thick. This was followed by a clayey sand alluvial deposit (119) of similar dimensions. This extensive sequence of alluvial deposition was capped by a substantial layer of mid grey, silty clay (118), measuring 8m in length and up to 0.55m thick.

4.1.4 Sealing the full extent of alluvial deposit (118) was a soft, dark brown, silty clay soil horizon (102), up to 0.40m thick, containing occasional fragments of ceramic building material (CBM) which is believed to be intrusive. It was truncated at the northwest end of the trench by palaeochannel [117], which was over 6.60m wide and up to 0.70m deep. The palaeochannel appeared to be aligned northeast-southwest, but this was unclear as it extended beyond the northwest limit of the trench. Palaeochannel [117] had an uneven but flat base with steeply angled sides. The primary fill of palaeochannel was a soft, dark brown silty clay (104), measuring up to 0.45m thick, and containing occasional animal bone and shell fragments. The secondary fill (116) was observed adjacent to the northwest limit of the section and consisted of approximately nine alternating bands, each comprising a lens of light grey silty sand and black silt together measuring up to 300mm thick. Analysis of column samples <5> and <6> taken through context (104) and (116) identify the darker layers as silt-rich beds, whereas the lighter layers are tufa rich beds which contained a quantity of mollusc remains. These lenses represent phased cycles of alluvial deposition indicating periods of relative stability allowing the development of terrestrial conditions, alternating with flooding episodes. The presence of terrestrial molluscs potentially reflects the proximity of adjacent valley sides. The high organic content present in context (104) enabled samples to be taken for radiocarbon dating, which indicated the context was deposited between 10,720 – 10,500 cal yr BP, a period associated with the beginning of the Early Mesolithic (see Appendix B).

4.1.5 The upper fills of [117] had been truncated by a small, later palaeochannel [115], measuring over 1.65m wide, 0.50m deep, retaining a similar profile and travelling on roughly the same alignment as [117]. The southeastern extent of palaeochannel [115] was obscured by modern intrusions. This later channel contained two recognisable fills. The earliest fill (114) was a light grey, clayey silt, whereas the upper fill (113) was a mid brown, silty clay deposit.

4.1.6 Deposited directly above palaeochannel [117], and extending across the full area of Trench 1, was an extensive deposit of soft, dark brown, silty clay (103), likely to be a disturbed soil horizon. It measured up to 0.60m thick and contained a relatively high density of inclusions including fragments of horse and dog bone, peg tile and pottery. The pottery sherds recovered are in keeping with Wealden types in use between the mid 14th to mid 16th century. Column samples <4> and <6> incorporated elements of context (103), from which fragments of edible shellfish, represented by Common Mussel (*Mytilus edulis*) and Common Oyster (*Ostrea edulis*), and terrestrial molluscs were identified.

4.1.7 Cutting into soil horizon (103), half way along the length of the trench, was a shallow channel [112] with a concave profile. Channel [112] was 1.55m wide by 0.25m deep, and appeared to be on a northeast-southwest alignment. The channel contained a single orangey brown, silty sand fill (111). A further soft, dark brown, clayey silt soil horizon (110), 0.20m thick, was recorded as sealing channel [112] and layer (103).

4.1.8 The final deposits in Trench 1 were all made ground material. The earliest of these made ground deposits, observed directly above layer (110), was a firm, grey, mixed deposit (109) comprising separate sandy, silty, gravel and chalky elements, formed up to a depth of 0.50m. The CBM and rubble material contained within this deposit indicates a date of deposition during the 19th or 20th century. Truncating layer (109) was evidence for 20th century structures in the form of concrete foundations [107] and [125] and surfacing slabs [108] distributed throughout the trench. These structural elements had been later sealed by a concrete and rubble surfacing layer (106), 0.45m thick. This was later replaced by a formation layer of compact gravel supporting the current tarmac car park surface (105).

4.2 Trench 2 (Figure 4)

Plate 2. General View of Trench 2 Looking Northeast

4.2.1 Surface of Trench = 4.85m

Level (OD)	Depth BGL	Context Number	Description
4.85-4.70m	0.00m	(212)	Tarmac and gravel formation.
4.70-3.60m	0.15m	(201)	Made ground. Compact, dark brown, mixed deposit. Frequent CBM fragments.
3.60-3.42m	1.25m	(203)	Soil horizon. Soft, dark brown, clayey silt.
3.42-3.17m	1.43m	(204)	Alluvial deposit. Soft, mid brown, silty sand.
3.17-2.67m	1.68m	(205)	Alluvial deposit. Soft, light grey, sandy silt.
2.67-2.47m	2.18-	(206)	Alluvial deposit. Compact, grey, sandy gravel.

(NFE)	2.38m		

4.2.2 Trench 2 was located in the central area of the site, orientated northeast-southwest. The earliest deposit was a compact, grey, gravel with a sandy matrix (206), which at its highest was observed at 2.67m AOD.

4.2.3 Overlying gravel deposit (206) was a soft, light grey, sandy silt alluvial deposit (205), measuring up to 0.50m thick. Column sample <1> determined context (205) to be a tufa-rich deposit. Two palaeochannels were cut into the surface of alluvial layer (205), both aligned northwest-southeast. The smaller of the two channels, cut [209], was located in the central area of Trench 2, and had a gradual concave profile measuring 1.30m wide and 0.15m deep. Palaeochannel [209] was filled by a soft, mid to light brown, silty clay deposit (208). The second channel [211] was much larger, 5.50m wide with a depth of up to 0.95m. The channel had a flat based profile with slightly convex sides. At the base of cut [211] was an unworked, naturally-deposited piece of timber (207) 1.85m long, which had been sealed by the soft, greyish brown, sandy silty fill (210) of the channel. Analysis of timber (207) identifies it as yew (*Taxus*), and radiocarbon dating has indicated it is from the Late Neolithic period.

4.2.4 Sealing the two palaeochannels was a further deposit of soft, silty sand alluvial material (204), up to 0.20m thick, which contained occasional fragments of animal bone and pottery. Column samples <1> and <2> determined that the context was tufa-rich in content. Context (204) covered the full area of the trench. Deposited above this was a more organic, dark brown, clayey silt layer (203), of approximately the same thickness with inclusions of animal bone, a variety of 19th century pottery types and several peg and floor tile fragments. The fragments of animal bone recovered from contexts (203) and (204) were predominantly identified as cattle. Evidence for butchery was present.

4.2.5 Overlying soil horizon (203) was a thick layer of made ground (201), up to a 1.10m deep, which contained frequent examples of 20th century building debris. Truncating made ground (201) at the northeast end of Trench 2 was a 0.40m thick modern red brick wall [202] set on concrete foundations. The wall was aligned northeast-southwest, before turning approximately 45 degrees to continue on an eastern course. The complete sequence of deposits in Trench 2 was sealed by a formation layer of compact gravel supporting the current tarmac car park surface (212).

4.3 Trench 3 (Figure 5)

Plate 3. General View of Trench 3 Looking South

4.3.1 Surface of Trench = 5.65m

Level (OD)	Depth BGL	Context Number	Description
5.65-5.50m	0.00m	(301)	Hard-standing. Compact, dark grey, gravel hogging.
5.50-4.85m	0.15m	(302)	Made ground. Compact, yellowish brown, mixed deposit. Frequent CBM fragments.
4.40-3.42m	0.40m	(324)	Made ground. Compact, brown, clayey silt deposit. Frequent CBM fragments.
4.85-3.85m	0.70m	(317)	Made ground. Compact, brown, clayey silt deposit. Frequent CBM fragments.
3.42-3.22m	0.55m	(304)	Soil horizon. Soft, dark brownish grey, silt.
3.95-3.77m	1.02m	(314)	Soil horizon. Soft, dark brownish grey, silt.
3.95-3.83m	1.80m	(322)	Soil horizon. Soft, dark brownish grey, silt.
4.05-3.87m	0.68m	(305)	Peat deposit. Soft, dark brown, silt.
3.75-3.60m	1.92m	(313)	Peat deposit. Soft, dark brown, silt.
3.85-3.71m	0.85m	(306)	Alluvial deposit. Soft, light grey, silt.
3.90-3.68m	1.45m	(318)	Alluvial deposit. Soft, light brown, sandy silt.
3.95-3.65m	0.78m	(307)	Alluvial deposit. Soft, light brown, sandy silt.
3.90-3.66m	0.96m	(311)	Alluvial deposit. Soft, light brown, sandy silt.
3.85-3.57m	0.90m	(308)	Alluvial deposit. Soft, light grey, sandy silt.
3.57-3.45m	1.20m	(309)	Alluvial deposit. Soft, light brown, silt.
3.40-2.90m (NFE)	2.30-2.80m	(310)	Alluvial deposit. Compact, light grey, sandy gravel.

4.3.2 Trench 3 was located in the southwest corner of the site, orientated northwest-southeast. The earliest deposit was a compact, grey, gravel within a sandy matrix (310). At its highest it was observed at 3.40m AOD.

4.3.3 The earliest of the alluvial deposits to overlie the gravels was observed at the northwest end of the trench. It consisted of a light brown, silty deposit (309), 0.12m thick, followed by a light grey, sandy silt deposit (308), 0.30m thick. Alluvial deposit (308) contained the impression of two logs, approximately 0.15m in diameter, which had rotted *in-situ.* Both deposits were roughly 5.30m in extent.

4.3.4 In the southeast end of Trench 3 the gravels (310) had been truncated by palaeochannel [331]. The main body of palaeochannel [331] was 2.60m wide and over 0.80m deep, on a northeast-southwest alignment, with a concave profile. The upper edges of the channel formed a shallow gradient covering a distance of at least 8m. This channel contained three distinct silty fills (319), (320) and (321), all of which closely follow the contours of the cut. Deposited above this sequence of fills was a light brown, sandy silt, alluvial deposit (318), measuring up to 0.25m thick and extending for 3.80m. Similar deposits (307) and (311), recorded at approximately the same depth and being of the same thickness as deposit (318), were observed at the northwest end of the trench. All three deposits are roughly contemporary to one another.

4.3.5 Several features cut the alluvial sequence formed by (307, 311) and (318). Palaeochannel [330] was located at the southeast end of the trench, and appeared to follow the same course as the earlier palaeochannel [331]. Channel [330] was 2.35m wide by 0.80m deep, with a concave profile. It was filled by a mid brown, silty clay deposit (323). In the middle of the trench a third channel [327] had a wider, shallow profile measuring 5.40m wide by 0.20m deep. It contained a light brown, silty fill (312). At the northeast end of the trench was a possible pit cut [329], measuring 0.55m wide by 0.15m deep. It was filled by a dark brown, silty organic fill (328), which did not any finds. Given the lack of finds and shallow depth of the feature it is possible this may be the result of a depression rather than a deliberate cut-feature.

4.3.6 Sealing features [327], [329] and [330] was a layer of soft, dark brown, silty peat, up to 0.20m thick, extending across the full area of the trench in the form of layers (305) and (313). The content of context (313) was sampled and analysed as part of column sample <3>. Occasional 19th or 20th century finds were collected from context (305).

4.3.7 The peat horizon was overlain by a soft, dark brownish grey, silt soil horizon, up to 0.20m thick, observed at the same level across the trench as layers (304), (314) and (322). Pottery and glass fragments dating to the 19th or 20th century were recovered from these deposits. Deposited above layers (304), (314) and (322), and containing inclusions of a similar date, was a substantial layer of compact, brown, clayey silt made ground (317) and (324). At the southeast end of the trench layer (317) had been built up to a depth of 1m, whereas at the northwest end layer (324) was up to 0.25m thick. This 19th or 20th century layer was later truncated by a large feature [326], over 7m wide by 1m deep, which was only observed in the northeast section. The function of feature [326] is unclear, but may have been employed as part of a drainage system. Feature [326] contained two fills, (315) and (316), both of which were sandy silt gravel deposits containing occasional fragments of CBM. This substantial feature was cut by a large artificial concave channel [325], 4m wide and 0.75m deep, aligned northeast-southwest to follow the localised gradient at a direct right angle. Channel [325] was filled by a single green, sandy silt gravel deposit (303), containing occasional fragments of CBM.

4.3.8 The full trench profile was sealed by up to 0.65m of modern, yellowish brown, highly mixed made ground (302), which in turn was overlain by a 0.15m thick layer of compact gravel and tarmac (301), forming the layer of hard-standing for the existing yard area.

4.4 Trench 4 (Figure 6)

Plate 4. General View of Trench 4 Looking Southeast

4.4.1 Surface of Trench = SE end 7.30m AOD, Middle 6.75m AOD, NW end 5.70m AOD

Level (OD)	Depth BGL	Context Number	Description
6.75-6.25m	0.00m	(401)	Hard-standing. Compact, dark grey, gravel hogging.
6.25-5.47m	0.50m	(402)	Made ground. Hard, reddish brown, silty clay. Frequent CBM fragments and modern debris.
5.47-5.17m	1.28m	(403)	Made ground. Hard, mid brownish grey, clayey silt. Frequent fragments of chalk and CBM.
5.17-4.77m	1.58m	(404)	Yard surface. Compact, crushed red brick.
4.77-4.65m (NFE)	2.16-2.32m	(405)	Natural. Hard, light grey, chalk.

4.4.2 Trench 4 was located adjacent to the southeast boundary of the site, orientated northwest-southeast. The earliest deposit was a hard, light grey, natural chalk (405). The chalk was recorded at its highest at the southeast end of the trench (6.81m AOD), while at the northwest end of the trench the chalk was recorded at a height of 4.77m AOD.

4.4.3 Overlying the chalk (405) for a distance of 14m at the northwest end of the trench, was a compacted layer of crushed red brick (404), up to 0.40m thick, representing the remains of a former 19th or 20th century yard surface. Immediately above yard surface (404) was a layer of hard, mid brownish grey, clayey silt made ground (403), measuring 0.50m thick. It contained frequent fragments of irregularly distributed chalk and ceramic building material (CBM). Sealing this layer of made ground, and extending the full length of the trench, was a more substantial deposit of reddish brown, silty clay

made ground (402), measuring up to 0.75m thick, and decreasing in depth towards the southeast end of the trench. The tapering depth of made ground deposit (402) was clearly designed to level the area. Inclusions within the made ground consisted of frequent flecks of chalk, large fragments of CBM, and a quantity of domestic waste, indicating a 20th century date for the deposit. The sequence in Trench 4 was completed by a 0.50m thick layer of compact gravel (401), acting as a layer of hard-standing for the existing yard area.

4.5 Trench 5 (Figure 7)

Plate 5. General View of Trench 5 Looking Southwest

4.5.1 Surface of Trench = 4.93m AOD

Level (OD)	Depth BGL	Context Number	Description
4.93-4.78m	0.00m	(500)	Tarmac and compacted gravel formation.
4.78-4.40m	0.15m	(501)	Made ground. Compact, dark brown, mixed deposit. Frequent CBM fragments.
4.40-3.70m	0.53m	(502)	Soil horizon. Firm, dark brown, silty sand.
3.70-3.30m	1.23m	(503)	Peat deposit. Soft, dark brown, silt.
3.30-3.12m	1.63m	(504)	Alluvial deposit. Bands of grey sand and black silt.
3.12-2.97m	1.81m	(505)	Alluvial deposit. Loose, orangey grey, sandy gravel.
2.97-2.77m	1.96m	(506)	Alluvial deposit. Soft, light grey, sand.
2.77-2.67m (NFE)	2.16-2.26m	(507)	Alluvial deposit. Compact, light grey, sandy silt gravel.

4.5.2 Trench 5 was located in the northeast corner of the site and was orientated north-south. The earliest deposit, present across the full extent of the trench, was a compact, light grey, flinty gravel in a sandy silt matrix (507). At its highest the gravel was at 2.77m AOD.

4.5.3 Overlying the gravel was a sequence of alluvial deposits initially consisting of a 0.20m thick layer of light grey sand (506), followed by a 0.15m thick deposit of orangey grey, sandy gravel (505). The latest alluvial deposit (504) consisted of approximately nine alternating bands, each consisting of a lens of grey sand and black silt and measuring up to 200mm thick. These lenses potentially represent a regular phased cycle of alluvial deposition.

4.5.4 Deposited above the alluvial sequence was a 0.40m thick layer of soft, dark brown, silty peat (503), over which was a substantial dark brown, silty sand soil horizon (502), measuring up to 0.70m thick, containing frequent inclusions of CBM, pottery and glass dating from the 19th or 20th century, including a round-bottom soda bottle with the inscription BRATTON GRAVESEND. Truncating soil horizon (502) was a large soak-away [508], approximately 1.5m in diameter, constructed of red and yellow brick, located at the northern end of the trench.

