

## 1 ABSTRACT

- 1.1 *In March 2006 an archaeological evaluation was undertaken by AOC Archaeology Group at the residential area (Phase II) of 18 London Road, Pulborough, West Sussex on behalf of Squires Bridge Homes, Shaw Healthcare Homes and GPIC Ltd. The site is bounded to the northwest by the train line from London to Chichester, the northeast by the new Tesco development, and to the southeast and southwest by various residential buildings, and was centred on TQ 0475 1897 (Figure 1). The evaluation work comprised the excavation of three trenches measuring 20.00m x 2.00m at base, located to assess the impact of the proposed development plan on any surviving archaeology, with particular focus on a stream located in the 1806/7 Ordnance Survey Map running across the site. The stream was identified in two trenches, dating to the post-medieval period. Overlying the alluvial silts in Trench 3 was a timber track dating to the late post-medieval period.*
- 1.2 *Due to the depth of the stream it was not possible to evaluate the depth, character or date of any deeper fills. Borehole excavation was therefore undertaken on 11<sup>th</sup> July 2006 on behalf of Kings Oak Homes Ltd. Two boreholes were excavated along the edge of Trench 3. These both contained an alluvial sequence dating approximately to the Holocene period. Borehole 2 contained a layer of gravel below the alluvium, thought to be deposited during the Devensian period.*

## **2 INTRODUCTION**

### **Site Location**

- 2.1 The site is centred on National Grid Reference (NGR) TQ 0475 1897, and is within land bounded to the northwest by the train line from London to Chichester, the northeast by the new Tesco development, and to the southeast and southwest by various residential buildings. The site is sub-rectangular in shape and covers an area of approximately 1.54ha (Figure 2).
- 2.2 Development proposals for the Phase II area consist of two Care Home blocks to the northeast of the site and residential development to the southwest. Both these developments consist of discrete new build units around communal open space and associated infrastructure. They will be constructed on piled foundations.

### **Planning Background**

- 2.3 The Local Planning Authority is West Sussex County Council. Archaeological advice to the council is provided by John Mills.
- 2.4 Under the guidelines of PPG16 a Desk-Based Assessment was commissioned by Pinnacle Consulting Engineers Ltd (AOC Archaeology 2004).
- 2.5 On the basis of the Desk-Based Assessment, West Sussex County Council (WSSC) advised that there may be remains of archaeological significance on the site, and that a programme of archaeological works was required ahead of the proposed redevelopment of the site.
- 2.6 Subsequent to this, the Phase I evaluation was conducted on retail development to the east of the site. The Phase I Written Scheme of Investigation (AOC Archaeology 2004b) identified the planning condition remaining on the western side of the site as being addressed under a separate Phase II evaluation strategy. In order to maintain the integrity of the archaeological documentation, the current evaluation works have been designated Phase II.

### **3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

- 3.1 The following information is derived from the Desk-Based Assessment (AOC Archaeology 2004) on 18 London Road, Pulborough, West Sussex.

#### **Geology**

- 3.2 The site is located in an area where Superficial Head deposits overlie Cretaceous, Hythe Formation or Fittleworth Formation.
- 3.3 Early editions of the Ordnance Survey Maps for the area show a watercourse crossing the central part of the site. It is likely that alluvial deposits will be present and could include very soft clays, silts and sands, gravels and possibly areas of peat.

#### **Prehistoric**

- 3.4 There have been several finds in the area ranging across the prehistoric period: a Palaeolithic hand axe, a few Mesolithic flints, two Neolithic arrowheads and a spearhead, and several Bronze Age finds of unknown location. A Hallstatt urn was found in 1910 at the sand pit above Lower Street in Pulborough.

#### **Roman**

- 3.5 The remains of a Romano-British building was discovered at Homestreet Farm in 1900. There have also been various finds such as a bronze statuette of Hercules on the left bank of the Arun, a Cinerary urn, and fragments of roof tile were found in St. Mary's churchyard. The Roman road running from Chichester to London (now London Rd) runs past the site on the southeast.

#### **Medieval**

- 3.6 Pulborough is a medieval town mentioned in the Domesday Book. It owes its origins to its situation as a crossing point on the river. There are several listed buildings of medieval date in Pulborough including four buildings dated to the 15<sup>th</sup> century. St. Mary's Church in Pulborough (Grade I listed) and a further property, Shepherd's Cottage (Grade II listed), date to the 14<sup>th</sup> century.

#### **Post-medieval**

- 3.7 Old Swan Bridge/Pulborough Bridge, Scheduled Monument No.139, is a stone bridge built in 1775. There are also several locally listed and listed buildings that date to this period. These range from the 15<sup>th</sup> to the 18<sup>th</sup> century. Two brick fields have been identified within the locality as well as two gun emplacements for 25 pound guns at the River Arun, positioned to protect the railway bridge and the road bridge at Pulborough.

