

# SANDY LANE, WEST THURROCK, ESSEX AN ARCHAEOLOGICAL WATCHING BRIEF REPORT

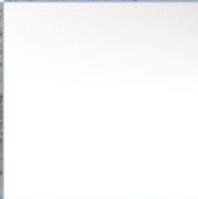
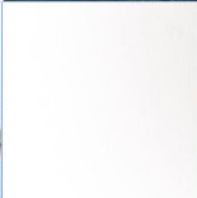
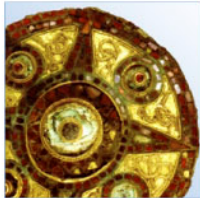
Planning Application Number: THU/0113/07/FUL

National Grid Reference Number: TQ 5895 7785

AOC Project no: 7926

Site Code: THSL07

Date: February 2009



ARCHAEOLOGY

HERITAGE

CONSERVATION

## SANDY LANE, WEST THURROCK, ESSEX

### AN ARCHAEOLOGICAL WATCHING BRIEF REPORT

**On Behalf of:** **Wallis Motors and Salvage**  
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**National Grid Reference (NGR):** **TQ 5895 7785**

**AOC Project No:** **7926**

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**Date of Report:** **February 2009**

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

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## Non-Technical Summary

*An Archaeological Watching Brief was undertaken between October 2007 and March 2008 at Sandy Lane, West Thurrock, Essex. The work was undertaken by AOC Archaeology Group on behalf Wallis Motors and Salvage.*

*The watching brief covered the machine excavation of strip foundation trenches, service runs and ground reduction. Natural alluvial and brickearth deposits were identified on site between 0.75m and 0.35m below ground level. Three features were identified truncating the brickearth, consisting of two pits and a linear ditch. The ditch did not produce any dateable finds, and the dating evidence recovered from the pits was ambiguous, although it does indicate that a low intensity of activity was taking place on site during the Late Bronze Age to Early Iron Age and the Romano-British periods. Sealing the features and across the remainder of the site was a layer of subsoil followed by a layer of either topsoil or made ground.*

## 1. Introduction

### 1.1 Site Location

- 1.1.1 The site was centred on National Grid Reference (NGR) TQ 5895 7785, and is within land bounded by Sandy Lane to the west and the West Thurrock Way to the east (Figures 1 & 2). A narrow, unmade footpath borders the northern edge of the site, and industrial units lie to the south.
- 1.1.2 The site is roughly rectangular in shape and measures approximately 1000m<sup>2</sup>.

### 1.2 Geology and Topography

- 1.2.1 The British Geological Survey map (BGS Sheet 256) indicates that the site is situated upon Taplow Gravel, with probable underlying Seaford Chalk, and probably overlain by alluvium, sand and gravel.
- 1.2.2 Geotechnical investigations were monitored by Pre-Construct Archaeology in 2007. The results indicate that there is for potential for stratigraphy containing early environmental evidence, including pollen, invertebrates and vertebrates, and sandy deposits from the interglacial periods.

### 1.3 Planning Background

- 1.3.1 The local planning authority is Thurrock Council. Archaeological advice to the council is provided by Richard Havis of Essex County Council's Historic Environment Management Team (HEM Team).
- 1.3.2 A Planning application (Ref: THU/0113/07/FUL) for industrial development was submitted in January 2007, and a full archaeological condition was recommended. The wording is as follows:

*"No development or groundworks of any kind shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the Local Planning Authority.*

- 1.3.3 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 archaeology advisor to Thurrock Council.
- 1.3.4 A Written Scheme of Investigation was prepared as a requirement of the Conditional Planning Permission. The archaeological Watching Brief followed an initial programme of Archaeological Assessment of geotechnical test pits on the site. This identified potentially important geological and early archaeological deposits, thus a further phase of archaeological investigation was required, in relation to the destruction of the potential archaeological resource.

## 2. Archaeological and Historical Background

No previous archaeological investigations have occurred on the site and little in the way of archaeological excavation has occurred in the area. No Desk Based Assessment was produced for this site. There are a number of entries in the Essex Sites and Monument Record for archaeological features or chance finds within close proximity to the site.

## **2.1 Palaeolithic (500,000 - 10,000 BC)**

- 2.1.1 During the Palaeolithic, the Thames flowed across east Essex and beyond Clacton, where the sea lay beyond the present shoreline. As the Thames was forced south through alternating cold and warm periods, sheets of sand and gravel were deposited, such as the Mucking and Corbets Tay formations.
- 2.1.2 The earliest evidence of early human activity in the area takes the form of an Acheulian handaxe (SMR no. 5056). The precise location is not identified on the SMR, but it is a good indicator of the potential of the area. Extensive work in the Thames Estuary has identified Palaeolithic sites of similar geological character.

## **2.2 Mesolithic (10,000 – 4,300 BC)**

- 2.2.1 Mesolithic activity has been identified approximately a kilometre north of the site. An assortment of Mesolithic implements including a finely serrated blade and other various narrow blade cores has been found. The Mesolithic period saw the gradual colonisation of south Essex by trees, which can be confirmed by pollen analysis.

## **2.3 Neolithic (4,300 – 2100 BC)**

- 2.3.1 Further prehistoric evidence was also found a kilometre north of the site, from the Neolithic period. This may be evidence that occupation in the area was focussed upon slightly higher ground. A quantity of D-shaped Neolithic scrapers have been found (SMR 5037) amongst a number of pits of undetermined date.

## **2.4 Bronze Age (2100- 750 BC)**

- 2.4.1 The Bronze Age character of the Thames is frequently typified by peat deposits formed through the gradual rise of the Thames, creating marshy environments, with permanent settlements located on higher ground. No confirmed Bronze Age sites are within a kilometre radius of the site.

## **2.5 Iron Age (750 BC – c.AD 43)**

- 2.5.1 The Iron Age has the largest number of entries on the Essex SMR. 200m west of the site, Early Iron Age pottery has been found from what may be a gravel surface (SMR No. 5038). To the west of Mill Wood, further Iron Age pottery, flint tools and a pit have been found, all indicative of a settlement (SMR Nos. 5014 and 5015). A further Iron Age pit has been found just 100m north of the site, at the edge of a gravel quarry.