4.5.5 Sealing soak-away [508] was a highly mixed layer of made ground (501), up to 0.40m thick. The made ground contained variable material, apparently dumped and subsequently compacted together, all of which contained 19th or 20th century building debris. Made ground (501) is associated with a late post-medieval and modern occupation horizon, as several structures were recording truncating the context. These structures are represented by basements constructed of concrete [509] and yellow brick [510], observed in the sections of Trench 5. The foundations of a small brick structure [511] were located at the southern end of the trench. Sealing all of these 19th or 20th century structures was a formation layer of compact gravel supporting current tarmac car park surface (500).

5. Finds and Samples

5.1 Artefacts retrieved during the evaluation trenching comprised an assemblage of pottery, ceramic building material and animal bone (Appendix B). The majority of the finds have been dated to the 19th/20th century, the exceptions being three sherds of pottery retrieved from deposit (103) dating to the mid 14th to mid 16th century.

5.2 Monolith samples were taken from four trenches (Trenches 1, 2, 3 and 4) by Quaternary Scientific (QUEST). The monolith samples were assessed in association with the fragment of timber (207) recovered. The assessment results revealed low concentration of environmental remains, although dating of organic sediments was possible. The fragment of timber was identified as yew and dates to the Late Neolithic period. The results of their assessment are detailed in Appendix B.

6. Conclusion

6.1 The evaluation successfully characterised both the stratigraphic sequence and archaeological potential of the site. Terrace gravels were present in Trenches 1, 2, 3 and 5, between a height of 2.67m and 3.40m AOD. This is consistent with the general topography of the generally level ground in the northern area of site, with the land rising gently to the south. Natural weathered chalk was observed in Trench 4 at a height of 6.81m, which is also consistent with the known geology of the area.

6.2 The archaeological evaluation identified that, of the five trenches excavated, four contained profiles consistent with gradually accumulation of alluvial deposits, with evidence of early palaeochannels cutting through the established alluvial sequence. Radiocarbon dating suggests these palaeochannels could have started to form during the Early Mesolithic period. Subsequent formation

of later soil horizons, potentially as early as the medieval period, followed by evidence of 19th and 20th century activity was also present. Trench 4 produced evidence of significant truncation, and removal of previously existing deposits as a result of modern landscaping. No evidence for human activity pre-dating the 19th century was identified during the course of the evaluation.

6.3 The sequence of deposits recorded in Trench 1 is consistent with an early alluvial environment, with the accumulation of alluvial silt and gravel horizons, prior to the phases of palaeochannel formation, represented by features [117] and [115] at the northwest end of the trench, which could have occurred from the Early Mesolithic onwards. Once the palaeochannels had silted up, further soil horizons formed. In the example of layer (103), the quantity of finds observed may indicate an artificial element to the soil accumulation, potentially resulting from a deliberate effort to raise the ground level in order to create a drier surface. Assessment of the finds recovered from layer (103) indicates the accumulation of these deposits may have occurred as early as the medieval period. By the 19th or 20th century, layer (109) indicates further efforts were made to raise the level of the ground by dumping more material prior to the construction of the known 20th century structures on site. The profile clearly demonstrates the demolition of these structures to allow the creation of the current town hall car park.

6.4 Trench 2 contained a much simpler series of deposits, represented by two palaeochannels [209] and [211] of varying size, truncating the terrace gravels (206), and sealed by alluvial deposition. Initial assessment of the fragment of yew (207) recovered from the base of palaeochannel [211] indicated it may have been of a later date than first thought as the alluvial silt in the base of Trench 1 indicates Early Mesolithic activity. However the yew in the base of Trench 2 has been dated to the Late Neolithic period. This difference in the date and sequence could either be due to incorrect dating from Trench 1 or the fills overlying the palaeochannels from Trench 1 to Trench 2 are actually different. Unfortunately it is not possible to determine which of these is likely to be correct, since both are of equal potential, From an archaeobotanical point of view, the date of the trunk is still of some interest since its age is within the same time-frame of the main period of yew growth on the peat surface in the Lower Thames Valley (*ca*. 5000 to 4000 cal yr BP). This date falls towards the end of the main period of growth within the valley, when yew began to decline. The current model for the Lower Thames Valley decline is that it was most likely due to increased waterlogging on the peat surface consequent of rising sea levels, although human activity may have been a contributory cause (Batchelor, 2009). In the case of the yew trunk from Crayford Town Hall however, little can be said about the yew because of its uncertain source location.

6.5 The deposits recorded in Trench 3 were the most complex observed on site, demonstrating multiple phases of palaeochannel formation. The recovery of finds dating to the 19th or 20th century suggest that the palaeochannels may have formed during the post-medieval period. Trench 3 also contained evidence of attempts to create drainage systems on the site over the past century. Both large drainage features [325] and [326] were cut through the same build up of 19th or 20th century made ground as observed in Trench 1 and 2.

6.6 Trench 5, the last of the four evaluation trenches to contain undisturbed profiles, did not produce any evidence for palaeochannels, although the earliest deposits recorded did represent an alternating sequence of alluvial silt and gravel deposition.

6.7 The excavation of Trench 4 did not identify the presence of any alluvial deposits. Instead, weathered chalk (405) was the earliest deposit. Overlying the chalk was an extensive sequence of made ground deposits, indicating a phase of horizontal truncation had taken place to facilitate the creation of a possible 19th or 20th century yard surface formed of crushed brick (404). This yard surface was not recorded in Trench 3, suggesting it had specifically been constructed on the firmer underlying chalk deposits, rather than the adjacent softer alluvial deposits. With the development of the site in the 20th century the yard surface (404) had been sealed beneath several layers of made ground, forming the current land surface.

6.8 The results of the five evaluation trenches indicates a similar sequence of events have occurred across the site over time, falling into clear phases. The earliest phase of activity on site relates to the deposition of extensive alluvial deposits, indicating the presence of a local river environment. Within this river environment, the formation of palaeochannels occurred from the Early Mesolithic onwards, creating a landscape of small channels running across the site.

6.9 A second phase of activity on site relates to the accumulation of soil horizons. The presence of these horizons indicates the environment within the area of the site must have been dry enough to allow their formation. The presence of possible peat deposits in Trenches 3 and 5 strongly suggests that parts of the immediate environment were still damp enough to allow waterlogged organic deposits to form. The quantity of finds recovered from several of the soil horizons indicate there may have been an artificial contribution to the ground formation, in order to raise the ground level and create a drier land surface. Finds recovered from Trench 1 indicate this may have been occurring as early as the medieval period, but the majority of the finds from other trenches date to the late post-medieval period.

6.10 The first significant human activity occurs in the last phase, with the deposition of substantial quantities of made ground material across the whole area of the site during the 19th and 20th centuries. The result of this activity is to raise the ground level further to facilitate the construction of structures in the northern half of the site. In the southern half of the site, a yard area appears to be constructed on the higher chalk ground at this time, followed by further attempts at drainage with the cutting of large artificial channels. All these 19th and 20th century features were subsequently demolished or backfilled to facilitate the formation of the site as we see it today.

7. Recommendations

7.1 The site does not contain any evidence of human activity pre-dating the late post-medieval period. No further fieldwork is recommended.

7.2 Based on the results of the geoarchaeological assessment it was recommended that further analysis of the fragment of yew be undertaken, consisting of radiocarbon dating, to determine a reliable date for the age of the wood. However, the analysis proved the date of the yew to be less significant i.e. it dated to the Late Neolithic and not Mesolithic period. Little can be said about the yew because of its uncertain source location therefore, no further work is required.

7.3 The final decision regards the requirement for further work lies with the London Borough of Bexley and its archaeology advisor, Mark Stevenson of GLAAS.

7.4 The archive, consisting of paper records, drawings, 35mm and digital photographs, will be deposited with the Museum of London within one year of the completion of the project.

7.5 As a minimum the results will be disseminated through a summary in the London Archaeology Round-Up and the online OASIS project (Appendix C).

8. Bibliography

AOC Archaeology Group (2009). *Crayford Town Hall, Crayford, London Borough of Bexley: A Written Scheme of Investigation of an Archaeological Evaluation.*

Institute for Archaeologists (2008). *Standard and Guidance for Archaeological Field Evaluations.*

MoLAS (2007). *Crayford Town Hall, Crayford, London Borough of Bexley: A Archaeological Desk-Based Assessment.*

Soil Mechanics (1998). *A Geo-Technical Investigation of the Crayford Town Hall Site.*