### **Summary of cartographic data**

- 3.8 The Ordnance Survey Map of 1806/7 is the earliest to show Pulborough in sufficient detail. The stream that runs through the centre of the site is visible, running between two fishponds illustrated to the east and west of London Road.
- 3.9 The first edition Ordnance Survey Map of 1876 shows the stream and the plots depicting cottages, gardens and orchards in more detail. The site is still shown as open fields.
- 3.10 The third edition Ordnance Survey Map of 1911 identifies the London Road as Stane Street. Residential housing is in place to the north of the site.
- 3.11 The fourth edition of the Ordnance Survey Map of 1971 shows considerable change from the last edition. The stream is no longer visible and the north-eastern end of the site is now occupied by a large warehouse and several smaller buildings. A police station is illustrated adjacent to the London Road.
- 3.12 By 1982 the factory to the southwest of the site is illustrated and the existing warehouse has been enlarged. The fish pond to the east is no longer illustrated and is replaced with residential housing. The general area now looks much more developed. The area remains unchanged in the last survey of 2000.

### **Previous Archaeological Works**

- 3.13 Archaeological evaluation and watching brief work was undertaken by AOC Archaeology Group in January, February and April 2005 (AOC Archaeology 2005). Initial evaluation comprised three 20m x 2m trenches excavated within the footprint of the new retail store. Trench 2 showed archaeological remains limited to six linear features. Of these, one more defined linear feature and one feature containing two finds of uncertain provenance were identified at the west end.
- 3.14 Accordingly a further trench was excavated to clarify the results of the initial evaluation. This work consisted of one 30m x 10m area excavated at the west end of the original evaluation to define the extent, function and date of these features and any other associated features. The further work revealed three further linear features as well as the continuation of those found in the initial phase of works.
- 3.15 On the basis of the fills and linear nature of these features, they were identified as late post-medieval/early modern drainage cuts. A one day watching brief was also conducted on a small drainage hole dug close to the A29 (formerly the Roman road Stane Street). This revealed a substantial amount of organic blue clay but no archaeological features. Possibly this represented the fill of the stream or leat running east-west across the southern part of the site. However, a test pit report from Pinnacle (Pinnacle 2003) identified the natural geology as being in part a

mottled blue clay. A further one day watching brief was conducted on four test pits aligned along the line of a proposed culvert. This also revealed evidence of similar deposition to that found in the initial watching brief.

#### **4 AIMS AND OBJECTIVES OF THE INVESTIGATION**

- 4.1 The aims of the investigation as set out in the Written Scheme of Investigation (AOC 2006) 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. This applied to remains of all periods, and includes evidence of past environments.
- 4.2 The following objectives were addressed:
- Was there evidence for later prehistoric occupation or land use?
  - Was there evidence for Roman occupation or land use? Might this relate to Stane Street running adjacent to the site on its southeast side?
  - Was there evidence for medieval occupation or land-use, particularly in the form of field boundaries?
  - Was there evidence for post-medieval occupation or land-use?
- 4.3 The evaluation will also enable the archaeology advisor to WSCC to make an informed decision on the status of the condition on the planning permission, and any possible requirement for further work in order to satisfy that condition.
- 4.4 The final aim is to make available to interested parties the results of the investigation subject to any confidentiality restrictions.

#### **5 METHODOLOGY**

- 5.1 Prior to commencing the evaluation works on site, a *Written Scheme of Investigation* (WSI) was prepared by AOC Archaeology (AOC Archaeology 2006).
- 5.2 All fieldwork procedure followed AOC Archaeology Group Ltd Fieldwork Sector On-Site Handbook, dated May 2003 (AOC 2003) and was conducted in accordance with the WSI.
- 5.3 The excavation and recording conformed to current best archaeological practice and local and national standards and guidelines. (English Heritage 1991, 1992, 1998a, 2002; IFA 1992, 1994, 1997; Museum of London 1994; United Kingdom Institute for Conservation 1983, 1990; Council for British Archaeology 1987)
- 5.4 Before excavation commenced, a museum acquisition number was obtained from Horsham Museum (**2006.72.1**). This was used as a site code.

