

Archaeological Services & Consultancy Ltd

**ARCHAEOLOGICAL EVALUATION:  
ABBOTT HOUSE, PRIMROSE HILL  
KINGS LANGLEY  
HERTFORDSHIRE**

*on behalf of Belstone Homes Ltd*



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**January 2008**

**ASC: 922/KPH/3**

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## Site Data

<i>ASC project code:</i>	KPH	<i>ASC Project No:</i>	922
<i>Accession No:</i>			
<i>County:</i>	Hertfordshire		
<i>Village/Town:</i>	Kings Langley		
<i>Civil Parish:</i>	Abbots Langley		
<i>NGR (to 8 figs):</i>	TL 0757 0327		
<i>Present use:</i>	Disused industrial buildings		
<i>Planning proposal:</i>	Demolition of existing buildings and residential redevelopment		
<i>Planning application ref/date:</i>	8/07/0205		
<i>Local Planning Authority:</i>	Three Rivers District Council		
<i>Date of fieldwork:</i>	24 <sup>th</sup> –25 <sup>th</sup> September 2007		
<i>Client:</i>	Belstone Homes Ltd 2 Hertford House Farm Close Shenley Hertfordshire WD7 9AB		
<i>Contact name:</i>	Mr Harish Vekaria		

## Internal Quality Check

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Figure 1: General location (scale 1:25,000)

## Summary

*In September 2007 ASC Ltd conducted an archaeological evaluation at Abbott House, Primrose Hill, Kings Langley in advance of a new residential development by Belstone Homes Ltd. The only archaeological remains observed during the evaluation were substantial peat deposits and preserved wood in the trenches in the northern part of the site. These were sent for specialist analysis, and the results are now included in this final evaluation report.*

## 1 Introduction

1.1 In September 2007 *Archaeological Services and Consultancy Ltd (ASC)* carried out an evaluation at Abbot House, Primrose Hill, Kings Langley (NGR TL 0757 0327: Fig. 1). The project was commissioned by *Belstone Homes Ltd*, and was carried out according to a brief (Instone 2007) prepared on behalf of the local planning authority (LPA), *Three Rivers District Council*, by their archaeological advisor (AA), *Historic Environment Unit, Hertfordshire County Council*, and a project design prepared by ASC (Barclay 2007). The relevant planning application reference is 8/07/0205.

1.2 This document forms the final report on the results of the evaluation

### 1.3 *Planning Background*

This evaluation was required under the terms of *Planning Policy Guidance Note 16 (PPG16)*, in response to proposals for the construction of a mixed-use residential and business development (Figure 3).

### 1.4 *Location*

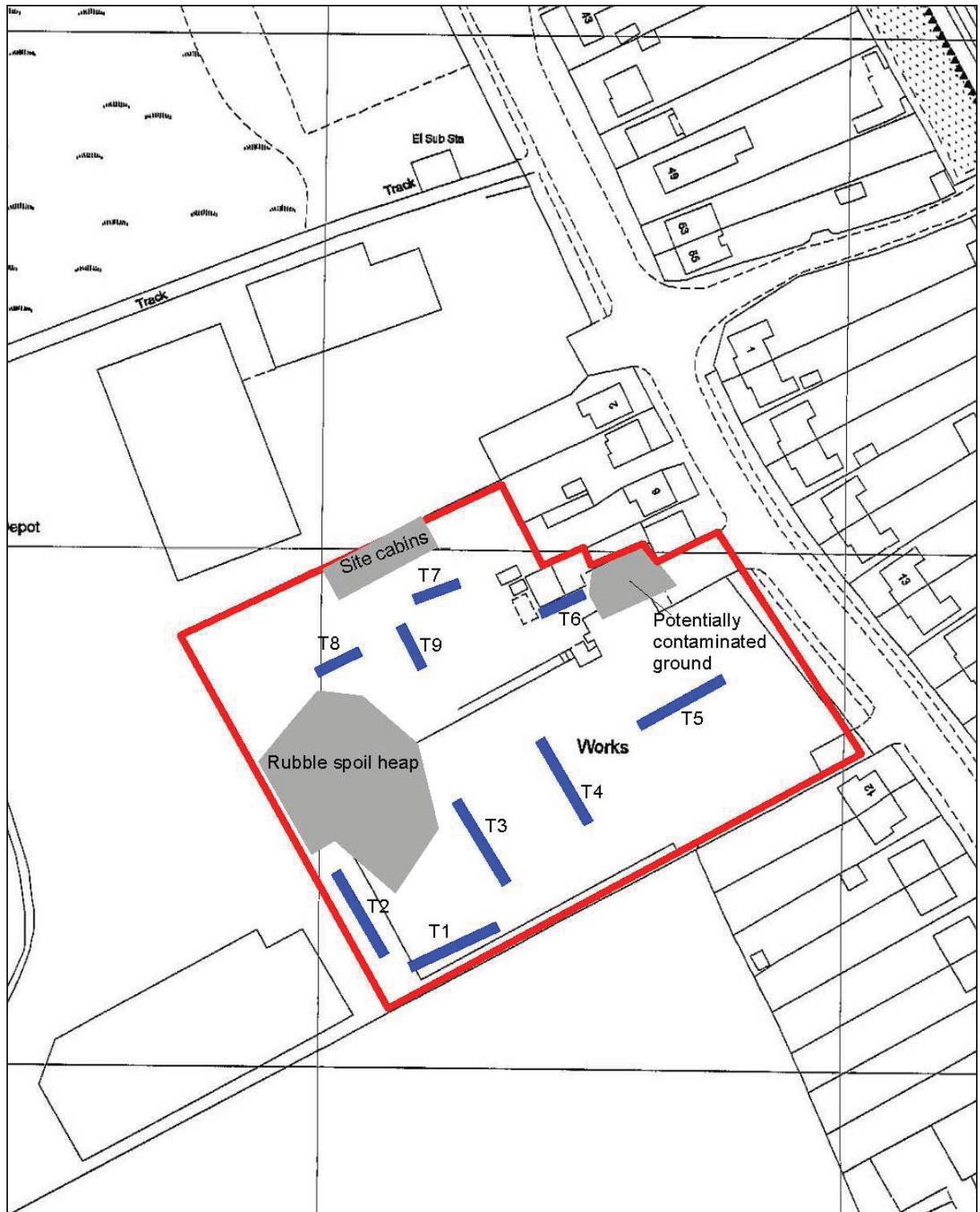
The site is situated in Kings Langley, in the administrative district of Three Rivers, Hertfordshire (Fig. 1). It is located in the valley of the river Gade, which flows directly to the east of the Grand Union Canal. The site lies on level ground, at NGR TL 0757 0327 (Fig. 2), and comprises an approximately rectangular area of *c.*1.8ha.