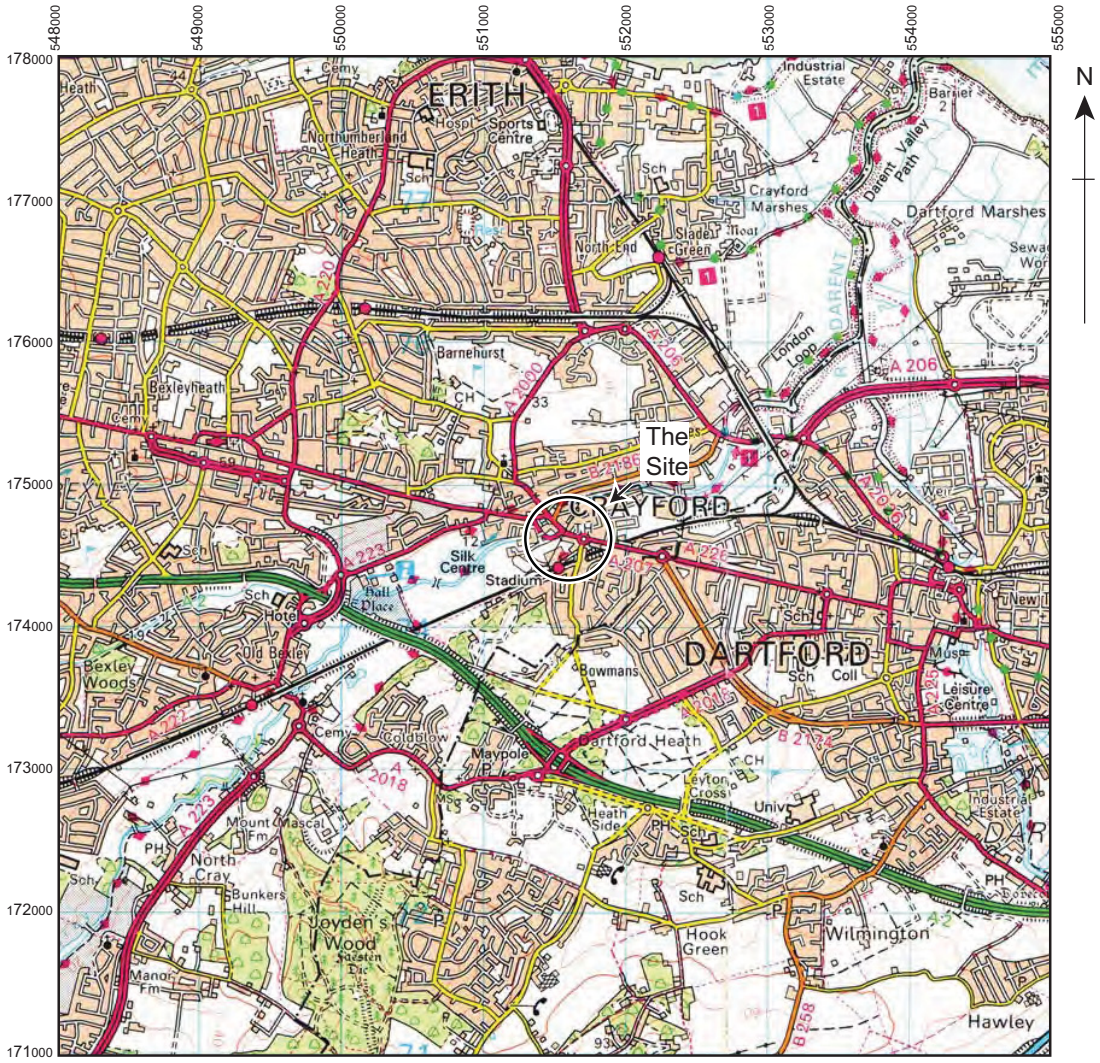


Figure 1: Site Location

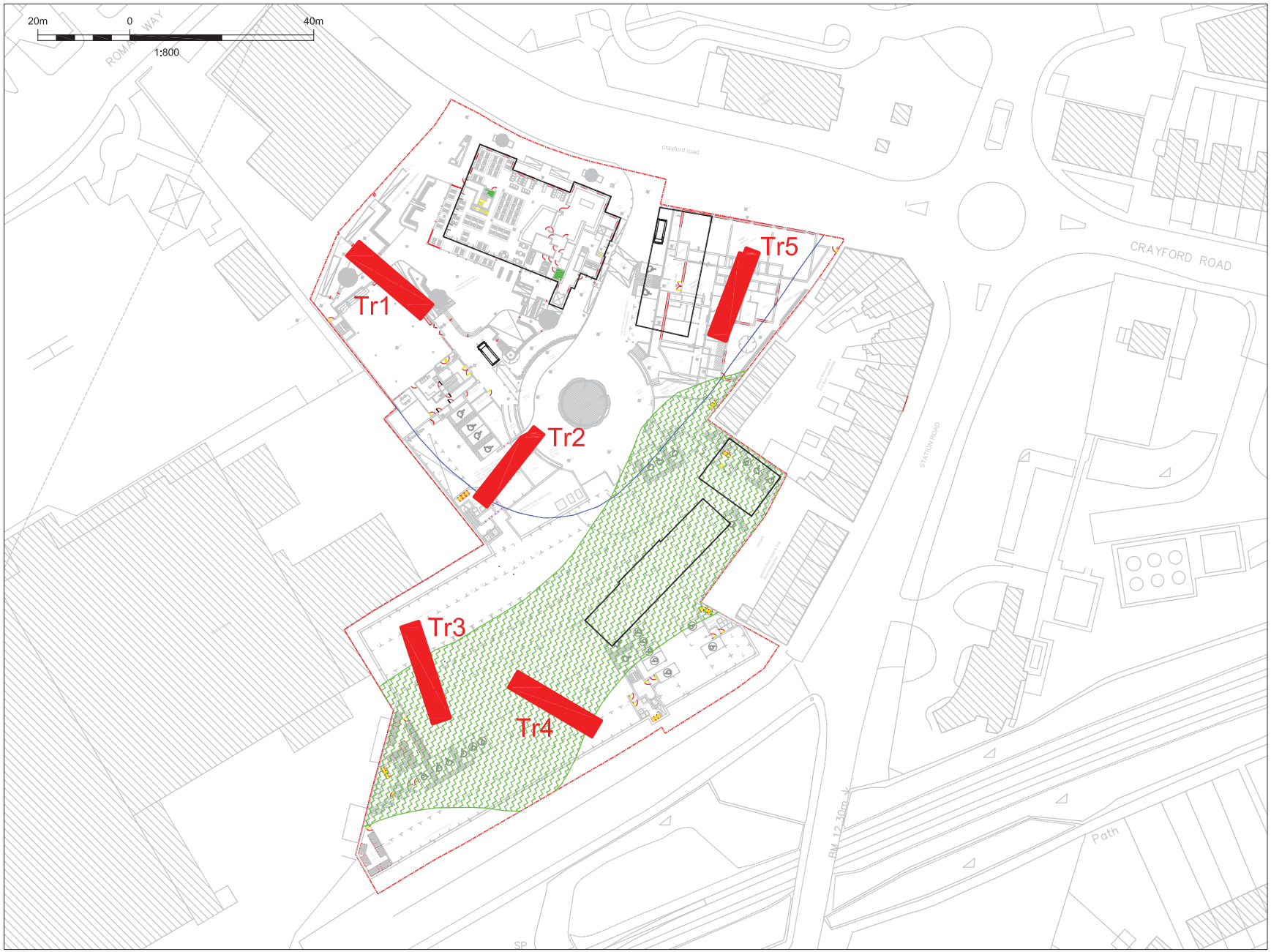


Figure 2: Detailed Site & Trench Location Plan

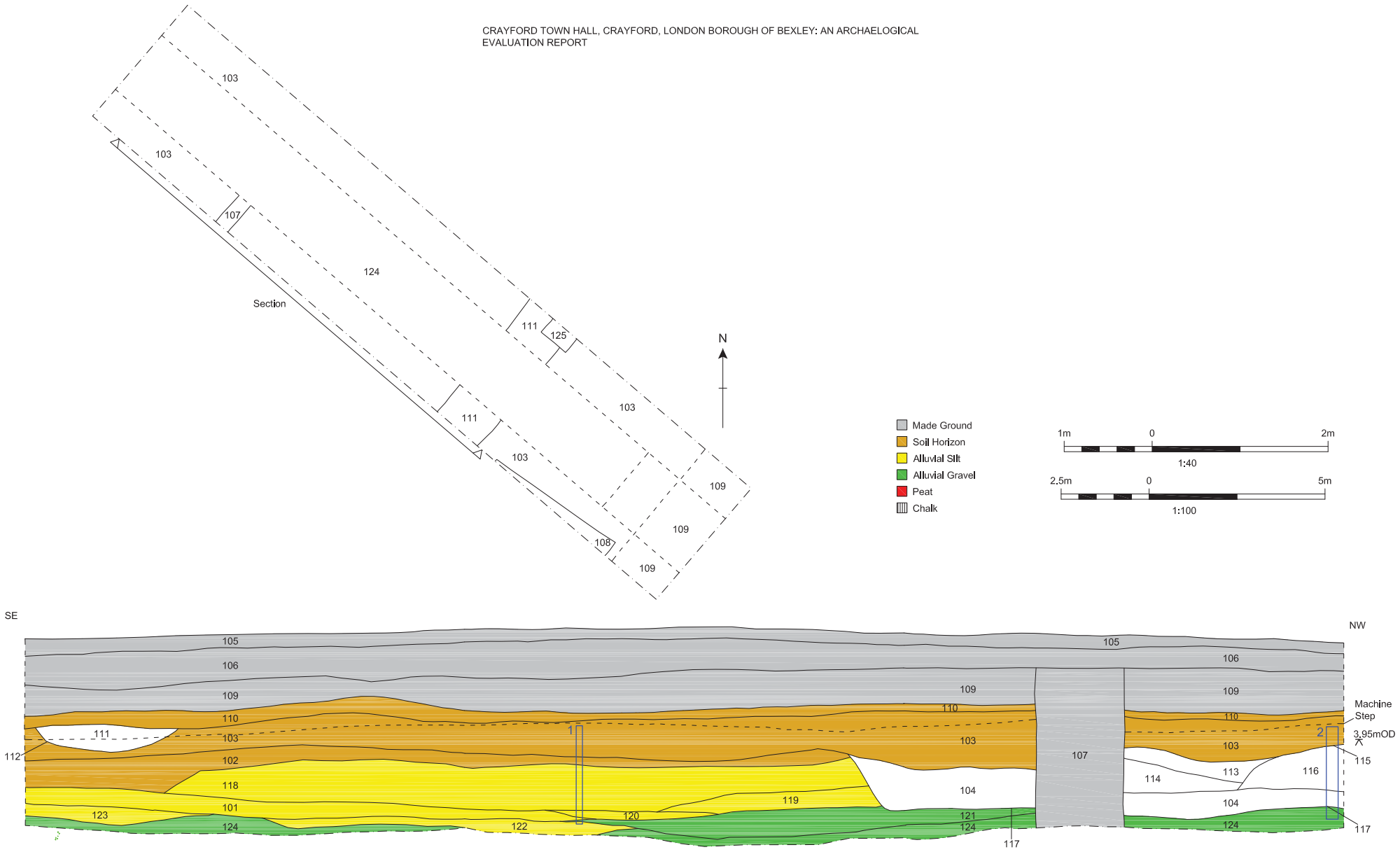


Figure 3: Trench 1: Plan (1:100) & Section (1:40)

AOC Archaeology Group

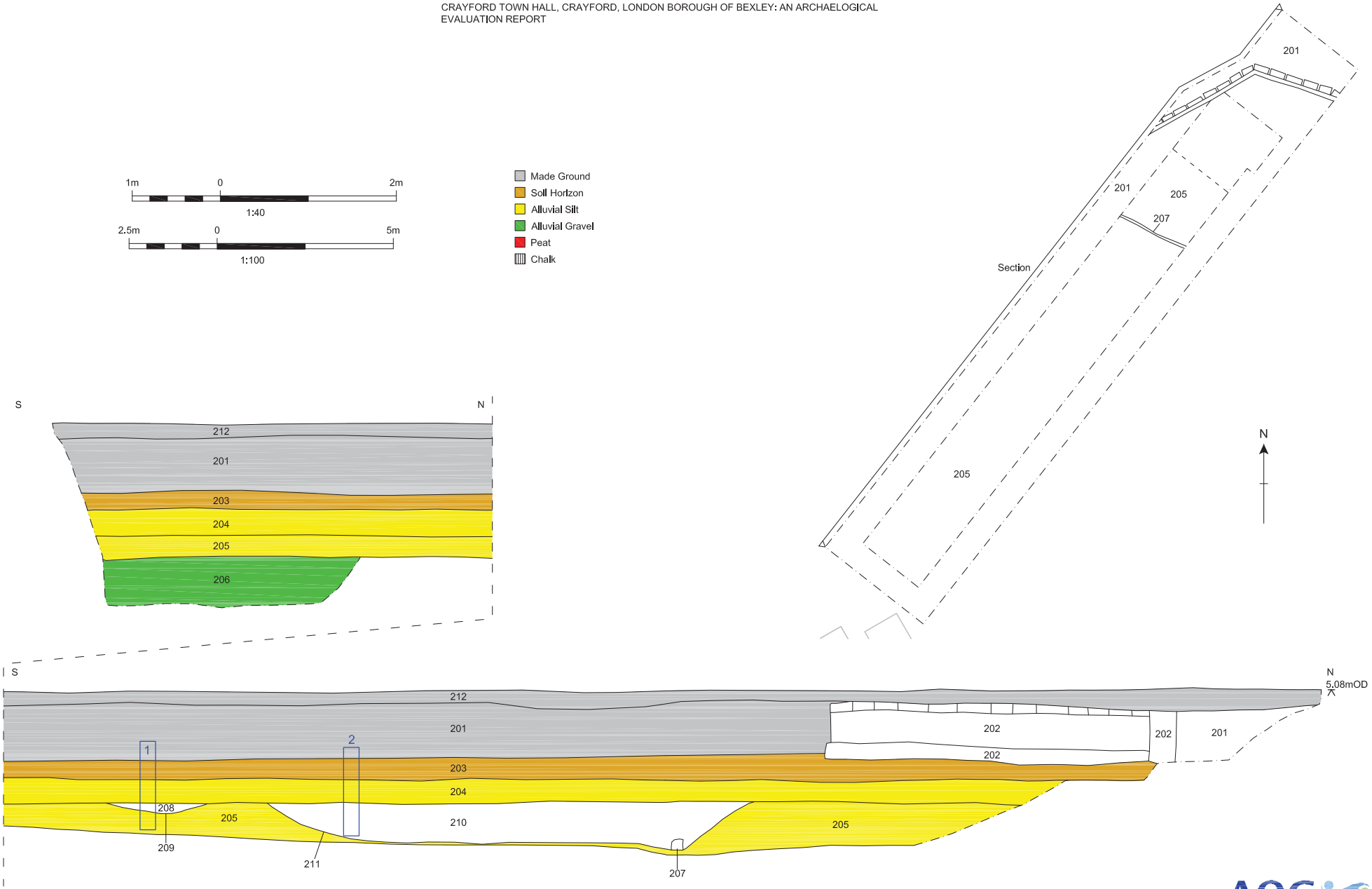


Figure 4: Trench 2: Plan (1:100) & Section (1:40)

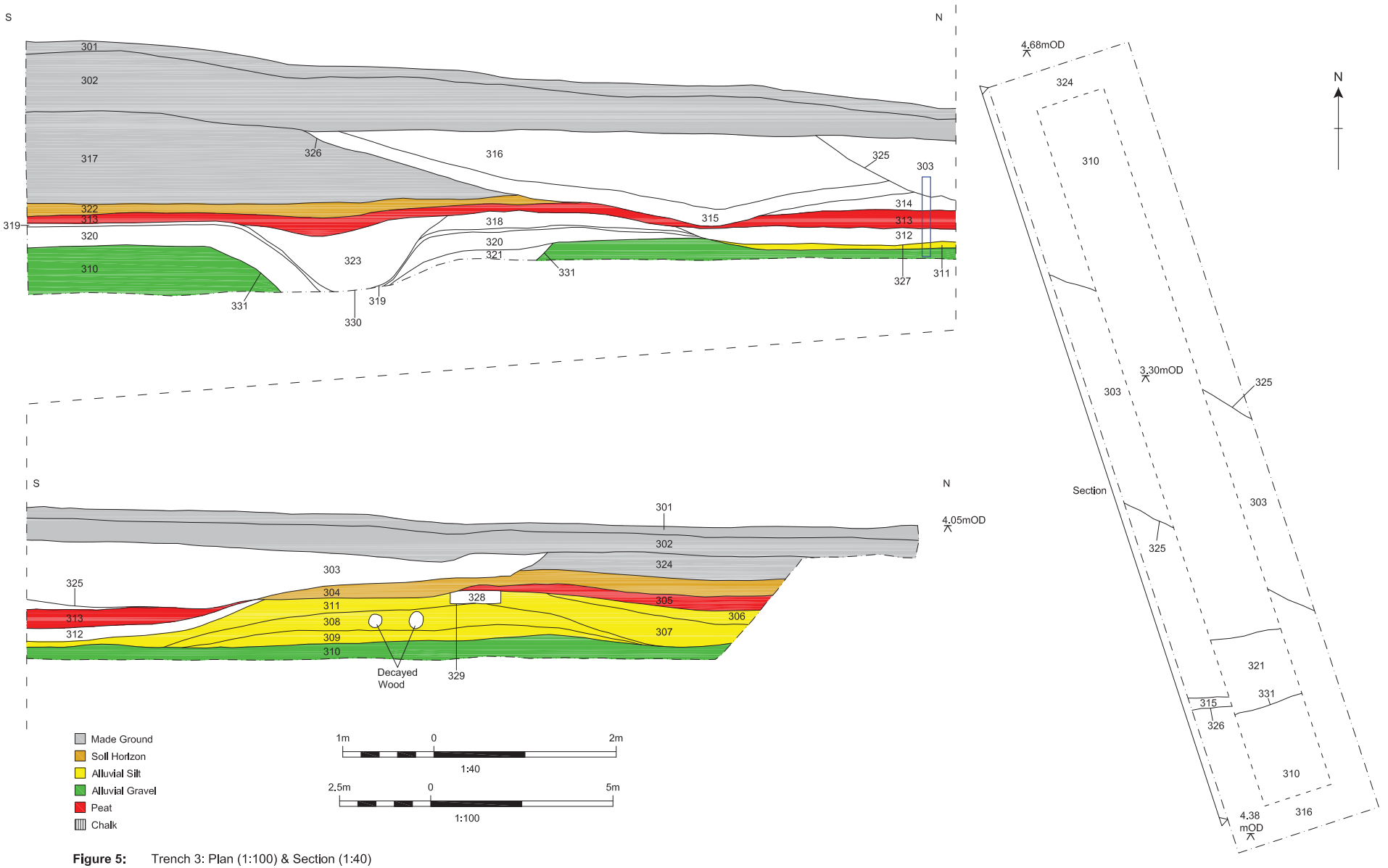


Figure 5: Trench 3: Plan (1:100) & Section (1:40)

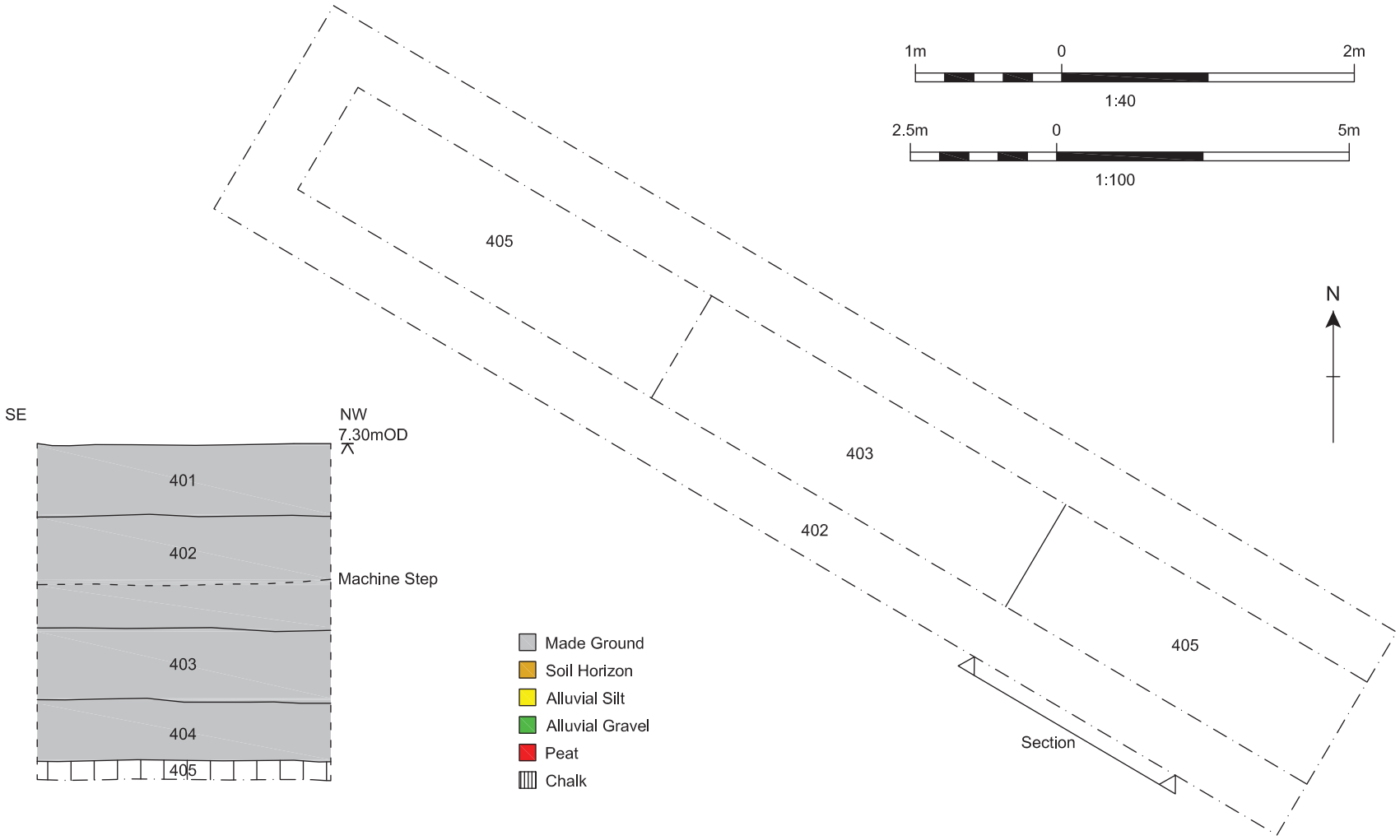


Figure 6: Trench 4: Plan (1:100) & Section (1:40)

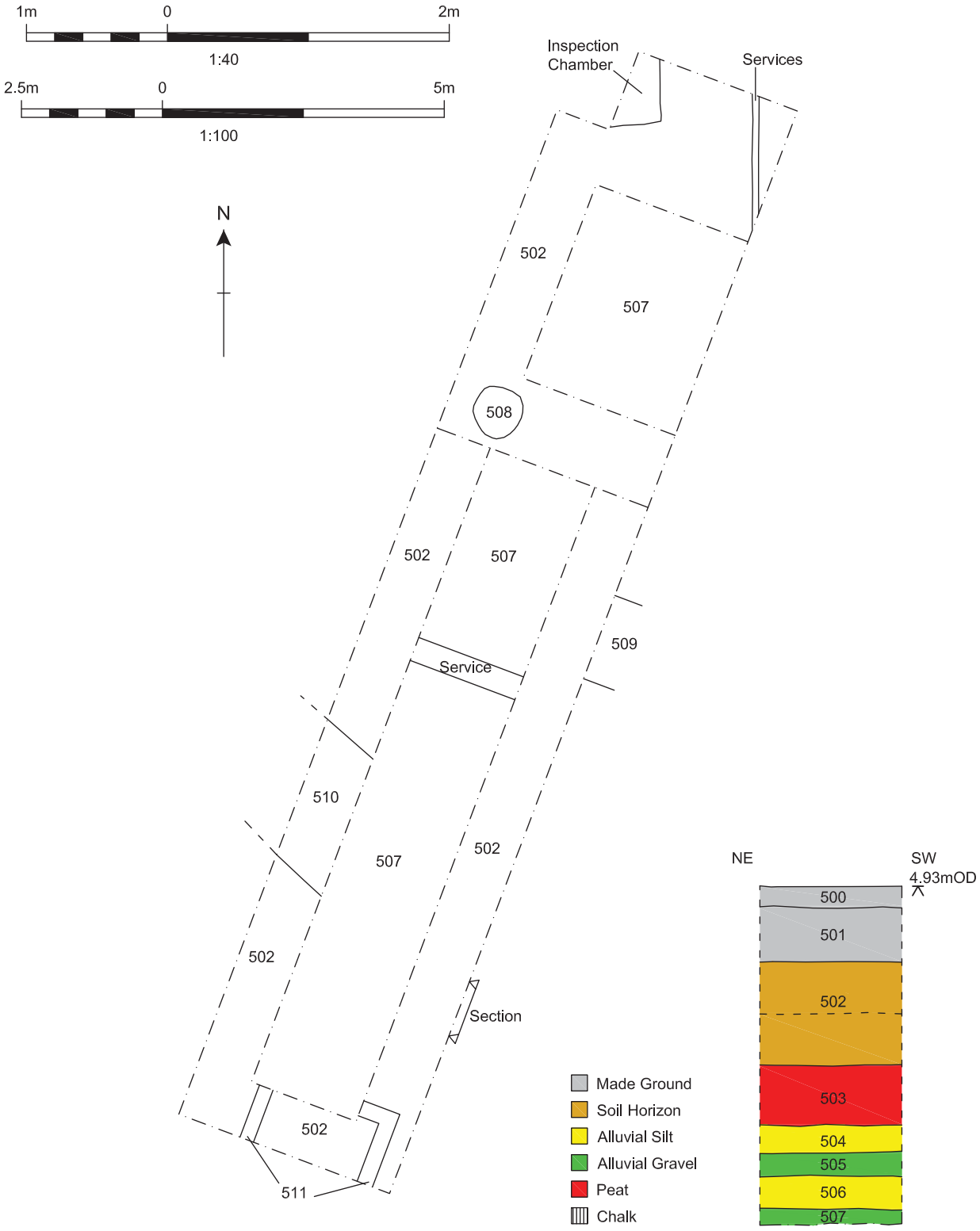


Figure 7: Trench 5: Plan (1:100) & Section (1:40)