- 5.5 The evaluation comprised three trenches measuring 20m x 2.00m (Fig 2) at base. These were machine excavated with a tracked excavator fitted with a toothless ditching bucket. All machining was conducted under the constant supervision of the Archaeological Project Supervisor. Undifferentiated overburden of recent origin was removed in successive level spits.
- 5.6 At the start of each trench a sondage was excavated to establish how deep each trench would need to be, thereby enabling the trench to be made wide enough to allow for stepped edges in accordance with health and safety regulations.
- 5.7 The trenches were located as set out in the WSI.
- 5.8 Excavated material was examined in order to retrieve artefacts and to assist in the analysis of their spatial distribution.
- 5.9 On completion of machine excavation, all faces of the trench that required examination or recording were cleaned using appropriate hand tools. All investigation of archaeological horizons was by hand, with cleaning, inspection, and recording both in plan and section.
- 5.10 A temporary bench mark was set up on a curbing stone by the access gate. This had a value of 15.76mOD.
- 5.11 The evaluation work was undertaken by the author under the overall project management of Mark Beasley for AOC Archaeology.
- 5.12 The maximum depth of the channel was not identified in any of the trenches. While Trench 2 was excavated to the natural Head deposit, the channel cut was still deepening at the horizontal limit of excavation. As a result of this the archaeology advisor to West Sussex County Council, John Mills, requested further work in the form of borehole excavation to establish the depth and age of the alluvial sequence.
- 5.13 Two boreholes were subsequently excavated on 11<sup>th</sup> July 2006 using a Terrier Rig. These were located along the northern edge of Trench 3.

## 6 RESULTS

### Trench 1

Depth of deposit (mOD)	Context	Description
15.42 – 13.92	(1/001)	Modern made ground
13.92 – 13.17	(1/002)	Modern dump layer
13.17 – 10.67+	(1/003)	Natural mixed yellow/blue clay.

- 6.1 Trench 1 had to be moved 15m to the north of its original location due to the presence of services crossing its intended situation. A small lens of dark brown organic/peat material was observed within natural deposit (1/003), revealed in the sondage excavated at the north end of the trench. Due to the high level of hydrocarbon contamination within this trench the excavation was abandoned at the top of this contaminated deposit (approximately 13.92mOD), in consultation with the archaeology advisor to West Sussex County Council, John Mills.
- 6.2 Overlying the mixed yellow/blue natural clay was a thick layer of heavily hydrocarbon-contaminated dump material (1/002), thought to have been deposited during the occupation of the land by the Spiro-Gills factory in the late 1970's/early 1980's (noted in the desk-Based Assessment (AOC 2004)).
- 6.3 Overlying (1/002) was a modern deposit of made ground with frequent building material inclusions. This appeared to have been imported specifically for the purpose of raising the ground level across the site.
- 6.4 No archaeological deposits were recorded in this trench.

### Trench 2

Depth of deposit (mOD)	Context	Description
15.81 – 15.06	(2/001)	Modern made ground
15.06 – 14.56	(2/002)	Modern bedding layer
14.56 – 13.50	(2/003)	Blue clay. Modern made ground/dump.
13.50 – 13.35	(2/004)	Modern dumped commercial waste deposit.
13.35 – 12.05	(2/005)	Silted up brown clayey silt fill of [2/008]
13.35 – 11.35	(2/006)	Silted up dark brown silty clay fill of [2/008]
12.20 – 11.16+	(2/007)	Silted up light blue silty clay fill of [2/008]
13.35 – 11.16+	[2/008]	Natural channel cut
13.41 – 11.16+	(2/009)	Light yellow clayey silt. Natural head deposit.

- 6.5 The natural clay (2/009) was cut by a natural water channel [2/008] aligned approximately northwest-southeast. Channel [2/008] was 7.75m wide to the limit of excavation to the east and the cut for it was continuing below the vertical limit of excavation. Health and Safety considerations prevented deeper excavation of this feature. Despite being a naturally formed feature, channel [2/008] had moderately steep sides, possibly the result of water erosion. Another possibility is that the stream was later canalised, resulting in a more artificial profile. The earliest deposit within the cut was a light blue silty clay (2/007). This had occasional root remains and building material inclusions. Overlying (2/007) was a secondary fill (2/006), comprising moderately compacted dark brown silty clay with lenses of organic material and flecks of red brick. Fill (2/006) also appeared to be a naturally silted deposit. (2/006) was overlain by the final fill of [2/008], (2/005), a moderately – loosely compacted mid-brown clayey silt. Again, this deposit was recorded as being a naturally silted deposit within the channel cut [2/008].
- 6.6 Sealing (2/005) was a thin deposit of loosely compacted dark brown dumped material including pieces of wood, metal, glass and plastic. This deposit was considered to be a dumped deposit associated with the Spiro-Gills factory that formerly occupied the site, marked on the Ordnance Survey Map of 1978/1982 (AOC 2004).
- 6.7 Sealing (2/004) were three modern deposits. Layer (2/003) was a thick, heavy blue clay with building material inclusions. This appeared to be a redeposited alluvial deposit. (2/002) was a compacted yellow sandy gravel, thought to be a recent bedding layer to consolidate the ground, (2/001), above. (2/001) was an imported deposit of made ground, designed to raise the level of the ground, in this case to 15.81mOD.
- 6.8 No other archaeological features were identified within this trench.