## **2.6 Undated prehistoric**

- 2.6.1 Further finds and features of prehistoric date are in the vicinity. These include a number of pits to the north of the site (SMR No. 5307), two flint scrapers from a point just north of the site (SMR No. 5046), and crop marks have been identified as representing ditches and enclosures, which may be of prehistoric date (SMR No. 5083).
- 2.6.2 Ten deneholes have also been excavated in the vicinity, whose function and cause is under some discussion. They are typically deep shafts with chambers at the base. They are not natural hollows, and may be the result of prehistoric mining for flint.



## 2.7 Roman (c. AD 43 - 450)

2.7.1 There are two entries for features of Roman date on the SMR. These are a group of pits from a possible domestic setting (SMR No. 5039) and a pair of burials in amphorae, uncovered in 1931 (SMR 5039). These finds are both over a kilometre from the site.

## 2.8 Anglo-Saxon (c.451-1065)

2.8.1 No Saxon archaeological remains are recorded in the Essex Sites and Monuments Record. Mucking is the nearest known Anglo-Saxon settlement.

## 2.9 Medieval (c.1066 - 1485)

2.9.1 The area appears to have been sparsely populated during the medieval period, and dominated by agricultural land.

## 2.10 Post-Medieval (c.1485 - modern)

2.10.1 The nearest post-medieval building of note, at National Grid Reference (NGR) TQ 5878 7780 is Dove House, now known as Hunts Farm. It is first shown on a 17<sup>th</sup> century map (SMR No. 5051).

2.10.2 No development on the site is illustrated on any Ordnance Survey map predating 1939, suggesting that the site was open land throughout the post-medieval period. The most recent use for the site was a builder's yard, with sheds, storage and areas of hard standing. All this has now largely been cleared.

## 2.11 Previous Archaeological Investigations

2.11.1 In April 2007 an archaeological watching brief to observe the excavation of seven geo-technical trial pits and two boreholes was undertaken by Pre-Construct Archaeology. The watching brief identified a sequence of sand, sand and gravel, and clay deposits occurring across the area of the site, and was interpreted as possibly representing deposits of a braded river channel. No archaeological features were recorded during the course of the work, although a struck flint was recovered from one of the sandy deposits. Due to the heavily abraded nature of the flint, it was believed to have been re-deposited (PCA 2007).

# 3. Strategy

## 3.1 Aims and Objectives

3.1.1 The aims of the Watching Brief were defined as being:

- To record 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 excavate any archaeological remains encountered.
- To assess the ecofactual and environmental potential of any archaeological features and deposits, in order to determine the need for specialist input.
- To record the extent of any truncations of the archaeological deposits caused by the siting of the recent builder's yard.
- To enable the archaeology advisor to Thurrock Council to make an informed decision on the status of the condition on the planning permission, and any possible requirement for further analysis of the archaeological results in order to satisfy that condition.

- To make available to interested parties the results of the investigation in order to inform the mitigation strategy as part of the planning process.

3.1.2 The specific objectives of the Watching Brief were to:

- Record the presence of any remains of prehistoric date.
- Record the presence of any remains of Palaeolithic date on the site.
- Sample geoarchaeological deposits to characterise the changing environment of this part of south Essex.
- Assess the results in the light of the local research framework.

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

## 3.2 Methodology

3.2.1 The Watching Brief was conducted during the machine excavation of foundation trenches, bulk excavation, ground reduction and service runs, (Figure 3). The excavation was conducted using a JCB 3CX machine with a 0.50m wide flat ditching bucket.

3.2.2 All excavations were carried out under the constant supervision and observation of an experienced archaeologist.

3.2.3 All of the work was carried out in line with Archaeological Guidance Paper (AGP): 3, Standards and Practices in Archaeological Fieldwork (English Heritage June 1998); and IFA Standards and Guidance for Archaeological Watching Briefs (IFA 2001).

3.2.4 A unique site code for the project was designated as **THSL07**.

3.2.5 The watching brief was undertaken by Adam Lord and Paolo Guarino under the overall project management of Andy Leonard, Fieldwork Divisional Manager for AOC Archaeology.

3.2.6 On completion of machine excavation, all faces of trenches that required examination or recording were cleaned using appropriate hand tools and the full stratigraphic sequence was recorded. Any archaeological remains revealed were excavated by hand with a view to avoiding damage to any archaeological features or deposits which appeared to be demonstrably worthy of preservation *in situ*.

3.2.7 The pits present were half-sectioned and then recorded. The linear ditch feature was excavated in two slots and recorded.

3.2.8 Written descriptions, comprising both factual data and interpretative elements was recorded on standardized pro-forma recording sheets. Plans were drawn of each trench at a scale of 1:100. Sections of features and short representative sample sections of trenches were drawn at 1:10. A full black and white, colour (35mm transparency) and digital photographic record was created, illustrating the sites principal features and finds. All identified finds and artefacts were collected and retained for dating and analysis.

3.2.9 Where appropriate, 40 litre bulk samples were taken for the recovery and assessment of environmental data. Sampling methods followed English Heritage guidelines (EH 2002).