### 1.5 *Description*

The southern part of the evaluation area was formerly occupied by a large industrial building, and the northern part by a tarmac car park. The buildings have been demolished and the site now comprises derelict land.

### 1.6 *Geology & Topography*

The site lies within an area of soils comprising the Marlow Association. These consist of “*Well drained fine loamy over clayey and clayey soils. Some coarse and fine loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging*”. This lies over a geological base of Plateau and river terrace drift overlying Lower Chalk deposits (Soil Survey 1983; 581e). The site lies at *c.*75m OD.



**Figure 2:** Site plan showing trench locations and constraints (scale 1:1250)

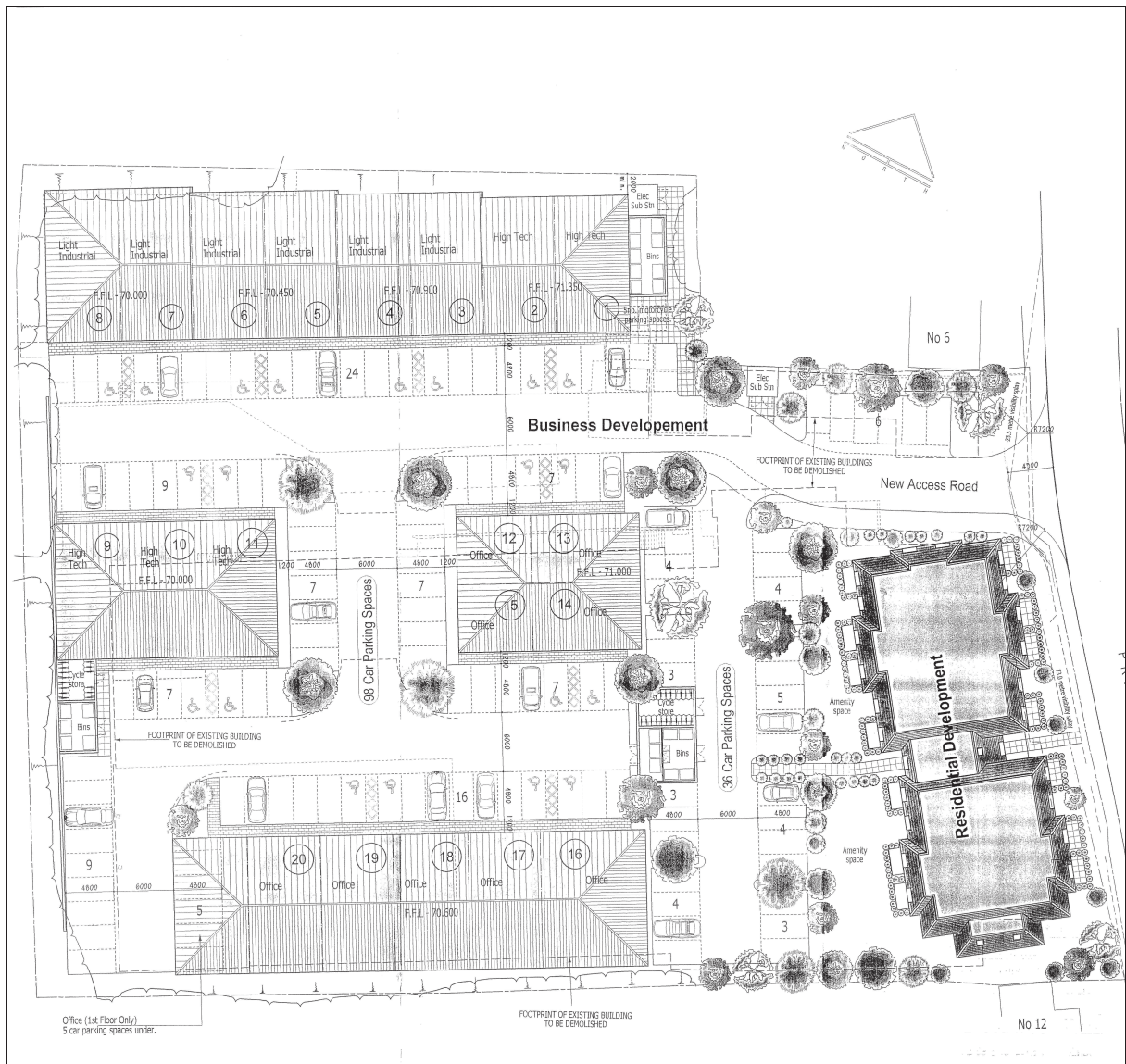


Figure 3: Proposed development, clients site plan (scale 1:200)

## 2 Aims & Methods

### 2.1 Aims

In line with the requirements of the *brief* (Section 3), the aims of the evaluation were:

- To determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains liable to be threatened by the proposed development, in accordance with the sampling strategy outlined below.
- To include a comprehensive assessment of the regional context within which the archaeological evidence rests and should aim to highlight any research priorities relevant to any further investigation of the site (making particular reference to the appropriate regional research agendas).

### 2.2 Standards

The work conformed to the project design, to the relevant sections of the Institute of Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGAO 2003), and to the relevant sections of ASC's own *Operations Manual*.

### 2.3 Methods

The work was carried out according to the brief (Section 4), which required:

- The excavation of trial trenches within the application site. A sufficient proportion of the site was to be sampled to enable a proper assessment of the site's potential.

Locations of the trenches opened during the evaluation are shown in Fig. 2.

### 2.4 Constraints

A large spoil heap to the west of the site prevented any trenches being located in this area. The north-east corner of the site was suspected to contain contaminated ground, and no trenches could be located here. The need to retain vehicle access onto site also affected the location of trenches (Fig. 2).