Appendices

AOC Archaeology Group

Appendix A – Context Register

Context No.	Context Description	Length	Width	Depth
101	Alluvial Deposit	9.40m+	2.00m+	0.21m
102	Soil Horizon	12.40m+	2.00m+	0.42m
103	Soil Horizon	20.00m+	4.00m+	0.60m
104	Fill of Channel [117]	6.60m+	2.00m+	0.45m
105	Car Park Surface	20.00m+	4.00m+	0.15m
106	Modern Surface	20.00m+	4.00m+	0.45m
107	Modern Foundation	0.50m	0.50m	2.00m
108	Modern Surface	4.00m+	4.00m+	0.50m
109	Made Ground	20.00m+	4.00m+	0.50m
110	Soil Horizon	20.00m+	4.00m+	0.20m
111	Fill of Channel [112]	4.00m+	1.55m	0.25m
112	Cut of Channel	4.00m+	1.55m	0.25m
113	Fill of Channel [115]	1.65m	2.00m+	0.20m
114	Fill of Channel [115]	1.35m	2.00m+	0.40m
115	Cut of Channel	1.65m	2.00m+	0.50m
116	Alluvial Deposits	2.20m+	2.00m+	0.55m
117	Cut of Channel	6.60m+	2.00m+	0.70m
118	Alluvial Deposit	8.00m	2.00m+	0.55m
119	Alluvial Deposit	2.54m	2.00m+	0.21m
120	Alluvial Deposit	1.88m	2.00m+	0.11m
121	Alluvial Gravel	5.30m	2.00m+	0.30m
122	Alluvial Deposit	5.28m	2.00m+	0.18m
123	Alluvial Deposit	3.00m+	2.00m+	0.20m
124	Alluvial Gravel	20.00m+	2.00m+	N.F.E
125	Modern Foundation	0.50m	0.50m	2.00m
201	Made Ground	20.00m+	4.00m+	1.09m
202	Modern Foundation	3.84m	0.40m	1.30m
203	Soil Horizon	20.00m+	4.00m+	0.18m
204	Alluvial Deposit	20.00m+	2.00m+	0.21m
205	Alluvial Deposit	20.00m+	2.00m+	0.49m
206	Alluvial Gravel	20.00m+	2.00m+	0.20m
207	Timber	1.86m	0.14m	0.07m
208	Fill of Channel [209]	2.00m+	1.30m	0.13m
209	Cut of Channel	2.00m+	1.30m	0.13m
210	Fill of Channel [211]	2.00m+	5.50m	0.95m
211	Cut of Channel	2.00m+	5.50m	0.95m
212	Car Park Surface	20.00m+	4.00m+	0.15m

Context No.	Context Description	Length	Width	Depth
301	Yard Surface	20.00m+	4.00m+	0.15m
302	Made Ground	20.00m+	4.00m+	0.64m
303	Fill of Channel [325]	4.00m+	4.00m	0.75m
304	Soil Horizon	5.90m	2.00m+	0.20m
305	Peat Deposit	3.5m	2.00m+	0.18m
306	Alluvial Deposit	2.36m	2.00m+	0.14m
307	Alluvial Deposit	2.75m	2.00m+	0.32m
308	Alluvial Deposit	5.35m	2.00m+	0.28m
309	Alluvial Deposit	5.20m	2.00m+	0.12m
310	Alluvial Gravel	20.00m+	2.00m+	N.F.E
311	Alluvial Deposit	7.45m	2.00m+	0.24m
312	Fill of Channel [327]	5.40m	2.00m+	0.40m
313	Peat Deposit	12.50m	2.00m+	0.15m
314	Soil Horizon	3.20m	2.00m+	0.18m
315	Fill of Channel [326]	2.00m+	7.00m	0.10m
316	Fill of Channel [326]	2.00m+	7.00m	0.60m
317	Made Ground	5.00m	2.00m+	1.00m
318	Alluvial Deposit	3.80m	2.00m+	0.22m
319	Fill of Channel [331]	2.00m+	3.20m	0.40m
320	Fill of Channel [331]	2.00m+	3.20m	0.20m
321	Fill of Channel [331]	2.00m+	1.80m	0.18m
322	Soil Horizon	5.80m	2.00m+	0.12m
323	Fill of Channel [330]	2.00m+	2.25m	0.80m
324	Made Ground	3.20m	2.00m+	0.25m
325	Cut of Channel	4.00m+	4.00m	0.75m
326	Cut of Channel	2.00m+	7.00m	1.00m
327	Cut of Channel	2.00m+	5.40m	0.20m
328	Fill of Pit [329]	0.55m	0.50m+	0.12m
329	Cut of Pit	0.55m	0.50m+	0.12m
330	Cut of Channel	2.00m+	2.25m	0.80m
331	Cut of Channel	2.00m+	3.20m	0.60m+
401	Made Ground	21.00m+	4.00m+	0.50m
402	Made Ground	21.00m+	4.00m+	0.75m
403	Made Ground	14.00m	2.00m+	0.50m
404	Yard Surface	14.00m	2.00m+	0.40m
405	Natural Chalk	20.00m+	2.00m+	N.F.E
500	Car park Surface	20.00m+	4.00m+	0.15m
501	Made Ground	20.00m+	4.00m+	0.38m
502	Soil Horizon	20.00m+	4.00m+	0.70m

Context No.	Context Description	Length	Width	Depth
503	Peat Deposit	20.00m+	2.00m+	0.40m
504	Alluvial Deposit	20.00m+	2.00m+	0.18m
505	Alluvial Gravel	20.00m+	2.00m+	0.15m
506	Alluvial Deposit	20.00m+	2.00m+	0.20m
507	Alluvial Gravel	20.00m+	2.00m+	N.F.E
508	Soak-away	1.50m	1.50m	N.F.E
509	Modern Structure	1.00m+	1.50m	N.F.E
510	Modern Structure	2.50m	1.00m+	N.F.E
511	Modern Foundation	1.40m+	2.50m	N.F.E

Appendix B – Specialist Reports

Assessment of the Crayford Town Hall Finds

by
Paul Fitz

Ceramic Building Material

Twelve fragments of CBM were recovered during the course of the evaluation from three different contexts.Context **103** contained seven pieces of peg tile, one with a partial rounded peg hole. Context **203** had two peg tile pieces; a possible plain red floor piece and a small unidentified piece with frequent crushed stone temper inclusions. Finally, context **303** has one piece of uncertain tile or brick.

Glass

The recovery of glass fragments was limited to three fragments from two different contexts. A complete 'round-bottom soda' bottle with the inscription BRATTON GRAVESEND was retrieved from context (502). In addition to this a small sherd of green wine (?) bottle was recovered from context (304) whilst context (502) has a clear glass tumbler/glass with waved etched pattern toward the base. This is late nineteenth/ twentieth century in date.

The post-Roman pottery

by

Luke Barber

Post-Roman pottery was only recovered from context [103]. This deposit produced just three body sherds weighing 37g. Two of these (13g) conjoin, and are from the shoulder of a medium-fired oxidised jug with horizontal ribbing and external olive green glaze. The vessel is tempered with moderate fine/medium sand. The other sherd is tempered with sparse fine/medium sand but is notably harder fired and distinctly buff in appearance. The sherd has traces of external painted white slip decoration though whether deriving from a jar or globular jug/pitcher is uncertain. Both fabrics are in keeping with Wealden types of the late medieval period (eg LM 2.1 at Canterbury) but close dating on the current sherds is difficult. However they can safely be placed within a mid 14th- to mid 16th- date range.

Potential and Significance

The pottery assemblage from context [103] is too small and lacking in feature sherds to warrant any further analysis.

The Animal Bone

by

Lucy Sibun

Introduction

Six contexts produced a small animal bone assemblage. The bone was recovered from channels, alluvial deposits and soil horizons/made ground, three of which were dateable to the medieval and post-medieval periods. The dateable contexts ([103], [203], [204]) produced 25 fragments of bone in good condition, with a number of large fragments present.

Methodology

Wherever possible bone fragments have been identified to species and the skeletal element represented. The bone was identified using the in-house reference collection and Schmidt (1972). Elements that could not be confidently identified to species, such as long-bone and vertebrae fragments, have been recorded according to their size. The bone has been recorded according to the part and proportion of the bone present. NISP (Number of identified Species) have been calculated and include fragments recorded as cattle-sized

The assemblage has also been studied for signs of butchery, burning, gnawing and pathology and the state of fusion has also been noted.

Quantification

Table 1 represents the NISP (Number of Identified Specimens) for each phase.

Species	Medieval	Post-medieval
Cattle		21
Horse	3	
Dog	1	
total	4	21

Table 1: NISP counts for each phase

Assessment

The quantity of identifiable bone from both periods was high but the overall quantity very low. Both periods produced limited age at death data based upon epiphyseal fusion alone, as no dental evidence was present in the assemblage. Metrical information was available in medieval soil horizon [103] and butchery evidence was present in post-medieval made ground [203].

Potential and Significance

Despite the good condition of the bone, the small size of the dated assemblage means that there is no potential for further analysis.

Further Work

The bone assemblage has been fully recorded and listed for archive. A summary statement will be produced for the report.

Bibliography

Schmidt, E. 1972. 'Atlas of Animal Bones- for pre-historians, archaeologists and quaternary geologists.' Amsterdam: Elsevier Publishing Company.

CRAYFORD TOWN HALL, CRAYFORD ROAD, LONDON BOROUGH OF BEXLEY: INTERIM ENVIRONMENTAL ARCHAEOLOGICAL ASSESSMENT

by

C.P. Green, C.R. Batchelor & D.S. Young

Quaternary Scientific (QUEST), *School of Human and Environmental Sciences, University of Reading, Whiteknights, PO Box 227, Reading, RG6 6AB, UK*

INTRODUCTION

This report summarises the early findings arising out of the environmental archaeological assessment undertaken by Quaternary Scientific (QUEST), University of Reading in connection with the proposed development at Crayford Town Hall, Crayford Road, London Borough of Bexley (site code CFF09; National Grid Reference: TQ 5161 7456; Figures 1 and 2). During recent archaeological investigations AOC Archaeology Group (Clarke, 2009) recorded the presence of peat and a buried soil horizon within various trenches across the site. Quaternary Scientific attended the site to collect column and bulk samples through selected trenches for environmental archaeological assessment and analysis (if necessary).

The aim of this environmental archaeological assessment was to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In order to achieve this aim, the environmental archaeological assessment consisted of the following techniques:

1. Recording the lithostratigraphy to provide a preliminary reconstruction of the sedimentary history

2. Carrying out organic matter content and calcium carbonate determinations to enhance the results of the sedimentary descriptions
3. Radiocarbon dating to provide a provisional geochronological framework for the natural stratigraphic sequence
4. Assessment of the preservation and concentration of pollen grains and spores to provide a preliminary reconstruction of the vegetation history, and to detect evidence for human activities e.g. woodland clearance and cultivation
5. Assessment of the preservation and concentration of diatom frustules to provide a preliminary reconstruction of the hydrological history e.g. water quality and depth
6. Assessment of the preservation and concentration of macroscopic plant, insect and Mollusca remains from small bulk samples to provide a preliminary reconstruction of the vegetation history and general environmental context of the site.

This report also contains an addendum following up on the recommendations made during the initial assessment report. This additional piece of work was regarding the radiocarbon dating of a large yew (*Taxus baccata*) trunk that was recorded within the basal gravel of Trench 2. For reasons that are outlined in the Discussion section, this find was deemed of potential high significance and thus radiocarbon dating of the wood was recommended.

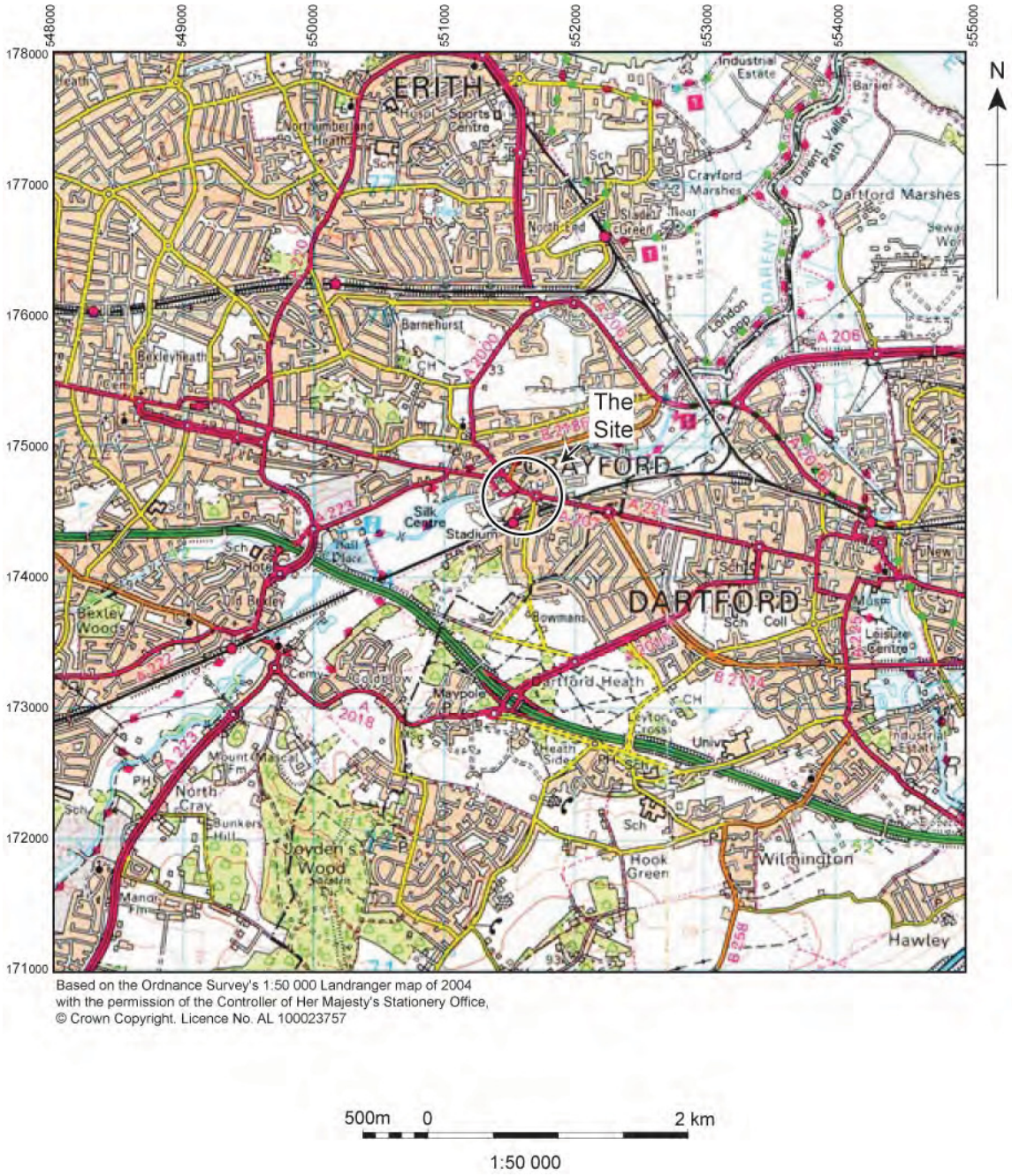


Figure 1: Location of Crayford Town Hall, Crayford Road, London Borough of Bexley