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

## 4. Results

- 4.1 Natural alluvial deposits were observed across the site in all thirteen trenches. The deposits were recorded as yellow orange sand, (2/005), (2/003), (3/003), (3/005), (4/004) (7/005), (9/004), (13/004); yellow brown gravel (5/003), (6/004), (7/004), (9/003); yellow orange coarse sand and gravel (13/003); orange or red grey silty clay (1/003), (2/004), (3/004), (4/003), (8/004), (8/009), (11/004), (11/005), (12/004), (12/005).
- 4.2 Overlying the alluvial deposits was a 1.50m thick deposit of grey orange sandy silt clay brickearth. The brickearth was only observed in four trenches (8/003), (10/005), (11/003), and (12/003) which located in the north-west of the site (Figure 3 & 4).
- 4.3 The clay, sand, and gravel layers are thought to be the remains of river deposits, accumulating during episodes of slow to fast flowing water. The distribution of the deposits on the site indicates a distinct difference between the northern and southern areas of the site. The sand and gravel deposits, to the south, would have been laid down during a period of fast flowing water. This was followed by a later period of slower moving water allowing for the build up of clay and possibly the brickearth, to the north.
- 4.4 During the course of the on site archaeological investigations three features were observed and recorded. Two features [8/006] and [8/008] were located in Trench 8, and a single feature [10/004] in Trench 10 (Figure 3).
- 4.5 Trench 8 was located centrally in the northern half of the site. Cutting into the brickearth were features [8/006] and [8/008]. Linear feature [8/006] was aligned north-south and measured 3.90m x 0.66m x 0.18m. Initially observed in section, the linear was observed fully in plan during further ground reduction. The linear feature was filled by (8/005), a firm orange greyish brown clay sandy silt with occasional charcoal flecks and fragments of fire-fractured flint. No dating evidence was recovered. Interpretation is difficult, especially as there were so few other features on the site.
- 4.6 A large pit [8/008] was also observed during the excavation of Trench 8. Pit [8/008] was oval in shape and measured 2.20m x 1.20m x 0.47m. The pit was filled by (8/007), a loose dark orange grey brown sandy silt, containing a substantial assemblage of finds. Thirty-seven pieces of knapped flint were recovered, primarily consisting of debitage, although three worked flint scrapers were identified. The pit fill also contained a substantial quantity of fire-fractured flint, non-diagnostic slag and a fragment of calcined mammal bone, all of which indicates heating activity taking place within the vicinity of the site. A small quantity of ironworking slag provides further evidence for the use of fire. There were no signs of *in situ* burning in the pit. There are several sherds of pottery in the finds assemblage: three abraded Late Bronze Age to Early Iron Age sherds, and a single Romano-British sherd dating to the mid 1<sup>st</sup> century to mid 2<sup>nd</sup> century AD. Taken in isolation, the quantity of worked and burnt flint in this feature would normally mean that it is more likely that the pottery sherd is intrusive than the prehistoric objects are residual. However, the presence of Romano-British pottery sherds in the other pit on the site, [10/004] (below), puts this into question, and probable iron working residues are more likely to be Romano-British than Early Iron Age. It is therefore unclear whether this feature is dated to the prehistoric or Romano-British period. The size of the pit [8/008] suggests that its primary function may have been for the quarrying of brickearth, with a secondary function as a rubbish pit.

- 4.7 Trench 10 was located in the very north-west of the site. During the excavation posthole or small pit [10/004] was recorded truncating the brickearth. The pit was oval in shape and measured 0.98m x 0.60m x 0.24m. The pit was filled with (10/003) a loose, mid brown grey sandy slit including 52 pieces of knapped flint debitage, frequent fragments of fire-fractured flint, and several fragments of animal bone. A small number of pottery sherds are tentatively dated to the mid 1<sup>st</sup> century to early 2<sup>nd</sup> century AD.
- 4.8 A layer of 0.30m thick subsoil was recorded covering the site, (1/002), (2/002), (3/002), (4/002), (5/002), (6/003), (7/003), (8/002), (9/002), (10/002), (11/002), (12/002) and (13/002). A fragment of samian pottery dating to the late 2<sup>nd</sup> century to early 3<sup>rd</sup> century AD was recovered from layer (8/002). Subsoil was overlaid by either a 0.30m thick deposit of topsoil (5/001), (6/002), (7/002) and (10/001), or 0.15-0.60m thick deposit of modern made ground, (1/003), (2/001), (3/001), (4/001), (6/001), (7/001), (8/001), (9/001), (11/001), (12/001) and (13/001).

## 5. Finds and Environmental Samples

- 5.1 A large number of finds was recovered during the course of the watching brief, consisting of knapped flint, fire-fractured flint, vitrified material, pottery and animal bone (Appendix B). The finds derived from four different contexts. Subsoil (8/002) contained a single fragment east Gaulish samian Dragendorff 45 mortarium, dated between AD170-230. The assemblage from fill (8/005) of linear (8/006) was also small, containing 4 fragments of fire-fractured flint. The largest assemblage derived from fill (8/007) of pit (8/008) comprising 248 fragments of fire-fractured flint, 37 pieces of knapped flint, 506.8g of slag material (including possible ironworking slag), four pottery sherds dating to the Late Bronze Age/Early Iron Age and Roman periods, and a fragment of animal bone. The second pit fill (10/003) contained a similar assemblage made up of 75 fragments of fire-fractured flint, 52 knapped flints, three Romano-British pottery sherds, and two animal bone fragments.
- 5.2 During the course of the watching brief three environmental samples were taken from contexts (8/005) and (10/003). The sample from context (8/005) produced fewer than 30 charcoal fragments, the majority of which are vitrified and therefore no identifications could be made. The remaining two samples from context (10/003) contained charcoal fragments and two cereal grains, all of which were poorly preserved. The analysis identified that the samples are of limited interest, requiring no further work.

## 6. Conclusions

- 6.1 Natural alluvial deposits were identified as being present across the full area of site, similar to those identified during the earlier observations of the geo-technical works (PCA 2007).
- 6.2 Three features were identified during the watching brief undertaken at the Sandy Lane site, located in the northwest quadrant of the area under investigation. The features primarily consisted of two pits and a ditch feature. Dating evidence was collected from two of the three features.
- 6.3 Pit [8/008] is possibly the earliest of the features encountered, and it may have either a Late Bronze Age to Early Iron Age or a Romano-British date. The assemblage contained within the pit strongly indicates an undefined type of burning activity taking place in the vicinity. The assemblage of smaller pit [10/004] was similar in character, although in this case the pottery gives a stronger indication that the date is early Romano-British period. Both pits are interpreted as having a secondary function, at least, for the disposal of waste products.

- 6.4 Ditch [8/006] was more ambiguous as only a limited proportion of it was uncovered in plan preventing a full interpretation of its function. No dating evidence was retrieved from the fill of the ditch, and those finds which were present were of limited diagnostic value. The location of the ditch does suggest that it maybe contemporary with one or both of the pits.
- 6.5 The three features identified during the course of the watching brief are of limited significance diagnostically. It is clear they do represent a low density of activity occurring on site in the past. Unfortunately, none of the features produced reliable dating for when this activity took place, or whether the three features were contemporary with one another. All that can be determined with confidence is that activity was occurring on site at some point during the later prehistoric and Romano-British period. The activity they represent this is also of a non-specific nature, but the presence of a substantial quantity of fire-fractured flint fragments and non-diagnostic slag indicate the deliberate heating of flint nodules. If this is related to concentrated domestic activity or an undefined industrial process is not certain.
- 6.6 With reference to the specific aims of the watching brief, possible prehistoric/Romano-British feature were recorded on site. No remains of a Palaeolithic date or geoarchaeological deposits were observed during the course of the investigation.

