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LAND OFF LIME AVENUE, OULTON, SUFFOLK

ARCHAEOLOGICAL TRIAL TRENCH EVALUATION

Authors:	Keeley-Jade Diggons (Fieldwork and report) Peter Thompson (Research) Kathren Henry	
NGR: TM 518 941		Report No: 5690
District: Waveney		Site Code: OUL037
Approved: Claire Halpin MCIfA		Project No: 5758
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PROJECT SUMMARY SHEET

Project details	
Project name	*Land off Lime Avenue, Oulton, Suffolk*

In October 2018 and February 2019 Archaeological Solutions Ltd (AS) carried out an archaeological trial trench evaluation in advance of the construction of a residential development on land off Lime Avenue, Oulton, Suffolk (NGR TM 518 941; Figs. 1 - 2). The evaluation was required by Waveney Borough Council and based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT). Its purpose was to provide further information for the initial requirement of planning conditions which require a programme of archaeological work.

The evaluation revealed an undated ditch (F4008 Trench 46), a pit with a sherd of Early Bronze Age pottery (F4010 Trench 47), an undated pit with charcoal (F4014 Trench 36), and an urned cremation (F4004 Trench 37). At the base of Cremation Pit F4004 was an urned cremation, F4006 L4007. The cremation vessel was truncated and the rim was lost. The vessel is of Early Anglo Saxon date (5th – 7th century) and two glass beads were found in association with the cremated human bone.

Undated Pit F4014 contained abundant charcoal. Given the proximity of Pit F4014 (Trench 36) to Urned Cremtion F4004 (Trench 37) it was considered that the feature may have been a remnant cremation pit broadly contemporary with Cremation Pit F4004 but the samples did not contain cremated bone. The feature may represent a charcoal production pit. Although a specific function cannot be ascribed based on the present data, small charcoal production pits have been identified on other sites in proximity to late Saxon to medieval urban settlements, such as a significant number distributed across a large area at Lodge Farm, Costessey on the outskirts of Norwich (e.g. Lloyd-Smith 2018). The location of the present site on the outskirts of Lowestoft is in keeping with this pattern. That said, the pit is undated and therefore cannot be ascribed to a period.

Additional trial trenching will be undertaken in the future as this evaluation is part of a larger scheme.

Project dates (fieldwork)	*October 2018 & February 2019*		
Previous work (Y/N/?)	*Y*	*Future work*	*TBC*
P. number	*5758*	*Site code*	*OUL037*
Type of project	*Archaeological Trial Trench Evaluation*		
Site status	*None*		
Current land use	*Agriculture*		
Planned development	*Residential*		
Main features (+dates)	*Saxon (5th – 7th C) damaged urned cremation; undated charcoal pit*		
Significant finds (+dates)	*Urned cremation with 2 glass beads; sherd of EBA pottery*		
Project location			
County/ District/ Parish	*Suffolk*	*Waveney*	*Oulton*
HER/ SMR for area	*Suffolk Historic Environment Record*		
Post code (if known)	-		
Area of site	*c. 2 ha*		
NGR	*TM 518 941*		
Height AOD (min/max)	*c. 17m*		
Project creators			
Brief issued by	*Suffolk County Council Archaeological Service Conservation Team*		
Project supervisor/s (PO)	*Archaeological Solutions Ltd*		
Funded by	*Persimmon Homes/Charles Church (Anglia)*		
Full title	*Land off Lime Avenue, Oulton, Suffolk. An Archaeological Trial Trench Evaluation*		
Authors	*Diggons, K-J.*		
Report no.	*5690*		
Date (of report)	*February 2019; revised April 2019*		

LAND OFF LIME AVENUE, OULTON, SUFFOLK

AN ARCHAEOLOGICAL TRIAL TRENCH EVALUATION

SUMMARY

In October 2018 and February 2019 Archaeological Solutions Ltd (AS) carried out an archaeological trial trench evaluation in advance of the construction of a residential development on land off Lime Avenue, Oulton, Suffolk (NGR TM 518 941; Figs. 1 - 2). The evaluation was required by Waveney Borough Council and based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT). Its purpose was to provide further information for the initial requirement of planning conditions which require a programme of archaeological work.

A geophysical survey (Egan 2014), trial trenching (Orzechowski 2015 and Edwards 2017) and excavation (Mustchin 2016) have all been undertaken in the immediate vicinity of the site.

During the previous archaeological investigations (geophysical survey (Egan 2014) and trial trenching (Orzechowski 2015) archaeological features were recorded but the principal features were located in the southern sector of the middle field (Figs. 3 and 4), and these features were subject to an archaeological excavation (Mustchin 2016).

Adjacent to the current phase of trenching within the new primary school site and adjacent road (Trenches 74-76, 91-93, 97–102, 123, 125 – 128 and 133-135) the earlier trial trenching (Edwards 2017) revealed sparse archaeological features: Trenches 101-102, 123 and 125, 133 were all devoid of features. Trench 135 contained a natural hollow and Trench 134 contained an undated pit and an undated ditch. Trench 126 contained a modern feature and Trench 91 contained an undated ditch.

The evaluation revealed an undated ditch (F4008 Trench 46), a pit with a sherd of Early Bronze Age pottery (F4010 Trench 47), an undated pit with charcoal (F4014 Trench 36), and an urned cremation (F4004 Trench 37). At the base of Cremation Pit F4004 was an urned cremation, F4006 L4007. The cremation vessel was truncated and the rim was lost. The vessel is of Early Anglo Saxon date (5th – 7th century) and two glass beads were found in association with the cremated human bone.

Undated Pit F4014 contained abundant charcoal. Given the proximity of Pit F4014 (Trench 36) to Urned Cremtion F4004 (Trench 37) it was considered that the feature may have been a remnant cremation pit broadly contemporary with Cremation Pit F4004 but the samples did not contain cremated bone. The feature may represent a charcoal production pit. Although a specific function cannot be ascribed based on the present data, small charcoal production pits have been identified on other sites in proximity to late Saxon to medieval urban settlements, such as a significant number distributed across a large area at Lodge Farm, Costessey on the outskirts of Norwich (e.g. Lloyd-Smith 2018). The location of the present site on the outskirts of

Lowestoft is in keeping with this pattern. That said, the pit is undated and therefore cannot be ascribed to a period.

Additional trial trenching will be undertaken in the future as this evaluation is part of a larger scheme.

1 INTRODUCTION

1.1 In October 2018 and February 2019 Archaeological Solutions Ltd (AS) carried out an archaeological trial trench evaluation in advance of the construction of a residential development on land off Lime Avenue, Oulton, Suffolk (NGR TM 518 941; Figs. 1 - 3). The evaluation was required by Waveney Borough Council and based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT). Its purpose was to provide further information for the initial requirement of planning conditions which require a programme of archaeological work.

1.2 A geophysical survey (Egan 2014), trial trenching (Orzechowski 2015 and Edwards, 2017) and excavation (Mustchin 2016) have all been undertaken in the immediate vicinity of the site.

1.3 The archaeological evaluation was carried out in accordance with a brief by Suffolk County Council Archaeological Service Conservation Team (dated 16th November 2016; Richard Hoggett), and a specification compiled by AS (dated 15th June 2018). The evaluation adhered to the Chartered Institute of Archaeologists' *Standard and Guidance for Evaluations* (2014) and *Standards for Field Archaeology in the East of England* (Gurney 2003).

1.4 The principal objectives of the evaluation were:

- to establish whether any archaeological deposit exists in the area, with particular regard to any which are of sufficient importance to merit preservation *in situ*;
- to identify the date, approximate form and purpose of any archaeological deposit within the application area, together with its likely extent, localised depth and quality of preservation;
- to evaluate the likely impact of past land uses, and the possible presence of masking colluvial/ alluvial deposits, along with the potential for the survival of environmental evidence; and
- to provide sufficient information to construct an archaeological conservation strategy dealing with preservation, the recording of archaeological deposits, working practices, timetables and orders of cost.

Planning Policy Context

1.5 The National Planning Policy Framework (NPPF 2012) states that those parts of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are heritage assets. The NPPF aims to deliver sustainable development by ensuring that policies and decisions that concern the historic environment recognise that heritage assets are a non-renewable resource, take account of the wider social, cultural, economic and environmental benefits of heritage conservation, and recognise that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. The NPPF requires applications to describe the significance of any heritage asset, including its setting that may be affected in proportion to the asset's importance and the potential impact of the proposal.

1.6 The NPPF aims to conserve England's heritage assets in a manner appropriate to their significance, with substantial harm to designated heritage assets (i.e. listed buildings, scheduled monuments) only permitted in exceptional circumstances when the public benefit of a proposal outweighs the conservation of the asset. The effect of proposals on non-designated heritage assets must be balanced against the scale of loss and significance of the asset, but non-designated heritage assets of demonstrably equivalent significance may be considered subject to the same policies as those that are designated. The NPPF states that opportunities to capture evidence from the historic environment, to record and advance the understanding of heritage assets and to make this publicly available is a requirement of development management. This opportunity should be taken in a manner proportionate to the significance of a heritage asset and to impact of the proposal, particularly where a heritage asset is to be lost.

2 DESCRIPTION OF THE SITE

2.1 It is proposed to erect a new residential developement. The site currently comprises arable land adjacent to a new school, spine road and residential development. The new school site, spine road and Phase 1 development area have been subject to a programme of archaeological work by AS comprising a geophysical survey, trial trenching and follow-up excavation of areas of identified archaeology.

3 TOPOGRAPHY, GEOLOGY AND SOILS

3.1 The site soils are those of the Wick 3 Association, described as 'Deep well drained coarse loamy often stoneless soils…with…some similar sandy soils' (Soil Survey of England and Wales 1983, 9). These soils are at risk of water erosion and are suitable for the cultivation of cereals and some horticultural crops (*ibid.*).

3.2 The underlying geology comprises the Crag Group - Sand (British Geological Survey 1978). The drift geology comprises the Happisburgh Glacigenic Formation – Sand across the majority of the surveyed area, with an area of Head – Clay, Silt, Sand and Gravel in the east (*ibid.*).

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

4.1 Prehistoric stone tools have been found in the area between 500m and 1km of the site including a Palaeolithic worked implement (OUL Misc), a Neolithic polished axe head, a late Neolithic flint artifact scatter including an adze and barbed-and-tanged arrowhead from Pound Lane to the north-east (LWT 015), and a Bronze Age hornblende granulite battleaxe from Lothingland to the south (SUF Misc). Cropmarks of at least one, and possibly three ring ditches, have been identified in Oulton parish between 500m and 1km south/south-west of the site (OUL 005). The only Roman finds are two bronze coins found during metal detecting (OUL 001).
4.2 An archaeological evaluation was carried out on 1.7ha of arable land off Mobbs Way between approximately 200 and 500m east of the site (OUL 011). A small assemblage of prehistoric material was recovered and two undated ditches and three possible pits were identified. A medieval or post-medieval ditch was also recorded, and the isolated post-medieval finds recovered indicated that the area had probably remained as open arable land since the medieval period.

4.3 St Michael's Church located 1km to the south-west is thought to date back to Norman times although it is not mentioned in the Domesday Survey. It was rebuilt in the 14th and 15th centuries and was restored in the 19th (OUL 004). A market is recorded at Oulton in the year 1307 (Oulton Misc). Oulton Broad is the most southerly of the manmade Norfolk Broads. A 14th century jetton and medieval finger ring were found in a garden at Oulton Broad village (LWT Misc). The cropmark of a sub-oval enclosure or moat is located over 500m west/north-west of the site (FTN 013). Post-medieval tile and other finds were made within the area of the enclosure/moat (FTN 011).

5 PREVIOUS INVESTIGATION

5.1 A geophysical survey recorded linear anomalies of possible archaeological origin (Fig.3) (Egan 2014). In summary:

West Field

The survey of the western field identified four possible archaeological anomalies; however these could equally be related to modern agricultural activity.

Middle Field

The principal recorded anomaly forms a curve or an enclosure which may be of archaeological origin. The enclosure contains four anomalies possibly indicative of in filled discrete pits. In the same southern area of the field five anomalies may be pits of archaeological origin. A linear feature is located in the north east area of site and is oriented east-west. It may represent a former field boundary and may be of archaeological origin.

East Field

A linear ditch runs NE/SW across the north-eastern section of the site and may be of archaeological origin. It is close to a second ditch which may also be of archaeological origin.

The conducive geology and presence of possible archaeological anomalies suggests that the survey has been successful. The remaining anomalies are of modern origin, relating to agricultural activity and ferrous objects.

5.2 The new primary school site is located in the northern sector of the Middle Field. Here an anomaly of modern origin (disturbed ground) was detected. Within the new primary school site and adjacent road (Trenches 74-76, 91-93, 97–102, 123, 125 – 128 and 133-135) the trial trenching (Edwards 2017) revealed sparse archaeological features: Trenches 101-102, 123 and 125, 133 were all devoid of features. Trench 135 contained a natural hollow and Trench 134 contained an undated pit and an undated ditch. Trench 126 contained a modern feature and Trench 91 contained an undated ditch.

5.3 To the south (Orzechowski 2015) Ditch F1039 (Trench 52) contained three struck flint. Ditch F1041 (Trench 59) contained two sherds of Saxo-Norman (10th – 12th century) pottery. Undated Gully F1009 was present in Trench 60. Two undated parallel ditches (F1003 and F1007), and an undated pit (F1005) were recorded in Trench 62. F1003 contained an early – middle Saxon (mid 5th – 9th century) pottery sherd.

5.4 Trial trenching of the spine road and area to the south of east has taken place, followed by an open area excavation of the Phase 1 development area (Fig.4) (HER OUL 037), revealing activity of prehistoric to medieval date, with a significant Anglo-Saxon component.

The excavation report (Mustchin 2016) summarised:

As was suggested by the evaluation, the excavation revealed abundant evidence of activity dating to the late Bronze Age/ early Iron Age and early to middle Anglo-Saxon period. Evidence of Romano-British, middle to late Anglo-Saxon and Saxo-Norman/ medieval occupation/activity was also encountered. Other periods were more sparsely represented.

Of particular significance were a late Bronze Age/ early Iron Age enclosure system, a Romano-British enclosure, hearths and a post-built structure, five Anglo-Saxon sunken-featured buildings and five burnt flint pits, also of Anglo-Saxon date. A middle to late Anglo-Saxon enclosure, a post and beam slot structure and a Saxo-Norman/ medieval metal working area were also recorded. Notable small finds comprise eight late Anglo-Saxon/ Viking Age scale weights with embedded silver coins.