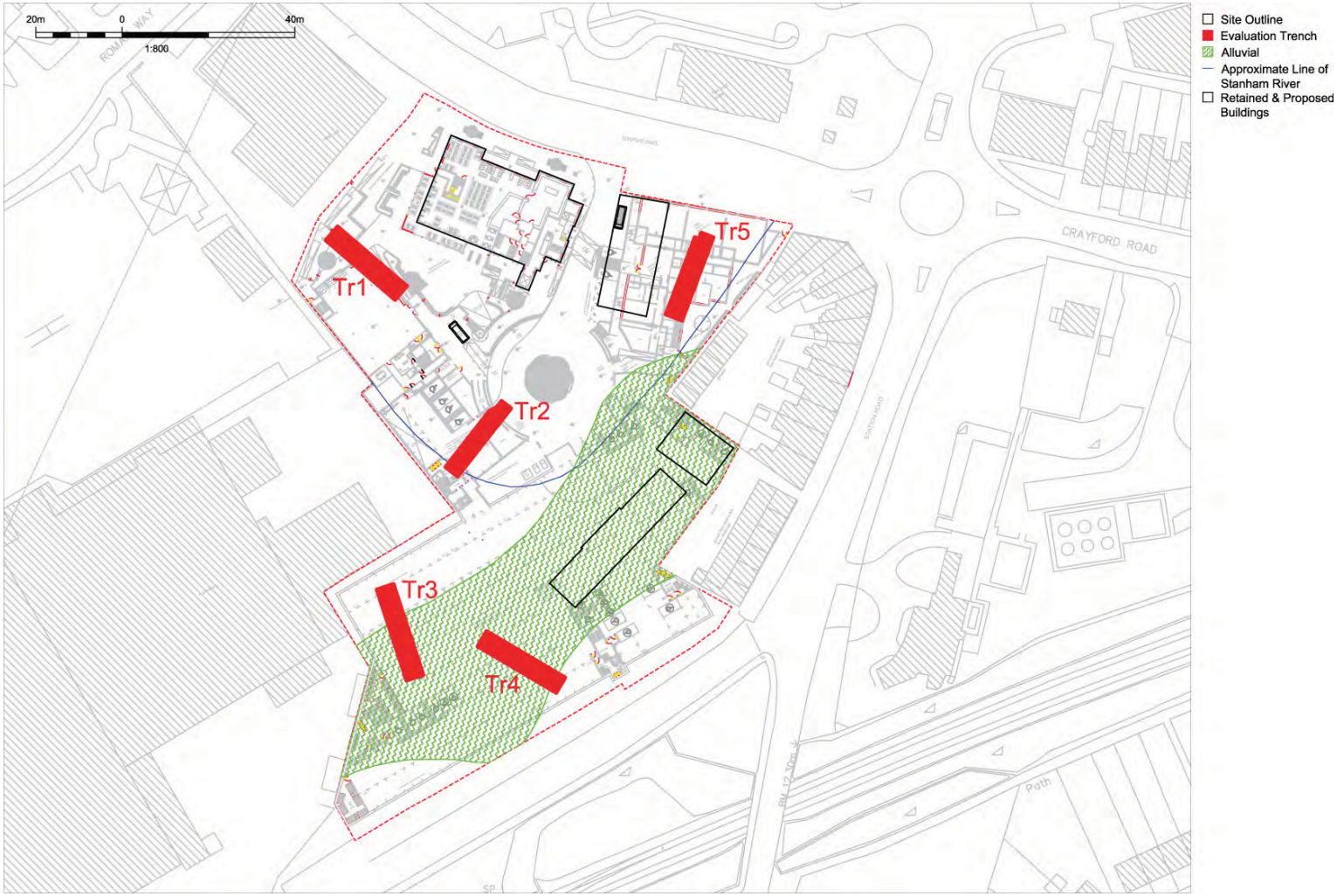


Figure 2: Detailed site and trench location plan, Crayford Town Hall, Crayford Road, London Borough of Bexley

METHODS

Field investigations

Six column samples were collected from the site and returned to the laboratory for environmental archaeological assessment. The chosen sequences provide a loose transect from N to S across the site (Figure 2). Column samples <5> and <6> were overlapping samples, respectively lower and upper, from the north west end of Trench 1, the most northerly trench (Figures 3 and 4; Tables 5 and 6). Column sample <4> was from the same face of Trench 1 further to the south-east (Table 4; Figure 5). Column samples <1> and <2> were from the SE-facing section in Trench 2 (Tables 1 and 2; Figures 6 and 7). Column sample <3> was from the middle of the east-facing section in Trench 3 (Table 3; Figures 8 and 9). Trench 4, slightly to the south and east of Trench 3 exposed only made ground resting directly on Chalk bedrock.

In addition, a set of bulk samples was collected from the stratigraphic sequence represented in Trench 3. Unfortunately, health and safety requirements did not permit the collection of a similar set of samples from Trench 1.

Lithostratigraphic descriptions

The lithostratigraphy of six Column samples <1> to <6> taken from Trenches 1, 2 and 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). 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, fine sand, silt, and clay; (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 to 6 and Figure 10.

Organic matter and calcium carbonate determination

Twenty sub-samples from Column samples <5> and <6> (Trench 1) were taken for determination of the organic matter and calcium carbonate content (Table 7; Figure 10*)*. These records were important as they can identify increases in organic matter possibly associated with more terrestrial conditions, and can quantify the concentrations of calcium carbonate recognised in the lithostratigraphic descriptions. The organic matter content was determined by standard procedures involving: (1) drying the sub-sample at 110^0C for 12 hours to remove excess moisture; (2) placing the sub-sample in a muffle furnace at 550°C for

2 hours to remove organic matter (thermal oxidation), and (3) re-weighing the sub-sample obtain the 'loss-on-ignition' value (see Bengtsson and Enell, 1986). In order to determine the calcium carbonate concentration, the same sample is reheated to 950^{o}C for two hours; the sample is re-weighed and the difference between the organic matter content and calcium carbonate values determined

Radiocarbon dating

One sub-sample was extracted towards the base of Column sample <5> (Trench 1) for radiocarbon dating. No datable macrofossils (seeds/wood) were present and thus a bulk organic-rich sample was extracted for radiocarbon dating. The sample was submitted for radiocarbon dating to Beta Analytic INC, Radiocarbon Dating Laboratory, Florida, USA. The results have been calibrated using OxCal v4.0.1 Bronk Ramsey (1995, 2001 and 2007) and IntCal04 atmospheric curve (Reimer *et al*., 2004). The results are displayed in Table 8.

Pollen assessment

Ten sub-samples from Column samples <5> and <6> (Trench 1) were extracted for an assessment of pollen content. The pollen was extracted as follows: (1) sampling a standard volume of sediment (1ml); (2) adding two tablets of the exotic clubmoss *Lycopodium clavatum* to provide a measure of pollen concentration in each sample; (3) deflocculation of the sample in 1% Sodium pyrophosphate; (4) sieving of the sample to remove coarse mineral and organic fractions (>125µ); (5) acetolysis; (6) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm^{3}); (7) 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). The assessment procedure consisted of scanning the prepared slides, and recording the concentration and preservation of pollen grains and spores, and the principal taxa on four transects (10% of the slide) (Table 9).

Diatom assessment

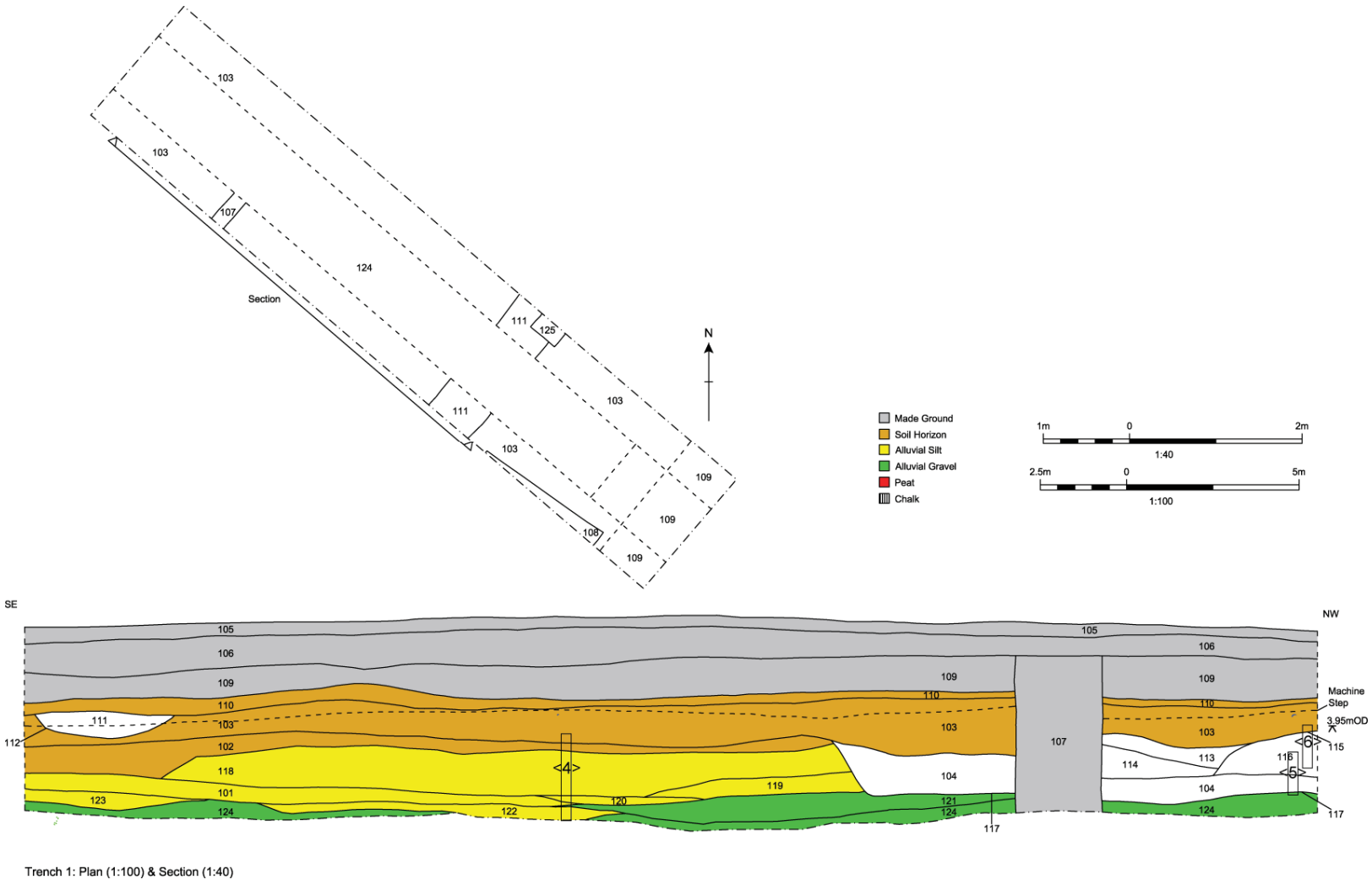
Six sub-samples from Column samples <5> and <6> (Trench 1) were extracted for the assessment of diatoms. The diatom extraction involved the following procedures (Battarbee *et al.,* 2001):

1. Treatment of the sub-sample (0.2g) with Hydrogen peroxide (30%) to remove organic material and Hydrochloric acid (50%) to remove remaining carbonates
2. Centrifuging the sub-sample at 1200 for 5 minutes and washing with distilled water (4 washes)
3. Removal of clay from the sub-samples in the last wash by adding a few drops of Ammonia (1%)
4. Two slides prepared, each of a different concentration of the cleaned solution, were fixed in mounting medium of suitable refractive index for diatoms (Naphrax)

The assessment procedure consisted of scanning the prepared slides, and recording the concentration and preservation of diatom frustules (Table 10).

Bulk sample assessment

Five small bulk samples from selected lithostratigraphic units in Column samples <5> and <6> (Trench 1) and two large bulks samples collected from Trench 3, were processed by wet sieving for the recovery of archaeobotanical, zooarchaeological and artefact remains. Up to a 1-litre subsample was extraced from each of the bulk samples and was processed by wet-sieving using 300 micron, 500 micron and 1mm mesh sizes. Both fractions from each sample were scanned under a stereozoom microscope at x7-45 magnifications and the macroscopic remains were recorded (Table 11).



Trench 1: Plan (1:100) & Section (1:40)

Figure 3: Trench 1 archaeological section diagram, Crayford Town Hall, Crayford Road, London Borough of Bexley

Figure 4: Plate illustrating the position of Column samples <5> (lower) and <6> (upper), Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Figure 5: Plate illustrating the position of Column sample <4>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

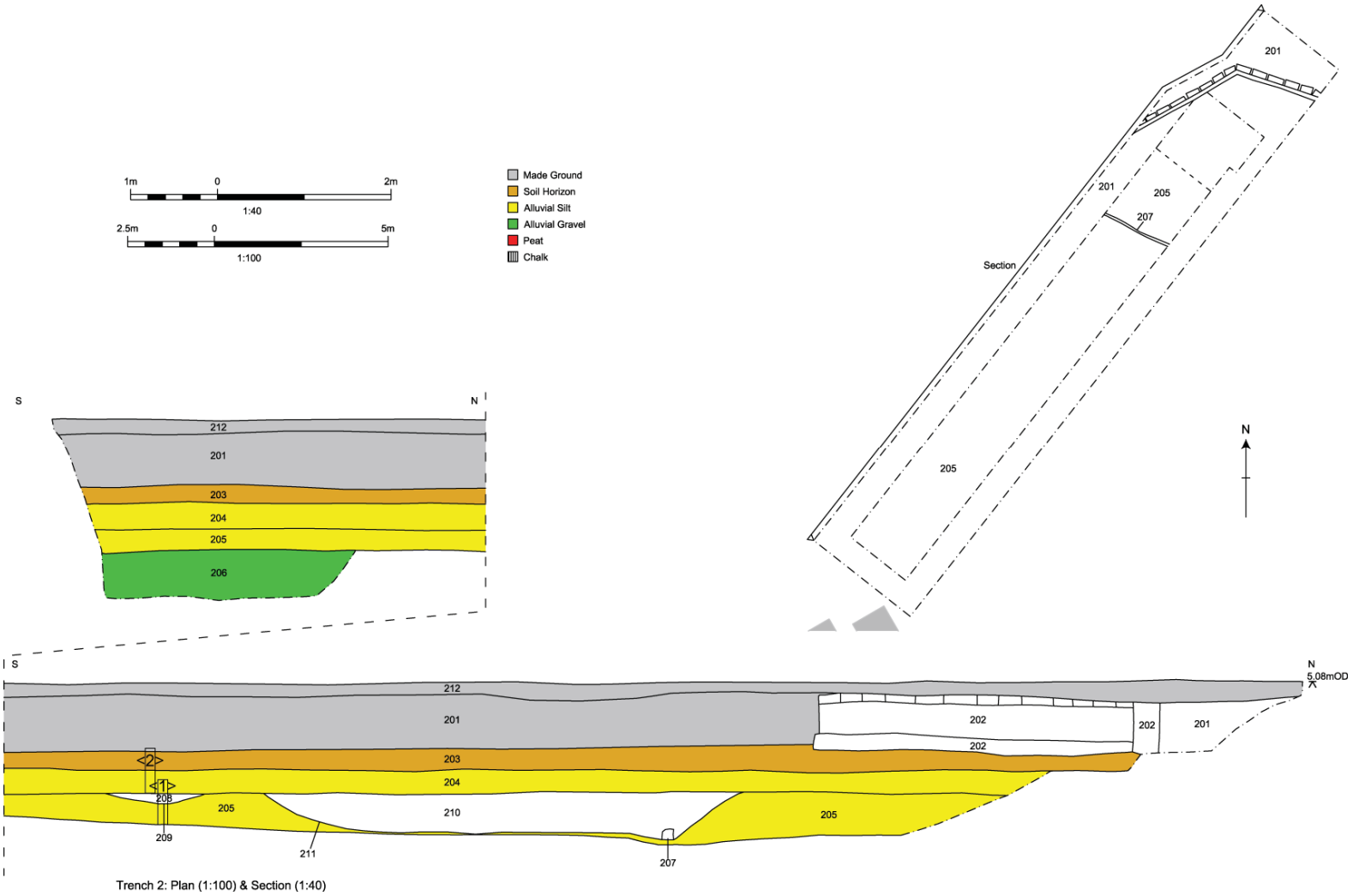
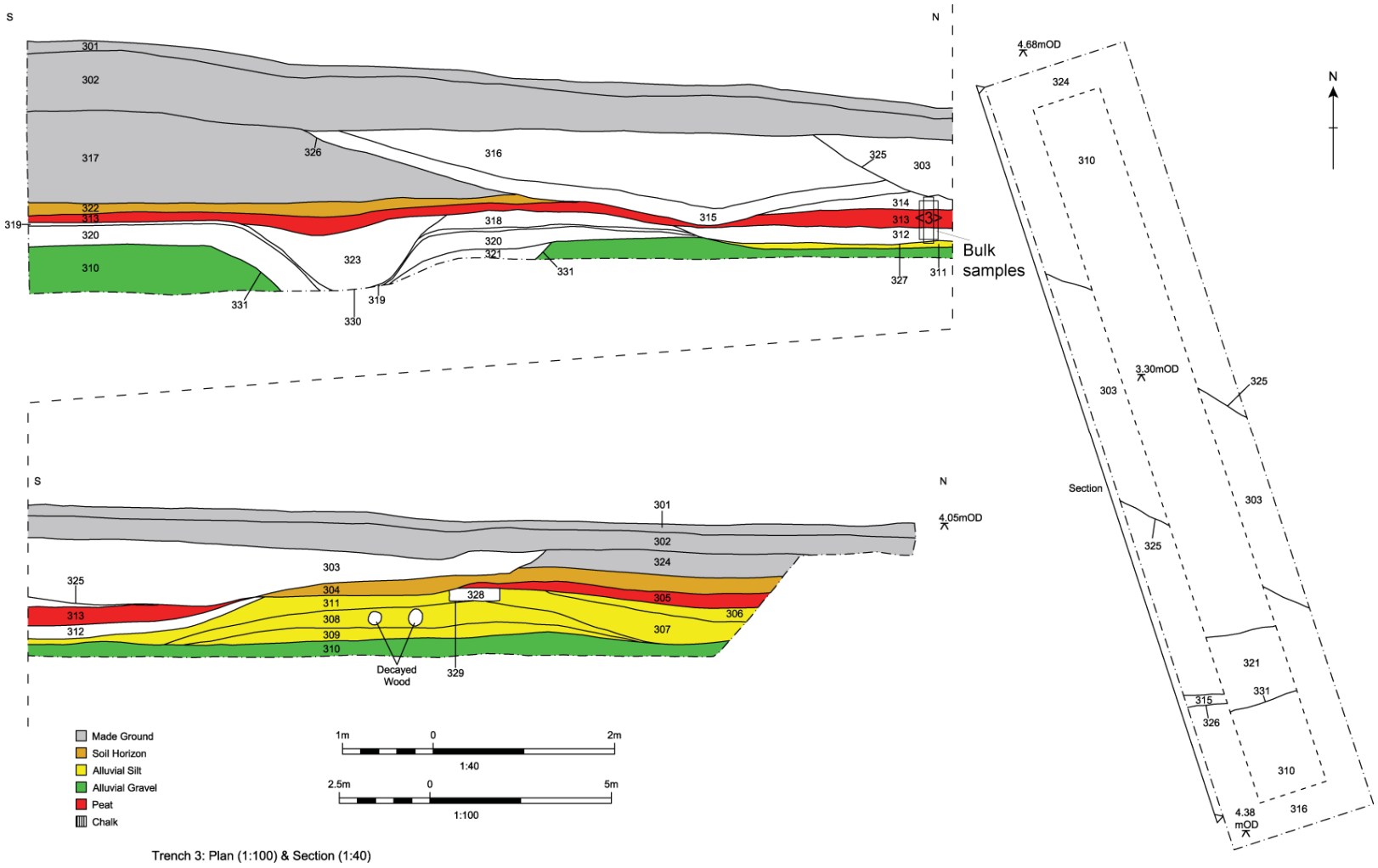