### Trench 3

Depth of deposit (mOD)	Context	Description
15.32 – 13.72	(3/001)	Modern made ground
13.72 – 12.92	(3/002)	Compacted blue alluvial clay redeposit
13.74 – 13.59	(3/003)	Timber structure
13.64 – 13.50	(3/004)	Timber structure
13.60 – 13.48	(3/005)	Silty gravel packing layer
13.66 – NFE	(3/006)	Fill of modern truncation [3/007]
13.66 – NFE	[3/007]	Cut of modern intrusion
13.72 – NFE	(3/008)	Soft green/blue silty clay. Naturally silted deposit.



- 6.9 The earliest deposit recorded in this trench was (3/008), a naturally silted alluvial deposit. It is likely that this deposit was actually a fill within the natural channel, recorded in Trench 2 as [2/008]. However, no cut could be found due to truncation to the north and northwest, and the extension of (3/008) beyond the limits of excavation to the south and southeast. No datable evidence was recovered from (3/008). On the basis of its loosely compacted fill and being immediately overlain by late post-medieval timbers, it was considered that (3/008) was deposited during the post-medieval period.
- 6.10 Constructed on top of (3/008) were two timber structures, (3/004) and (3/003). These were both aligned approximately north-south and were of similar build, comprising long timbers on either side with planks nailed to both underside and topside and linked to each other with metal cleats. (3/003) measured 4.00m x 0.80m and was 0.10m deep. (3/004) measured 2.00m x 0.80m and was also 0.10m deep. Flanking (3/004) on both sides were reused timber sleepers measuring 1.20m (to the limit of excavation) x 0.25m x 0.10m deep. (3/003) and (3/004) were packed with a blue/grey silty gravel (3/005). These deposits formed a path of late 19<sup>th</sup>/ early 20<sup>th</sup> century date, almost certainly for pedestrians, across what would have been very wet, boggy ground – the result of the silted channel recorded in Trench 2. At their northern extent both (3/003) and (3/004) were truncated. This was most likely to be the result of activity associated with cut [3/007] but this relationship could not be proved.
- 6.11 Cut [3/007] crossed the trench at a roughly east-west alignment, truncating alluvial deposit (3/008) below. The fill of [3/007], (3/006), was a firmly compacted light brown/orange clay containing modern brick and glass inclusions. Owing to the practical problems of water in the trench and the modern date of this feature it was not excavated and the function remains unclear. Possibly it was associated with one of the many service pipes found in Trench 3.
- 6.12 Sealing fill (3/006) and timbers (3/003) and (3/004), a layer of blue, dense clay (3/002) with a moderate amount of building material inclusions was recorded. This was identified as a made ground deposit of redeposited alluvium. Layer (3/002) was sealed by a layer of imported made ground (3/001). This was a clayey gravelly silt containing frequent building material inclusions.
- 6.13 Other than the timber structure (3/003)/(3/004), no archaeological features were recorded in this trench.

### **Borehole Results**

- 6.14 Two boreholes were excavated next to Trench 3 (Figure 2), where the top of the alluvial sequence had been identified during the evaluation but the depth unknown. Boreholes 1 and 2 were excavated to depths of 5.70m and 6.00m respectively. For a full description refer to Appendix C.

- 6.15 Borehole 1 contained four organic horizons between depths of 2.30m and 4.90m, while Borehole 2 contained similar, although less (two), horizons between 1.32m and 3.35m. The organic horizons in Borehole 1 sealed dark grey sands to the vertical limit of excavation. In Borehole 2 the organic horizons sealed a thin gravel layer which sealed a thick sequence of yellow to grey sands.
- 6.16 The alluvial sediments recovered from the boreholes are typical of those anticipated in alluvial situations. The nature of the fine grained sediments indicates that they probably date to the Holocene period.
- 6.17 The thin gravel layer is probably the result of deposition under cold climate conditions and can therefore be ascribed to the late Devensian period.

## 77 FINDS

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- 7.1 All finds collected during the evaluation were of late post-medieval date and were not retained. Timber samples were not taken from the wooden trackway in Trench 3 (3/003, 3/004), as this was late 19<sup>th</sup>/early 20<sup>th</sup> century in date.