## 3 Archaeological & Historical Background

### 3.1 Prehistoric (before 600BC)

The earliest evidence for human activity in the area comes from The Grove in the Gade valley some 4 kilometres to the south. This takes the form of late Mesolithic assemblages and early Neolithic pottery (Druce *et al* 2002). There was a near-total absence of residual Mesolithic flintwork from the upper plateau (*ibid.*). Two kilometres to the north of Kings Langley Neolithic ditches, possibly belonging to a ‘henge’ were found near Rucklers Lane (McDonald 1995). This indicates that some parts of the plateau areas of the Chilterns had been cleared at that date. In the river valley itself this period is poorly represented. The only evidence for prehistoric human activity in the area surrounding the development site is the occurrence of occasional discarded flint artefacts.

### 3.2 Iron Age (600BC-AD43)

A bronze and iron enamelled lynch pin from a 1<sup>st</sup> century AD chariot was found in Kings Langley. The design is of British inspiration, and is currently the only piece of evidence for immediately pre-Roman occupation in the area (Munby 1963).

### 3.3 Roman (AD43-c.450)

Evidence for an early Roman cemetery in the area of Kings Langley has been found in the form of funerary urns, several kilometres southeast of the proposed development site. The presence of this cemetery suggests that parts of Kings Langley were subject to some considerable settlement close to the river in either Kings Langley, or nearby Abbots Langley (*ibid.*). Various Roman spot finds have also been recorded along the Gade valley. The proposed development site lies to the north of *Area of Archaeological Significance 3*, which notes the existence of a Roman cremation cemetery.

### 3.4 Saxon (c.450-1066)

Like many such settlements in the Chilterns the origins of the post-Roman settlement of Langley is obscure. The name is first recorded in c.1060 as *Langalege* or ‘long clearing’ (Gover *et al* 1970, 44). About this time it was held by Thuri and Seric under the overlordship of Earl Leofwine (Morris 1976, section 15.11). It is by no means certain that the settlement pattern was in anyway ‘nucleated’. More probably it was relatively dispersed but this inference has yet to be demonstrated by archaeology. Until and including the period of the Domesday survey, Kings Langley lay in the hundred of Tring. It has been suggested that Tring represented the sole survivor of a ‘Riding’ or third part of a Danish unit of government (Dumville 1989; Williamson 2000, 89). This is an attractive and quite plausible hypothesis. Before the Conquest, Langley was held by the abbey of St Albans who had been granted it by Egelwin le Swarte and Aelfleda his wife in the time of Leofstan the 12<sup>th</sup> abbot, about the middle of the 11<sup>th</sup> century (Page 1908, 235). After the Conquest it was lost to the abbey and came into the hands of the crown. It subsequently became part of the fee of Mortain and honour of Berkhamsted (*ibid.*).

### 3.5 Medieval (1066-1500)

At the time of the Domesday survey (1086) the area of the township, which was co-extensive with the parish of Kings Langley, was broadly the same as it was until the later part of the 19<sup>th</sup> century (3481.4 acres). It is highly probable, given the high value

attached to riverside pasture and meadowland (Roden 1973, 327) that the valley bottom retained this land use pattern until well into the 19<sup>th</sup> century. It was precisely because of the high value attached to these lands that it is highly unlikely that this area was used for anything other than for grazing.

The acquisition of the manor in the reign of Edward I (c.1275), and its development as a royal residence, had a significant impact on the settlement pattern of the area. The extent of settlement nucleation in the early medieval period remains uncertain, but a focus in the vicinity of the church (All Saints) and the manor (Langley House) seems most probable. The development of the palace and Friary created, in effect, a secondary settlement away from the valley bottom on Langley Hill. Royal patronage also influenced the present-day layout of the valley settlement. During the 13<sup>th</sup> century the main road ran along Rectory Lane to Green Lane and beyond (Munby 1963, 7). By 1384 a new road ran along 'Newchepinge', along what is today the High Street (*ibid.*).

### 3.6 Post-Medieval (1500-present)

In the post-medieval period the Kings Langley area saw a gradual expansion of population in the early centuries to rapid growth in the 20<sup>th</sup> century. For the earlier part there were three important surveys of 1556, 1591 and 1619 (Munby 1963, 41). By the mid-16<sup>th</sup> century the enclosure of the more open medieval landscape had advanced leaving only a few surviving elements (*ibid.*). The occupations of the area were overwhelmingly agricultural in nature. In 1524 there were 63 taxpayers (NA: E.179 120/119); in 1563 some 50 families were recorded (Munby 1964) and a century later the Hearth Tax returns show that there were 63 dwellings and 9 empty dwellings (NA: E. 179 248/23). Throughout this period there was a piecemeal consolidation of small plots of land, which gradually coalesced into farms. These are recognisable from the 18<sup>th</sup> century onwards and survive to this day. Between 1603 and 1676 the population rose from just over 400 to 500 (Munby 1963, 75). By c.1790 there were 190 families in Kings Langley (Munby 1964); by the first census of 1801 there were 189 families composed of 970 individuals. At that time there were 181 dwellings (6 of which were vacant (*ibid.*)). At this period the area was noted for the number of its orchards (Young 1804, 143), though even in the early 17<sup>th</sup> century there 57 orchards in the parish (Munby 1963, 80).

The construction of the canal and railway in the earlier part of the 19<sup>th</sup> century had a considerable impact on the development of the area. This was reflected in the size of the population, which increased to 1599 in 1851 (Page 1914, 236). The next three decades saw an 8% decline as the population moved to larger conurbations (Munby 1963, 120). However, the population recovered to 1576 by the end of the 19<sup>th</sup> century. The second half of the 19<sup>th</sup> century saw the development of utilities such as gas lighting, sewage and telephone (Munby 1963, 121). The population doubled between 1901-21. There was a slight decline by 1931 but by 1951 the population rose by 51% to c.5000 (Munby 1963, 139). In the valley area progressive residential and commercial development saw the destruction of the traditional land use pattern of the area such as hop growing and water meadows (Munby 1963, 81-2). Although the canal is not longer of commercial significance, the railway continued to be important in the 20<sup>th</sup> century. Transport links have continued to grow with the opening of the M25 in the late 1980s. Its proximity to this major highway has been an important factor in the development of the Gade valley, both for commercial and residential reasons.