Figure 6: Trench 2 archaeological section diagram, Crayford Town Hall, Crayford Road, London Borough of Bexley

Figure 7: Plate illustrating the position of Column samples <1> (lower) and <2> (upper), Trench 2, Crayford Town Hall, Crayford Road, London Borough of Bexley



Trench 3: Plan (1:100) & Section (1:40)

Figure 8: Trench 3 archaeological section diagram, Crayford Town Hall, Crayford Road, London Borough of Bexley

Figure 9: Plate illustrating the position of Column sample <3>, Trench 3, Crayford Town Hall, Crayford Road, London Borough of Bexley

RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS

In Trench 1, Column samples <5> and <6> (Tables 5 and 6; Figures 3, 4 and 10) recorded a superficial layer, Column <6> Unit 5, containing remains of probable food waste in the form of shell fragments of Common Mussel (*Mytilus edulis*) and remains of terrestrial Mollusca. This layer, approximately equivalent to context (103) might be a disturbed soil but its contact with underlying sediments is sharp and there is no evidence of a gradational transition which might represent the B and C horizons of a soil. The underlying sediments form a sequence of alternating horizontally bedded darker silt-rich beds and paler silty beds rich in tufa debris and mollusc remains, equivalent to contexts (116) and (104). In the lower part of the sequence, Column <5> Units 7 and 3, thin layers of peat are present and throughout the lower part of the sequence *in situ* vertical root channels penetrate the sediment. At the base of the sequence a clayey flint gravel was recorded in Column <5> Unit 1 and is probably equivalent to context (124).

Column sample <4>, also in Trench 1 (Table 4; Figures 3 and 5) similarly records a superficial layer approximately equivalent to context (103). This layer contains the remains of edible shellfish in the form of shells of Common Oyster (*Ostrea edulis*) and cf. *Mytilus edulis* (Common Mussel). Charcoal is also present. As in Column <6>, this layer might be a disturbed soil, but as in Column <6> its contact with the underlying sediment is sharp and there is no evidence for the development of horizonisation. The underlying sediments coarsen downward from clayey silts (Unit 3) to gravelly sand (Unit1). The uppermost unit (Unit 3) is a thin peaty silt. Tufa debris is present throughout and *in situ* vertical root channels penetrate the sediment of Unit 2. This sediment sequence includes contexts (118), (120), (121) and (122).

A similar sequence with 'soil' resting directly on peat overlying alternating beds of silt and gravel was recorded in Trench 5 at the eastern extremity of the site.

In Trench 2, Column samples <1> and <2> (Tables 1 and 2; Figures 6 and 7) record a thin superficial layer of olive brown fine sand, column <2> Unit 2, which rests with a very sharp contact on the underlying sediment. This layer is probably Made Ground, equivalent to context (201). Underlying the sand is a very dark brown stony layer, Column <2> Unit 1, which includes CBM down to a level of more than 1.0m bgs and is approximately equivalent to context (203). Similar material is present in the upper part of Column <1> (Unit 3) and rests with a sharp contact on the underlying sediments. This stony layer is probably a disturbed soil, but as in Trench 1 there is no evidence of downward gradation into parent

material. The underlying sediments, equivalent to contexts (204), (205), (210) form a sequence of tufa-rich sands.

In Trench 3, Column sample <3> (Table 3; Figures 8 and 9) records a thin, compact, stony superficial layer (Unit 3), approximately equivalent to context (303), resting with a very sharp contact on silty peat, equivalent to context (313). The peat becomes less silty downward with scattered grains and pieces of tufa. The peat rests on horizontally bedded fine sand that becomes slightly gravelly downward and is approximately equivalent to contexts (310), (311) and (312).

In all the trenches, the uppermost layer recorded in the column samples was a poorly sorted unit containing material of anthropogenic origin. It has some of the characteristics of a disturbed soil A horizon but nowhere can it be traced downward through B and C horizons into alluvial parent material. If it is a soil, it has been severely disturbed by anthropogenic activity on its surface and it seems possible that it may, in part at least be made ground.

The underlying sediment sequences in all the trenches appear to be floodplain alluvium of a river with access to abundant tufa accumulations. The alternation of tufa-rich silts and sands with much more organic units including peats, suggests periods of relative stability, allowing the development of terrestrial conditions on the floodplain surface, alternating with flooding episodes. The presence of terrestrial mollusc species in the tufa-rich sediments probably reflects the proximity of the site to the adjacent valley side. The only evidence of a possible nearby human presence during the accumulation of these sediments is the occasional occurrence of charcoal (all <2mm).

Column samples <5> and <6> from Trench 1 contained the best peat and tufa sequence from the site and thus was selected for environmental archaeological assessment.

Table 1: Lithostratigraphic description of Column sample <2>, Trench 2, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
4.28 to 4.23	0.73 to 0.78	2	(201)	2.5Y4/4 olive brown; very well sorted very slightly silty fine sand; massive; no acid reaction; very sharp contact with
4.23 to 3.78	0.78 to 1.23	1	(203)/(204)	10YR2/2 very dark brown; very poorly sorted gritty sandy silt with sub-angular flint clasts (up to 25mm); massive; root channels with iron-rich coatings; scattered plant remains including seeds; scattered mollusc shell fragments; CBM at 1.17m bgs; strong acid reaction.

Table 2: Lithostratigraphic description of Column sample <1>, Trench 2, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
3.84 to 3.70	1.17 to 1.31	3	(204)	2.5Y3/2 very dark greyish brown; poorly sorted slightly sandy pebbly silt (clasts up to 50mm mainly well-rounded Tertiary flint pebbles); massive but with many well-defined irregular inclusions of sand varying in colour and texture ; root channels with iron-rich coatings; scattered root remains; scattered mollusc shell fragments; strong acid reaction; sharp contact with:
3.70 to 3.58	1.31 to 1.57	2	(208)	2.5Y3/3 dark olive brown; moderately sorted silty fine sand with sand-size tufa grains as a subsidiary component; massive; scattered root and faunal channels with glazed botryoidal iron-rich coatings; scattered root remains; scattered plant remains; scattered mollusc shell fragments; strong acid reaction; sharp contact with:
3.58 to 3.34	1.57 to 1.67	1	(205)	2.5Y4/4 olive brown; well sorted slightly silty fine sand rich in sand-size tufa grains; massive; strong acid reaction.

Table 3: Lithostratigraphic description of Column sample <3>, Trench 3, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
3.30 to 3.19	1.10 to 1.21	3	(303)/(314)	2.5Y5/4 light olive brown; very poorly sorted gritty gravelly clayey fine sand with flint and greensand clasts up to 50mm; massive and compact; strong acid reaction; very sharp contact with:
3.19 to 2.89	1.21 to 1.51	2	(314)/(313)	2.5Y3/2 very dark greyish brown to black; silty peat down to c.1.35m bgs passing down into slightly sandy peat with sub-angular flint clasts (up to 20mm) at base ; moderate acid reaction in silty peat, none in sandy peat; very sharp contact with:
2.89 to 2.80	1.51 to 1.60	1	(312)/(311)	2.5Y4/2 dark greyish brown; well sorted silty fine sand with scattered sub-angular flint clasts (up to 20mm); weakly defined horizontal bedding; scattered root channels and root remains; strong acid reaction.

Table 4: Lithostratigraphic description of Column sample <4>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
3.91 to 3.89	0.00 to 0.02	5	(103)	2.5Y3/2 very dark greyish brown; very poorly sorted stony gritty sandy silt with clasts of sub-angular flint (up to 35mm); massive; broken mollusc shell including fragments of cf. *Mytilus edulis* (Common Mussel) and a complete upper valve of immature *Ostreaedulis* (Common Oyster); scattered fragments of charcoal; strong acid reaction; sharp contact with:
3.89 to 3.64	0.02 to 0.27	4	(103) / (102)	2.5Y3/2 very dark greyish brown to black; peaty silt; massive; moderate acid reaction; sharp contact with:
3.64 to 3.26	0.27 to 0.65	3	(118)	2.5Y4/2 dark greyish brown; well sorted clayey/silty tufa-rich fine sand; massive; root channels with iron-rich coatings; scattered detrital plant remains; scattered broken mollusc shell; strong acid reaction; well-marked transition to:
3.26 to 2.97	0.65 to 0.94	2	(120)/(101)/	2.5Y4/3 olive brown; well sorted silty fine sand with sand-size tufa grains as a

			(121)/(122)	subsidiary component and well rounded Tertiary flint pebbles (up to 20mm) at base; massive; *in situ* vertical root channels with iron-rich coatings; scattered mollusc shell fragments; scattered small charcoal fragments; pieces of tufa encrustation, mostly tubular(up to 5mm diam); strong acid reaction; well marked transition to:
2.97 to 2.91	0.94 to 1.00	1	(122)	2.5Y7/1 light grey; poorly sorted tufa-rich gravelly sand with well rounded Tertiary flint pebbles (up to 20mm), occasional chalk pellets and numerous pieces of tufa encrustation, mainly tubular (up to 5mmdiam); strong acid reaction.

Table 5: Lithostratigraphic description of Column sample <5>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
3.95 to 3.92	1.50 to 1.53	10	(103)	2.5Y5/2 greyish brown; moderately sorted tufa-rich silt; massive; common *in situ* vertical root channels; fragments of mollusc shell; strong acid reaction; well marked transition to:
3.92 to 3.90	1.53 to 1.55	9	(116)	2.5Y4/2 dark greyish brown; moderately sorted clayey silt with grains of tufa sand and pieces of tufa encrustation; massive; common *in situ* vertical root channels; fragments of mollusc shell; strong acid reaction; well marked transition to:
3.90 to 3.86	1.55 to 1.59	8	(116)	2.5Y6/2 light brownish grey; moderately sorted clayey silt with very common grains of tufa sand and pieces of tufa encrustation; massive; common *in situ* vertical root channels; fragments of mollusc shell; strong acid reaction; well-marked transition to:
3.86 to 3.84	1.59 to 1.61	7	(116)	2.5Y2.5/1 black; silty peat; moderate acid reaction; well-marked transition to:
3.84 to 3.75	1.61 to 1.70	6	(116)	2.5Y5/2 greyish brown; moderately sorted tufa-rich silt with tufa content increasing downward; massive; common *in situ* vertical root channels; fragments of mollusc shell; strong acid reaction; well-marked transition to:
3.75 to 3.71	1.70 to 1.74	5	(116)	2.5Y6/2 light brownish grey; moderately sorted clayey silt with common grains of tufa sand and pieces of tufa encrustation; massive; common *in situ* vertical root channels; fragments of mollusc shell; strong acid reaction; well-marked transition to:

3.71 to 3.69	1.74 to 1.76	4	(116)	2.5Y7/1 light grey; mainly tufa debris including sand-size grains and pieces of encrustation; fragments of mollusc shell; common *in situ* vertical root channels; strong acid reaction; sharp contact with:
3.69 to 3.63	1.76 to 1.82	3	(116)	2.5Y2.5/1 black peat with scattered sand-size tufa grains and pieces of tufa encrustation; sharp contact with:
3.63 to 3.49	1.82 to 1.96	2	(116)	2.5Y4/2 dark greyish brown; organic silt with flint clasts at base; massive; strong acid reaction; very sharp contact with:
3.49 to 3.45	1.96 to 2.00	1	(116)	10YR3/2 very dark greyish brown; clayey flint gravel.

Table 6: Lithostratigraphic description of Column sample <6>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)	Depth (m bgs)	Unit number	Context number	Description
4.25 to 4.11	1.20 to 1.34	5	(116)	10YR3/2 very dark greyish brown; very poorly sorted clayey silt with clasts of well and sub-rounded chalk (up to 30mm) and clasts of sub-round flint (up to 60mm); massive; common fragments of mollusc shell including large terrestrial species cf. *Helix aspersa* (Garden Snail) and cf. *Mytilus edulis* (Common Mussel); strong acid reaction; sharp contact with:
4.11 to 3.98	1.34 to 1.47	4	(116)	10YR3/2 very dark greyish brown but including common pale coloured tufa debris; very poorly sorted gritty clayey silt with tufa clasts (up to 10mm); massive; root channels with iron-rich coatings; common mollusc shell debris and scattered whole gastropod shells including *Pupilla muscorum*; strong acid reaction; sharp contact with:
3.98 to 3.95	1.47 to 1.50	3	(116)	10YR3/2 very dark greyish brown; well sorted clayey silt; massive; root channels with iron-rich coatings; common broken mollusc shell; strong acid reaction; sharp contact with:
3.95 to 3.87	1.50 to 1.58	2	(116)	10YR3/2 very dark greyish brown; poorly sorted gritty clayey silt with common pale coloured tufa clasts and tufa sand; massive; root channels with iron-rich coatings;

				common mollusc shell debris and scattered complete gastropod shells; strong acid reaction; sharp contact with:
3.87 to 3.75	1.58 to 1.70	1	(124)	10YR3/2 very dark greyish brown; well sorted clayey silt; massive; root channels with iron-rich coatings; common broken mollusc shell and scattered near complete shells; strong acid reaction.

RESULTS AND INTERPRETATION OF THE ORGANIC MATTER CONTENT AND CALCIUM CARBONATE DETERMINATIONS

Organic matter content and calcium carbonate determinations were carried out to enhance the results of the sedimentary descriptions, and aid in the selection of a suitable horizon for radiocarbon dating (Table 7).

Organic matter content

The results of the organic matter determinations reflect the results of the lithostratigraphic descriptions. Organic matter content is relatively low (<13%) in Units 1 (clayey flint gravel) and 2 (organic silt), before rising to a peak of 71.62% at 3.65m OD (black peat). Values then return to <10% from 3.69m OD to the top of the sequence.