## 8 CONCLUSIONS

- 8.1 The evaluation established the presence of the stream or channel located on the Ordnance Survey Map of 1806/7 in Trench 2. It seems likely that alluvial deposit (3/008) in Trench 3 also represents a later fill of this channel but due to practical problems resulting from the presence of service pipes and the timber path, this could not be clarified by the evaluation work.
- 8.2 Trench 2 located the southwest side of the channel. In this trench the channel was recorded as being 7.50m to the horizontal limit of excavation. At this juncture the cut was still deepening which would suggest that the overall size of the channel may well be in excess of 15.00m wide. Deposits recorded in this cut were of late post-medieval date. However, the possibility for earlier deposits was unevaluated due to the unsafe depth.
- 8.3 The geoarchaeological results demonstrate that there are much earlier deposits, although these are naturally deposited and contain no archaeological remains. The postulated age of these deposits indicates that the channel was certainly a 'natural' feature, at least to begin with. The fact that no archaeological remains until the late post-medieval period were found suggests that this continued to be the case.
- 8.4 None of the trenches excavated showed any signs of revetting or artificial manipulation associated with the channel recorded as [2/008]. The timber structures identified in Trench 3 were overlying an alluvial deposit that formed the fill of the channel. It is likely that these were intended to aid traversing the boggy ground left as a result of the channel having silted up, rather than being directly associated with the channel in the period prior to its silting. This would mean that although the alluvial deposit was not dated, the timber structures were at the earliest dating to the very late 19<sup>th</sup> century as the stream was still present when the Ordnance Survey Map of 1876 was created.
- 8.5 No earlier structures were recorded, suggesting that if the channel was part of a managed water system associated with the medieval moat and postulated fishpond, it was a case of utilising a natural feature rather than creating a leat for the specific purpose.

- 8.6 The specialist has recommended that further work be carried out in order to date the alluvial sequence retrieved during the borehole excavations. However, this decision, along with any other requirement for further work, will be made by the archaeology advisor to West Sussex County Council. This report has been prepared to assist the West Sussex County Council archaeology advisor to make an informed decision on the status of the condition on the planning permission.

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Fig. 1 Site Location

Fig 2. Trench Location



Fig. 3 Trench 2 section

**Fig 4 Trench 3 plan**

## Appendix A: Context Register

Context No.	Context Description	Length	Width	Depth	Image No.	Single Ctxt. Plan?	Plan No.	Section No.
1/001	Modern made ground	Trench	Trench	1.50m	-	No	-	1
1/002	Modern dump layer	Trench	Trench	0.75m	-	No	1	1
1/003	Natural yellow/blue clay	10.50m	2.00m	2.75m	-	No	1	1
2/001	Modern made ground	Trench	Trench	0.75m	-	No	-	2
2/002	Modern gravel bedding layer	Trench	Trench	0.50m	-	No	2	2
2/003	Redeposited blue clay	Trench	Trench	1.00m	-	No	2	2
2/004	Modern dump deposit	7.50m	4.00m	0.15m	-	No	-	2
2/005	Tertiary fill of [2/008]	7.00m	4.00m	1.25m	-	No	2	2
2/006	Secondary fill of [2/008]	7.75m	2.00m	0.60m+	-	No	2	2
2/007	Primary fill of [2/008]	4.50m	2.00m	0.45m+	-	No	2	2
2/008	Channel cut	7.75m	2.00m	2.50m+	-	No	2	2
2/009	Natural yellow/blue clay	10.00m	2.00m	1.85m	-	No	2	2
3/001	Modern made ground	Trench	Trench	1.60m	-	No	-	-
3/002	Redeposited alluvial clay	Trench	Trench	0.80m	-	No	-	-
3/003	Timber structure	4.00m	0.80m	0.10m	-	No	3B	-
3/004	Timber structure	2.00m	0.80m	0.10m	-	No	3B	-
3/005	Gravel packing layer	3.10m+	2.90m	0.10m	-	No	3B	-
3/006	Fill of 3/007	7.50m	5.00m+	NFE	-	No	3A	-
3/007	Modern Cut	7.50m	5.00m+	NFE	-	No	3A	-
3/008	Possible alluvial fill	10.00m	6.00m	NFE	-	No	3A	-

## **Appendix B – Matrix**

## **Appendix C**

### **Field and preliminary laboratory observations**

#### **18 London Road, Pulborough (Site Code 2006.72.1)**

**17 August 2006**

**Martin R. Bates**

### **Introduction**

Two site visits were made by the author to the site in March and July 2006. An initial visit made on 8<sup>th</sup> March 2006 was undertaken by the author in the company of site supervisor Andy Leonard. Two trenches were observed in which a range of different sediment types were present. Because of the instability of the trench sides and the difficulties of access to the deeper parts of the site a proposal was made to undertake the drilling of auger holes in order to recover a more complete sequence of samples. This was undertaken on 11<sup>th</sup> July 2006 when 2 boreholes (BH 1 and 2, see Appendix I) were drilled. This report presents the primary borehole logs (including photographs), a summary of the likely environmental conditions associated with sequence accumulation and recommendations for further work.

### **Background**

The site lies north of Pulborough town centre at the base of a gently sloping valley that forms a minor tributary draining towards the west that eventually enters the Arun about 1km from the site.