## 7. Publication

- 7.1 Due to the small scale of the project and limit nature of the results, publication is expected to be limited to a summary in the Essex Archaeology Round-up and publication via the Archaeological Data Service (ADS) (Appendix C).

## 8. Archive Deposition

- 8.1 The archive, consisting of paper records, drawings, and digital photographs, will be deposited with Thurrock Museum.

## 9. Bibliography

British Geological Survey Map, Sheet 256.

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

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*Pre-Construct Archaeology (2007). An Archaeological Watching Brief on Geotechnical Investigations at the ELV Recovery Site, Sandy Lane, West Thurrock, Essex.*

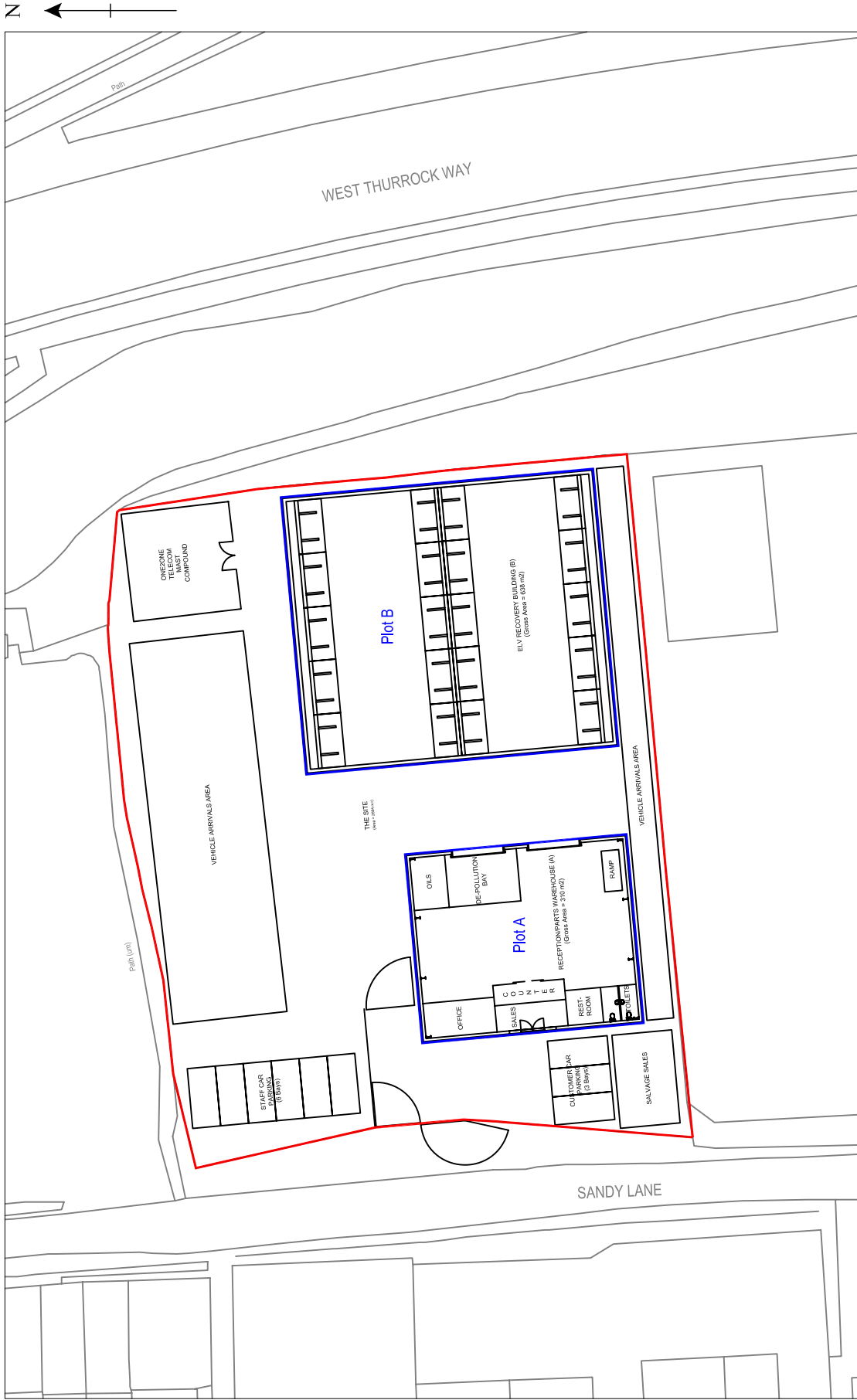




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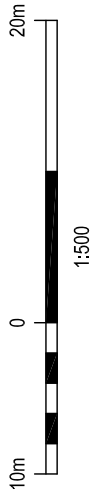
Figure 1: Site Location