## 4 Results

- 4.1 Nine 2m-wide trenches were excavated on the site, comprising a total area of 280 square metres. A large spoil heap and an access route restricted the positioning of the trenches (Figure 2, Plate 1)
- 4.2 The natural substrata (102), (202), (302), (606), (704), (804), (904) was predominantly a light grey, flinty gravel mixed with a mid orange flinty gravel, both with calcareous inclusions (Plate 2). However, to the northern end of Trench 4 and the eastern end of Trench 5 it changed to a mid orangey brown silty sand (402), (502) (Plates 3 & 4).
- 4.3 Stratigraphically, the site can be divided into two areas: the southern area, within the footprint of the former building, and the northern area, outside the footprint of the earlier building. No archaeological remains were observed in the southern part of the site (Trenches 1-5). Substantial deposits of peat were noted in Trenches 6-9 in the northern part of the site (603), (605), (702), (802), (902).
- 4.4 These peat deposits began at a depth of between 0.4m and 0.8m below the ground surface, and were between 0.5m and 1.0m in thickness (Plates 5-8). Deposits of preserved wood were observed in Trench 6 (Plate 7). Samples of the peat were taken for pollen analysis, and samples of the wood were taken for radiocarbon dating. Both samples were in close proximity to each other. The wood lay at the base of Trench 6.
- 4.5 The site had been terraced at some point in the past, and the overlying soils were visible in the south west facing section below the road to the north east of the site, and along the southern edge of the site. These revealed a deposit of dark brown topsoil with high concentrations of organic matter to a depth of 1.5m below the level of the road surface (Plate 4).
- 4.6 Detailed information regarding the trial trenches and their contents appears in Appendix 1.



**Plate 1:** General view of site, illustrating constraints on the evaluation



**Plate 2:** Trench 2 from north, showing natural strata and overburden, scale 2m



**Plate 3:** Trench 4 from north, scale 2m



**Plate 4:** Trench 5 from west, scale 2m



**Plate 5:** Trench 6 from west



**Plate 6:** Section detail of Trench 6



**Plate 7:** Detail of wood in base of Trench 6, scale  
0.5m



**Plate 8:** Section of Trench 9, scales 1m

## 5. Conclusions

- 5.1 Most of the previously recorded archaeological remains in Kings Langley appear to be located on the opposite side of the town from the development site, and the potential for archaeological remains around the development site was not considered to be high.
- 5.2 The five trenches excavated in the southern half of the site, in the area of the previous building, showed that this part of the site had been extensively damaged by the basements of the building. Any archaeological features that may have been present are likely to have been extensively disturbed by the basements.
- 5.3 A thick layer of peat was present in Trenches 6 to 9, in the northern part of the site, outside the footprint of the building. This is evidence that there has been a period of waterlogging on the site in the past. This peat was associated with a deposit of preserved wood (Alder).
- 5.4 These peat deposits have been exploited in the past. William Ellis of Little Gaddesden, writing in about 1730, stated '*A peat ground was opened at Kings Langley. The owner, Mr Lea, proposes to furnish any home with peat to burn as fuel all the year in grates for 50/-, provided they take care of the ashes, by burning no wood or other fuel with it, and let him have them all neat*' (Munby 1963, 79). Peat deposits was also found at the Ovaltine works in 1957 (*ibid.*)
- 5.5 Analysis of the lower peat levels in Trench 6 showed that alder and oak were the dominant trees, with hazel, lime and elm also present. By contrast the upper peat contained relatively few trees and shrubs. There was a greater diversity of other plants including cereal pollen. The plants are dominated by sedges and aquatic species with a few ferns present. According to the pollen evidence the date of the peat formation should lie between ca.6000 – 5000 BP (early Neolithic or sub-boreal) for the lower level and for the upper peat a Neolithic or later age. The lower level was confirmed by a C14 date on the wood which gave a reading of 6060 ±35 BP (Appendices 3a and 3b).
- 5.6 *Confidence Rating*
- Large spoil heaps and potentially contaminated ground prevented the original trench plan being followed. In spite of this, 5% of the development area was evaluated. A moderate to high confidence rating is therefore attached to this evaluation.

## 6. Acknowledgements

ASC is grateful to Harish Vekaria of *Belstone Homes Ltd* for commissioning this work, and to Andy Instone of the *Hertfordshire County Council Historic Environment Unit* for curatorial advice.

The project was managed on behalf of ASC by Jonathan Hunn BA PHD MIFA; fieldwork was undertaken by Jonathan Hunn and Jenny Richards BA PIFA. The report was written by Jenny Richards and revised by Jonathan Hunn. The final text was edited by Bob Zeepvat BA MIFA.

## 7. Archive

7.1 The project archive will comprise:

1. Brief
2. Project Design
3. Initial Report
4. Clients site plans
5. Site records
6. Sample records
7. List of photographs
8. B/W prints & negatives
9. Original specialist reports and supporting information
10. CDROM with copies of all digital files.

7.2 The archive will be deposited with Three Rivers Museum.

## 8. References

### *Standards & Specifications*


- ALGAO 2003 *Standards for Field Archaeology in the East of England*. East Anglian Archaeology Occasional Paper 14.
- Barclay, C. 2007 *Project Design for Archaeological Evaluation on behalf of Belstone Homes Ltd: Abbott House, Primrose Hill, Kings Langley* ASC Ltd Client Report 922/KPH/1
- EH 1991 *The Management of Archaeological Projects, 2<sup>nd</sup> edition*. English Heritage (London).
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- IFA 2001 Institute of Field Archaeologists' *Standard & Guidance documents (Desk-Based Assessments, Watching Briefs, Evaluations, Excavations, Investigation and Recording of Standing Buildings, Finds)*.
- Instone, A. 2007 *Design Brief for Archaeological Evaluation* Historic Environment Unit Hertfordshire County Council


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- Munby, L.M (ed.) 1963 *The History of Kings Langley* Kings Langley Branch of the Workers' Educational Association
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- Neal, D.S 1973 Excavations at the Palace and Priory at Kings Langley, 1970 *Hertfordshire Archaeology* 3, 31-72
- Soil Survey 1983 1:250,000 Soil Map of England and Wales, and accompanying legend (Harpenden).
- Roden, D. 1973: Field systems of the Chiltern Hills and their environs, in A.R.H. Baker and R.A. Butlin (eds) *Studies of Field Systems in the British Isles*, Cambridge: Cambridge University Press, 325-376.
- Young, A. 1804 (reprint 1971): *General View of the Agriculture of the county of Hertfordshire*. David & Charles reprints (Newton Abbot).