Calcium carbonate content

The results of the calcium carbonate determinations also reflect the results of the lithostratigraphic descriptions. Calcium carbonate is near absent in Units 1 and 2, before rising to *ca*. 40% between 3.69m and 4.01m OD. Values then decline to 15% to the top of the sequence.

Table 7: Results of the organic matter content and calcium carbonate determinations, Column samples <5> and <6>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)		Organic matter content (%)	Calcium carbonate content (%)
From	To		
4.21	4.22	7.42	15.06
4.17	4.18	7.50	21.97
4.13	4.14	7.15	25.13
4.09	4.1	6.60	30.53
4.05	4.06	8.18	28.79
4.01	4.02	3.45	40.04
3.97	3.98	5.14	38.56
3.93	3.94	3.84	40.13
3.89	3.9	7.37	39.66
3.85	3.86	6.45	39.42
3.81	3.82	4.89	41.24
3.77	3.78	3.26	41.08
3.73	3.74	10.47	39.56
3.69	3.7	6.36	40.45
3.65	3.66	71.62	14.20
3.61	3.62	42.20	2.84
3.57	3.58	12.67	1.16

3.53	3.54	9.90	1.09
3.49	3.5	7.08	0.97
3.45	3.46	0.81	0.59

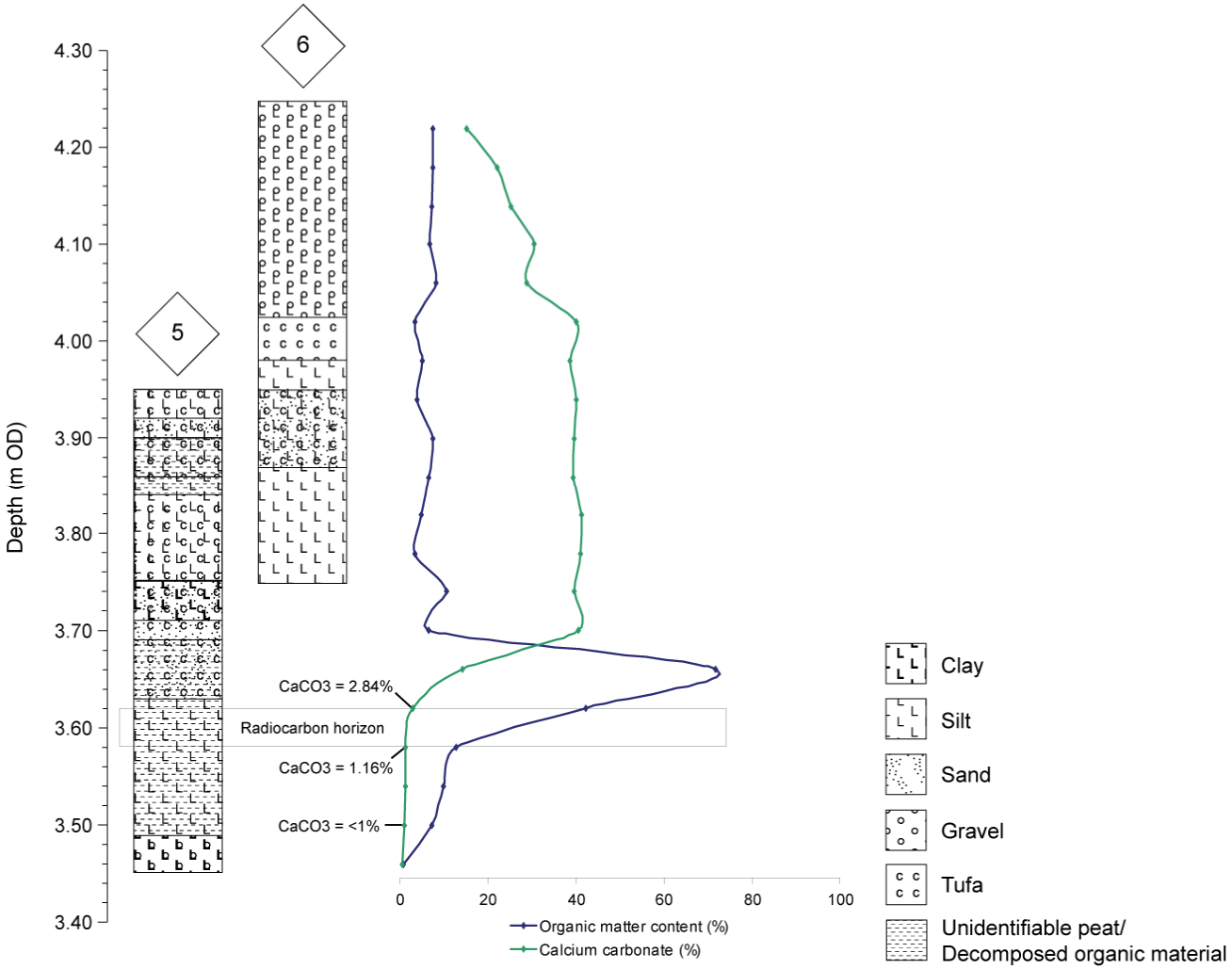


Figure 10: Lithostratigraphic diagram of Column samples <5> and <6>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

RESULTS AND INTERPRETATION OF THE RADIOCARBON DATING

No datable macrofossils (seeds/wood) were present in the Column sample <5>/<6> sequence and thus a bulk organic-rich sample had to instead be selected for radiocarbon dating. The results of the organic matter content and calcium carbonate determinations indicated that the organic silt of Unit 2, between 3.58 and 3.62m OD was most suitable for radiocarbon dating (Figure 10), due to the rise in organic matter content (between 12.67% and 42.20%) and near absence of calcium carbonate content. It was particularly important to ascertain that calcium carbonate had not leached into the organic silt from the tufa above, as its presence could have resulted in a 'reservoir effect' and led to an incorrect age determination.

Unfortunately insufficient sample was available for a radiometric date, and thus two AMS determinations had to be carried out on the single horizon; one on the humic acid (alkali-soluble fraction) and one on the humins (alkali-insoluble fraction). In an alkaline environment such as that at Crayford Town Centre, the humin fraction is largely insoluble and thus tends to be the more reliable indicator of age, whilst the humic acids are more likely to move up or down the section, according to the hydrological conditions (i.e. carried by rainwater going down or groundwater coming up). Therefore, the humin fraction is likely to indicate the 'true age' if enough humans survive and the level of discrepancy with the humic acids will provide the measure of how reliable the determination is (Ballantyne, pers comm.).

The humin fraction of the sample at 3.58 to 3.62m OD has been radiocarbon dated to 10,720-10,500 cal yr BP, and the humic acid fraction to 10,520-10,240 cal BP (Table 8). The humin fraction represents the most likely 'true age' of the sample, and the younger, but very similar humic acid fraction suggests the determination is reliable. The sediment is thus at least very Early Mesolithic (Early Holocene) in age, and the peat/tufa horizon must post-date it.

Table 8: Results of the radiocarbon dating of Column sample <5>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Laboratory code / Method	Material and location	Depth (m OD)	Uncalibrated radiocarbon years before present (yr BP)	Calibrated age BC/AD (BP) (2-sigma, 95.4% probability)	δ13C (‰)
Beta-283921	Humin (alkali insoluble) fraction of bulk organic sediment	3.58 to 3.62	9380 ± 50	8770-8550 cal BC (10,720-10,500 cal BP)	-28.1
Beta-283920	Humic acid (alkali soluble) fraction of bulk organic sediment	3.58 to 3.62	9210 ± 50	8560-8290 cal BC (10,520-10,240 cal BP)	N/A

RESULTS AND INTERPRETATION OF THE POLLEN-STRATIGRAPHIC ASSESSMENT

The results of the pollen stratigraphic assessment indicate a very low to absent concentration of pollen through the entire sequence from Column samples <5> and <6> (Table 9). This can be attributed to the physical and/or chemical properties of the sediments at the time of deposition. These properties may include coarse particle size (e.g. sand and gravel), which may cause physical destruction, and high pH due to calcium carbonate-rich groundwater, which may cause chemical deterioration of the pollen grains. However, as stated in the lithostratigraphic descriptions, the alternation of tufa-rich silts and sands with much more organic units including peats, suggests periods of relative stability, alternating with flooding episodes. This varying type of environment is most likely to have led to the deterioration of pollen at the site.

Table 9: Results of the pollen-stratigraphic assessment of Column samples <5> and <6>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)		Column/ Context/Unit number	Main pollen taxa			Concentration 0 - 5	Preservation 0- 5	Microcharcoal 0 - 5
From	To		Latin name	Common name	Number			
3.46	3.45	<5> / (124) / 1	-	-	0	0	-	-
3.54	3.53	<5> / (116) / 2	-	-	0	0	-	2-3
3.62	3.61	<5> / (116) / 2	*Pinus* *Dryopteris* type *Lycopodium clavatum*	Pine Buckler fern Clubmoss 'spike'	6 2 18	1-2	4	2
3.70	3.69	<5> / (116) / 4	*Dryopteris* type *Lycopodium clavatum*	Buckler fern Clubmoss 'spike'	4 40	0	-	4
3.78	3.77	<5> / (116) / 6	*Lycopodium clavatum*	Clubmoss 'spike'	7	0	-	1-2
3.86	3.85	<5> / (116) / 7	*Lycopodium clavatum*	Clubmoss 'spike'	1	0	-	1-2
3.94	3.93	<5> / (116) / 10	-	-	0	0	-	-
4.02	4.01	<5> / (116) / 4	Lacutuceae	Dandelion family	1	1	2	-

4.10	4.09	<5> / (116) / 5	Lacutuceae	Dandelion family	3	1	3	1-2
			Aster type	e.g. Daisy	1			
			Unknown		4			
			Various fungal spores types					
			Lycopodium clavatum	Clubmoss 'spike'	8			
4.18	4.17	<5> / (116) / 5	Poaceae	Grass family	1	1-2	2-3	3
			Sinapis type	e.g. White mustard	1			
			cf *Rumex* undifferentiated	Dock/Sorrel	1			
			Lactuceae	Dandelion family	2			
			cf *Sparganium* type	Bulrush	1			
			Unknown		5			
			Various fungal spore types					
			Lycopodium clavatum	Clubmoss 'spike'	9			

Key:

Concentration: 0 = 0 grains; 1 =1-75 grains, 2 = 76-150 grains, 3 =151-225 grains, 4 = 226-300, 5 =300+ grains per slide

Preservation: 0 = none, 1 = very poor , 2 = poor, 3 = moderate, 4 = good, 5 = excellent

Charcoal: 0 = none, 1= negligible, 2 = occasional, 3 = moderate, 4 = frequent, 5 = abundant

RESULTS AND INTERPRETATION OF THE DIATOM ASSESSMENT

Unfortunately, the assessment revealed were absent/unidentifiable in all samples (Table 10). This could be due to several factors, mainly chemical dissolution and physical destruction during and following deposition (see Flower, 1993; Ryves *et al.*, 2001).

Table 10: Results of the diatom assessment of Column samples <5> and <6>, Trench 1, Crayford Town Hall, Crayford Road, London Borough of Bexley

Depth (m OD)		Column/ Context/Unit number	Concentration 0 - 5	Preservation 0- 5
From	To			
3.46	3.45	<5> / (124) / 1	1	2
3.78	3.77	<5> / (116) / 6	0	-
3.88	3.89	<5> / (116) / 7	0	-
3.94	3.93	<5> / (116) / 10	0	-
4.10	4.09	<5> / (116) / 5	0	-
4.18	4.17	<5> / (116) / 5	0	-

Key:

Concentration: 0 = 0 diatoms; 1 =1-75 diatoms, 2 = 76-150 diatoms, 3 =151-225 diatoms, 4 = 226-300, 5 =300+ diatoms per slide

Preservation: 0 = none, 1 = very poor , 2 = poor, 3 = moderate, 4 = good, 5 = excellent

RESULTS AND INTERPRETATION OF THE BULK SAMPLE ASSESSMENT

A total of seven bulk samples (5 small from Column samples <5> and <6> (Trench 1), and 2 adjacent to Column sample <3> (Trench 3)) were extracted for the recovery of macrofossil remains including charred and waterlogged plant macrofossils (seeds and wood), insects, Mollusca and artefacts (Table 11).

Column samples <5> and <6> (Trench 1)

The results of an initial assessment indicated that even considering their small size, the samples from the peat and tufa of Trench 1 contained very few macrofossil remains. Charcoal was recorded in some of the samples but its size is too small to permit identification (Allott, pers comm.). A very small quantity of waterlogged wood, seeds and insects were also recorded. Mollusca were the most frequently preserved macrofossil remains, although many of the specimens are too fragmented to permit identification. No artefact or bone remains were noted.

Column sample <3> (Trench 3)

The results of an initial assessment indicate that waterlogged plant remains (wood and seeds) were present in moderate quantities within both samples assessed. Whole Mollusca were present in only one sample, but unidentifiable fragments are frequent. Insects and charred plant macrofossils (seeds and wood were absent). The presence of nail and slag in the lower sample indicate this sequence of samples has been impacted upon by historic human activity.

Table 11: Results of the bulk sample assessment, Crayford Town Hall, Crayford Road, London Borough of Bexley

						Charred					Waterlogged		Mollusca		Bone					
Trench Number	Column sample	Depth	Context number	Volume processed (l)	Volume remaining (l)	Charcoal (>4mm)	Charcoal (2-4mm)	Charcoal (<2mm)	Seeds	Chaff	Wood	Seeds	Whole	Fragments	Large	Small	Fragments	Insects	Magnetic particles	Artefacts
3	<3>	3.10 to 3.05	(314)/(313)	1	*ca*. 6						1	2		3		1				nail; slag
3	<3>	3.25 to 3.20	(303)/(314)	1	*ca*. 6							3	1	2						
1	<5>	3.54 to 3.49	(116)	0.05	0		1	1/2			1	1								
1	<5>	3.69 to 3.65	(116)	0.15	0									1						
1	<5>	3.74 to 3.71	(116)	0.10	0								1/2	3				1		
1	<5>	3.92 to 3.89	(116)	0.15	0								2	4						
1	<5>/ <6>	4.05 to 4.00	(116)	0.15	0			1					1							

Key: 0 = Estimated Minimum Number of Specimens (MNS) = 0; 1 = 1 to 25; 2 = 26 to 50; 3 = 51 to 75; 4 = 76 to 100; 5 = 101+

DISCUSSION AND CONCLUSIONS

The aim of this environmental archaeological assessment was to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs. In all the trenches, the uppermost layer recorded in the column samples was a poorly sorted unit containing material of anthropogenic origin. The underlying sediment sequences in all the trenches appear to be floodplain alluvium of a river with access to abundant tufa accumulations. The alternation of tufa-rich silts and sands with much more organic units including peats, suggests periods of relative stability, allowing the development of terrestrial conditions on the floodplain surface, alternating with flooding episodes. Column samples <5> and <6> from Trench 1 contained the best peat and tufa sequence from the site and was selected for environmental archaeological assessment.

Radiocarbon dating of the organic silt overlying the basal clayey flint gravel indicated that sedimentation commenced from at least the very Early Mesolithic (10,720-10,500 cal BP) with peat/tufa accumulation beginning sometime later. This date is older than a single radiocarbon determination made on silty peat at Acorn Industrial Estate (CFD96; 8170-7850 cal BP; Ballantyne, pers comm.). Here, the peat ranged in thickness between 0.4 to 0.7m in thickness, across four trenches with lower horizons of peat at 2.63m, 2.78m, 2.74m and 2.80m OD (i.e. a thicker and lower elevation than at Crayford Town Hall. Unfortunately the report is unclear on the trench number and context that the radiocarbon date came from, and the different thickness and elevation of the unit makes comparison between the two sites difficult.

The recovery of micro- and macro-fossils at the site was extremely poor, unfortunately meaning that a provisional reconstruction of the environmental history of the site and its environs was not possible.

However, within the basal gravel unit of Trench 2, a large trunk of wood (context (207)) was recorded (Figure 11). This trunk of wood has been identified as *Taxus* sp (yew) and could have high (national) significance. A literature search carried out as part of PhD investigations (Batchelor, 2009), suggests that *Taxus* macrofossils have not been identified in the UK prior to 7650-7000 cal yr BP, where it was recorded within peat in Coombwich on the Estuary of the River Parrett in Somerset (Godwin, 1941; Godwin and Willis, 1961). *Taxus* pollen has been recorded earlier, but generally only sporadic grains. Therefore, (and whilst *Taxus* has been recorded during previous interglacials of the Pleistocene, such as the Cromerian interglacial (*ca.* 700 to 450 ka BP; Marine oxygen isotope stages 16-13; Godwin, 1956; West, 1980) and Hoxnian interglacial (*ca.* 400-367 ka BP; Marine oxygen isotope stage 11; West, 1962, 1980)), the find from Crayford Town Hall may

represent the earliest Holocene or Late Glacial find of *Taxus* in the UK. It is of course important to note however, that the trunk may be detrital and thus possibly derived from an earlier period and/or elsewhere, although the large size of the fragment would suggest it is unlikely to have travelled far.