Based on the Plan Provided by ARUP

- Site Outline
- Plot Outline

**Figure 2:** Detailed Site Location





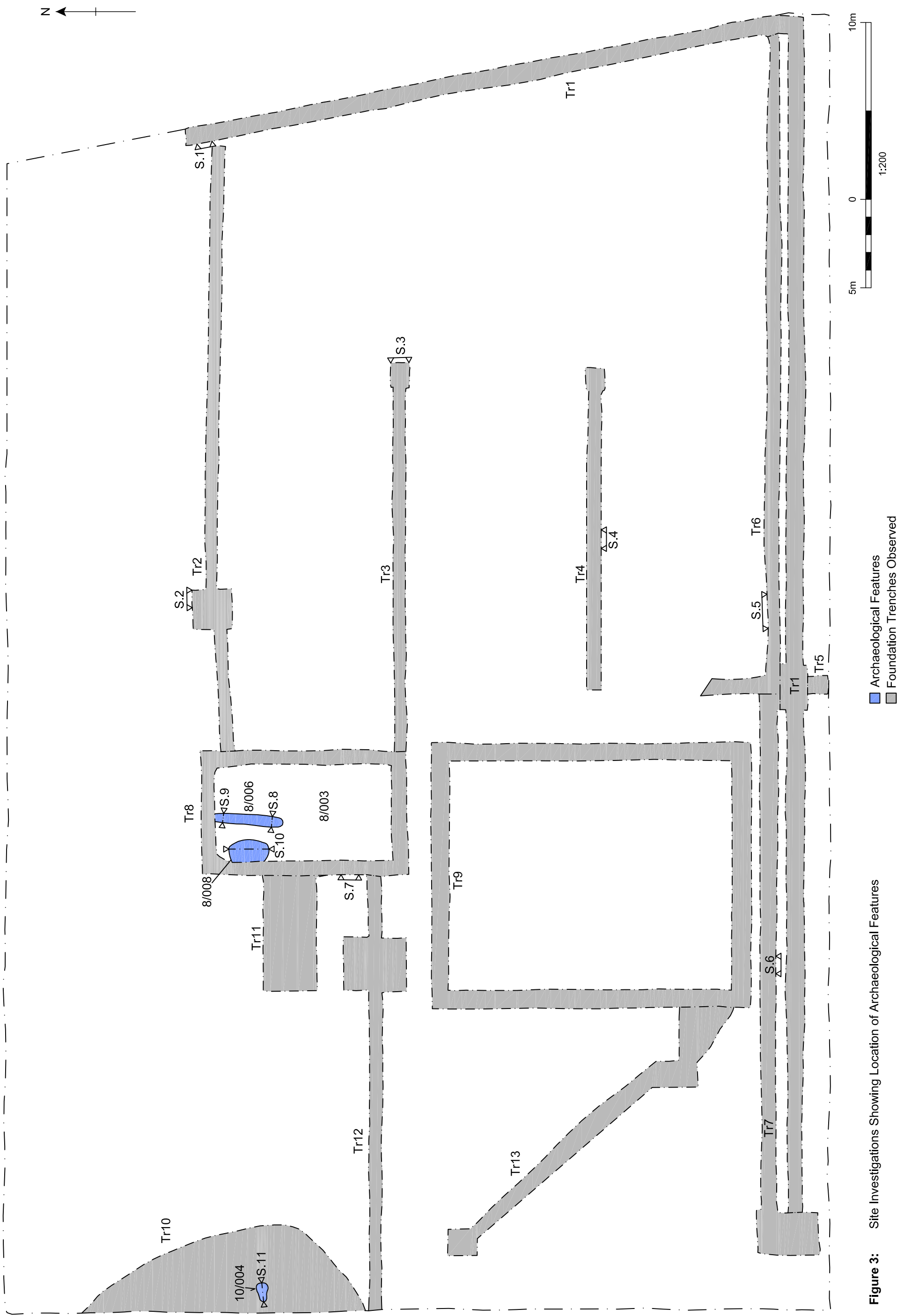
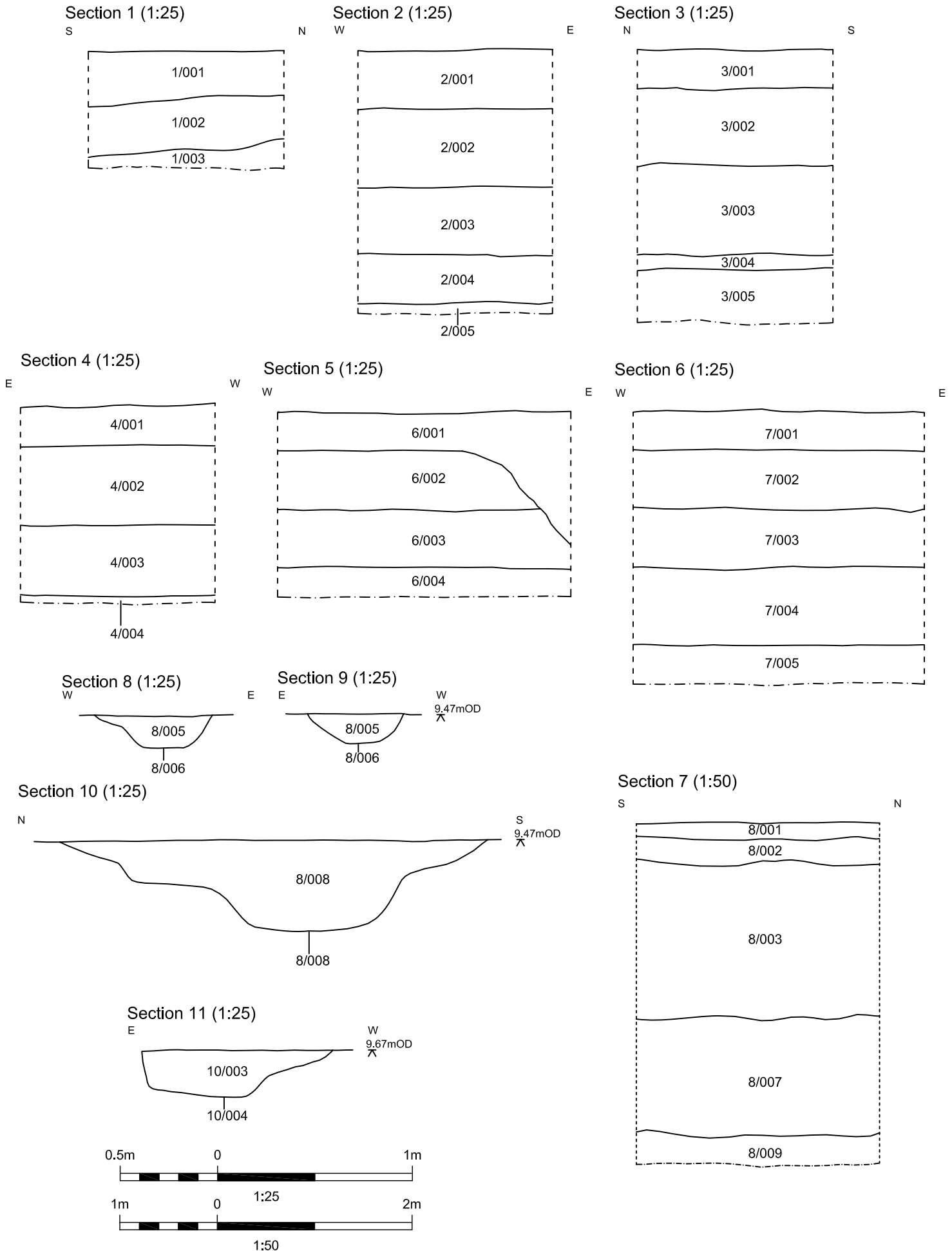