6 METHODOLOGY

6.1 SCC AS-CT required a programme of archaeological trial trenching and stipulated that a 5% sample of the site should be subject to trial trenching at 1.8m width should be undertaken. Trenches 31 – 33, 37 – 39, 46 – 47, 53 – 56, 71 – 72 and 78 were excavated. Initially (in October 2017) Trenches 34 – 36, 40 – 45, 57 – 58, 73, 77 and 89 – 90 could not be excavated for practical reasons. These trenches were excavated in February 2019. Each excavated trench was 40m x 1.80m, and was excavated using a tracked 360□ mechanical excavator fitted with a toothless ditching bucket (Figs 3 – 5).

6.2 The topsoil and subsoil were removed under close archaeological supervision using a mechanical excavator fitted with a toothless ditching bucket. Thereafter, all further investigation was undertaken by hand. Exposed surfaces were cleaned as appropriate and examined for archaeological features and finds. Deposits were recorded using *pro forma* recording sheets, drawn to scale and photographed. Excavated spoil was checked for finds and the trenches were scanned by metal detector. A metal detector survey was conducted prior to, and on conclusion of, the excavation of the trenches and thereafter during the course of the evaluation. Only modern (19^{th} – 20^{th} century finds were present). The pre-excavation metal detector survey was conducted by Geoff Stribling.

7 DESCRIPTION OF RESULTS

7.1 Individual trench descriptions are presented below. The trench numbering follows that of the previous evaluations (Orzechowski 2015 & Edwards 2017)

Trench 31 Figs. 3 - 4

Sample Section 31A 0.00 = 8.80m AOD		
0.00 – 0.30m	L4000	Topsoil. Firm, mid to dark grey brown clay silt with frequent sub-angular flint, chalk flecks and CBM fragments.
0.30 – 0.50m	L4001	Subsoil. Firm, pale yellow grey to brown grey sand with occasional sub-rounded flint.
0.50 - 0.77m	L4003	Subsoil. Firm, pale brown yellow silty sand with occasional sub-rounded flint.
0.77m+	L4002	Natural. Variable mid yellow brown sand to pale grey clay with moderate to frequent sub-angular flint.

Sample Section 31B 0.00 = 9.65m AOD		
0.00 – 0.30m	L4000	Topsoil. As above
0.30 – 0.50m	L4001	Subsoil. As above
0.50 - 0.90m	L4003	Subsoil. As above
0.90m+	L4002	Natural. As above

Description: Trench 31 contained no archaeological features or finds

Trench 32 Figs. 3 – 4

Sample Section 32A 0.00 = 8.91m AOD		
0.00 – 0.34m	L4000	Topsoil. As above, Trench 31.
0.34 - 0.60m	L4003	Subsoil. As above, Trench 31.
0.60m+	L4002	Natural. As above, Trench 31.

Sample Section 32B 0.00 = 8.86m AOD		
0.00 – 0.40m	L4000	Topsoil. As above, Trench 31.
0.40 – 0.73m	L4001	Subsoil. As above, Trench 31.
0.73m +	L4002	Natural. As above, Trench 31.

Description: Trench 32 contained no archaeological features or finds

Trench 33 Figs. 3 – 4

Sample Section 33A 0.00 = 8.91m AOD		
0.00 – 0.34m	L4000	Topsoil. As above, Trench 31.
0.34 - 0.60m	L4003	Subsoil. As above, Trench 31.
0.60m+	L4002	Natural. As above, Trench 31.

Sample Section 33B 0.00 = 8.86m AOD		
0.00 – 0.40m	L4000	Topsoil. As above, Trench 31.
0.40 – 0.73m	L4001	Subsoil. As above, Trench 31.
0.73m +	L4002	Natural. As above, Trench 31.

Description: Trench 33 contained no archaeological features or finds

Trench 34 Figs. 3 – 4

Sample Section 34A 0.00 = 9.93m AOD		
0.00 – 0.28m	L4001	Subsoil. As above, Trench 31.
0.28m+	L4002	Natural. As above, Trench 31.

Sample Section 34B 0.00 = 10.92m AOD		
0.00 – 0.31m	L4001	Subsoil. As above, Trench 31.
0.31m+	L4002	Natural. As above, Trench 31.

Description: Trench 34 contained no archaeological features or finds

Trench 35 Figs. 3 – 4

Sample Section 35A 0.00 = 9.94m AOD		
0.00 – 0.32m	L4001	Subsoil. As above, Trench 31.
0.32m+	L4002	Natural. As above, Trench 31.

Sample Section 35B 0.00 = 9.60m AOD		
0.00 – 0.21m	L4000	Topsoil. As above, Trench 31.
0.21 – 0.48m	L4001	Subsoil. As above, Trench 31.
0.44m+	L4002	Natural. As above, Trench 31.

Description: Trench 35 contained no archaeological features or finds

Trench 36 Figs. 3 – 5

Sample Section 36A 0.00 = 9.17m AOD		
0.00 – 0.14m	L4000	Topsoil. As above, Trench 31.
0.14 - 0.38m	L4001	Subsoil. As above, Trench 31.
0.38m+	L4002	Natural. As above, Trench 31.

Sample Section 36B 0.00 = 10.11m AOD		
0.00 – 0.31m	L4001	Subsoil. As above, Trench 31.
0.31m+	L4002	Natural. As above, Trench 31.

Description: Trench 36 contained undated Pit F4014.

Pit F4014 was sub-circular in plan (0.58 x 0.53 x 0.22m). It had moderately sloping sides and a concave base. Its basal fill, L4015, was a friable, dark grey silty sand with occasional sub-rounded flint. Its upper fill, L4016, was a friable, mid yellow brown silty sand with occasional sub-rounded flint.

Trench 37 Figs. 3 – 5

Sample Section 37A 0.00 = 9.93m AOD		
0.00 – 0.23m	L4000	Topsoil. As above, Trench 31.
0.23 - 0.44m	L4001	Subsoil. As above, Trench 31.
0.44 - 0.52m	L4003	Subsoil. As above, Trench 31.
0.52m+	L4002	Natural. As above, Trench 31.

Sample Section 37B 0.00 = 10.54m AOD		
0.00 – 0.22m	L4000	Topsoil. As above, Trench 31.
0.22 – 0.39m	L4001	Subsoil. As above, Trench 31.
0.39 - 0.44m	L4003	Subsoil. As above, Trench 31.
0.44m+	L4002	Natural. As above, Trench 31.

Description: Trench 37 contained Cremation Pit F4004 and within the pit was an urned cremation (F4006 L4007). The vessel is of Early Anglo Saxon date (5th – 7th century) and two beads were found in association with the cremated human bone.

Cremation Pit F4004 was sub-circular in plan (0.38 x 0.27 x 0.07m). It had moderately sloping sides and a flattish base. Its fill, L1005, was a friable, pale yellow grey silty sand with moderate small to medium sub-rounded flint. At the base of F4004 was an urned cremation, F4006 L4007. The cremation vessel was truncated and the rim was lost. The vessel is of Early Anglo Saxon date (5th – 7th century) and two beads were found in association with the cremated human bone.

Trench 38 Figs. 3 – 4

Sample Section 38A 0.00 = 11.28 AOD		
0.00 – 0.35m	L4001	Subsoil. As above, Trench 31.
0.35m +	L4002	Natural. As above, Trench 31.

Sample Section 38B 0.00 = 11.39m AOD		
0.00 – 0.25m	L4000	Topsoil. As above, Trench 31.
0.25 – 0.42m	L4001	Subsoil. As above, Trench 31.
0.42m +	L4002	Natural. As above, Trench 31.

Description: Trench 38 contained no archaeological features or finds

Trench 39 Figs. 3 – 4

Sample Section 39A 0.00 = 10.33m AOD		
0.00 – 0.32m	L4001	Subsoil. As above, Trench 31.
0.32m +	L4002	Natural. As above, Trench 31.

Sample Section 39B 0.00 = 11.29m AOD		
0.0 – 0.33m	L4001	Subsoil. As above, Trench 31.
0.33m +	L4002	Natural. As above, Trench 31.

Description: Trench 39 contained no archaeological features or finds

Trench 40 Figs. 3 – 4

Sample Section 40A 0.00 = 11.56m AOD		
0.00 – 1.26m		Remnants of spoilheap
1.26 – 1.40m	L4000	Topsoil. As above, Trench 31.
1.40 – 1.75m	L4003	Subsoil. As above, Trench 31.
1.75m +	L4002	Natural. As above, Trench 31.

Description: Trench 40 contained no archaeological features or finds. The southern end of the trench had been mechanically excavated to the natural prior to AS' attendance on site. Conversely the northern end was overlain by remnants of a spoilheap and this was removed before the trench was excavated down to the natural. The full length of the trench was excavated to the natural horizon.

Trench 41 Figs. 3 – 4

Sample Section 41A 0.00 = 12.93m AOD		
0.00 – 0.80m		Remnants of spoilheap
0.80 – 1.04m	L4000	Topsoil. As above, Trench 31.
1.04 – 1.35m	L4001	Subsoil. As above, Trench 31.
1.35m +	L4002	Natural. As above, Trench 31.

Description: Trench 41 contained no archaeological features or finds. The western end of the trench had been mechanically excavated to the natural prior to AS attendance on site. Conversely the eastern end was overlain by remnants of a spoilheap and this was removed before the trench was excavated down to the natural. The full length of the trench was excavated to the natural horizon.

Trench 42 Figs. 3 – 4

Sample Section 42A 0.00 = 13.16m AOD		
0.00 – 0.25m	L4001	Subsoil. As above, Trench 31.
0.25m+	L4002	Natural. As above, Trench 31.

Sample Section 42B 0.00 = 12.23m AOD		
0.00 – 0.36m	L4001	Subsoil. As above, Trench 31.
0.36m +	L4002	Natural. As above, Trench 31.

Description: Trench 42 contained no archaeological features or finds

Trench 43 Figs. 3 – 4

Sample Section 43A 0.00 = 13.41m AOD		
0.00 – 1.00m		Remnants of spoilheap
1.00 – 1.10m	L4000	Topsoil. As above, Trench 31.
1.10 – 1.35m	L4001	Subsoil. As above, Trench 31.
1.35m +	L4002	Natural. As above, Trench 31.

Sample Section 43B 0.00 = 13.72m AOD		
0.00 – 0.05m	L4001	Subsoil. As above, Trench 31.
0.05m +	L4002	Natural. As above, Trench 31.

Description: Trench 43 contained no archaeological features or finds

Trench 44 Figs. 3 – 4

Sample Section 44A 0.00 = 12.62m AOD		
0.00 – 0.05m	L4001	Subsoil. As above, Trench 31.
0.05m+	L4002	Natural. As above, Trench 31.

Sample Section 44B 0.0 11.73m AOD		
0.00 – 0.08m	L4001	Subsoil. As above, Trench 31.
0.08m +	L4002	Natural. As above, Trench 31.

Description: Trench 44 contained no archaeological features or finds

Trench 45 Figs. 3 – 4

Sample Section 45A 0.00 = 10.92m AOD		
0.00 – 0.07m	L4001	Subsoil. As above, Trench 31.
0.07m+	L4002	Natural. As above, Trench 31.

Sample Section 45B 0.00 = 12.45m AOD		
0.00 – 0.06m	L4001	Subsoil. As above, Trench 31.
0.06m +	L4002	Natural. As above, Trench 31.

Description: Trench 45 contained no archaeological features or finds

Trench 46 Figs. 3 – 5

Sample Section 46A 0.00 = 11.65m AOD		
0.00 – 0.36m	L4001	Subsoil. As above, Trench 31.
0.36m +	L4002	Natural. As above, Trench 31.

Sample Section 46B 0.00 = 11.93m AOD		
0.0– 0.36m	L4001	Subsoil. As above, Trench 31.
0.36m +	L4002	Natural. As above, Trench 31.

Description: Trench 46 contained undated Ditch F4008. The latter may be a continuation of Ditch F1039 (Trench 52) (Orzechowski 2015). F1039 contained animal bone (184g) and three struck flint (17g).

Ditch F4008 was linear in plan (1.80+ x.27 x 0.35m), orientated E-W. It had moderately sloping sides and a concave base. Its fill, L4009, was a firm pale grey brown sand with very occasional small sub-rounded flint. It contained no finds.

Trench 47 Figs. 3 – 4 & 6

Sample Section 47A 0.00 = 11.13m AOD		
0.00 – 0.30m	L4001	Subsoil. As above, Trench 31.
0.30m +	L4002	Natural. As above, Trench 31.

Sample Section 47B 0.00 = 12.24m AOD		
0.00 – 0.28m	L4000	Topsoil. As above, Trench 31.
0.28 – 0.52m	L4001	Subsoil. As above, Trench 31.
0.52m +	L4002	Natural. As above, Trench 31.

Description: Trench 47 revealed Pit F4010 and it contained a small sherd of Early Bronze Age pottery.

Pit F4010 was sub-circular in plan (0.25 x 0.94 x 0.37m). It had steep sides and an undulating base. Its fill, L4011, was a firm mid brown grey silty sand with moderate small sub-angular flint. It contained a sherd of Early Bronze Age pottery (1; 1g).

Trenches 48 - 52 were not within the current phase of evaluation (see Orzechowski 2015).

Trench 53 Figs. 3 – 4

Sample Section 53A 0.00 = 12.99m AOD		
0.00 – 0.22m	L4001	Subsoil. As above, Trench 31.
0.22m +	L4002	Natural. As above, Trench 31.

Sample Section 53B 0.00 = 12.84m AOD		
0.0 – 0.16m	L4001	Subsoil. As above, Trench 31.
0.16m +	L4002	Natural. As above, Trench 31.

Description: Trench 53 contained no archaeological features or finds

Trench 54 Figs. 3 – 4

Sample Section 54A 0.00 = 13.07m AOD		
0.00 – 0.24m	L4001	Subsoil. As above, Trench 31.
0.24m +	L4002	Natural. As above, Trench 31.

Sample Section 54B 0.00 = 13.78m AOD		
0.0 – 0.19m	L4001	Subsoil. As above, Trench 31.
0.19m +	L4002	Natural. As above, Trench 31.

Description: Trench 54 contained no archaeological features or finds

Trench 55 Figs. 3 – 4

Sample Section 55A 0.00 = 14.28m AOD		
0.00 – 0.40m	L4013	Silty Clay Deposit. Firm mid grey brown silty clay with patches of grey clay and chalk.
0.40m +	L4002	Natural. As above, Trench 31.