## Appendix 1: Trench Summary Tables


Trench 1						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	1.60m
	<b>Levels</b>					
	<b>Trench base east</b>		67.48m OD			
	<b>Trench top east</b>		68.03m OD			
	<b>Trench base west</b>		67.51m OD			
	<b>Trench top west</b>		68.40m OD			
	<b>NGR Co-ordinates</b>					
	<b>SW</b>	507515 203220	<b>NE</b>	507535 203230		
	<b>Orientation</b>		SW-NE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(101)	Deposit	Brick rubble, demolition layer	-	1600	-	
(102)	Deposit	Light grey mottled with mid orange gravel, natural strata	-	-	1600	


Trench 2						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	1m
	<b>Levels</b>					
	<b>Trench base north</b>		67.76m OD			
	<b>Trench top north</b>		68.40m OD			
	<b>Trench base south</b>		67.56m OD			
	<b>Trench top south</b>		68.37m OD			
	<b>NGR Co-ordinates</b>					
	<b>S</b>	507510 203225	<b>N</b>	507505 203245		
	<b>Orientation</b>		NNW-SSE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(201)	Deposit	Brick rubble, demolition layer	-	1000	-	
(202)	Deposit	Light grey mottled with mid orange gravel, natural strata	-	-	1000	


<b>Trench 3</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	1m
	<b>Levels</b>					
	<b>Trench base north</b>		67.43m OD			
	<b>Trench top north</b>		68.26m OD			
	<b>Trench base south</b>		67.48m OD			
	<b>Trench top south</b>		68.02m OD			
	<b>NGR Co-ordinates</b>					
	<b>S</b>	507545	203245	<b>N</b>	507540	203255
	<b>Orientation</b>		NNW-SSE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(301)	Deposit	Brick rubble, demolition layer	-	1000	-	
(302)	Deposit	Light grey mottled with mid orange gravel, natural strata	-	-	1000	


<b>Trench 4</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	1m
	<b>Levels</b>					
	<b>Trench base north</b>		67.96m OD			
	<b>Trench top north</b>		68.50m OD			
	<b>Trench base south</b>		67.45m OD			
	<b>Trench top south</b>		68.23m OD			
	<b>NGR Co-ordinates</b>					
	<b>S</b>	507565	203250	<b>N</b>	507555	203265
	<b>Orientation</b>		NNW-SSE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(401)	Deposit	Brick rubble, demolition layer	-	1000	-	
(402)	Deposit	Light grey mottled with mid orange gravel and orange sand, natural strata	-	-	1000	

<b>Trench 5</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	0.80m
	<b>Levels</b>					
	<b>Trench base east</b>		68.36m OD			
	<b>Trench top east</b>		69.02m OD			
	<b>Trench base west</b>		68.67m OD			
	<b>Trench top west</b>		69.48m OD			
	<b>NGR Co-ordinates</b>					
	<b>W</b>	507565 203270	<b>E</b>	507585 203280		
	<b>Orientation</b>		SW-NE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(501)	Deposit	Brick rubble, demolition layer	-	800	-	
(502)	Deposit	Light grey mottled with mid orange gravel and orange sand, natural strata	-	-	800	

<b>Trench 6</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	10m	<b>Width</b>	2m	<b>Depth</b>	1.40m
	<b>Levels</b>					
	<b>Trench base east</b>		68.43m OD			
	<b>Trench top east</b>		69.45m OD			
	<b>Trench base west</b>		67.97m OD			
	<b>Trench top west</b>		69.61m OD			
	<b>NGR Co-ordinates</b>					
	<b>SW</b>	507545 203290	<b>NE</b>	507550 203295		
	<b>Orientation</b>		SW-NE			
<b>Reason for Trench</b>		Trial trenching strategy				
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(601)	Deposit	Orange sand and gravel	-	500	-	
(602)	Deposit	Light greyish white chalky clay	-	300	500	
(603)	Deposit	Dark blackish brown soil with plant matter inclusions, possible peat layer	-	400	800	
(604)	Deposit	Preserved wood deposit	-	150	1200	
(605)	Deposit	Dark reddish brown soil with plant matter inclusions, possible peat layer	-	50	1350	
(606)	Deposit	Light grey gravels, natural strata	-	-	1400	

<b>Trench 7</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	20m	<b>Width</b>	2m	<b>Depth</b>	1.60m
	<b>Levels</b>					
	<b>Trench base east</b>			67.56m OD		
	<b>Trench top east</b>			69.10m OD		
	<b>Trench base west</b>			67.24m OD		
	<b>Trench top west</b>			69.20m OD		
	<b>NGR Co-ordinates</b>					
	<b>SW</b>	507520 203290	<b>NE</b>	507530 203295		
	<b>Orientation</b>			SW-NE		
<b>Reason for Trench</b>			Trial trenching strategy			
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(701)	Deposit	Dark blackish grey, demolition rubble	-	400	-	
(702)	Deposit	Dark reddish brown soil with plant matter inclusions, possible peat layer	-	1000	400	
(703)	Deposit	Light grey chalky clay, natural soil	-	200	1400	
(704)	Deposit	Mid grey with orange mottling gravels, natural strata	-	-	1600	

<b>Trench 8</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	5m	<b>Width</b>	2m	<b>Depth</b>	1.40m
	<b>Levels</b>					
	<b>Trench base east</b>			67.23m OD		
	<b>Trench top east</b>			68.93m OD		
	<b>Trench base west</b>			67.08m OD		
	<b>Trench top west</b>			68.91m OD		
	<b>NGR Co-ordinates</b>					
	<b>SW</b>	507500 203280	<b>NE</b>	507510 203285		
	<b>Orientation</b>			SW-NE		
<b>Reason for Trench</b>			Trial trenching strategy			
<b>Context</b>	<b>Type</b>	<b>Description and Interpretation</b>	<b>Max Width (mm)</b>	<b>Max Thckn (mm)</b>	<b>Depth BGL (mm)</b>	
(801)	Deposit	Dark blackish grey, demolition layer	-	400	-	
(802)	Deposit	Dark reddish brown soil with plant matter inclusions, possible peat layer	-	500	400	
(803)	Deposit	Light grey chalky clay, natural soil	-	500	900	
(804)	Deposit	Mid grey with orange mottling gravels, natural strata	-	-	1400	