Figure 3: Site Investigations Showing Location of Archaeological Features

- Archaeological Features
- Foundation Trenches Observed



**Figure 4:** Sample and Feature Sections

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## Appendices

## Appendix A – Context Register

Context No.	Context Description	Length	Width	Depth
1/001	Dark grey sandy silty sand. Made Ground	Trench	Trench	0.25-0.30m
1/002	Brown silty sand. Subsoil	Trench	Trench	0.30m
1/003	Orange yellow silty clay with gravel. Alluvial deposit	Trench	Trench	-
2/001	Dark grey sandy silty sand. Made Ground	Trench	Trench	0.30m
2/002	Brown silty sand. Subsoil	Trench	Trench	0.40m
2/003	Yellow and orange silty sand. Alluvial deposit	Trench	Trench	0.35m
2/004	Orange silty clay. Alluvial deposit	Trench	Trench	0.40m
2/005	Dark brown grey silt sand with gravel. Alluvial deposit	Trench	Trench	0.60m
3/001	Dark grey sandy silty sand. Made Ground	Trench	Trench	0.20m
3/002	Brown silty sand. Subsoil	Trench	Trench	0.40m
3/003	Yellow and orange silty sand. Alluvial deposit	Trench	Trench	0.50m
3/004	Orange silty clay. Alluvial deposit	Trench	Trench	0.10m
3/005	Dark brown grey sandy silt. Alluvial deposit	Trench	Trench	-
4/001	Dark grey sandy silty sand. Made Ground	Trench	Trench	0.20m
4/002	Brown silty sand. Subsoil	Trench	Trench	0.40m
4/003	Orange yellow silty clay with gravel. Alluvial deposit	Trench	Trench	0.37m
4/004	Dark brown grey silt sand with gravel. Alluvial deposit	Trench	Trench	0.06m
5/001	Dark brown sandy silt. Topsoil	Trench	Trench	0.30m
5/002	Orangey brown clay silt sand. Subsoil	Trench	Trench	0.26m
5/003	Loose brown orange sandy silty gravel with flint. Alluvial deposit	Trench	Trench	-
6/001	Redeposited brown sandy silt. Made ground	Trench	Trench	
6/002	Dark brown sandy silt. Topsoil	Trench	Trench	0.30m
6/003	Orangey brown clay silt sand. Subsoil	Trench	Trench	0.30m
6/004	Loose brown orange sandy silty gravel with flint. Alluvial deposit	Trench	Trench	0.20m+
7/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.20m
7/002	Dark brown sandy silt. Topsoil	Trench	Trench	0.30m
7/003	Orangey brown clay silt sand. Subsoil	Trench	Trench	0.30m
7/004	Loose brown orange sandy silty gravel with flint. Alluvial deposit	Trench	Trench	0.40m
7/005	Yellow and orange sand	Trench	Trench	0.20m
8/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.15m
8/002	Greenish orangey brown clay silt sand. Subsoil	Trench	Trench	0.10-0.25m

8/003	Greyish dark orange sand silt clay. Brickearth	Trench	Trench	1.50m
8/004	Orange grey silty clay. Alluvial deposit	Trench	Trench	10.20m
8/005	Orange grey brown clay sand silt. Fill of [8/006]	3.90	0.40-0.66	0.13-0.18m
8/006	Linear Cut	3.90	0.40-0.66	0.13-0.18m
8/007	Loose orange grey brown sandy silt. Fill of [8/008]	2.20	1.20	0.47m
8/008	Pit cut	2.20	1.20	0.47m
8/009	Dark reddish grey clay. Alluvial deposit	Trench	Trench	0.30-0.40m
9/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.60m
9/002	Dark orangey brown sandy silt. Subsoil	Trench	Trench	0.35m
9/003	Yellow brown sandy gravel. Alluvial deposit	Trench	Trench	0.10-0.15m
9/004	Orange yellow fine sand. Alluvial deposit	Trench	Trench	0.10m
10/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.20m
10/002	Dark grey clay sand silt. Subsoil	Trench	Trench	0.30m
10/003	Mid brown grey sandy silt. Fill of [10/004]	Trench	Trench	0.24m
10/004	Pit or posthole cut	Trench	Trench	0.24m
10/005	Mid yellow orange sand silt clay. Brickearth	Trench	Trench	-
11/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.15m
11/002	Brown green grey silty clay. Subsoil	Trench	Trench	0.10-0.25m
11/003	Greyish dark orange sand silt clay. Brickearth	Trench	Trench	1.50m
11/004	Orange grey silty clay. Alluvial deposit	Trench	Trench	1.20m
11/005	Dark reddish grey clay. Alluvial deposit	Trench	Trench	0.40m
12/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.15m
12/002	Brown green grey silty clay. Subsoil	Trench	Trench	0.10-0.25m
12/003	Greyish dark orange sand silt clay. Brickearth	Trench	Trench	1.50m
12/004	Orange grey silty clay. Alluvial deposit	Trench	Trench	1.20m
12/005	Dark reddish grey clay. Alluvial deposit	Trench	Trench	0.40m
13/001	Redeposited brown sandy silt. Made ground	Trench	Trench	0.20m
13/002	Brown green grey silty clay. Subsoil	Trench	Trench	0.15m
13/003	Yellow orange sands and gravel	Trench	Trench	0.15-0.20m
13/004	Yellow orange sands	Trench	Trench	0.70m

## Appendix B – Specialist Reports

### The Prehistoric and Roman Pottery

by Anna Doherty

A total of 8 sherds, weighing 38g, were recovered from the evaluation. The most diagnostic sherd, from context 8/002, is from an east Gaulish samian Dragendorff 45 mortarium, produced between AD170-230. Context, 8/007 yielded a fine greyware sherd with the characteristic ‘sandwich-firing’ associated with fabrics from the Upchurch/Thameside industry in north Kent, dated to AD40-160. Three abraded flint-tempered sherds with sand-free matrixes, most likely of Late Bronze Age to Early Iron Age date were also found possibly residually in this context. An undiagnostic Romanised greyware sherd from context 10/003 was accompanied by some tiny flakes of a shell-tempered fabric, which if contemporary with the other sherd would suggest a date of around AD40-120.