The site lies within the Weald area, an eroded anticline that exposes older rocks in the core of a dome flanked to the south by the younger chalk rocks of the South Downs about 5km from the site. Bedrock geology has been mapped by the British Geological Survey (1996) and their mapping indicates that the site lies close to the boundary between the Hythe Formation and the overlying Sandgate Formation (both belonging to a group known as the Lower Greensand Group). The Hythe Formation consists of glauconitic fine to coarse sandstones while the overlying Sandgate Formation consists of sandy clays and clayey sands of the local Fittleworth Member. All these deposits belong to the Cretaceous.

Overlying the bedrock geology the flanks of the valley are mantled by Head deposits that may contain a variety of grain sizes from gravel to clay. The age of the Head deposits in the area is unknown although they are likely to be polycyclic and therefore may well date to a number of different phases in the Pleistocene. At least some of the Head deposits are likely to have been emplaced during the last cold stage (the Devensian).

Valley bottom sediments are also recorded in the vicinity of the site to the west of the railway but not shown to penetrate east of the railway and into the site area. These deposits are mapped as alluvium. These are likely to be fine grained clays and silts deposited during the Holocene (last 10,000 years) with a possible basal gravel dating to the final part of the last cold stage, probably post dating the glacial maximum at 18-20ka B.P.

### **Survey**

Two boreholes were drilled using a Terrier drill rig on the 11<sup>th</sup> July 2006 (Plate 1). The position of the boreholes were located by staff from AOC prior to commencing drilling. Survey details are held by AOC.

Drilling utilised equipment capable of recovering 1m length sealed cores. Drilling ceased when bedrock was attained (BH 2) or when drilling conditions made it impossible to drill further (BH 1).

All cores were taken by the author and cut and cleaned. Preliminary logs are presented in Appendix I along with a photographic record of the cores.

### **Results**

In both cases sample recovery varied depending on ground conditions. Due to the nature of the made ground in BH 1 no recovery of core material was possible from the upper 2m of stratigraphy, recovery only began at a depth of 2m where the base of the made ground was encountered. Drilling of BH 1 ceased at a depth of 5.7m where the presence of dense sands and driven gravel clasts made further drilling impossible. Recovery in BH 2 was good throughout and drilling ceased when bedrock had been satisfactorily reached.

In both cases similar sequences were encountered beneath made ground. In BH 1 interbedded clay-silts/sands and organic horizons were encountered between depths of 2.3m and 4.9m (4 organic horizons present) while in BH 2 similar sediments were encountered between 1.32m and 3.35m (only 2 organic horizons were present).

In BH 1 beneath the lowermost organic horizon dark grey sands were encountered (4.90 – 5.70m). In BH 2 a thin gravel horizon (3.35 – 3.55m) sealed a thick sequence of yellow to grey sands (3.55 – 6.00m).

### **Discussion**

The evidence obtained from the boreholes indicates that beneath the made ground sequences in both boreholes a sequence of alluvial sediments (mixed clay-silts/sands and organic silts) are present. These sediments are typical of those anticipated in alluvial

situations and are likely to be similar to those associated with the tongue of alluvium mapped to the west of the railway by the BGS. On the basis of this evidence the tongue of alluvium can now be extended east of the railway.

The nature of these fine grained sediments suggest accumulation in low energy floodplain or fluvial conditions in which slow moving water (minerogenic (clay-silt/sand) parts of sequences) alternated with phases in which organic material built up as a result of the lessening of fluvial conditions and perhaps emergence of the site above permanently inundated conditions. These sediments probably all date to the Holocene.

In BH 2 these deposits rested on a thin gravel horizon. It is difficult to ascertain from the borehole sequence whether this represents fluvial deposition or deposition by other processes such as colluviation or through solifluction processes. It is most likely these gravels represent deposition under cold climate conditions and can therefore be ascribed to the late Devensian period (?post 20ka B.P.).

It is likely that bedrock was attained beneath the gravel in BH 2 and may tentatively be ascribed to the Fittleworth Member of the Sandgate Formation. It is unclear at present whether the basal parts of BH 1 represent bedrock or whether they are parts of the Holocene alluvial sequence.

The results of the drilling are entirely consistent with the pattern that may be suggested from an interpretation of the BGS mapping and all sequences probably post date the last glacial maximum in age. The sequence of Holocene alluvium remains difficult to relate to any particular phase of the Holocene without supporting evidence from other sources.

### **Recommendations for further work**

The evidence presented in this study indicates that well preserved alluvial sediments of Holocene age exist at the site. These include organic as well as inorganic units and therefore it is predicted that:

1. Pollen probably exists within the organic beds and may be present within the minerogenic units.
2. Microfossils such as ostracods may exist in the minerogenic units (fossil material (including foraminifera) may also exist within the sequences, particularly the base of BH 1, that may allow bedrock to be clearly differentiated from alluvium where it is presently difficult to do this, e.g. BH 1 base).
3. The organic horizons contain sufficient carbon for dating through AMS methods.