<b>Trench 9</b>						
	<b>Max Dimensions (m)</b>					
	<b>Length</b>	4m	<b>Width</b>	2m	<b>Depth</b>	1.40m
	<b>Levels</b>					
	<b>Trench base north</b>			67.48m OD		
	<b>Trench top north</b>			69.01m OD		
	<b>Trench base south</b>			67.63m OD		
	<b>Trench top south</b>			69.12m OD		
	<b>NGR Co-ordinates</b>					
	<b>N</b>	507515 203285		<b>S</b>	507520 203280	
	<b>Orientation</b>			NNW-SSE		
<b>Reason for Trench</b>			Trial trenching strategy			
Context	Type	Description and Interpretation	Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)	
(901)	Deposit	Dark blackish grey, demolition layer	-	400	-	
(902)	Deposit	Dark reddish brown soil with plant matter inclusions, possible peat layer	-	700	400	
(903)	Deposit	Light grey chalky clay, natural soil	-	300	1100	
(904)	Deposit	Mid grey with orange mottling gravels, natural strata	-	-	1400	

## Appendix 2: List of Photographs

SITE NAME: Abbott House, Primrose Hill, Kings Langley			SITE NO/CODE: 922/KPH
Shot	B&W	Digital	Subject
1		√	Site prior to building demolition
2		√	Site prior to building demolition
3		√	Site prior to building demolition
4		√	Site prior to building demolition
5		√	Site prior to building demolition
6		√	Site prior to building demolition
7		√	Site prior to building demolition
8		√	Site prior to building demolition
9		√	Site prior to building demolition
10		√	Site prior to building demolition
11		√	Site prior to building demolition
12		√	Site prior to building demolition
13		√	Site prior to building demolition
14		√	Site prior to building demolition
15		√	Site prior to building demolition
16		√	Site prior to building demolition
17		√	Site prior to building demolition
18		√	Working Shot
19		√	Working Shot
20		√	Working Shot
21		√	Working Shot
22		√	Working Shot
23		√	Working Shot
24		√	Working Shot
25		√	Working Shot
26		√	Working Shot
27		√	Working Shot
28		√	Working Shot
29		√	Working Shot
30		√	Working Shot
31		√	Working Shot
32		√	Working Shot
33		√	Working Shot
34	√	√	Trench 1 from west
35	√	√	Trench 2 from north
36	√	√	Trench 3 from north
37	√	√	Trench 4 from north
38	√	√	Trench 5 from west
39	√	√	Trench 6 from west
40	√	√	Trench 7 from west
41	√	√	Trench 8 from west
42	√	√	Trench 8 from west
43	√	√	Trench 9 from north
44		√	Close up of wood in Trench 6
45		√	Close up of wood in Trench 6
46		√	Close up of wood in Trench 6

47		√	Stratigraphy of Trench 6
48		√	Soil deposits in south west corner of site
49		√	Close up of section in Trench 6
50		√	Close up of section in Trench 6
51		√	Close up of section in Trench 6
52		√	Stratigraphy of Trench 9
53		√	Close up of section in Trench 9

## **Appendix 3: A Preliminary Pollen Investigation Of The Peat Sequence.**

*Dr Rob Scaife*

### **A3.1 Introduction**

A peat deposit 0.5 to 1.0m thick was found in Trench 6. Samples from the top and bottom of this unit have been examined to determine if sub-fossil pollen and spores are preserved from which information on the past vegetation and environment might be gained. This proved to be the case and the results of this investigation are given here.

### **A3.2 Pollen procedures.**

Pollen sub-samples of 2ml volume were processed using standard techniques for the extraction of the sub-fossil pollen and spores (Moore and Webb 1978; Moore *et al.* 1992). The sub-fossil pollen and spores were identified and counted using an Olympus biological research microscope fitted with Leitz optics. A pollen sum of 100 grains of dry land taxa per level was counted for each sample where possible, plus pollen of marsh taxa (largely *Alnus glutinosa* and Cyperaceae), fern spores and miscellaneous elements which were counted outside of the basic pollen sum. Pollen data are given in Table A3.1. For the purposes of this brief assessment, data have not been calculated as percentages of sum total. Taxonomy, in general, follows that of Moore and Webb (1978) modified according to Bennett *et al* (1994) for pollen types and Stace (1992) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton.

### **A3.3 The Pollen data**

Two samples have been examined taken from the base and top of the peat sequence. Pollen was abundant and well preserved which allowed preliminary pollen counts to be made. There are marked differences between the two samples suggesting that substantial environmental changes occurred during the time-span encompassed by the peat accumulation. The characteristics of the two samples are as follows.

#### **A3.3.1 Sample 1; The basal peat.**

Trees and shrubs are dominant with few herbs. *Alnus glutinosa* (alder) is dominant with *Quercus* (oak) and *Corylus avellana* type (hazel). *Tilia* (lime/linden) and *Ulmus* (elm) are also of importance with sporadic *Fraxinus* (ash). These latter taxa pollen are usually poorly represented in pollen spectra and as such are of importance (see below). The few herbs present comprise Poaceae (Grasses), *Ranunculus* type (buttercups) and *Mentha* type (mint). A single grain of *Nuphar* (yellow water lily) indicates aquatic conditions. There are few spores.

#### **A3.3.2 Sample 3; The upper peat.**

Contrasting with sample 1, herbs are dominant with relatively few trees and shrubs. The latter include small numbers of *Quercus*, *Tilia*, *Alnus glutinosa* and *Corylus avellana* type. *Fagus sylvatica* (beech) is, however, present. Herbs are dominated by Poaceae (\*\*\*) and Cyperaceae (sedges) with a much greater diversity of types including cereal pollen and *Plantago lanceolata*



(ribwort plantain) and other herbs. Marsh and aquatic types are important including the Cyperaceae noted with *Sparganium* type (bur reed and reed mace), *Typha latifolia* (greater reedmace) and *Caltha* type (marsh marigold). Spores of ferns are also of substantially greater importance than in sample 1. These comprise monolete forms (*Dryopteris* type; typical ferns) and *Pteridium aquilinum* (bracken).