Sample Section 55B 0.00 = 14.06m AOD		
0.0 – 0.15m	L1001	Subsoil. As above, Trench 31.
0.15m +	L1002	Natural. As above, Trench 31.

Description: Trench 55 contained no archaeological features or finds

Trench 56 Figs. 3 – 4

Sample Section 56A 0.00 = 13.90m AOD		
0.00 – 0.84m	L4013	Silty Clay Deposit. As above, Trench 55.
0.84m +	L4002	Natural. As above, Trench 31.

Sample Section 56B 0.00 = 13.28m AOD		
0.0 – 0.50m	L4013	Silty Clay Deposit. As above, Trench 55.
0.50m +	L4002	Natural. As above, Trench 31.

Description: Trench 56 contained no archaeological features or finds

Trench 57 Figs. 3 – 4 & 6

Sample Section 57A 0.00 = 13.70m AOD		
0.00 – 0.22m	L4013	Silty Clay Deposit. As above, Trench 55.
0.22m +	L4002	Natural. As above, Trench 31.

Sample Section 57B 0.00 = 1458m AOD		
0.0 – 0.18m	L4013	Silty Clay Deposit. As above, Trench 55.
0.18 – 0.61m	L4001	Subsoil. As above, Trench 31.
0.61m +	L4002	Natural. As above, Trench 31.

Description: Trench 57 contained only modern disturbances

Trench 58 Figs. 3 – 4

Sample Section 58A 0.00 = 13.90m AOD		
0.00 – 0.39m		Hardcore
0.39m +	L4002	Natural. As above, Trench 31.

Sample Section 58B 0.00 = 15.19m AOD		
0.0 – 0.12m		Hardcore
0.12 – 0.21m	L4001	Subsoil. As above, Trench 31.
0.21m +	L4002	Natural. As above, Trench 31.

Description: Trench 58 contained no archaeological features or finds

Trenches 59 - 70 were not within the current phase of evaluation (see Orzechowski 2015).

Trench 71 Figs. 3 – 4

Sample Section 71A 0.00 = 14.59m AOD		
0.00 – 0.19m	L4012	Compact Soil. Firm/compact mid to dark red brown clay with pale yellow and mid red patches. Occasional small angular flint.
0.19m +	L4002	Natural. As above, Trench 31.

Sample Section 71B 0.00 = 15.96m AOD		
0.0 – 0.05m	L4012	Compact Soil. As above, Trench 71.
0.05m +	L4002	Natural. As above, Trench 31.

Description: Trench 71 contained no archaeological features or finds

Trench 72 Figs. 3 – 4

Sample Section 72A 0.00 = 13.95m AOD		
0.00 – 1.3m	L4013	Silty Clay Deposit. As above, Trench 55.
1.3m +	L4002	Natural. As above, Trench 31.

Sample Section 72B 0.00 = 14.77m AOD		
0.40 – 0.91m	L4013	Silty Clay Deposit. As above, Trench 55.
0.91m +	L4002	Natural. As above, Trench 31.

Description: Trench 72 contained no archaeological features or finds

Trench 73 Figs. 3 – 4

Sample Section 73A 0.00 = 14.89m AOD		
0.00 – 0.06m	L4013	Silty Clay Deposit. As above, Trench 55.
0.06m +	L4002	Natural. As above, Trench 31.

Sample Section 73B 0.00 = 15.79m AOD		
0.40 – 0.12m	L4013	Silty Clay Deposit. As above, Trench 55.
0.12m +	L4002	Natural. As above, Trench 31.

Description: Trench 73 contained no archaeological features or finds

Trenches 74 - 76 were not within the current phase of evaluation (see Edwards, N., 2017).

Trench 77 Figs. 3 – 4

Sample Section 77A 0.00 = 15.67m AOD		
0.00 – 0.22m	L4013	Silty Clay Deposit. As above, Trench 55.
0.22m +	L4002	Natural. As above, Trench 31.

Sample Section 77B 0.00 = 16.31m AOD		
0.00 – 0.08m	L4013	Silty Clay Deposit. As above, Trench 55.
0.08m +	L4002	Natural. As above, Trench 31.

Description: Trench 77 contained no archaeological features or finds

Trench 78 Figs. 3 – 4

Sample Section 78A 0.00 = 16.14m AOD		
0.00 – 0.06m	L4012	Compact Soil. As above, Trench 71.
0.06m +	L4002	Natural. As above, Trench 31.

Sample Section 78B 0.00 = 15.37m AOD		
0.0 – 0.10m	L4012	Compact Soil. As above, Trench 71.
0.10m +	L4002	Natural. As above, Trench 31.

Description: Trench 78 revealed no archaeological features or finds.

Trenches 79 - 88 were not within the current phase of evaluation (see Orzechowski 2015).

Trench 89 Figs. 3 – 4 & 6

Sample Section 89A 0.00 = 16.06m AOD		
0.00 – 0.12m	L4013	Silty Clay Deposit. As above, Trench 55.
0.12m +	L4002	Natural. As above, Trench 31.

Sample Section 89B 0.00 = 15.95m AOD		
0.40 – 0.28m	L4013	Silty Clay Deposit. As above, Trench 55.
0.28m +	L4002	Natural. As above, Trench 31.

Description: Trench 89 contained only modern disturbances.

Trench 90 Figs. 3 – 4

Sample Section 90A 0.00 = 16.66m AOD		
0.00 – 0.16m	L4013	Silty Clay Deposit. As above, Trench 55.
0.16m +	L4002	Natural. As above, Trench 31.

Sample Section 90B 0.00 = 16.30m AOD		
0.40 – 0.23m	L4013	Silty Clay Deposit. As above, Trench 55.
0.23m +	L4002	Natural. As above, Trench 31.

Description: Trench 90 contained only modern disturbances.

8 CONFIDENCE RATING

8.1 Trenches 40 and 41 had been partially mechanically excavated to the natural prior to AS' attendance on site. This is not wholly satisfactory for the recovery of finds and recognition of features.

8.2 Initially (October 2017) Trenches 34 – 36, 40 – 45, 57 – 58, 73, 77 and 89 – 90 could not be excavated for practical reasons; there were spoilheaps within the site. The heaps were moved and the remaining trenches excavated.

9 DEPOSIT MODEL

9.1 Uppermost was Topsoil L4000 a firm, mid to dark grey brown clay silt with frequent small sub angular flints, chalk flecks and CBM fragments (0.22 – 0.50m thick).

9.2 In western area of the site, L4000 overlay Subsoil L4001, a firm, pale brown grey clay sand with occasional small sub-rounded flints (0.19 – 0.5m thick). In eastern area of the site (Trenches 71 and 78) below 4000, L4012 was a compact mid to dark red brown clay with pale yellow and mid red silt patches (0.05 - 0.19m thick). Below L4000 in Trenches 55 – 57, 72 – 73, and 89 - 90, L4013 was a firm mid grey brown patchy clay with frequent chalk and small to medium sub-angular flint (0.40 - 1.3m thick).

9.3 At the base of the sequence were the natural deposits (L4002), varying from a friable, mid brown yellow silty sand in western area of the site, to a pale to mid grey clay in the east. L4002 was present 0.05 –1.3m below the present day ground surface.

10 DISCUSSION

10.1 A geophysical survey (Egan 2014), trial trenching (Orzechowski 2015 and Edwards 2017) and excavation (Mustchin 2016) have all been undertaken in the immediate vicinity of the site.

10.2 During the previous archaeological investigations (geophysical survey (Egan 2014) and trial trenching (Orzechowski 2015) archaeological features were recorded but the principal features were located in the southern sector of the middle field (Figs. 3 and 4), and these features were subject to an archaeological excavation (Mustchin 2016).

10.3 Adjacent to the current phase of trenching within the new primary school site and adjacent road the earlier trial trenching (Edwards 2017: Trenches 74-76, 91-93, 97–102, 123, 125 – 128 and 133-135) revealed sparse archaeological features: Trenches 101-102, 123 and 125, 133 were all devoid of features. Trench 135 contained a natural hollow and Trench 134 contained an undated pit and an undated ditch. Trench 126 contained a modern feature and Trench 91 contained an undated ditch.

10.3 To the south (Orzechowski 2015) Ditch F1039 (Trench 52) contained three struck flint. Ditch F1041 (Trench 59) contained two sherds of Saxo-Norman (10th – 12th century) pottery. Undated Gully F1009 was present in Trench 60. Two undated parallel ditches (F1003 and F1007), and an undated pit (F1005) were recorded in Trench 62. F1003 contained an early – middle Saxon (mid 5th – 9th century) pottery sherd.

10.5 The evaluation revealed an undated ditch (F4008 Trench 46). The latter may be a continuation of Ditch F1039 (Trench 52) (Orzechowski 2015), and F1039 contained animal bone (184g) and three struck flint (17g). The current evaluation also recorded a pit with a small body sherd of Early Bronze Age grog-tempered pottery (F4010 Trench 47), most likely from a Beaker vessel with comb-impressed decoration, although Collared Urns and similar types may have been similarly decorated. Fuel debris, primarily in the form of oak charcoal and also contained in the Early Bronze Age pit, may have been derived from a domestic hearth in the near vicinity. The cropmarks of several ring ditches, potentially including Bronze Age round houses or barrows have been recorded in the parish therefore the confirmation of related domestic activity, albeit as an isolated feature, is interesting. These features have a very limited potential to contribute to the reginal research agenda of furthering the understanding of early Bronze Age land use and patterns of barrows and cremations (Brown & Murphy 1997, 14; Medlycott 2011, 15-16). tentative.

10.6 In Trench 37 at the base of Cremation Pit F4004 was an urned cremation, F4006 L4007. The cremation vessel was truncated and the rim was lost, but the fabric of the vessel and its sagging base suggest an Early Saxon date. Two glass beads were found in association with the cremated human bone, and had been fused by the creamtion process, suggesting they were worn by the deceased rather than placed in the cremation after the funerary process. The beads appear to have been blue and white, and also support an early Saxon date based on comparisons

with grave goods from contemporary cemeteries in the region. The associated human bone had been cremated to a high temperature and was highly fragmented. An absence of any charcoal or carbonised organic remains within, or outside, the vessel suggests the cremated bone elements had been carefully removed from the pyre and that deposition was likely significantly removed from the cremation site. The limited diagnostic components of the human bone, specifically suture closures, and parts of fused metatarsals and radius, combined with the below average weight of the cremation, suggest a relatively young adult, potentially in their late teens or early twenties. The presence of an early Anglo-Saxon cremation is highly significant because it is likely associated with a settlement recorded by excavation at Lime Avenue, Oulton to the south-east (Mustchin 2016), which included an enclosure containing at least five sunken-featured buildings (SFBs) and a possible post-built building, as well as burnt flint pits. The cremation was *c*.300m to the north-east of the nearest SFB, and may indicate an area of funerary activity slightly detached from the settlement; a pattern common in the early Anglo-Saxon landscapes of eastern England, including at Bloodmoor Hill, Carlton Colville, which occupies a closely comparable position in the landscape. The presence of this cremation has a modest potential to contribute to the further understanding of social organisation and development of rural villages in the early Saxon period, as highlighted by the regional research agenda (Wade 1997, 48-49; Medlycott 2011, 51). This potential is significantly enlarged when it is considered in association with larger excavation of the nearby settlement (Mustchin 2016).

10.7 Undated Pit F4014 contained abundant charcoal. Given the proximity of Pit F4014 (Trench 36) to Urned Cremtion F4004 (Trench 37) it was considered that the feature may have been a remnant cremation pit broadly contemporary with Cremation Pit F4004 but the samples did not contain cremated bone. A prehistoric date is also possible for this feature. It may represent a charcoal production pit. Although a specific function cannot be ascribed based on the present data, small charcoal production pits have been identified on other sites in proximity to late Saxon to medieval urban settlements, such as a significant number distributed across a large area at Lodge Farm, Costessey on the outskirts of Norwich (e.g. Lloyd-Smith 2018). The location of the present site on the outskirts of Lowestoft is in keeping with this pattern. That said, the pit is undated and therefore cannot be ascribed to a period.

11 DEPOSITION OF THE ARCHIVE

11.1 Archive records, with an inventory, will be deposited at Suffolk County Store. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency. In addition to the overall site summary, it will be necessary to produce a summary of the artefactual and ecofactual data.

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Appendix 1 - Concordance of Finds

OUL037 - P5758, Land off Lime Avenue, Oulton, Suffolk

Feature	Context	Segment	Trench	Description	Spot Date (Pot Only)	Pot Qty	Pottery (g)	CBM (g)	A.Bone (g)	Other Material	Other Qty	Other (g)
1006	1007		37	Cremation Fill	5th-7th C	46	236			Bead	2	1
										H.Bone - Sieved to 10mm		193
										H.Bone - Sieved to 5mm		130
										H.Bone - Sieved to 2mm		122
1010	1011		47	Fill of Pit	Early Bronze Age	1	1					

APPENDIX 2 SPECIALIST REPORTS

The Pottery
Peter Thompson

The archaeological evaluation recovered 47 sherds weighing 237g from two features. All but one sherd came from an Early Anglo-Saxon cremation vessel and the remaining sherd was Early Bronze Age.

Methodology
The sherds were examined according to the Medieval Pottery Research Group Guidelines (Slowikowski et al 2001). Fabric codes are those used for the Suffolk County Council pottery type series which are appropriate for Norfolk.

The Pottery
Fill L1007 of Cremation Pit F1006, contained 46 mid brown sherds mottled with orange, with grey cores, all came from the same globular vessel, probably a bowl, with a sagging base but no surviving rim. The fabric comprises moderate to common fine sand with slightly micaceous surfaces, with few other inclusions except for occasional burnt organics. The vessel surfaces are smooth with the outer surface polished, and although the fabric is unusually hard fired and similar to medieval pottery, the overall appearance, and the fact it is a cremation vessel, indicate an Early Anglo-Saxon date (ESFS). The pot contained charcoal residue on the outer surface suggesting it was probably originally a domestic vessel.

Pit F1010 (L1011) contained a single tiny Early Bronze Age sherd with common grog and flint temper less than 2mm across (BAGF). There is a single narrow band of comb-ompressed decoration across it indicating it is probably from a Beaker.

Feature	Context	Quantity	Date	Comment
Cremation 1006	1007	46x236g ESFS	5th-7th?	all one vessel, polished on outer surface with charcoal residue.
Pit 1010	1011	1x1g BAGF	Early Bronze Age	roulette decoration

Table 1

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Glass Beads

Rebecca Sillwood

Two melted and fused glass beads were recovered from the fill of a cremation urn (L1007) from this site. The object weighed 0.6g and measured 9.7mm in height by 7.6mm in maximum diameter. One of the beads was white and the other, though now burned to a porous grey, was most likely a translucent blue originally. Both beads, though slightly distorted, were clearly small, bun-shaped examples, not cylindrical.