Because the age of the alluvium is presently unknown it is suggested that age estimates are a priority at the site prior to determining whether or not any additional investigation is merited. Dating the 4 main organic horizons in BH 1 would achieve this aim. This might

usefully be linked to microfossil assessment of the minerogenic units in order to attempt to differentiate bedrock from alluvium. Depending on the results of the dating exercise it is then possible that pollen analysis in order to produce a local pollen diagram may be justified.

## **References**

British Geological Survey 1996 **Chichester and Bognor**. England and Wales Sheet 317/332. Solid and Drift Geology. 1:50 000. British Geological Survey: Keyworth.



### Borehole logs BH 1 and 2

18 London Road, Pulborough		11/7/06	BH 1
Grid co-ordinates			
Elevation (m O.D.)			
Depth below ground level	Sediment description	Inferred environment of deposition	
0.00 – 2.00	Not recorded	Made ground	
	---not observed---		
2.00 – 2.30	Soft yellowish brown clay-silt.	?made ground	
	---abrupt contact---		
2.30 – 2.38	Grey-brown organic silt. Soft and structureless.	Low energy fluvial?	
	---graded contact---		
2.38 – 2.48	Yellow-brown fine sand and silt.	Low energy fluvial, some moving water	
	---sharp contact---		
2.48 – 2.52	Brown organic silt.	Very low energy, standing very shallow water or emergent surface	
	---abrupt contact---		
2.52 – 2.80	Grey clay-silt.	Low energy fluvial?	
	---sharp contact---		
2.80 – 2.84	Yellow-brown silt.	Low energy fluvial?	
	---abrupt contact---		
2.84 – 3.20	Dark brown organic silt.	Very low energy, standing very shallow water or emergent surface	
	---abrupt contact---		
3.20 – 3.40	Grey sand becoming finer with depth.	Low energy fluvial, some moving water becoming higher energy up-profile	
	---abrupt contact---		
3.50 – 3.65	Greenish-grey sand.	Low energy moving water	
	---sharp contact---		
3.65 – 3.90	Yellowish-grey clay-silt.	Low energy fluvial?	
	---sharp contact---		
3.90 – 4.10	Brown organic silt.	Very low energy, standing very shallow water or emergent surface	
	---sharp contact---		
4.10 – 4.70	Grey clay-silt.	Low energy fluvial?	
	---sharp contact---		
4.70 – 4.90	Brown organic silts.	Very low energy, standing very shallow water or emergent surface	
	---abrupt contact---		
4.90 – 5.70	Very dark grey sand.	Low energy moving water	
	---hole abandoned 5.70m---		

18 London Road, Pulborough		11/7/06	BH 2
Grid co-ordinates			
Elevation (m O.D.)			
Depth below ground level	Sediment description	Inferred environment of deposition	
0.00 -1.32	Not recorded.	Made ground	
	---abrupt contact---		
1.32 – 1.58	Dark grey clay-silt.	Low energy fluvial?	
	---sharp contact---		
1.58 – 1.65	Black organic silt and large clasts of stone/brick.	Made ground	
	---sharp contact---		
1.65 – 1.90	Yellow-brown becoming grey medium/fine sand	Low energy moving water	
	---sharp contact---		
1.90 – 2.00	Brown organic silt and sand	Low energy moving water with high input of local vegetation	
	---not seen---		
2.00 – 2.55	Grey fine sand. Massive and structureless.	Low energy moving water	
	---abrupt contact---		
2.55 – 3.35	Grey to light grey fine sand. Structureless. Becomes yellowish grey sand with depth	Low energy moving water	
	---abrupt contact---		
3.35 – 3.55	Poorly sorted sandy-gravel. Sub-angular clasts typically <5cm. Sand matrix. Loose and structurless.	? Moderate to high energy moving water or downslope movement of material (colluvial processes). Possibly late Pleistocene cold climate system either in water or as solifluction.	
	---sharp contact---		
3.55 – 6.00	Yellow-brown to grey becoming grey and dark grey with depth. Medium/fine sand.	Low energy moving water. Bedrock.	
	---hole abandoned 6.0m---		

## Appendix D - OASIS DATA COLLECTION FORM

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### Printable version

**OASIS ID: aocarcha1-13737**

#### Project details

Project name	Phase II, 18 London Road, Pulborough, West Sussex - An Archaeological Evaluation Report
Short description of the project	In March 2006 an archaeological evaluation and was undertaken by AOC Archaeology Group at the residential area (Phase II) of 18 London Road, Pulborough, West Sussex on behalf of Squires Bridge Homes, Shaw Healthcare Homes and GPIC Ltd. The evaluation work comprised the excavation of three trenches measuring 20.00m x 2.00m at base, located to assess the impact of the proposed development plan on any surviving archaeology, with particular focus on a stream located in the 1806/7 Ordnance Survey Map running across the site. The stream was identified in two trenches, dating to the post-medieval period. Overlying the alluvial silts in Trench 3 was a timber track dating to the late 19th/early 20th century. Following the archaeological fieldwork, two boreholes were excavated adjacent to Trench 3 to establish the depth and age of the alluvial deposits.
Project dates	Start: 06-03-2006 End: 09-03-2006
Previous/future work	Yes / Yes
Any associated project reference codes	2006.72.1 - Museum accession ID
Any associated project reference codes	LOP 05 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Other 13 - Waste ground