#### **A3.4 The past vegetation.**

The pollen assemblages can be viewed in terms of the on-site (autochthonous) and the pollen input from the near and far terrestrial zone (long distance component). Here, there are clear differences between the earliest, basal peat and the upper contact. The former shows peat accumulation under a floodplain alder carr woodland. This was surrounded by oak, lime and hazel woodland, which was dominant on the nearby interfluves. Lime (*Tilia cordata*) forms 12% of the dry land pollen sum (*i.e.* excluding on-site) alder. This taxon is substantially under-represented in pollen spectra compared with oak and hazel. This is due to its entomophily and flowering during summer months when all trees are in full leaf, further inhibiting dissemination of its pollen. Thus, along with oak and hazel, lime was also a major component of the local woodland. Elm and ash were also present. There is no evidence of clearances within this woodland. However, this may in part be due to the closed character of the alder carr woodland, which may restrict pollen rain coming from farther afield.

The uppermost sample shows a marked change to a wetter on-site environment. Alder carr was replaced by grass and sedge dominated fen habitat with associated fen taxa (bur reed and reed mace). The surrounding interfluve vegetation had largely been clear of woodland and was probably grassland/pasture. A single pollen grain of cereal type indicates some arable activity and a Neolithic or later age of this material (See below).

It is possible that the clearance of woodland was responsible for the change in the depositional environment. Deforestation would result in a reduction in evapotranspiration, higher ground water table and increased surface water run-off to the valley bottom. This resulted in a wetter valley bottom which was unable to support alder and changed to wet herb fen.

#### **A3.5 Suggested age of the peats**

Whilst pollen analysis is no longer used as a means of dating, there can be certain characteristics in pollen assemblages which can provide an indication of age. Here, the dominance of woodland containing lime and elm at its base indicates a middle Holocene (Atlantic: Flandrian Chronozone II) or early Neolithic (Sub-Boreal) age. That is, between *ca.* 6,000 and 5,000 BP (radiocarbon years.). Change to an open and probably agricultural environment by the top of the peat sequence clearly shows a Neolithic or later age. The extent of clearance would indicate Bronze Age. These are suggestions only and radiocarbon dating will/would confirm or otherwise these suggestions.

#### **A3.6 Potential for further analysis**

This preliminary study demonstrates that pollen is present and preserved in sufficient numbers to enable pollen counts and a pollen diagram to be constructed. It appears likely that if such a fuller analysis were carried out, this would provide important

information on the prehistoric (Neolithic and possibly Bronze Age) clearance of woodland and subsequent agriculture. A further aspect making this site of some importance is its situation on the chalk. There are few data from the chalklands of southern England and little is known about the regional palaeoecology and palaeoenvironmental development of this major lithological zone.

### ***A3.7 Suggested further analysis***

For further detailed analysis, the following aspects should be considered.

- To obtain suitable monolith columns from the most representative section of the peat, underlying and overlying sediments. This would allow detailed laboratory analysis including stratigraphical description and sampling for pollen and radiocarbon dating.
- Pollen sampling/analysis at 4cm intervals with pollen counts of 400-500 grains per sample where preservation permits.
- Radiocarbon dating is required to place the resulting pollen sequence within the regional framework.

This work will result in data and report to publication standard and provide useful palaeoenvironmental data for this region.


### ***References***

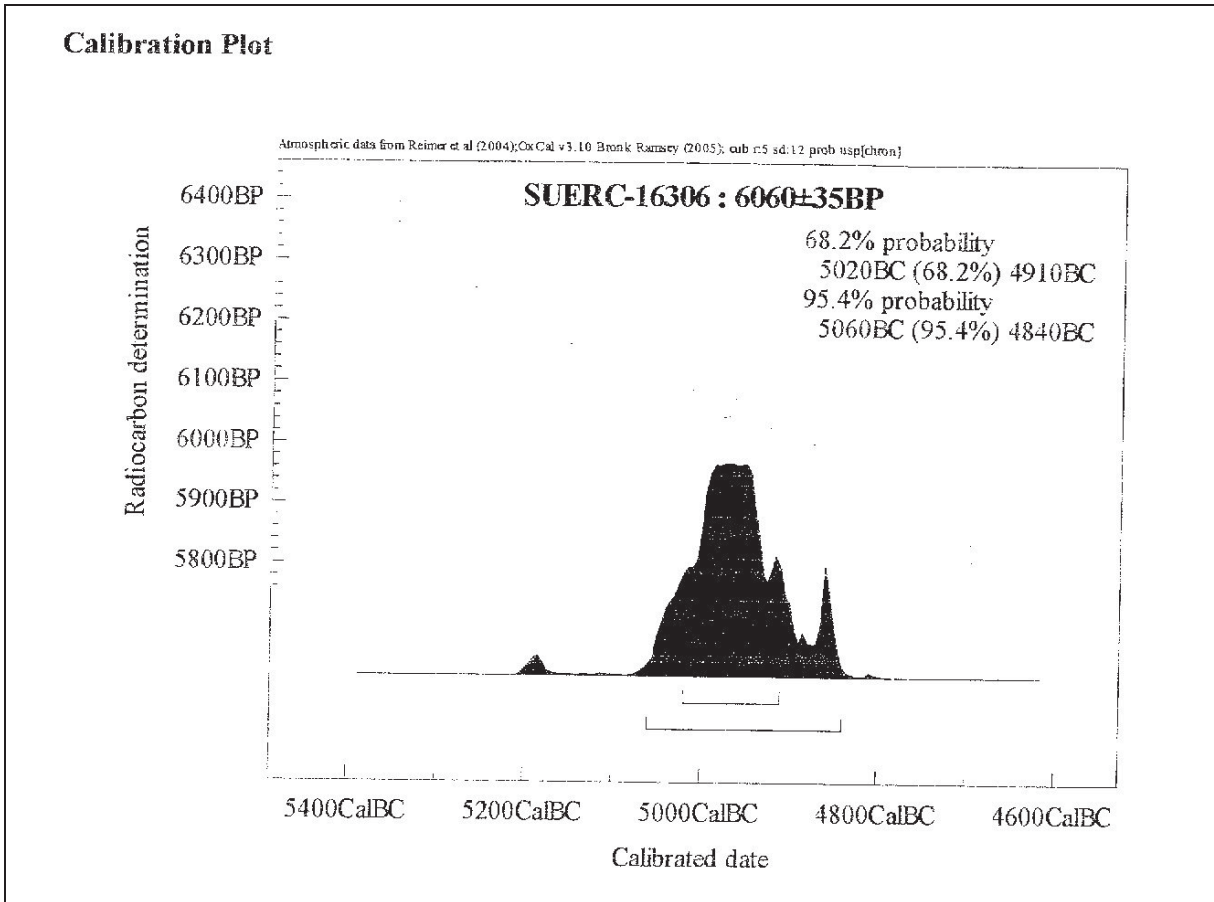
- Bennett, K.D., Whittington, G. and Edwards, K.J. 1994 'Recent plant nomenclatural changes and pollen morphology in the British Isles'. *Quaternary Newsletter* 73,1-6
- Moore, P.D. and Webb, J.A. 1978 *An illustrated guide to pollen analysis*. London: Hodder and Stoughton.
- Moore, P.D., Webb, J.A. and Collinson, M.E. 1991 *Pollen analysis*. Second edition. Oxford: Blackwell Scientific.
- Stace, C. 1991 *New flora of the British Isles*. Cambridge: Cambridge University Press