Cremations do produce grave goods, both those placed with the individual on to the pyre, and therefore placed into the urn after being burnt, and also goods which are placed into the urn unburnt. In this case it is clear that the beads were cremated alongside the person buried within the urn. At Snape in Suffolk there were 51 cremations recorded, and out of those around 20 contained graves goods. The author has found within that catalogue of cremations only three that contained melted beads. This shows that though grave goods can be found in cremations, it was not always the practice.

Beads are a good method for the dating of female graves, and an extensive countrywide analysis was undertaken of glass beads by Brugmann in 2004 and was utilised during the four-cemetery analysis undertaken by Penn & Brugmann in 2007. The beads from Oulton are burnt, and therefore definite identifications are difficult, however, if one bead is white and the second is blue, it may be that these fit into Brugmann's A1 phase, which is said to have been fashionable from the 5th century until the early 6th century (Penn & Brugmann, 2007, 58). This could provide a tentative date for the cremation here at Oulton.

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CREMATION MATERIAL / BURNT BONE

Julie Curl

THE CREMATAED BONE

Table 1

Methodology

Five bags of burnt bone were submitted for recording and analysis. The contents were dry-sieved through a stack of 10, 5, 2 sized meshes to ensure maximum recovery and assess the degree of fragmentation, residue below

2mm was also included. Fragments measuring over 5mm were manually separated for analysis, those below 5mm were scanned, but not fully sorted and examined in greater depth for this report. Greatest lengths were measured for the larger pieces in each bag. As this is a single deposit, information was input directly into a table in this report (Table 2).

Quantification, provenance and preservation

The cremated material from this assemblage totals 487g and consists of a minimum of 1,150 countable pieces of bone. The material was found with a pottery urn of a 5th to 7th century date. The material from inside the pot weighs 484g, considerably higher than the 3g found around the outside of the pot.

Preservation is good to fragmented, with many large fragments of bone surviving. Many small fragments and bone dust are present, and it is possible that at least some of these may have been from previous cremations and collected with the bone to be placed in the pot.

Analysis results and discussion

Size of Cremation

The size of a cremation depends on the individual (age, sex, body mass, bone density), maintenance of the pyre, the extent of bone recovery from the pyre site and during excavation, as well as on the rate of bone preservation (McKinley, 1993).

The weight for the cremation in this assemblage of 487g is on the lower end of the weight range in comparison to average archaeological cremations (range: 57 – 3000 g) (McKinley, 2000) and substantially incomplete in comparison to a modern cremation (1000 – 3600 g) (McKinley, 2000).

Cremations in containers are normally larger than cremations in pits and finely crushed cremations tend to be smaller due to poor preservation, so this urned cremation is a low weight. The smaller size of this cremations may be due to a range of factors including loss of some of the bone of bone before burial, perhaps suggesting poor collection from the pyre, as well as post-depositional bone decay.

Fragmentation

The fragmentation of bone resulting from the cremation process may be increased by funerary practices such as raking and tending of the pyre, collection of bone at the pyre site, deliberate crushing prior to burial, as well as a result of post-depositional processes, excavation and processing (McKinley, 1989).

There is quite a lot of variation in fragment size with the largest fragment in the assemblage coming from within the urn, measuring 64mm with the largest number of fragments around 5mm to 10mm. The material around the pot produced only twenty-five fragments of bone, with the largest fragment measuring 4mm.

The overall degree of bone fragmentation is greater than that generally seen in archaeological cremations where an average of 50% of bone fragments are over 10 mm in size (McKinley, 1994).

The fragmentation is high despite the protection of the urn and the degree of burning seen, which would suggest that the cremation was heavily raked or that acidic soil conditions have made fragments more fragile.

Colour
The colour of cremated bone depends on a range of factors including the maximum temperature reached, the length of the cremation process, the type and amount of fuel, the quantity of oxygen, the amount of body fat as well as on the degree of uniformity of exposure to the heat across the body. A correlation has been found between the temperature attained and colour changes. Cremated bone can exhibit a large range of heat-induced colour variation from normal coloured (unburnt), to black (charred: c.300°C), through hues of blue and grey (incompletely incinerated: up to c.600°) to fully oxidised white (> c.600°C) (McKinley, 2004).

The bone in this assemblage was largely burnt to a high temperature leaving the bone white in colour.

Surface Changes
Surface changes such as warping, cracking and fissuring were seen on several fragments that were burnt at higher temperature and fully oxidised. These are characteristics of cremated bone and are produced during the process of dehydration undergone by bone exposed to heat. The pattern of heat-induced bone changes in colour and texture can be exploited to infer the technological aspects of the ritual, the condition of the body at the time when the cremation process took place and the nature of post-depositional disturbance (Shipman et al.1984).

Elements and species identified
While the vast majority of fragments are unidentifiable, the larger fragments produced skull, pelvis, femur, radius, ulna, humerus, tibia, ribs, a distal metatarsal and phalange fragments. All of the bone with diagnostic features are of human origin.

Age, sex and pathologies
Some of the skull fragments in this assemblage had unfused sutures. While suture closure is a less reliable method of ageing (Brothwell, 1981), this does suggest a relatively young individual, possibly around 20 years or maybe younger. Fusion was noted on the distal metatarsal, which occurs at around 12 – 22 years of age. A proximal radius was fused, which occurs at 13 -19 years of age. Overall, the remains suggest an individual in the range of late teenage to early twenties.

No bones in this assemblage showed any sign of injuries or pathologies. No remains allowed an estimation of the sex of the individual.

Additional finds

The cremation material included small fragments of concreted sediment and small fragments of reddish brown and grey ceramic material. No animal remains were seen in this bone assemblage.

Conclusion

The cremated material from this site is of human origin. The remains are of a low weight compared to average archaeological cremations, despite being contained in a pottery vessel, which would normally offer greater protection. However, other urned cremations have been found of a similar weight, such as at Colchester (Curl, 2016). Low weight cremations may have been adversely affected by the weather or poor soil conditions in the place of burial that lead to destruction of some of the bone.

The small size and above average fragmentation of this cremation limits the information that can be obtained. The remains are of a young adult of approximately late teenage to young adult. No pathologies were seen, which would be expected on a young individual. Cause of death could not be determined from the bone.

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Table 2. Summary catalogue of the cremated/burnt bone from OUL037, Lime Avenue, Oulton, Suffolk.

Context	Description	Count	Weight (g)	Elements Present	Comments
1005 Sample 1 Outside pot	Cremation 1006	25	3g	Small fragments of bone	GL: 4mm Burnt white, sand, grey
1007	Cremation 1006 Bone sieved to 10mm	142	193g	Skull, pelvis, femur, radius, humerus, tibia, ribs	GL: 64mm Burnt grey, sand, white, Some blackened fragments Some skull sutures not fused
1007	Cremation 1006 Bone sieved to 5mm	298	130g	Skull, radius, ulna, ribs, metatarsal	GL: 15mm Burnt grey, sand, white, 2 black fragments Some skull sutures not fused
1007	Cremation 1006 Bone sieved to 2mm	685	122g	2 phalange fragments, skull fragment, mostly unidentifiable fragments	GL: 4mm Burnt grey, blue, sand, white, Some fine fragments of reddish-brown and grey ceramic material, one fossil sponge fragment
1007 Sample 4	Cremation 1006 Residue bone below 2mm	Not counted	39g	Tiny fragments of bone, unidentifable	Gl: 2-3mm Burnt grey, white, sand Some tiny fragments of CBM, sediment

The Environmental Samples

Dr John Summers

Introduction

During the archaeological evaluation at Oulton Sands, five bulk samples were taken for archaeobotanical assessment. Two samples were associated with cremation F4006 (fill L4007 and surrounding material L4005), one from EBA pit fill L4011 (F4010) and two from undated Pit F4014 (L4015 and L4016) with a charcoal-rich fill. This report presents the results from the assessment of the bulk sample light fractions, and discusses the significance and potential of any remains recovered.

Methods

Samples were processed at the Archaeological Solutions Ltd facilities in Bury St. Edmunds using standard flotation methods. The light fractions were washed onto a mesh of 500µm (microns), while the heavy fractions were sieved to 1mm. The dried light fractions were scanned under a low power stereomicroscope (x10-x30 magnification). Botanical remains were identified and recorded using a semi-quantitative scale (X = present; XX = common; XXX = abundant). Reference literature (Cappers *et al.* 2006; Jacomet 2006) and a reference collection of modern seeds was consulted where necessary. A sub-sample of charcoal fragments >2mm were fractured to produce a transverse section and examined under low power magnification (x10) to gain an insight into variation within the charcoal assemblage. Potential contaminants, such as modern roots, seeds and invertebrate fauna were also recorded in order to gain an insight into possible disturbance of the deposits.

Results

The assessment data from the bulk sample light fractions are presented in Table 3. No carbonised plant macrofossils in the form of crop plants or arable weed taxa were identified in the samples. A relatively small amount of charcoal was identified within EBA pit fill L4011 (F4010), with vessel patterns identified as oak (*Quercus* sp.).

Undated Pit F4014 contained abundant oak charcoal remains within both of its fills (L4015 and L4016). No other archaeobotanical remains were present.

Neither the fill of cremation F4006 (L4007) nor the surrounding material (L4005) contained identifiable charcoal fragments.

Conclusions

The samples associated with cremation F4006 did not contain any charcoal fragments of identifiable size. This may indicate the careful selection of bone

from the pyre for burial in the cremation vessel and the careful exclusion of fuel debris. The remains from EBA pit fill L4011 (F4010) are likely to represent fuel debris, which was composed primarily of oak wood. Without the inclusion of any other identifiable material, it is difficult to ascribe a specific activity which generated the charcoal deposit, although fuel debris from a domestic hearth is one possibility.

In the absence of other remains accompanying the charcoal from L4015 and L4016 (F4014), it is difficult to take the interpretation of the material further. Oak was a common fuel in many periods, often selected due to its favourable burning characteristics for specialist processes such as kilns, furnaces and cremations. It was also a commonly selected wood for charcoal production.

References

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Jacomet, S. 2006, *Identification of Cereal Remains from Archaeological Sites* (2nd edn), Laboratory of Palinology and Palaeoecology, Basel University

Site code	Sample number	Context	Feature	Description	Trench	Spot date	Volume taken (litres)	Volume processed (litres)	% processed	Cereals			Non-cereal taxa		Hazelnut shell	Charcoal		Molluscs		Contaminants					Other remains
										Cereal grains	Cereal chaff	Notes	Seeds	Notes		Charcoal>2mm	Notes	Molluscs	Notes	Roots	Molluscs	Modern seeds	Insects	Earthworm capsules	
OUL037	1.1	4005	-	Material Surrounding Cremation	37	5th-7th C	10	10	100%	-	-	-	-	-	-	X	-	-	-	X	-	X	-	-	-
OUL037	1.3	4011	4010	Fill of Pit	47	EBA	10	10	100%	-	-	-	-	-	-	XX	*Quercus* sp.	-	-	X	-	-	-	-	-
OUL037	1.4	4007	4006	Cremation Fill	37	5th-7th C	1.5	1.5	100%	-	-	-	-	-	-	-	Fragments <2mm	-	-	X	-	X	-	-	Small bone fragments (XX)
OUL037	2.1	4015	4014	Fill of Pit	36	-	10	10	100%	-	-	-	-	-	-	XXX	*Quercus* sp. incl. heartwood	-	-	X	X	XX	-	-	-
OUL037	2.2	4016	4014	Fill of Pit	36	-	10	10	100%	-	-	-	-	-	-	XXX	*Quercus* sp. incl. heartwood	-	-	X	X	X	-	-	-

Table 3: Results from the assessment of bulk sample light fractions from Oulton Sands.

APPENDIX 3 SPECIFICATION

LAND OFF LIME AVENUE, OULTON, SUFFOLK
PHASE 2

WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL EVALUATION

15th June 2018

Archaeological Solutions is an independent archaeological contractor providing the services which satisfy all archaeological requirements of planning applications, including:

Desk-based assessments and environmental impact assessments
Historic building recording and appraisals
Trial trench evaluations
Geophysical surveys
Archaeological monitoring and recording
Archaeological excavations
Post excavation analysis
Promotion and outreach
Specialist analysis

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LAND OFF LIME AVENUE, OULTON, SUFFOLK
PHASE 2
ARCHAEOLOGICAL TRIAL TRENCH EVALUATION

1 INTRODUCTION

1.1 This specification has been prepared in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT) (dated 28th March 2014). It provides for an archaeological trial trench evaluation to be carried out in advance of the proposed construction of a new residential development on land off Lime Avenue, Oulton, Oulton, Suffolk (NGR TM 518 941), in order to provide further information for the initial requirement of planning conditions on Waveney County Council Planning Approval requiring a programme of archaeological work. P1 of the development has been subject to an archaeological evaluation and excavation according to the requirements of the condition, and this updated WSI provides for the remaining Phase 2 trial trenching. The evaluation is required by the LPA, based on advice from SCC AS-CT.

1.2 It is understood that the programme of archaeological investigation should comprise an archaeological field evaluation, to comply with the planning requirement of the local planning authority (on advice from SCC AS-CT). This WSI for initial archaeological evaluation has been prepared for the approval of SCC AS-CT and represents the first stage of work. If remains are present then SCC AS-CT may require further mitigation for archaeology as part of the proposed development. Such requirement/s will be confirmed in a subsequent brief/s as necessary.

2 COMPLIANCE

2.1 If AS carried out the evaluation, AS would comply with SCC AS-CT's requirements.

3 SITE & DEVELOPMENT DESCRIPTION ARCHAEOLOGICAL BACKGROUND

3.1 It is proposed to erect a new residential development (Phase 2) on land off Lime Avenue, Oulton. The spine road and Phase 1 development area have been subject to a programme of archaeological work by AS comprising trial trenching and follow-up excavation of areas of identified archaeology.

3.2 The Suffolk Historic Environment Record (HER) confirms that the site is in an area of archaeological potential. Trial trenching of the spine road and area to the south, north east and east has taken place, followed by an open area excavation of the Phase 1 development area (HER OUL 037), revealing activity of prehistoric to medieval date, with a significant Anglo-Saxon component.