#### Significance and Potential

The low number, small size and highly abraded condition of the sherds suggests a significant likelihood of residuality and does not therefore provide clear evidence of substantial prehistoric or Roman activity. The assemblage holds no potential for further work.

### Prehistoric Flintwork

by Chris Butler

A small assemblage of 89 pieces of worked flint weighing 432g was recovered during the work, and is summarised in Table 1. In addition 327 un-worked fire-fractured flints weighing 1.211kg were recovered.

The assessment comprised a visual inspection of each bag, counting the number of pieces of each type of worked flint present, noting details of the range and variety of pieces, general condition, and the potential for further detailed analysis. A hand written archive of the assemblage was produced at this stage. Classification follows Butler (2005) Those pieces of flint that were obviously not worked were discarded during the assessment.

The raw material comprises pieces in different shades of grey, mottled grey coloured flint, and a reddish-brown to orange stained flint. Cortex where present was a buff to cream colour. A number of un-worked pieces of pebble flint (some were also fire-fractured) were noted, but this material does not appear to have been used as a source of raw material for flintworking.

**Table 1 The Flintwork**

Type	8/07	10/03	Total
Hard hammer-struck flakes	17	6	23
Soft hammer-struck flakes	2	1	3
Soft hammer-struck blade	1	-	1
Fragments	7	8	15
Chips/spalls	5	36	41
Chunks	2	-	2
Core	-	1	1
Scrapers	3	-	3
<b>Total</b>	<b>37</b>	<b>52</b>	<b>89</b>



This small assemblage is predominantly debitage, and comprises mostly hard hammer-struck flakes, flake fragments and chips. None of the flakes has any evidence for platform preparation, and therefore suggest a later prehistoric date (i.e. Bronze Age) for most of the assemblage. The only core is a two-platform flake core, with possible platform preparation, and this together with the three small soft hammer-struck flakes and a blade hint at some earlier activity.

The implements comprise three scrapers, all of which came from Context 8/007: An end scraper with minimal abrupt retouch on a flake fragment, a side scraper with semi abrupt retouch, and a hollow scraper with a concave area of abrupt retouch; both of the latter scrapers being on hard hammer-struck flakes. All three implements are fairly basic, and would also not be out of place in a later prehistoric assemblage.

The fire-fractured flint was recovered from three contexts; Context 8/05: 4 pieces (42gms); Context 8/05: 248 pieces (902gms); Context 10/03: 75 pieces (267gms).

### **Significance and Potential**

This small assemblage has little potential for further study. It is recommended that no further work be undertaken on this assemblage, although the worked flint should be retained for possible further study in the future. A short summary paragraph should be included in the report and the handwritten assessment summary retained in the archive.

## **Environmental Samples**

by Lucy Allott

Three bulk soil samples taken during the evaluation and processed by AOC have produced small quantities of highly comminuted charcoal and occasional cereal grains. The charcoal has been fractured following standardised procedure (Gale & Cutler 2000) and viewed under an incident light microscope at x50, 100 and 200 magnifications. Identifications have been made with reference to modern comparative material and reference texts (Schweingruber 1990, Hather 2000).

Sample <1>, (8/005) produced fewer than 30 charcoal fragments, which are mostly <4mm in size. The majority of these are vitrified and therefore no identifications have been obtained. Two samples, <2> and <3>, from context (10/003) contained charcoal fragments (also mostly <4mm in size) and two poorly preserved cereal grains were noted in sample <3>. The charcoal was generally poorly preserved and infiltrated by sediment suggesting evidence for fluctuations in ground water level. Some deciduous oak fragments (*Quercus* sp.) have been identified within these samples however none of the charcoal is considered suitable for dating or for further analysis.

### **References**

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

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

## Animal Bone

By Lisa Yeomens

A very small quantity of animal bone was recovered from Sandy Lane. Table 1 provides a summary of the animal bone and Table 2 details of the animal bone recovered. A fragment of cattle radius and unidentifiable fish vertebra was recovered from a pit in Trench 10. A single small fragment of calcined large mammal bone was recovered from (8/007).

No further work is required.

Context	Sample	Recovery	WT(g)	Pres	Nos	Lmam	Smam	Fish	Bird	Amph	Mand	Meas	Epi	Fus	Complete
08/007		H/C	1	aver	1	1	0	0	0	0	0	0	0	0	0
10/003	3	flotation	1	aver	0	0	0	1	0	0	0	0	0	0	0
10/003		H/C	47	aver	1	1	0	0	0	0	0	0	0	1	0

Table 1: Summary of animal bone recovered from Sandy Lane. Pres = preservation, Nos = number of bone fragments, Lmam = number of large mammal bones, Smam = number of small mammal bone, Mand = number of mandibles with dental aging data, Epi = number of loose epiphyses, Fus = number of bones with fusion information, Complete = number of whole bones.

Context	Sample	Taxon	Part	Age	Notes
08/007		lm	ui		calcined
10/003		cattle	radius	adult	modern fragmentation
10/003		fish	vert		

Table 2: Details of animal bone recovered from Sandy Lane. ui = unidentified, lm = cattle/horse-sized animal bone.

## The Vitrified Material

By Andy Heald

A small assemblage, comprising 356g of vitrified material, was recovered from Sandy Lane, West Thurrock. The material was categorised through visual examination alone based on the criteria of morphology, density and colour. During iron production a range of slag morphologies are produced. Only a few, for example tapped slag and hammerscale, are truly diagnostic (of smelting and smithing respectively). In many slag assemblages there is a significant amount of material which is unclassifiable making the allocation of individual pieces – particularly small samples – to specific types and processes difficult (Crew & Rehren 2002, 84). The slag has been described using common terminology (e.g. McDonnell 1994; Starley 2000). All of the material is small and fragmentary.

Where discernible, the material falls into two types:

### Ironworking slag

A very small amount (20.3g) of slag is suggestive of ironworking. Due to the fragmentary nature, it is not possible to ascertain whether the material is related to smithing or smelting. The material was recovered from the sandy fill of a pit (Context 8/007).