	Sample 1 (upper peat)	Sample 2 (lower peat)
<b>Trees &amp; Shrubs</b>		
<i>Betula</i>		2
<i>Pinus</i>	1	
<i>Ulmus</i>		7
<i>Quercus</i>	10	33
<i>Fagus sylvatica</i>	2	
<i>Tilia</i>	3	12
<i>Fraxinus excelsior</i>		1
<i>Alnus glutinosa</i>	12	220
<i>Corylus avellana</i> type	5	41
<b>Herbs</b>		
<i>Ranunculus</i> type	5	1
<i>Sinapis</i> type	1	
<i>Dianthus</i> type	1	
<i>Mentha</i> type		1
Scrophulariaceae	1	
<i>Plantago lanceolata</i>	3	
<i>Valeriana officinalis</i>	1	
Lactucoideae	5	
<i>Cirsium</i> type	1	
Poaceae	61	3
Cereal type	1	
<b>Fen &amp; Aquatic</b>		
<i>Caltha</i> type		
<i>Nuphar</i>		1
<i>Typha latifolia</i>	1	
<i>Typha angustifolia</i> type	1	
Cyperaceae	99	5
<b>Spores</b>		
<i>Dryopteris</i> type	36	2
<i>Pteridium aquilinum</i>	40	
<i>Polypodium vulgare</i>	1	1
Liverworts	1	

**Table A3.1:** Pollen counts obtained from the upper and lowest peat levels.

## Appendix 4: Radiocarbon Dates

 <hr/> <p>Director: <i>Professor A B MacKenzie</i></p>	<p><b>Scottish Universities Environmental Research Centre</b> Rankine Avenue Scottish Enterprise Technology Park East Kilbride Scotland UK G75 0QF</p> <p><b>Email:</b> g.cook@suerc.gla.ac.uk <b>Telephone:</b> 01355 223332 <b>Direct Dial:</b> 01355 270136 <b>Fax:</b> 01355 229898</p>
<p><b>RADIOCARBON DATING CERTIFICATE</b> 21 December 2007</p>	
<b>Laboratory Code</b>	SUERC-16306 (GU-15878)
<b>Submitter</b>	Jonathan R. Hunn ASC Ltd., Letchworth House Chesney Wold Bleak Hall Milton Keynes, MK6 1NE
<b>Site Reference</b> <b>Sample Reference</b>	Abbott House, Kings Langley 922/KPH
<b>Material</b>	Wood : Alder
<b><math>\delta^{13}\text{C}</math> relative to VPDB</b>	-25.9 ‰
<b>Radiocarbon Age BP</b>	6060 $\pm$ 35
<b>N.B.</b>	<ol style="list-style-type: none"><li>1. The above <math>^{14}\text{C}</math> age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.</li><li>2. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3).</li><li>3. Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code.</li></ol>
Conventional age and calibration age ranges calculated by :-	<i>P. Nispank</i> Date :- 21-12-07
Checked and signed off by :-	<i>Jonathan Cook</i> Date :- 21-12-07



## Appendix 5: ASC OASIS Form

PROJECT DETAILS			
Project Name:	Primrose Hill, Kings Langley		
Short Description:	In September 2007 ASC Ltd conducted an archaeological evaluation at Abbott House, Primrose Hill, Kings Langley in advance of a new residential development by Belstone Homes Ltd. The only archaeological remains observed during the evaluation were substantial peat deposits and preserved wood in the trenches in the northern part of the site. These have been sent for specialist analysis, and therefore this document forms an interim report, pending the results of this analysis.		
Project Type: (indicate all that apply)	Trial Trenching		
Site status: (eg. none, SAM, Listed)	None	Previous work: (eg. SMR refs)	None
Current land use:	Industrial	Future work: (yes / no / unknown)	Unknown
Monument type:	None	Monument period:	None
Significant finds: (artefact type & period)	None		
PROJECT LOCATION			
County:	Hertfordshire	OS reference: (8 figs min)	TL 0757 0327
Site address: (with postcode if known)	Abbot House, Primrose Hill, Kings Langley		
Study area: (sq. m. or ha)	1.8ha	Height OD: (metres)	70m
PROJECT CREATORS			
Organisation:	Archaeological Services & Consultancy Ltd		
Project brief originator:	Herts CC	Project design originator:	C Barclay
Project Manager:	J Hunn	Director/Supervisor:	J Richards
Sponsor / funding body:	Belstone Homes Ltd		
PROJECT DATE			
Start date:	24 <sup>th</sup> September 2007	End date:	10 <sup>th</sup> October 2007
PROJECT ARCHIVES			
	Location (Accession no.)	Content (eg. pottery, animal bone, files/sheets)	
Physical:	N/a	N/a	
Paper:	Three Rivers Museum	Project Design, Interim Report, Specialist Reports, Black and White prints and negatives, Fieldwork forms	
Digital:	Three Rivers Museum	Digital copies of reports, CD-ROM of digital photographs	
BIBLIOGRAPHY (Journal/monograph, published or forthcoming, or unpublished client report)			
Title:	Archaeological Evaluation, Interim Report: Abbott House, Primrose Hill, Kings Langley		
Serial title & volume:	ASC Client Report 922/KPH/2		
Author(s):	J Richards BA PIFA		
Page nos	23	Date:	10 <sup>th</sup> October 2007