The excavation report (Mustchin 2016) summarised:

As was suggested by the evaluation, the excavation revealed abundant evidence of activity dating to the late Bronze Age/ early Iron Age and early to middle Anglo-Saxon period. Evidence of Romano-British, middle to late Anglo-Saxon and Saxo-Norman/ medieval occupation/activity was also encountered. Other periods were more sparsely represented.

Of particular significance were a late Bronze Age/ early Iron Age enclosure system, a Romano-British enclosure, hearths and a post-built structure, five Anglo-Saxon sunken-featured buildings and five burnt flint pits, also of Anglo-Saxon date. A middle to late Anglo-Saxon enclosure, a post and beam slot structure and a Saxo-Norman/ medieval metal working area were also recorded. Notable small finds comprise eight late Anglo-Saxon/ Viking Age scale weights with embedded silver coins.

Trenching of the new school site to the immediate north east of the current site was undertaken by AS in 2017 (Edwards *et al* 2017) revealing only an undated ditch and modern features.

3.3 The site thus has a further potential for multi-period remains such as have been excavated immediately adjacent to the site.

3.4 The proposed works will cause significant ground disturbance that has the potential to damage any archaeological deposits that exist. The archaeological and historical background of the site will be discussed in the project report and the HER will be consulted.

4 BRIEF FOR THE ARCHAEOLOGICAL EVALUATION SPECIFICATION FOR TRIAL TRENCH EVALUATION GENERAL MANAGEMENT

4.1 The principal objectives for the evaluation include:

- To establish whether any archaeological deposit exists in the area, with particular regard to any which are of sufficient importance to merit preservation *in situ*

- To identify the date, approximate form and purpose of any archaeological deposit within the application area, together with its likely extent, localised depth and quality of preservation.

- To evaluate the likely impact of past land uses, and the possible presence of masking colluvial/alluvial deposits, along with the potential for the survival of environmental evidence

- To provide sufficient information to construct an archaeological conservation strategy dealing with preservation, the recording of archaeological deposits, working practices, timetables and orders of cost.

4.2 Research Design

4.2.1 The regional research frameworks are set out in Glazebrook (1997 and Brown & Glazebrook (2000) and updated by Medlycott and Brown (2008) and Medlycott (2011). The key issues for the Neolithic and Bronze Age (as set out by Brown & Murphy in Brown & Glazebrook 2000, 9-13) centre on the theme of the development of farming and the attendant development and integration of monuments, fields and settlements. Medlycott & Brown (2008) and Medlycott (2011, 13) suggest that future research on the Neolithic should include synthetic and regional studies for the region; an examination of the Mesolithic/Neolithic transition through radiocarbon dates; the establishment of a chronology for Neolithic ring-ditches; improved understanding of the chronological development of pottery; the excavation and study of cropmark complexes; greater understanding of burial practices; a study of the inter-relationships of settlements; greater use of scientific methods of dating and modelling of the environmental conditions during this period; targeted programmes of sedimentological, palynological and macrofossil analyses of sediment sequences in valley bottoms, lakes or the intertidal zone; and the human impact on the natural landscape during this period. The nature of Neolithic burial in the region and the pattern of burial practice, including the relationship between settlement sites and burial, require further research. Settlement sites themselves also form part of an important research subject as there is a requirement to identify if a consensus exists on the subject of non-permanent settlement in the Neolithic (Medlycott 2011, 13). Further work on understanding the effects of plough damage on Neolithic sites is considered to be an important research subject for the region (Medlycott 2011, 13).

4.2.2 Inter-relationships between settlements and greater understanding of patterns of burial practice are important areas of research for the Bronze Age (Medlycott & Brown 2008). Medlycott (2011, 21) identifies artefact studies as of particular importance for the study of the Bronze Age in the region; the typological identification of later Bronze Age pottery linked to close radiocarbon dating, the further study of Bronze Age flintworking and the significance of hoarding and other depositional practices are all identified as being key research subjects. Artefact studies can contribute to the refinement of chronologies for the period and to an assessment of the reasons behind the marked divide in research results between the northern and southern parts of the region, which are identified by Medlycott (2011, 21) as important research areas. Like the Neolithic, sedimentological, palynological and macrofossil analyses of sediment sequences are considered to be important areas of research as are the effects of colluviation and the possibility that colluvial deposits mask some significant sites (Medlycott 2011, 21).

4.2.3 Research topics for the Iron Age set out by Bryant (in Brown & Glazebrook 2000, 14-18) include further research into chronologies, precise dating and ceramic assemblages, further research into the development of the agrarian economy (particularly with regard to field systems), research into settlement chronology and dynamics, research into processes of economic and social change during the late Iron Age and Romano-British transition (particularly with regard to the development of Aylesford/Swarling and Roman culture, and also regional differences and tribal polities in the late Iron Age and further research into *oppida* and ritual sites), further analysis of development of social organisation and settlement form/function in the

early and middle Iron Age, further research into artefact production and distribution and the Bronze Age/Iron Age transition. Medlycott & Brown (2008) and Medlycott (2011, 29-32) build on these themes, paying particular attention to chronological and spatial development and variation and adding subjects as the Bronze Age/Iron Age transition and manufacturing and industry.

4.2.4 Medlycott (2011, 47) identifies regional variation and tribal distinctions as underlying themes for research in the Roman period. Research topics for the Roman period previously set out by Going & Plouviez (in Brown & Glazebrook 2000, 19-22) include analysis of early and late Roman military developments, further analysis of large and small towns, evidence of food consumption and production, further research into agricultural production, landscape research (in particular further evidence for potential woodland succession/regression and issues of relict landscapes, as well as further research into the road network and bridging points), further research into rural settlements and coastal issues. Medlycott (2011, 47-48) states that these research areas remain valid and presents updated consideration of them. To these themes Medlycott & Brown (2008) and Medlycott (2011, 47-48) add rural settlements and landscapes, the process of Romanisation in the region, the evidence for the Imperial Fen Estate, and the Roman/Saxon transition.

4.2.5 Wade (in Brown & Glazebrook 2000, 23-26) identifies research topics for the rural landscape in the Saxon and medieval periods. These include examination of population during this period (distribution and density, as well as physical structure), settlement (characterisation of form and function, creation and testing of settlement diversity models), specialisation and surplus agricultural production, assessment of craft production, detailed study of changes in land use and the impact of colonists (such as Saxons, Danes and Normans) as well as the impact of the major institutions such as the Church.

4.2.6 Medlycott (2011, 57) states that he study of the Anglo-Saxon period still requires further cooperation between historians and archaeologists. Important research issues for this period comprise: the Roman/Anglo-Saxon transitional period; settlement distribution, which suffers from problems associated with the identification of Saxon settlement sites; population modelling and demographics, which has the potential to be advanced by modern scientific methods; differences within the region in terms of settlement type and economic practice and subjects related to this such as links with the continent, trading practices and cultural influences; rural landscapes and settlements, including detailed study of the changes and developments in such settlements over time and the influence of Saxon landscape organisation and settlements on these issues in the medieval period; towns and their relationships with their hinterland; infrastructure, including river management, the identification of ports and harbours and the role of existing infrastructure in shaping the Saxon period landscape; the economy, based on palaeoenvironmental studies; ritual and religion; the effect of the Danish occupation; and artefact studies (Medlycott 2011, 57-59).

4.2.7 The issues identified by Ayers (in Brown & Glazebrook, 2000) and Wade (in Brown & Glazebrook, 2000) remain valid research subjects (Medlycott 2011, 70) for the medieval period. The study of landscapes is dominated by issues such as water management and land reclamation for large parts of the region, the economic

development of the landscape and the region's potential to reveal information regarding field systems, enclosures, roads and trackways. Linked to the study of the landscape are research issues such as the built environment and infrastructure; the main communication routes through the region need to be identified and synthesis needs to be carried out regarding the significance, economic and social importance of historic buildings in the region (Medlycott 2011, 70-71). Also considered to be important research subjects for the medieval period are rural settlements, towns, industry and the production and processing of food and demographic studies (Medlycott 2011, 70-71).

4.2.8 The research subjects identified as important for the post-medieval and modern periods (see Medlycott 2011, 72-80) expand on those set out by Gilman *et al* (in Brown & Glazebrook, 2000) which focussed on the subjects of fortifications, parks and gardens and industrialisation and manufacture. Medlycott (2011) stresses the importance of the built and environment and the use of the Listed Buildings databases and thematic surveys in understanding this. The subject of industry and infrastructure, which is clearly of great importance for this period, remains a key research subject for the region with particular attention being paid to rural industries, the processing of food for urban markets and the development and character of the region's primary communication roots. Landscapes, and the effect of social changes, such as the Dissolution and the enclosure of greens and commons, on them are considered to be an area of research. The region's military sites and their impact on the development of eastern England, on its landscapes and on its appearance are also considered to be of importance. Towns, their development and their impact on the landscape, require further study. Issues such as economic and social influences of towns on their hinterlands and neighbours are identified as being of importance, as are the development of specific urban forms.

References

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Mustchin, ARR et al 2016, *Land off Lime Avenue, Oulton, Suffolk; An Archaeological Excavation, Research Archive Report,* AS Report 5069

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5 SPECIFICATION TRENCHED EVALUATION

5.1 Details of Senior Project Staff

5.1.1 AS has developed a professional and well-qualified team who have undertaken numerous archaeological projects (both desk-based and field evaluations) on all types of developments, including commercial, residential, road schemes and golf courses. AS is a Registered Organisation of the CIfA.

5.1.2 Profiles of key project staff are provided (Appendix 3).

A Method Statement is presented
Trial Trench Evaluation Appendix 1

5.1.3 The evaluation will conform with the guidelines set down in the brief and the Chartered Institute for Archaeologists *Standard and Guidance for Archaeological Evaluations (revised 2014) and Standard and Guidelines for Historic Environment Desk-based Assessment (revised 2014).* It will also adhere to the document *Standards for Field Archaeology in the East of England* (Gurney 2003) and the requirements of the SCC document *Requirements for a Trenched Evaluation* (March 2017).

5.1.4 SCC AS-CT require a programme of archaeological trial trenching and stipulate that a 5% sample of the site should be subject to trial trenching at 1.8m width should be undertaken. 27 trenches of 40m x 1.8m are proposed. A trench plan is appended. The trenches may be excavated in two phases due to the presence of existing spoil heaps on part of the site. AS is happy to review the scale/location of the trenches following comment from the client and/or SCC AS-CT.

5.1.5 The environmental strategy will adhere to the guidelines issued by English Heritage (now Historic England) (*Environmental Archaeology; A guide to the theory and practice of methods, from sampling and recovery to post-excavation,* Centre for Archaeology Guidelines, rev 2011). An environmentalist will be invited to visit the site if remains of interest are found. Dr Rob Scaife/Dr John Summers will be the Environmental Coordinator for the project. The specialist will make his/her results known to the regional science advisor who co-ordinates environmental archaeology in the region on behalf of Historic England.

5.1.6 Estimate of time and resources required for each phase, to complete the trial trenching, project archive and the production of an evaluation report.

Trial Excavation
Processing, Cataloguing and Conservation of Finds
Preparation of Report and Archive *c.*10-15 Days

Staff on site: a Project Officer and Site Assistant/s (as necessary)

5.1.7 In advance of the field work AS will liaise with the Suffolk Archaeological Archive to fulfil their requirements for the long term deposition of the project archive. These will encompass: their collection policy, and their financial and technical requirements for long term storage. The resources include provision for the long term-deposition of the project archive.

5.1.8 Details of staff and specialist contractors are provided (Appendix 2). The project will be managed by Claire Halpin MCIFA /Jon Murray MCIFA.

5.1.9 AS is a member of FAME formerly the Standing Conference of Archaeological Unit Managers (SCAUM) and operates under the `Health & Safety in Field Archaeology Manual'. A risk assessment and management strategy will be completed prior to the start of works on site.

5.1.10 AS is a member of the Council for British Archaeology and is insured under their policy for members.

6 SERVICES

6.1 The client is to advise AS of the position of any services which traverse the site.

7 SECURITY

7.1 Throughout all site works care will be taken to maintain all existing security arrangements, and to minimise disruption.

8 REINSTATEMENT

8.1 No provision has been made for reinstatement, excepting simple backfilling. Backfilling will only take place once SCC AS-CT have signed off the trenches.

9 REPORT REQUIREMENTS

9.1 The report will include (as a minimum):

a) the archaeological background
b) a consideration of the aims and methods adopted in the course of the recording
c) a detailed account of the nature, location, extent, date, significance and quality of any archaeological evidence recorded.
d) Excavation methodology and detailed results including a suitable conclusion and discussion
e) plans and sections of any recorded features and deposits
f) discussion and interpretation of the evidence. An assessment of the projects significance in a regional and local context and appendices.
g) All specialist reports or assessments
h) A concise non-technical summary of the project results
i) A HER summary sheet
j) An OASIS summary sheet

9.2 Draft hard and digital PDF copies of the report will be submitted to SCC AS-CT for approval. If any revisions are required, final hard and digital PDF copies will be supplied to SCC AS-CT for deposition with the HER.

9.3 The project details will be submitted to the OASIS database, and the online summary form will be appended to the project report.

9.4 A summary report will be submitted suitable for inclusion in the annual roundups of *Proceedings of the Suffolk Institute of Archaeology and History*, dependent on the results of the project.

10 ARCHIVE

10.1 The requirements for archive storage will be agreed with the Suffolk Archaeological Archives.

10.2 The archive will be deposited within six months of the conclusion of the fieldwork. It will be prepared in accordance with the UK Institute for Conservation's *Conservation Guideline No.2* and according to the document *Deposition of Archaeological Archives in Suffolk* (SCC AS Conservation Team, 2017). A unique event number and HER site code will be obtained from the County HER Officer before the project commences.

10.3 The full archive of finds and records will be made secure at all stages of the project, both on and off site. Arrangements will be made at the earliest opportunity for the archive to be accessed into the collections of Suffolk Archaeological Archives; with the landowner's permission in the case of any finds. It is acknowledged that it is the responsibility of the field investigation organisation to make these arrangements with the landowner and Suffolk Archaeological Archives. The archive will be adequately catalogued, labelled and packaged for transfer and storage in

accordance with the guidelines set out in the United Kingdom Institute for Conservation's *Conservation Guidelines No.2* and the other relevant reference documents.

10.4 Archive records, with inventory, are to be deposited, as well as any donated finds from the site, at the Suffolk Archaeological Archives and in accordance with their requirements. The archive will be quantified, ordered, indexed, cross-referenced and checked for internal consistency. In addition to the overall site summary, it will be necessary to produce a summary of the artefactual and ecofactual data. A unique event number for the report and monument number for any finds will be obtained from the HER.