#### Vitrified material

The remaining material (336.2g) is created during a pyrotechnic process, but is not necessarily indicative of metalworking. The majority is characterised by a vitreous and vesicular nature, low density and friability. This type of slag can be variously called fuel ash slag, cinder or prill. It is formed when material such as earth, clay, stones or ceramics are subjected to high temperatures, for example in a hearth. None of these fragments is magnetic. In addition to this non-diagnostic material some fragments may be hearth lining. 150.3g was recovered from the sandy fill of a pit (Context 8/007); the remainder was from the fill of a pit or posthole (Context 10/003).

#### Other material

One mass of material (200.9g; context 8/007) cannot be characterised. X-radiography was inconclusive.

### SIGNIFICANCE OF DATA

Only a few fragments are the result of iron-processing activities but their small size prevents identification to a specific process and restricts the conclusions that can be drawn as a result. In morphological terms the vitrified material contains many samples that cannot be specifically associated with metalworking processes. Non-magnetic vitrified material and hearth-lining can be formed during any high temperature pyrotechnic process and are not necessarily indicative of deliberate industrial activity. However, the association of some of this material with ironworking slag from context (8/007) may suggest that at least some of the material was related to ironworking.

The slag is of interest in that it indicates ironworking in the general area but of limited potential unless it can be shown that any of the finds are directly associated with hearths. It is quite likely that it represents random redeposition.

### BIBLIOGRAPHY

Crew, P & Rehren, T 2002 'High temperature workshop residues from Tara: iron, bronze and glass', in Roche, H (ed) 'Excavations at Ráith na Rí, Tara, Co. Meath, 1997', Discovery Programme Reports 6, 83-102, Dublin: Royal Irish Academy.

McDonnell, G 1994 'The slag report', in Ballin-Smith, B (ed), Howe: Four Millennia of Orkney Prehistory. Excavations 1978-82, 228-34. Edinburgh (=Soc Antiq Scot Monogr Ser, 9).

Starley, D 2000 'Metalworking debris', in Buxton, K & Howard-Davis, C (eds), Bremetenacum: Excavations at Roman Ribchester 1980, 1989-1990, 337-47. Lancaster (=Lancaster Imprints Ser No. 9).

## Appendix C – OASIS Form

**OASIS ID: aocarcha1-40368**

### Project details

Project name Sandy Lane, West Thurrock

Short description of the project An Archaeological Watching Brief was undertaken between October 2007 and March 2008 at Sandy Lane, West Thurrock, Essex. The watching brief comprised the machine excavation of strip foundation trenches, service runs and ground reduction. Natural alluvial and brickearth deposits were identified on site between 0.75m and 0.35m below ground level. Three features were identified as truncating the brickearth, consisting of two pits and a linear ditch. The ditch did not produce any dateable finds, and the dating evidence recovered from the pits was ambiguous, although it does indicate that a low intensity of activity was taking place on site between the later prehistoric and Romano-British period. Sealing the features and across the remainder of the site was a layer of subsoil followed by a layer of either topsoil or made ground.

Project dates Start: 15-10-2007 End: 12-03-2008

Previous/future work Yes / No

Any associated project reference codes THSL 07 - Sitecode

Any associated project reference codes 7926 - Contracting Unit No.

Any associated project reference codes THU/0113/07/FUL - Planning Application No.

Type of project Recording project

Site status Local Authority Designated Archaeological Area

Current Land use Industry and Commerce 1 - Industrial

Monument type	DITCH Uncertain
Monument type	PITTING Uncertain
Significant Finds	POTTERY Late Prehistoric
Significant Finds	POTTERY Roman
Significant Finds	FIRE-FRACTURED FLINT Uncertain
Significant Finds	HEARTH SLAG Uncertain
Significant Finds	KNAPPED FLINT Late Prehistoric
Significant Finds	ANIMAL BONE Uncertain
Investigation type	'Watching Brief'
Prompt	Direction from Local Planning Authority - PPG16

### Project location

Country	England
Site location	ESSEX THURROCK PURFLEET Sandy Lane, West Thurrock, Essex
Study area	1000.00 Square metres
Site coordinates	TQ 5895 7785 51.4767281802 0.289118339644 51 28 36 N 000 17 20 E Point

### Project creators

Name	of AOC Archaeology Group
Organisation	
Project originator	brief Local Authority Archaeologist and/or Planning Authority/advisory body

Project design originator AOC Archaeology Group

Project director/manager Andy Leonard

Project supervisor Adam Lord

Type of Developer sponsor/funding body

Name of Wallis Motors and Salvage sponsor/funding body

### Project archives

Physical Archive recipient Thurrock Museum

Physical Archive ID THSL07

Physical Contents 'Animal Bones','Ceramics','Environmental','Industrial','Worked stone/lithics'

Digital Archive recipient Thurrock Museum

Digital Archive ID THSL07

Digital Contents 'Animal Bones','Ceramics','Industrial','Stratigraphic','Worked stone/lithics'

Digital Media available 'Database','Images raster / digital photography','Images vector','Spreadsheets','Survey','Text'

Digital Archive notes To be held at AOC until ready to archive.

Paper Archive Thurrock Museum



recipient

Paper Archive ID THSL07

Paper Contents 'Animal Bones','Ceramics','Industrial','Stratigraphic','Worked stone/lithics'

Paper available Media 'Context sheet','Map','Matrices','Microfilm','Photograph','Plan','Report','Section','Survey','Unpublished Text'

Paper Archive notes To be held at AOC until ready to archive.

### Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)

Title SANDY LANE, WEST THURROCK, ESSEX

Author(s)/Editor(s) Edwards, C and Clarke, C.

Date 2008

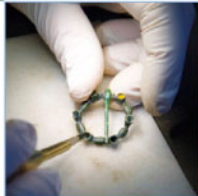
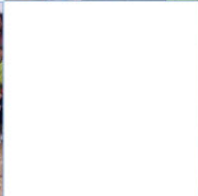
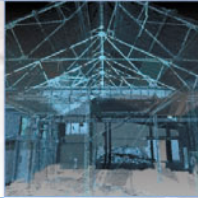
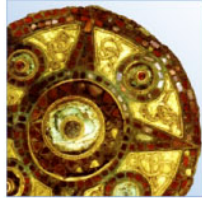
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