*PHASE II - RESIDENTIAL AREA, 18 LONDON ROAD, PULBOROUGH, WEST SUSSEX – AN ARCHAEOLOGICAL EVALUATION REPORT*

Methods & techniques	'Targeted Trenches'
Development type	Rural residential
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	WEST SUSSEX HORSHAM PULBOROUGH 18 London Road, Pulborough, West Sussex
Postcode	RH20 1AS
Study area	1.54 Hectares
National grid reference	TQ 0502 1913 Point
Height OD	Min: 13.18m Max: 13.41m

#### **Project creators**

Name of Organisation	AOC Archaeology Group
Project brief originator	Contractor (design and execute)
Project design originator	AOC Archaeology Group
Project director/manager	Mark Beasley
Project supervisor	Andy Leonard

*PHASE II - RESIDENTIAL AREA, 18 LONDON ROAD, PULBOROUGH, WEST SUSSEX – AN ARCHAEOLOGICAL EVALUATION  
REPORT*

Sponsor or  
funding body

Developer

**Project archives**

Physical Archive  
Exists?

No

Digital Archive  
Exists?

No

Paper Archive  
recipient

Horsham Museum

Paper Archive ID

2006.72.1

Paper Contents

'Ceramics','Stratigraphic'

Paper Media  
available

'Context  
sheet','Manuscript','Matrices','Microfilm','Photograph','Plan','Report','Section','Unpublished  
Text'

Paper Archive  
notes

Archive retained at AOC Archaeology until deposition with Horsham Museum.

**Project  
bibliography 1**

Publication type

Grey literature (unpublished document/manuscript)

Title

An Archaeological Desk-Based Assessment of 18 London Road, Pulborough, West  
Sussex

Author(s)/Editor(s)

Brooks, S.

Date

2004

Issuer or  
publisher

AOC Archaeology Group

*PHASE II - RESIDENTIAL AREA, 18 LONDON ROAD, PULBOROUGH, WEST SUSSEX – AN ARCHAEOLOGICAL EVALUATION  
REPORT*

Place of issue or publication AOC Archaeology Group

Description A4 bound document

**Project  
bibliography 2**

Publication type Grey literature (unpublished document/manuscript)

Title 18 London Road, Pulborough, West Sussex - A Written Scheme of Investigation for a Phase 1 Archaeological Evaluation

Author(s)/Editor(s) Leonard, A.

Date 2004

Issuer or publisher AOC Archaeology

Place of issue or publication AOC Archaeology

Description A4 Bound Document

**Project  
bibliography 3**

Publication type Grey literature (unpublished document/manuscript)

Title 18 London Road, Pulborough - An Archaeological Evaluation and Watching Brief Report

Author(s)/Editor(s) Leonard, A.

Date 2005

Issuer or publisher AOC Archaeology

Place of issue or publication AOC Archaeology

*PHASE II - RESIDENTIAL AREA, 18 LONDON ROAD, PULBOROUGH, WEST SUSSEX – AN ARCHAEOLOGICAL EVALUATION  
REPORT*

Description A4 Bound Document

**Project  
bibliography 4**

Publication type Grey literature (unpublished document/manuscript)  
Title 18 London Road, Pulborough, West Sussex: Written Scheme of Investigation for Phase II Archaeological Evaluation

Author(s)/Editor(s) Leonard, A.

Date 2006

Issuer or publisher AOC Archaeology

Place of issue or publication AOC Archaeology

Description A4 Bound Document

**Project  
bibliography 5**

Publication type Grey literature (unpublished document/manuscript)  
Title Phase II - Residential Area, 18 London Road, Pulborough, West Sussex - An Archaeological Evaluation Report

Author(s)/Editor(s) Leonard, A.

Date 2006

Issuer or publisher AOC Archaeology Group

Place of issue or publication AOC Archaeology Group

*PHASE II - RESIDENTIAL AREA, 18 LONDON ROAD, PULBOROUGH, WEST SUSSEX – AN ARCHAEOLOGICAL EVALUATION  
REPORT*

Description      A4 Bound Document

Entered by      Andy (andyleonard@aocarchaeology.co.uk)

Entered on      22 August 2006

**OASIS:**

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