11 MONITORING

11.1 It is understood that SCCAS-CT will monitor the project on behalf of the local planning authority.

11.2 ***Notification*** Archaeological Solutions will give SCCAS-CT notification prior to the commencement of the project on site

11.3 ***Monitoring*** SCCAS-CT will be responsible for monitoring progress and standards throughout the project, both on site and during the post-survey/report stages, to ensure compliance with the planning requirement, the approved WSI and any subsequent Brief and approved WSI for further fieldwork, analyses and publication.

11.4 Any variations to the WSI will be agreed in advance with SCCAS-CT prior to them being carried out.

APPENDIX 1

METHOD STATEMENT

Method Statement for the recording of archaeological remains

The archaeological evaluation will be conducted in accordance with the project brief, and the code of the Chartered Institute for Archaeologists.

1 Mechanical Excavation

1.1 A mechanical excavator fitted with a wide toothless bucket will be used to remove the topsoil/overburden. The machine will be powerful enough for a clean job of work and be able to mound spoil neatly, at a safe distance from the trench edges.

1.2 The mechanical stripping will be controlled, and the mechanical excavator will only operate under the full-time supervision of an experienced archaeologist.

2 Site Location Plan

2.1 On conclusion of the mechanical excavation, a `site location plan', based on the current Ordnance Survey 1:1250 map and indicating site north, will be prepared. This will be supplemented by an `area plan' at 1:200 (or 1:100) which will show the location of the area(s) investigated in relationship to the development area, OS grid and site grid.

3 Manual Cleaning & Base Planning of Archaeological Features

3.1 Exposed areas will be hand-cleaned to define archaeological features sufficient to produce a base plan.

4 Full Excavation

If deep, ‘urban’ type deposits are encountered, or significant deposits of made ground are encountered (which is unlikely on this site) the upper levels of the test pits will be stepped as necessary, within layers of later post-medieval/modern date only, in order to ensure safe working practices. The trenches will be no less than 1.6m wide at base.

Excavation of Stratified Sequences

The trenches will be excavated according to phase, from the most recent to the earliest, and the phasing of features will be distinguished by their stratigraphic relationships, fills and finds.

Deep features e.g. quarry holes, may incorporate stratified deposits which will be excavated by hand-dug sections and recorded.

Excavation of Buildings

Building remains are likely to comprise stake holes, post holes and slots/gullies, masonry foundations and low masonry walls. Associated features may be present e.g. hearths.

The features comprising buildings will be excavated fully and in plan/phase, to a level sufficient for the requirements of an evaluation.

Full Excavation

Industrial remains and intrinsically interesting features e.g hearths, burials will clearly merit full excavation, though will be excavated sufficient to characterise such deposits within the context of an evaluation. Discrete features associated with possible structures and/or settlement will be fully excavated, again sufficient to characterise them for the purposes of an evaluation. Otherwise discrete features (eg pits) will be half-sectioned.

Ditches

The ditches will be excavated in segments up to 2m long, and the segments will be placed to provide adequate coverage of the ditches, establish their relationships and obtain samples and finds.

Buried Soils

If buried soils are encountered, the surfaces will be cleaned and examined for features/finds, which will be investigated/recorded before any further excavation takes place.

5 Written Record

5.1 All archaeological deposits and artefacts encountered during the course of the excavation will be fully recorded on the appropriate context, finds and sample forms.

5.2 The site will be recorded using AS.'s excavation manual which is directly comparable to those used by other professional archaeological organisations, including English Heritage's own Central Archaeological Service.

6 Photographic Record

6.1 An adequate photographic record of the investigations will be made. It will include black and white prints and colour transparencies (on 35mm) illustrating in both detail and general context the principal features and finds discovered. Digital images will also be taken (Nikon Coolpix L29 16.1 megapixel cameras). It will also include `working and promotional shots' to illustrate more generally the nature of the archaeological operations. The black and white negatives and contacts will be filed, and the colour transparencies will be mounted using appropriate cases. All photographs will be listed and indexed.

7 Drawn Record

7.1 A record of the full extent, in plan, of all archaeological deposits encountered will be drawn on A1 permatrace. The plans will be related to the site, or OS, grid and be drawn at a scale of 1:50 or 1:20, as appropriate. In addition where appropriate, e.g. recording an inhumation, additional plans at 1:10 will be produced. The sections of all archaeological contexts will be drawn at a scale of 1:10 or, where appropriate, 1:20. The OD height of all principal strata and features will be calculated and indicated on the appropriate plans and sections.

8 Recovery of Finds

GENERAL

The principal aim is to ensure that adequate provision is made for the recovery of finds from all archaeological deposits.

The Small Finds, e.g. complete pots or metalwork, from all excavations will be 3-dimensionally recorded.

A metal detector will be used to enhance finds recovery. The metal detector survey will be conducted prior to and on conclusion of the topsoil stripping, and thereafter during the course of the excavation. Gareth Barlow of AS is our experienced metal detectorist. The spoil tips will also be surveyed. Metal detectors will not be set to discriminate against iron. Any small finds will be located by GPS. Regular metal detector surveys of the excavation area and spoil tips will reduce the loss of finds to unscrupulous users of metal detectors (treasure hunters). All non-archaeological staff working on the site should be informed that the use of metal detectors is forbidden.

In the event of items considered as being defined as treasure being found, then the requirements of the Treasure Act 1996 (with subsequent amendments) will be followed. Any such finds encountered during the investigation will be reported immediately to the Suffolk Portable Antiquities Scheme Finds Liaison Officer who will in turn inform the Coroner within 14 days

WORKED FLINT

When flint knapping debris is encountered large-scale bulk samples will be taken for sieving.

POTTERY

It is important that the excavators are aware of the importance of pottery studies and therefore the recovery of good ceramic assemblages.

The pottery assemblages are likely to provide important evidence to be able to date the structural history and development of the site.

The most important assemblages will come from `sealed' deposits which are representative of the nature of the occupation at various dates, and indicate a range of pottery types and forms available at different periods.

`Primary' deposits are those which contain sherds contemporary with the soil fill and in simple terms this often means large sherds with unabraded edges. The sherds have usually been deposited shortly after being broken and have remained undisturbed. Such sherds are more reliable in indicating a more precise date at which the feature was `in use'. Conversely, `secondary' deposits are those which often have small, heavily abraded sherds lacking obvious conjoins. The sherds are derived from earlier deposits.

HUMAN BONE

Any human remains present would not normally be excavated at the stage of an evaluation, but would be protected and preserved in situ, on advice from SCC AS-CT. Should human remains be discovered and be required to be removed, the coroner will be informed and a licence from the Ministry of Justice sought immediately; both the client and the monitoring officer will also be informed. Any excavation of human remains at the stage of an evaluation would only be carried out following advice from SCC AS-CT. Excavators would be made aware, and comply with, provisions of Section 25 of the Burial Act of 1857 and pay due attention to the requirements of Health & Safety.

ANIMAL BONE

Animal bone is one of the principal indicators of diet. As with pottery the excavators will be alert to the distinction of primary and secondary deposits. It will also be important that the bone assemblages are derived from dateable contexts. All animal bone will be collected.

ENVIRONMENTAL SAMPLING

The sampling will adhere to the guidelines prepared by English Heritage (now Historic England), and the specialist will make his/her results known to the regional science advisor who co-ordinates environmental archaeology in the region on behalf of Historic England. The project will also accord with the guidelines of the English Heritage (now Historic England) document *Environmental Archaeology, a guide to the theory and practice of methods, from sampling and recovery to post-excavation*, Centre for Archaeology Guidelines 2011.

Provision will be made for the sampling of appropriate materials for specialist and/or scientific analysis (e.g. radiocarbon dating, environmental analysis). The location of samples will be 3-dimensionally recorded and they will also be shown on an appropriate plan. AS has its own environmental sampling equipment (including a pump and transformer) and, if practical, provision will be made to process the soil samples during the fieldwork stage of the project.

If waterlogged remains are found advice on sampling will be obtained on site from Dr Rob Scaife/Dr John Summers. Dr Rob Scaife/Dr Summers and AS will seek advice from the HE Regional Scientific Advisor if significant environmental remains are found.

The study of environmental archaeology seeks to understand the local and near-local environment of the site in relation to phases of human activity and as such is an important and integral part of any archaeological study.

Environmental remains, both faunal and botanical, along with pedological and sedimentological analyses may be used to understand the environment and the impact of human activity.

There may be a potential for the recovery of a range of environmental remains (ecofacts) from which data pertaining to past environments, land use and agricultural economy should be forthcoming.

Sampling strategies on evaluations aim to determine the potential of the site for both biological remains (plants, small vertebrates) and small sized artefacts which would otherwise not be collected by hand. The number/range of samples taken will represent the range of feature types encountered, but with an aim of at least three samples from each feature type.

For plant remains, the samples taken at evaluation stage would aim to characterise:
- The range of preservation types (charred, mineral-replaced, waterlogged) and their quality
- Any differences in remains from dated/undated features
- Variation between different feature types/areas

To realise the potential of the environmental material encountered, a range of specialists from different disciplines is likely to be required. The ultimate goal will be the production of an interdisciplinary environmental study which can be of value to an understanding of, and integrated with, the archaeology.

Organic remains may allow study of the contemporary landscape (occupation/industrial/agricultural impact and land use) and also changes after the abandonment of the site.

The nature of the environmental evidence

Aspects of sampling and analysis may be divided into four broad categories; faunal remains, botanical remains, soils/sediments and radiocarbon dating measurements.

a) Faunal remains: These comprise bones of macro and microfauna, birds, molluscs and insects.

a.i) Bones: The study of the animal bone remains, in particular domestic mammals, domestic birds and marine fish will enhance understanding of the development of the settlement in terms of the local economy and also its wider influence through trade. The study of the small animal bones will provide insight into the immediate habitat of any settlement.

The areas of study covered may include all of the domestic mammal and bird species, wild and harvested mammal, birds, marine and fresh water fish in addition to the small mammals, non-harvest birds, reptiles and amphibia.

Domestic mammalian stock, domestic birds and harvest fish

The domestic animal bone will provide insight into the different phases of development of any occupation and how the population dealt with the everyday aspect of managing and utilising all aspects of the animal resource.

Small animal bones

Archaeological excavation has a wide role in understanding humans' effect on the countryside, the modifications to which have in turn affected and continue to affect their own existence. Small animals provide information about changing habitats and thereby about human impact on the local environment.

a.ii) Molluscs: Freshwater and terrestrial molluscs may be present in ditch and pit contexts which are encountered. Sampling and examination of molluscan assemblages if found will provide information on the local site environment including environment of deposition.

a.iii) Insects: If suitable waterlogged contexts (pit, pond and ditch fills) are encountered (which can potentially be expected to be encountered on the project), sampling and assessment will be carried out in conjunction with the analysis of waterlogged plant remains (primarily seeds) and molluscs. Insect data may provide information on local site environment (cleanliness etc.) as well as proxies for climate and vegetation communities.

b) Botanical remains: Sampling for seeds, wood, pollen and seeds are the essential elements which will be considered. The former are most likely to be charred but possibly also waterlogged should any wells/ponds be encountered.

b.i) Pollen analysis: Sampling and analysis of the primary fills and any stabilisation horizons in ditch and pit contexts which may provide information on the immediate vegetation environment including aspects of agriculture, food and subsistence. These data will be integrated with seed analysis.

b.ii) Seeds: It is anticipated that evidence of cultivated crops, crop processing debris and associated weed floras will be present in ditches and pits. If waterlogged features/sediments are encountered (for example, wells/ponds) these will be sampled in relation to other environmental elements where appropriate (particularly pollen, molluscs and possibly insects).

c) Soils and Sediments: Characterisation of the range of sediments, soils and the archaeological deposits are regarded as crucial to and an integral part of all other aspects of environmental sampling. This is to afford primary information on the nature and possible origins of the material sampled. It is anticipated that a range of 'on-site' descriptions will be made and subsequent detailed description and analysis of the principal monolith and bulk samples obtained for other aspects of the environmental investigation. Where considered necessary, laboratory analyses such as loss on ignition and particle size may also be undertaken. A geoarchaeologist will be invited to visit the site as necessary to advise on sampling.

d) Radiocarbon dating: Archaeological/artifactual dating may be possible for most of the contexts examined, but radiocarbon dating should not be ruled out

Sampling strategies

Provision will be made by the environmental co-ordinator that suitable material for analysis will be obtained. Samples will be obtained which as far as possible will meet the requirements of the assessment and any subsequent analysis.

a) Soil and Sediments: Samples taken will be examined in detail in the laboratory. An overall assessment of potential will be carried out. Analysis of particle size and loss on ignition, if required would be undertaken as part of full analysis if assessment demonstrates that such studies would be of value.

b) Pollen Analysis: Contexts which require sampling may include stabilisation horizons and the primary fills of the pits and ditches, and possibly organic well/pond fills. It is anticipated that in some cases this will be carried out in conjunction with sampling for other environmental elements, such as plant macrofossils, where these are also felt to be of potential.

c) Plant Macrofossils: Principal contexts will be sampled directly from the excavation for seeds and associated plant remains. It is anticipated that primarily charred remains will be recovered, although provision for any waterlogged sequences will also be made (see below). Sampling for the former will, where possible (that is, avoiding contamination) comprise samples of an average of 40-60

litres which will be floated in the AS facilities for extraction of charred plant remains. Both the flot and residues will be kept for assessment of potential and stored for any subsequent detailed analysis. The residues will also be examined for artifactual remains and also for any faunal remains present (cf. molluscs). Where pit, ditch, well or pond sediments are found to contain waterlogged sediments, principal contexts will be sampled for seeds and insect remains. Standard 5 litre+ samples will be taken which may be sub-sampled in the laboratory for seed remains if the material is found to be especially rich. The full sample will provide sufficient material for insect assessment and analysis.

d) Bones: Predicting exactly how much of what will be yielded by the excavation is clearly very difficult prior to excavation and it is proposed that in order to efficiently target animal bone recovery there should be a system of direct feedback from the archaeozoologist to the site staff during the excavation, allowing fine tuning of the excavation strategy to concentrate on the recovery of animal bones from features which have the highest potential. This will also allow the faunal remains to materially add to the interpretation as the excavation proceeds. Liaison with other environmental specialists will need to take place in order to produce a complete interdisciplinary study during this phase of activity. In addition, this feedback will aid effective targeting of the post-excavation analysis.

e) Insects: If contexts having potential for insect preservation are found, samples will be taken in conjunction with waterlogged plant macrofossils. Samples of 5 litres will suffice for analysis and will be sampled adjacent to waterlogged seed samples and pollen; or where insufficient context material is available provision will be made for exchange of material between specialists.

f) Molluscs: Terrestrial and freshwater molluscs. Samples will be taken from a column from suitable ditches. Pits may be sampled, based on the advice of the Environmental Consultant and / or Historic England Regional Advisor. Provision will also be made for molluscs obtained from other sampling aspects (seeds) to be examined and/or kept for future requirements.

g) Archiving: Environmental remains obtained should be stored in conditions appropriate for analysis in the short to medium term, that is giving the ability for full analysis at a later date without any degradation of samples being analysed. The results will be maintained as an archive at AS and supplied to the HE regional co-ordinator as requested.