Figure 11: Plate illustrating the base of Trench 2 and location of the *Taxus* trunk (bottom right of plate)

The find is also of interest due to the palaeoenvironmental significance of *Taxus* in the Lower Thames Valley during the Middle Holocene (ca. 5000 to 4000 cal BP; Batchelor, 2010). In addition, *Taxus* is of great cultural significance and has been utilised from the Palaeolithic through to the modern day. The prehistoric importance of yew is demonstrated by its use in: (i) creating weapons and tools such as spears, swords, bows, knives and musical pipes (e.g. Clark, 1963), and (ii) constructing trackways, platforms and boats (Coles and Hibbert, 1968; Wright *et al.*, 1965, 2001). Furthermore, during the early historic period, records also indicate the cultural significance of *Taxus* in: (i) place names (Delahunty, 2002), (ii) folklore, (iii) heraldry (Bevan-Jones, 2002), and (iv) its frequent occurrence in churchyards. Although one of the most well recognised characteristics of *Taxus* is its toxicity, modern day research has also lead to its use in the development of a cure for multiple types of cancer (e.g. Jennewein and Croteau, 2001; Altmann, 2001).

RECOMMENDATIONS

No further work is recommended on the column sample sequences from Crayford Town Centre due to the extremely low concentration of remains. However as outlined above, the *Taxus* trunk is

considered of potential national significance, and it is therefore recommended that radiocarbon dating is carried out on the wood in an attempt to determine its age. Due to the potential high significance it is recommended that two determinations are attempted from the outside of the trunk where a bark-like structure has been identified. Depending on the results of the radiocarbon determinations the results could be incorporated into a publication possibly outlining the history and significance of *Taxus* in the Lower Thames Valley (e.g. Vegetation History and Archaeobotany).

ADDENDUM

In January 2011, the recommendations made during the assessment investigations were instigated and two small samples of wood were cut from the outside of the *Taxus baccata* (yew) trunk and submitted for AMS radiocarbon dating to the SUERC laboratory in East Kilbride. The results have been calibrated using OxCal v4.0.1 Bronk Ramsey (1995, 2001 and 2007) and IntCal04 atmospheric curve (Reimer *et al*., 2004). The results are displayed in Table 12.

Table 12: Results of the radiocarbon dating of the *Taxus baccata* trunk, Context (207), Trench 2, Crayford Town Hall, Crayford Road, London Borough of Bexley

Laboratory code / Method	Material and location	Uncalibrated radiocarbon years before present (yr BP)	Calibrated age BC/AD (BP) (2-sigma, 95.4% probability)	δ13C (‰)
SUERC-32835 (GU-23245)	*Taxus* waterlogged wood: Trench 2, Context (207) sample 1	3885 ± 35	2470-2210 cal BC (4420-4160 cal BP)	-26.6
SUERC-32831 (GU-23244)	*Taxus* waterlogged wood: Trench 2, Context (207) sample 2	3860 ± 30	2460-2210 cal BC (4410-4160 cal BP)	-27.0

The results of the radiocarbon dating indicate that there is no statistical difference in age between the two determinations, with the yew branch being dated to 4410/4420-4160 cal yr BP. This date places the yew branch in the Late Neolithic cultural period.

The results of the radiocarbon dating are somewhat surprising from a stratigraphic point of view, since the difference in date between the base of the fined grained sediment in Trench 1 and the date from the yew trunk in or on the gravel in Trench 2 is rather large. There are really only a couple of reasonable explanations for this occurrence: either the dates from Trench 1 are incorrect, or the sediment from which the sample for dating was taken in Trench 1 forms a different channel fill to the one overlying the yew in Trench 2. Unfortunately it is not possible to determine which of these is likely to be correct, since both are of equal potential.

From an archaeobotanical point of view, the date of the trunk is still of some interest since its age

is within the same time-frame of the main period of yew growth on the peat surface in the Lower Thames Valley (*ca*. 5000 to 4000 cal yr BP). Indeed this particular date falls towards the end of the main period of growth within the valley, when yew began to decline. The current model for the Lower Thames Valley decline is that it was most likely due to increased waterlogging on the peat surface consequent of rising sea levels, although human activity may have been a contributory cause (Batchelor, 2009). In the case of the yew trunk from Crayford Town Hall however, little can be said about the yew because of its uncertain source location.

REFERENCES

Altmann, K.H. (2001) Microtubule-stabilizing agents: a growing class of important anticancer drugs, *Current Opinion in Chemical Biology* **5**, 424-431.

Batchelor, C.R. (2009) *Middle Holocene environmental changes and the history of yew (Taxus baccata L.) woodland in the Lower Thames Valley*. Unpublished PhD thesis, Royal Holloway, University of London.

Battarbee, R.W., Jones, V.J., Flower, R.J., Cameron, N.G., Bennion, H.B., Carvalho, L. & Juggins, S. (2001) *Diatoms.* In (J.P. Smol, H.J.B. Birks & W.M. Last, eds.), *Tracking environmental change using lake sediments volume 3: terrestrial, algal, and siliceous indicators*, 155-202. Dordrecht: Kluwer Academic Publishers.

Bengtsson, L. & Enell, M. (1986) Chemical Analysis. In (Berglund, B.E. ed.) *Handbook of Holocene palaeoecology and palaeohydrology,* 423-451. Chichester: John Wiley and Sons.

Bevan-Jones, R. (2002) *The Ancient Yew: A history of Taxus baccata*, Cheshire: Windgather Press.

Bronk Ramsey, C. (1995) Radiocarbon calibration and analysis of stratigraphy: the oxcal program. *Radiocarbon,* **37(2)**, 425-430.

Bronk Ramsey, C. (2001) Development of the radiocarbon program oxcal. *Radiocarbon,* **43(2a)**, 355-363.

Bronk Ramsey, C. (2007) Deposition models for chronological records. *Quaternary Science Reviews,* **27(1-2)**, 42-60.

Clark, J.G.D. (1963) Neolithic bows from Somerset, England, and the prehistory of archery in

north-western Europe. *Proceedings of the Prehistoric Society,* **29**, 50-98.

Clarke, C. (2009) *Crayford Town Hall, Crayford Road, London Borough of Bexley: an archaeological evaluation report*. AOC Archaeology Group.

Coles, J.M. & Hibbert, F.A. (1968) Prehistoric roads and tracks in Somerset, England: 1. Neolithic. *Proceedings of the Prehistoric Society,* **34**, 238-258.

Delahunty, J.L. (2002) *Religion, war, and changing landscapes: an historical and ecological account of the yew tree (Taxus baccata L.) In Ireland.* University of Florida unpublished PhD thesis.

Flower, R.J. (1993) Diatom preservation: experiments and observations on dissolution and breakage in modern and fossil material, *Hydrobiologia* **269/270**, 473-484.

Godwin, H. (1941) Studies of the Post-Glacial history of British vegetation: VI correlations in the Somerset Levels. *New Phytologist,* **40(2)**, 108-132.

Godwin, H. (1956) *The History of British Flora*. Cambridge: Cambridge University Press.

Godwin, H. & Willis, E.H. (1961) Cambridge University natural radiocarbon measurements III. *Radiocarbon,* **3**, 60-76.

Jennewein, S., & Croteau, R. (2001) Taxol: biosynthesis, molecular genetics, and biotechnological applications. *Applied Microbiological Biotechnology,* **57**, 13-19.

Moore, P.D., Webb, J.A. & Collinson, M.E. (1991) *Pollen Analysis*. Oxford: Blackwell Scientific.

Reille, M. (1992) *Pollen et spores D'Europe et D'Afrique du Nord*. Laboratoire de Botanique historique et Palynologie, Marsaille.

Reimer, P. J., Baille, M. G. L., Bard, E., Bayliss, A., Beck, J. W., Bertrand, C. J. H., Blackwell, P.G., Buck, C.E., Burr, G.S., Cutler, K.B., Damon, P.E., Edwards, R. L., Fairbanks, R.G., Friedrich, M., Guilderson, T.P., Hogg, A.G., Hughen, K.A., Kromer, B., McCormac, G., Manning, S., Bronk Ramsey, C., Reimer, R.W., Remelle, S., Southon, J.R., Stuiver, M., Talamo, S., Taylor, F.W., Van der Plicht, J., Weyhenmeyer, C.E. (2004) IntCal04 terrestrial radiocarbon age calibration, 0-26 cal kyr BP. *Radiocarbon,* **46 (3)**, 1029-1058.

Ryves, D.B., Juggins, S., Fritz, S.C. and Battarbee, R.W. (2001) Experimental diatom dissolution and the quantification of microfossil preservation in sediments, *Palaeogeography, Palaeoclimatology, Palaeoecology* **172**, 99-113.

West, R.G. (1962) A note on Taxus pollen in the Hoxnian Interglacial. *New Phytologist,* **61**, 189-190.

West, R.G. (1980) Pleistocene Forest History in East Anglia. *New Phytologist,* **85**, 571-622.

Wright, E.V. & Churchill, D.M. (1965) The Boats from North Ferriby, Yorkshire, England, with a review of the origins of the sewn boats of the Bronze Age. *Proceedings of the Prehistoric Society,* **31**, 1-24.

Wright, E.V., Hedges, R.E.M., Bayliss, A. & Van de Noort, R. (2001) New AMS radiocarbon dates for the North Ferriby boats - a contribution to dating prehistoric seafaring in northwestern Europe. *Antiquity,* **75**, 726-734.

Appendix C – OASIS Form

OASIS ID: aocarcha1-69247

Project details

Project name	Crayford Town Hall, Crayford
Short description of the project	AOC Archaeology Group undertook an archaeological evaluation at the site of Crayford Town Hall, Crayford, London Borough of Bexley. The evaluation comprised the machine excavation of five trenches. The aim of the evaluation was to establish the presence or absence of archaeological remains on the site. The evaluation identified three principal phases of deposition in four of the five evaluation trenches. The earliest phase comprised alluvial deposition and a series of palaeochannels across the site which started to form during the Early Mesolithic period. From the base of one of the palaeochannels a large timber fragment of yew was recovered, dating to the Late Neolithic period. This was followed by a second phase represented by the accumulation of peat, overlain by a sequence of medieval and post-medieval dumps. The final phase of activity was associated with large scale deposition of made ground deposits during the 19th and 20th centuries in order to facilitate extensive use of the site. Many of the structures built on this sequence have subsequently been demolished before constructing the current car park and yard areas. Overall the archaeological evaluation identified the presence of naturally-accumulated alluvial and peat sequences. No archaeological features were identified during the course of the fieldwork although evidence of the medieval/post-medieval environment was identified.
Project dates	Start: 23-11-2009 End: 30-11-2009
Previous/future work	No / No
Any associated project reference codes	CFF09 - Sitecode
Any associated project reference codes	30508 - Contracting Unit No.
Any associated project reference codes	08/03277/FULM - Planning Application No.
Type of project	Field evaluation

Site status	Area of Archaeological Importance (AAI)
Current Land use	Community Service 1 - Community Buildings
Significant Finds	BOTTLE Post Medieval
Significant Finds	POTTERY Medieval
Methods & techniques	'Sample Trenches'
Development type	Urban residential (e.g. flats, houses, 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	GREATER LONDON BEXLEY CRAYFORD Crayford Town Hall, Crayford, London Borough of Bexley
Postcode	DA1 3QA
Study area	1.20 Hectares
Site coordinates	TQ 5161 7456 51.4491849255 0.182084652017 51 26 57 N 000 10 55 E Point
Height OD / Depth	Min: 2.67m Max: 6.81m

Project creators

Name of Organisation	AOC Archaeology

Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	AOC Archaeology
Project director/manager	Andy Leonard
Project supervisor	Chris Clarke
Type of sponsor/funding body	Developer
Name of sponsor/funding body	Robert Lombardelli Partnership

Project archives

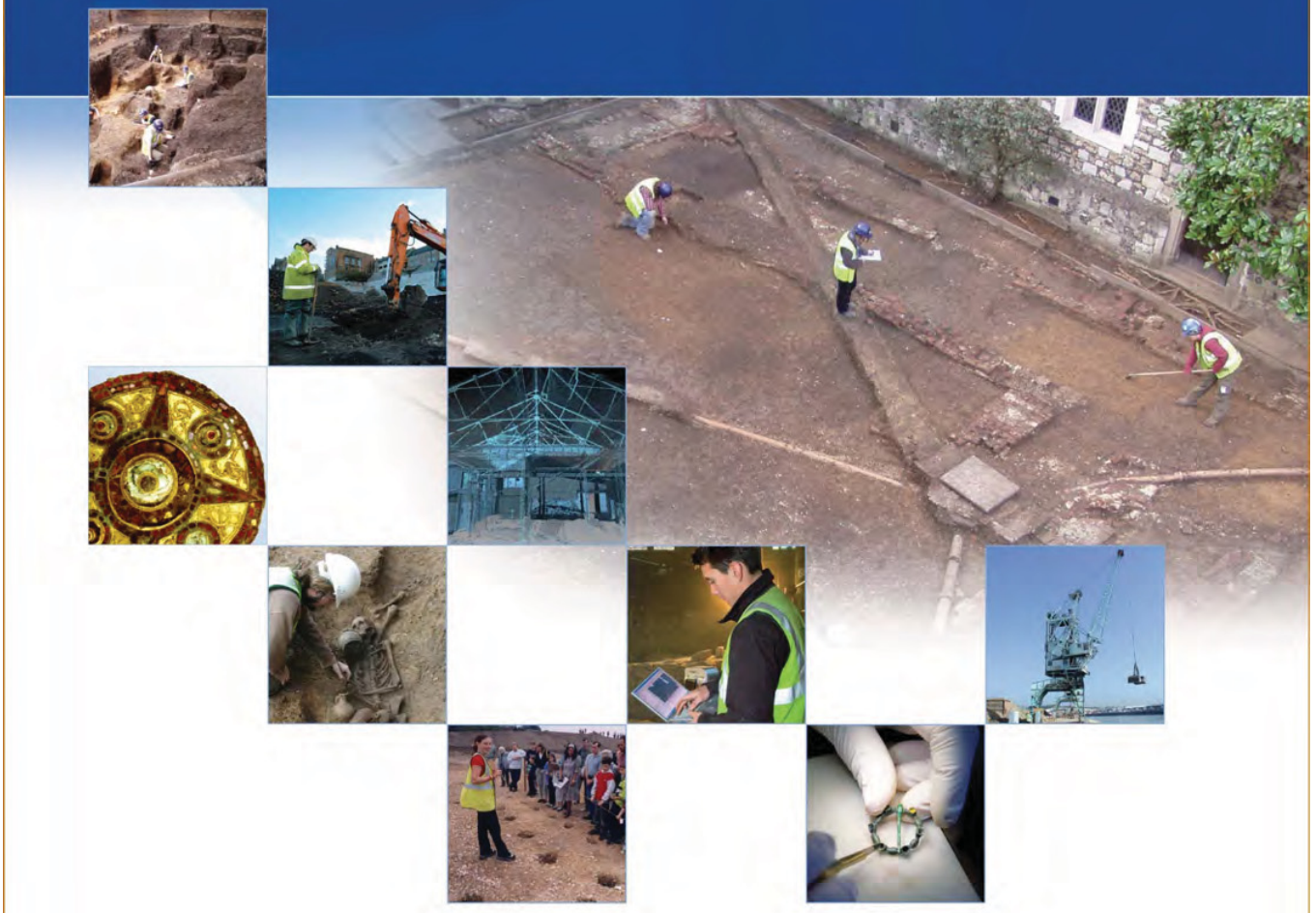
Physical Archive recipient	Museum of London-LAARC
Physical Archive ID	CFF09
Physical Contents	'Animal Bones','Ceramics','Glass'
Digital Archive recipient	Museum of London-LAARC
Digital Archive ID	CFF09
Paper Archive recipient	Museum of London-LAARC
Paper Archive ID	CFF09
Paper Contents	'Animal Bones','Ceramics','Glass','Stratigraphic'

Paper Media available	'Microfilm','Plan','Report','Unpublished Text'

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	CRAYFORD TOWN HALL, CRAYFORD, LONDON BOROUGH OF BEXLEY:
Author(s)/Editor(s)	Clarke, C.
Date	2009
Issuer or publisher	AOC Archaeology
Place of issue or publication	London
Description	A4 text, 5 illustrations, 24 pages, bounded between plastic covers

Entered by	Chris Clarke (chris.clarke@aocarchaeology.com)
Entered on	17 September 2010



AOC Archaeology Group

AOC Archaeology Group, Unit 7, St Margarets Business Centre, Moor Mead Road, Twickenham TW1 1JS
tel: 020 8843 7380 | **fax:** 020 8892 0549 | **e-mail:** london@aocarchaeology.com

www.aocarchaeology.com