Waterlogged Deposits/Remains

Should waterlogged deposits (such as wells/deep ditches) be encountered, provision has been made for controlled hand excavation and sampling. Dr Rob Scaife/Dr John Summers will visit to advise on sampling as required, and AS will take monolith samples as necessary for the recovery of palaeoenvironmental information and dating evidence.

Scientific/Absolute Dating

- Samples will be obtained for potential scientific/absolute dating as appropriate (eg Carbon-14).

Provision will be made for the sampling of appropriate materials for specialist and/or scientific analysis (e.g. radiocarbon dating, environmental analysis). The location of samples will be 3-dimensionally recorded and they will also be shown on an appropriate plan. AS has its own environmental sampling equipment (including a pump and transformer) and, if practical, provision will be made to process the soil samples during the fieldwork stage of the project.

If waterlogged remains are found they will be sampled by Dr Rob Scaife/Dr John Summers. Dr Rob Scaife and AS will seek advice from the HE Regional Scientific Advisor if significant environmental remains are found.

FINDS PROCESSING

The project director will have overall responsibility for the finds and will liaise with AS's own finds personnel and the relevant specialists. A person with particular responsibility for finds on site will be appointed for the excavation. The person will ensure that the finds are properly labelled and packaged on site for transportation to AS's field base. The finds processing will take place in tandem with the excavations and will be under the supervision of AS's Finds Officer.

The finds processing will entail first aid conservation, cleaning (if appropriate), marking (if appropriate), categorising, bagging, labelling, boxing and basic cataloguing (the compilation of a Small Finds Catalogue and quantification of bulk finds) i.e. such that the finds are ready to be made available to the specialists. The Finds Officer, having been advised by the Project Officer and relevant specialists, will select material for conservation. AS's Finds Officer, in conjunction with the Project Officer, will arrange for the specialists to view the finds for the purpose of report writing.

APPENDIX 2

ARCHAEOLOGICAL SOLUTIONS LIMITED: PROFILES OF STAFF & SPECIALISTS

DIRECTOR
Claire Halpin BA MCIfA

Qualifications: Archaeology & History BA Hons (1974-77). Oxford University Dept for External Studies In-Service Course (1979-1980). Member of Institute of Archaeologists since 1985: IFA Council member (1989-1993)
Experience: Claire has 25 years' experience in field archaeology, working with the Oxford Archaeological Unit and English Heritage's Central Excavation Unit (now the Centre for Archaeology). She has directed several major excavations (e.g. Barrow Hills, Oxfordshire, and Irthlingborough Barrow Cemetery, Northants), and is the author of many excavation reports e.g. St Ebbe's, Oxford: *Oxoniensia* 49 (1984) and 54 (1989). Claire moved into the senior management of field archaeological projects with Hertfordshire Archaeological Trust (HAT) in 1990, and she was appointed Manager of HAT in 1996. From the mid 90s HAT has enlarged its staff complement and extended its range of skills. In July 2003 HAT was wound up and Archaeological Solutions was formed. The latter maintains the same staff complement and services as before. AS undertakes the full range of archaeological services nationwide.

DIRECTOR
Tom McDonald BSc MCIfA

Qualifications: Member of the CIfA
Experience: Tom has over twenty years' experience in field archaeology, working for the North-Eastern Archaeological Unit (1984-1985), Buckinghamshire County Museum (1985), English Heritage (Stanwick Roman villa (1985-87) and Irthlingborough barrow excavations, Northamptonshire (1987)), and the Museum of London on the Royal Mint excavations (1986-7), and as a Senior Archaeologist with the latter (1987-Dec 1990). Tom joined HAT at the start of 1991, directing several major multi-period excavations, including excavations in advance of the A41 Kings Langley and Berkhamsted bypasses, the A414 Cole Green bypass, and a substantial residential development at Thorley, Bishop's Stortford. He is the author of many excavation reports, exhibitions etc. Tom is AS's Health and Safety Officer and is responsible for site management, IT and CAD. He specialises in prehistoric and urban Archaeology, and is a Lithics Specialist.

OFFICE MANAGER (ACCOUNTS)
Rose Flowers

Experience: Rose has a very wide range of book-keeping skills developed over many years of employment with a range of companies, principally Rosier Distribution Ltd, Harlow (now part of Securicor) where she managed eight accounts staff. She has a good working knowledge of both accounting software and Microsoft Office.

OFFICE MANAGER (LOGISTICS)
Jennifer O'Toole

Experience: Jennifer's professional career has included a variety of roles such as Operations Director with The Logistics Network Ltd, Tutor/Trainer & Deputy Manager with Avanta TNG and Training and Assessment Consultant with PDM Training and Consultancy Ltd. Jennifer's career history emphasises her organisational and interpersonal skills, especially her ability to efficiently liaise with and manage individuals on various levels, and provide a range of supportive/ administrative services. Jennifer holds professional qualifications in a number of subjects including recruitment practice, customer service, workplace competence and health and safety. In her role with Archaeological Solutions Ltd, Jennifer has assisted in the delivery of the company's services on a variety of projects as well as co-ordinating recruitment and providing a range of complex administrative support.

SENIOR PROJECTS MANAGER
Jon Murray BA MCIfA

Qualifications: History with Landscape Archaeology BA Hons (1985-1988).
Experience: Jon has been employed by HAT (now AS) continually since 1989, attaining the position of Senior Projects Manager. Jon has conducted numerous archaeological investigations in a variety of situations, dealing with remains from all periods, throughout London and the South East, East Anglia, the South and Midlands. He is fluent in the execution of (and now project manages) desk-based assessments/EIAs, historic building surveys (for instance the recording of the Royal Gunpowder Mills at Waltham Abbey prior to its rebirth as a visitor facility), earthwork and landscape surveys, all types of evaluations/excavations (urban and rural) and environmental archaeological investigation (working closely with Dr Rob Scaife), preparing many hundreds of archaeological reports dating back to 1992. Jon has also prepared numerous publications; in particular the nationally-important Saxon site at Gamlingay, Cambridgeshire (*Anglo-Saxon Studies in Archaeology & History*). Other projects published include Dean's Yard, Westminster (*Medieval Archaeology*), Brackley (*Northamptonshire Archaeology*), and a medieval cemetery in Haverhill he excavated in 1997 (*Proceedings of the Suffolk Institute of Archaeology).* Jon is a member of the senior management team, principally preparing specifications/tenders, co-ordinating and managing the field teams. He also has extensive experience in preparing and supporting applications for Scheduled Monument Consent/Listed Building Consent

SENIOR PROJECTS MANAGER
Vincent Monahan BA

Qualifications: University College Dublin: BA Archaeology (2007-2012)
Experience: Professionally, Vincent has worked for various archaeological groups and projects including the Stonehenge Riverside Project (Site Assistant/ Supervisor; 2008), University College Dublin Archaeological Society (Auditor; 2009-2010) and the Castanheiro do Vento Research Project (Site Assistant/ Supervisor; 2009-2010 (seasonal)). This background has provided Vincent with a good experience of

archaeological fieldwork including excavation, various sampling techniques and on-site recording. He also gained experience of museum-grade curatorial practice during his undergraduate degree. Since joining Archaeological Solutions Ltd, Vincent has managed various large and complex excavation projects including a number of sites associated with the onshore element of the East Anglia One project (ScottishPower Renewables). His duties include overall project management (fieldwork), the management of staff and timescales, and professional liaison with clients, local authority representatives and other organisations as necessary. Vincent also assists in the dissemination of project outcomes through contributions to 'grey' and published literature, and through the organisation and delivery of site open days. He is CSCS qualified (expires June 2020) and has successfully completed the Emergency First Aid at Work course (January 2018).

SENIOR PROJECT OFFICER
Kerrie Bull BSc

Qualifications: University of Reading: BSc Archaeology (2008-2011)
Experience: During her undergraduate degree at the University of Reading Kerrie worked on the Lyminge Archaeological Project (2008), the Silchester 'Town Life' Project (2009) and the Ecology of Crusading Research Programme (2011). Through her academic and professional career, Kerrie has gained good experience of archaeological fieldwork and post-excavation techniques. Since joining Archaeological Solutions Ltd, Kerrie has gained enhanced experience of commercial archaeological practice, and has managed the fieldwork elements of various large projects, including the excavation of Chilton Leys, Stowmarket. Kerrie's other responsibilities include the training and management of field staff, and professional liaison with clients and local authority representatives. Kerrie has contributed towards the dissemination of project outcomes through the production of 'grey' literature and published works. She is CSCS qualified (expires February 2019).

PROJECT OFFCICER
Gareth Barlow MSc

Qualifications: University of Sheffield, MSc Environmental Archaeology & Palaeoeconomy (2002-2003)
King Alfred's College, Winchester, Archaeology BA (Hons) (1999-2002)
Experience: Gareth worked on a number of excavations in Cambridgeshire before pursuing his degree studies, and worked on many archaeological projects across the UK during his university days. Gareth joined AS in 2003 and has worked on numerous archaeological projects throughout the South East and East Anglia with AS. Gareth was promoted to Supervisor in the Summer 2007. Gareth is qualified in the Construction Skills Certification Scheme (CSCS) and is a qualified in First Aid at Work (St Johns Ambulance).

SUPERVISOR
Keeley-jade Diggons

Qualifications: University of Southampton, BA Archaeology and Geography (2014-2017)
Experience: Keeley's higher education at the University of Southampton provided her with a good, working understanding of archaeological fieldwork method and theory through the completion of modules including *Archaeological Survey*, *Geophysics* and *Advanced GIS*. She also gained valuable excavation and finds administration experience through participation on British and overseas field projects. Since joining Archaeological Solutions Ltd, Keeley has participated on a number of fieldwork projects, including elements of the East Anglia One infrastructure project (ScottishPower Renewables), and has coordinated geophysical survey projects, including cart-based surveys. Keeley has also contributed to the production of archaeological reports through the collation and assessment of site data and she holds a qualification in Remote Outdoor First Aid.

SUPERVISOR
Samuel Thomelius BA MA

Qualifications: Bachelor Programme in Archaeology and Ancient History, Archaeology (Uppsala University 2012–15)
Master Programme in the Humanities, Archaeology (Uppsala University 2015–17)
Experience: Samuel's higher education has provided him with a good, practical understanding of the archaeology of northern Europe and a firm grounding in various vocational skills. Samuel's practical experience encompasses archaeological excavation duties and post-excavation curation, including a lead role in digital documentation at Uppsala University (2016). His principle research interests are landscape archaeology and digital methods in archaeology. Since joining Archaeological Solutions Ltd, Samuel has worked on a variety of commercial fieldwork projects, developing his practical skills and gaining a good understanding of various archaeological periods across the East of England. Samuel is CSCS certified.

SUPERVISOR
Juan Palomeque-Gonzalez

Qualifications: University Alfonso X (Madrid), MSc post-graduate certificate in education (2014-2015)
University Complutense of Madrid, BSc Archaeology (2010-2014)
Experience: Juan's higher education provided him with a good, working understanding of archaeological theory and practice, including specialist knowledge of the archaeological application of micro-photogrammetry. He is an author on a number of technical academic papers, including 'On applications of micro-photogrammetry and geometric morphometrics to studies of tooth mark morphology:

The modern Olduvai Carnivore Site (Tanzania)', *Palaeogeography, Palaeoclimatology, Palaeoecology* (2017), and 'Micro-photogrammetric characterization of cut marks on bones', *Journal of Archaeological Science* (2015). Juan's academic interests have led to his involvement on a number of international research projects including the OLDUVAI Project (Tanzania) and The Ulaca Research Project, Avila (Spain). He has gained good experience of archaeological excavation and post-excavation practice through voluntary and professional participation on a number of field projects and has worked commercially for LURE ARCHAEOLOGY S.L. (Madrid). Since joining Archaeological Solutions Ltd, Juan has worked on various projects across East Anglia and has received training in the use of AutoCAD. He has passed the Health, Safety and Environment Test for Managers and Professionals (October 2017) and has been awarded a certificate in Emergency First Aid at Work (November 2017).

SUPERVISOR
Joseph Locke BA MSt

Qualifications: BA (Hons) Classical and Archaeological Studies (University of Kent 2009–12)
MSt Classical Archaeology (University of Oxford 2014–15)

Experience: Joseph has been working in field archaeology across southern Britain for the last five years for a variety of contracting units, and developing an extensive repertoire of excavation, surveying and supervisory skills. Significant projects during this period have included the large-scale excavation of a complex Roman farmstead in eastern Milton Keynes, late Iron Age and Roman field systems and settlement, and Roman inhumation burials also around Milton Keynes. Other projects have included Anglo-Saxon cremations and the medieval Greyfriars Friary in Oxfordshire, Bronze Age cremations, Iron Age field systems and Saxon sunken-featured building across East Anglia, as well as overseeing watching briefs. In addition to British archaeology, Joseph's academic background has also supported research interests in Minoan Archaeology, in particular burial practices. Joseph is CSCS certified.

SUPERVISOR
Aurelian 'Ike' Rusu BA MA PHD

Qualifications: BA History and Philology (University of Sibiu 2002–6)
MS History (University of Sibiu 2008-6)
PHD History (University of Sibiu 2009-12)

Experience: Ike's archaeological career has spanned a wide-range of excavations in Romania and Great Britain, ranging from rescue and research excavations, rural and urban commercial projects, and investigations in advance of motorway and road construction. For the last two years Ike has been supervising teams working on multi-period sites along the A14 road expansion in Cambridgeshire, including prehistoric cremations, extensive Roman settlement and industry and a medieval deserted village. Prior to that, he worked on sites in London ranging from investigations into Palaeolithic gravel deposits to post-medieval charnel pits. Other projects have included Saxon burials and an Augustinian Friary in Norfolk, while projects in Romania have spanned, Mesolithic and Neolithic sites, a Roman cursus,

Migration period burials, and medieval settlement and houses. Through his post-graduate studies Ike developed a strong research interest in Mesolithic sites and material culture, as well as the transition into the Neolithic. Ike is an Associate member of the Chartered Institute for Archaeologists, is CSCS certified, and qualified for First Aid at Work.

PROJECT OFFICER (DESK-BASED ASSESSMENTS)
Kate Higgs MA (Oxon)

Qualifications: University of Oxford, St Hilda's College Archaeology & Anthropology MA (Oxon) (2001-2004)
Experience: Kate has archaeological experience dating from 1999, having taken part in clearance, surveying and recording of stone circles in the Penwith area of Cornwall. During the same period, she also assisted in compiling a database of archaeological and anthropological artefacts from Papua New Guinea, which were held in Scottish museums. Kate has varied archaeological experience from her years at Oxford University, including participating in excavations at a Roman amphitheatre and an early church at Marcham/ Frilford in Oxfordshire, with the Bamburgh Castle Research Project in Northumberland, which also entailed the excavation of human remains at a Saxon cemetery, and also excavating, recording and drawing a Neolithic chambered tomb at Prissé, France. Kate has also worked in the environmental laboratory at the Museum of Natural History in Oxford, and as a finds processor for Oxford's Institute of Archaeology. Since joining AS in November 2004, Kate has researched and authored a variety of reports, concentrating on desk-based assessments in advance of archaeological work and historic building recording.

ASSISTANT PROJECTS MANAGER (POST-EXCAVATION)
Andrew Newton MPhil PCIFA

Qualifications: University of Bradford, MPhil (2002-04)
University of Bradford, BSc (Hons) Archaeology (1999-2003)
University of Bradford, Dip Professional Archaeological Studies (2002)
Experience: Andrew has carried out geophysical surveys for GeoQuest Associates on sites throughout the UK and has worked as a site assistant with BUFAU. During 2001 he worked as a researcher for the Yorkshire Dales Hunter-Gatherer Research Project, a University of Bradford and Michigan State University joint research programme, and has carried out voluntary work with the curatorial staff at Beamish Museum in County Durham. Andrew is a member of the Society of Antiquaries of Newcastle-upon-Tyne and a Practitioner Member of the Institute for Archaeologists. Since joining AS in early Summer 2005, as a Project Officer writing desk-based assessments, Andrew has gained considerable experience in post-excavation work. His principal role with AS is conducting post-excavation research and authoring site reports for publication. Significant post-excavation projects Andrew has been responsible for include the Ingham Quarry Extension, Fornham St. Genevieve, Suffolk – a site with large Iron Age pit clusters arranged around a possible wetland area; the late Bronze Age to early Iron Age enclosure and early Saxon cremation cemetery at the Chalet Site, Heybridge, Essex; and, Church Street, St Neots,

Cambridgeshire, an excavation which identified the continuation of the Saxon settlement previously investigated by Peter Addyman in the 1960s. Andrew also writes and co-ordinates EnvironmentalImpact Assessments and has worked on a variety of such projects across southern and eastern England. In addition to his research responsibilities Andrew undertakes outreach and publicity work and carries out some fieldwork.

PROJECT OFFICER (POST-EXCAVATION)
Lindsay Lloyd-Smith BSc MPhil PhD

Qualifications: Institute of Archaeology, UoL, BSc (Hons) Archaeology (1989-1992)
University of Cambridge, MPhil Archaeological Research (2004-2005)
University of Cambridge, PhD Archaeology (2005-2008)

Experience: Lindsay has over 25 years' experience in archaeology working on a wide variety of contract and research projects. As well as working in East Anglia for the Norfolk Archaeological Unit (1992), the Cambridge Archaeology Unit (repeatedly between 1995 and 2010), and most recently for Pre-Construct Archaeology (2016-2018), Lindsay's work and research has taken him to Belize (1992), the Netherlands (1992-1995), Sweden (1997-2004), India (1996-2005), Egypt (2002-2004), Malaysia (2000-2017), the Philippines (2006), Vietnam (2009), and South Korea (2011-2015). He was a member of the Niah Caves Project, Borneo (University of Cambridge, 2000-2004), which led on to his post-graduate research (MPhil, PhD) into later prehistorical mortuary practice in Island Southeast Asia. Following this, he was a Post-Doctoral Research Associate on the Cultured Rainforest Project, University of Cambridge (2007-2011), responsible for archaeological fieldwork investigating the prehistory of the central highlands of Borneo. He spent four years (2011-2015) working as an Assistant Professor at the Institute for East Asian Studies, Sogang University, Seoul, South Korea, where he taught Area Studies and Southeast Asian Archaeology and directed the Early Central Borneo Project (2013-2016). During this time he also was lead editor for the newly launched journal *TRANS: Trans –Regional and –National Studies of Southeast Asia* published by Cambridge University Press. Returning to the UK in 2015, Lindsay worked at Leicester University as an Associate Tutor in the School of Archaeology and Ancient History where he designed and wrote a Distance Learning Masters Module in Archaeology and Education. Lindsay joined AS in June 2018 and is responsible for the post-excavation management of large excavation projects, from the assessment, interpretation and synthesis of site data to the production of archaeological reports from assessment to publication level.

POTTERY, LITHICS AND CBM RESEARCHER
Andrew Peachey BA MCIfA

Qualifications: University of Reading BA Hons, Archaeology and History (1998-2001)

Experience: Andrew joined AS (formerly HAT) in 2002 as a pottery researcher, and rapidly expanded into researching CBM and lithics. Andrew specialises in prehistoric and Roman pottery and has worked on numerous substantial assemblages,

principally from across East Anglia but also from southern England. Recent projects have included a Neolithic site at Coxford, Norfolk, an early Bronze Age domestic site at Shropham, Norfolk, late Bronze Age material from Panshanger, Hertfordshire, middle Iron Age pit clusters at Ingham, Suffolk and an Iron Age and early Roman riverside site at Dernford, Cambridgshire. Andrew has worked on important Roman kiln assemblages, including a Nar Valley ware production site at East Winch Norfolk, a face-pot producing kiln at Hadham, Hertfordshire and is currently researching early Roman Horningsea ware kilns at Waterbeach, Cambridgeshire. Andrew is an enthusiastic member of the Study Group for Roman Pottery, and also undertakes pottery and lithics analysis as an 'external' specialist for a range of archaeological units and local societies in the south of England.

POTTERY RESEARCHER
Peter Thompson MA

Qualifications: University of Bristol BA (Hons), Archaeology (1995-1998)
University of Bristol MA; Landscape Archaeology (1998-1999)

Experience: As a student, Peter participated in a number of projects, including the excavation of a Cistercian monastery cemetery in Gascony and surveying an Iron Age promontory hillfort in Somerset. Peter has two years excavation experience with the Bath Archaeological Trust and Bristol and Region Archaeological Services which includes working on a medieval manor house and a post-medieval glass furnace site of national importance. Peter joined HAT (now AS) in 2002 to specialise in Iron Age, Saxon and medieval pottery research and has also produced desk-based assessments. Pottery reports include an early Iron pit assemblage and three complete Early Anglo-Saxon accessory vessels from a cemetery in Dartford, Kent.

ENVIRONMENTAL ARCHAEOLOGIST
Dr John Summers

Qualifications: 2006-2010: PhD "The Architecture of Food" (University of Bradford)
2005-2006: MSc Biological Archaeology (University of Bradford)
2001-2005: BSc Hons. Bioarchaeology (University of Bradford)

Experience: John is an archaeobotanist with a primary specialism in the analysis of carbonised plant macrofossils and charcoal. Prior to joining Archaeological Solutions, John worked primarily in Atlantic Scotland. His research interests involve using archaeobotanical data in combination with other archaeological and palaeoeconomic information to address cultural and economic research questions. John has made contributions to a number of large research projects in Atlantic Scotland, including the Old Scatness and Jarlshof Environs Project (University of Bradford), the Viking Unst Project (University of Bradford) and publication work for Bornais Mound 1 and Mound 2 (Cardiff University). He has also worked with plant

remains from Thruxton Roman Villa, Hampshire, as part of the Danebury Roman Environs Project (Oxford University/ English Heritage). John's role at AS is to analyse and report on assemblages of plant macro-remains from environmental samples and provide support and advice regarding environmental sampling regimes and sample processing. John is a member of the Association for Environmental Archaeology.

SENIOR GRAPHICS OFFICER
Kathren Henry

Experience: Kathren has over twenty-five years' experience in archaeology, working as a planning supervisor on sites from prehistoric to late medieval date, including urban sites in London and rural sites in France/ Italy, working for the Greater Manchester Archaeological Unit, Passmore Edwards Museum, DGLA and Central Excavation Unit of English Heritage (at Stanwick and Irthlingborough, Northamptonshire). She has worked with AS (formerly HAT) since 1992, becoming Senior Graphics Officer. Kathren is AS's principal photographer, specializing in historic building survey, and she manages AS's photographic equipment and dark room. She is in charge of AS's Graphics Department, managing computerised artwork and report production. Kathren is also the principal historic building surveyor/illustrator, producing on-site and off-site plans, elevations and sections.

GRAPHICS OFFICER
Danielle Hall

*Qualifications:*University of Edinburgh, Archaeology MA (Hons) (2014 - 2018)

Experience: Since joining the Graphics Department at AS, Danielle has been involved multiple tasks including digitising site records, compiling geo-physics surveys, and creating visual figures for desk-based assessments. Danielle has participated in various field excavations from Romania to Cyprus and has worked alongside the University of Edinburgh and Archaeology Scotland. She has also worked in conjunction with Historic Environment Scotland, the University of Glasgow, and the Society of Antiquaries Scotland using her designs to promote archaeology to local communities.

HISTORIC BUILDING RECORDING
Tansy Collins BSc

*Qualifications:*University of Sheffield, Archaeological Sciences BSc (Hons) (1999-2002)

Experience: Tansy's archaeological experience has been gained on diverse sites throughout England, Ireland, Scotland and Wales. Tansy joined AS in 2004 where she developed skills in graphics, backed by her grasp of archaeological interpretation and on-site experience, to produce hand drawn illustrations of pottery,

and digital illustrations using a variety of packages such as AutoCAD, Corel Draw and Adobe Illustrator. She joined the historic buildings team in 2005 in order to carry out both drawn and photographic surveys of historic buildings before combining these skills with authoring historic building reports in 2006. Since then Tansy has authored numerous such reports for a wide range of building types; from vernacular to domestic architecture, both timber-framed and brick built with date ranges varying from the medieval period to the 20th century. These projects include a number of regionally and nationally significant buildings, for example a previously unrecognised medieval aisled barn belonging to a small group of nationally important agricultural buildings, one of the earliest surviving domestic timber framed houses in Hertfordshire, and a Cambridgeshire house retaining formerly hidden 17th century decorative paint schemes. Larger projects include The King Edward VII Sanatorium in Sussex, RAF Bentley Priory in London as well as the Grade I Listed Balls Park mansion in Hertfordshire.

HISTORIC BUILDING RECORDING
Lauren Wilson

Qualifications:University of Chester (2010-2013) BA (Hons) Archaeology
University of York (2013-2014) MA Archaeology of Buildings

Experience: Throughout her higher education, Lauren has gained extensive practical archaeological experience, including small finds processing and cataloguing at Norton Priory, Runcorn and assisting in the excavation of a Roman villa as part of the *Santa Marta Project*, Tuscany. Lauren also participated in a training excavation at Grovesnor Park, Chester, centred on a Roman road and 16th century chapel. As part of her Masters dissertation, Lauren worked with the Historic Property Manager of Middleham Castle, North Yorkshire, gaining a good practical knowledge of public outreach and events planning. Since joining Archaeological Solutions Ltd, Lauren has contributed to complex historic buildings recording projects at Landens Farm, Horley (Surrey) and the Ostrich Inn, Colnbrook (Berkshire). She also conducts background research and contributes to archaeological report writing.

ARCHIVES CO-ORDINATOR
Luke Harris

Qualifications:Northampton College, A-Level History, English Literature and Language and AS-Level Government and Politics (2006)

Experience: Since completing his advanced education, Luke has held a number of professional administrative roles with companies and institutions including Nationwide Building Society (2007–2011) and Civica (2013–2014). His duties and responsibilities in these posts included the supervision and coordination of co-workers, the handling of customer enquiries and the categorisation, collation and digitalisation of paper records. Luke has also gained valuable clerical experience through voluntary roles and work experience. Since joining Archaeological Solutions Ltd, Luke has received training in finds recognition, finds and environmental processing/ storage, archiving and the deposition of archaeological archives.

ARCHAEOLOGICAL SOLUTIONS: PRINCIPAL SPECIALISTS

GEOPHYSICAL SURVEYS	David Bescoby Dr John Summers
AIR PHOTOGRAPHIC ASSESSMENTS	Air Photo Services
PHOTOGRAPHIC SURVEYS	K Henry
PREHISTORIC POTTERY	A Peachey MCIfA
ROMAN POTTERY	A Peachey MCIfA
SAXON & MEDIEVAL POTTERY	P Thompson
POST-MEDIEVAL POTTERY	P Thompson
FLINT	A Peachey MCIfA
GLASS	H Cool
COINS	British Museum, Dept of Coins & Medals
SMALL FINDS	R Sellwood
SLAG	A Newton
ANIMAL BONE	Dr J Cussans
HUMAN BONE:	S Anderson
ENVIRONMENTAL CO-ORDINATOR	Dr J Summers
POLLEN AND SEEDS:	Dr R Scaife
CHARCOAL/WOOD	Dr J Summers
SOIL MICROMORPHOLOGY	Dr R MacPhail, Dr C French
CARBON-14 DATING:	Historic England Ancient Monuments Laboratory (for advice).
CONSERVATION	University of Leicester

OASIS DATA COLLECTION FORM: England

Printable version

OASIS ID: archaeol7-342198

Project details

Project name	Land off Lime Avenue, Oulton, Suffolk NR323QT (TT Phase 4))
Short description of the project	The evaluation revealed an undated ditch (F4008 Trench 46), a pit with a sherd of Early Bronze Age pottery (F4010 Trench 47), an undated pit with charcoal (F4014 Trench 36), and an urned cremation (F4004 Trench 37). At the base of Cremation Pit F4004 was an urned cremation, F4006 L4007. The cremation vessel was truncated and the rim was lost. The vessel is of Early Anglo Saxon date (5th - 7th century) and two glass beads were found in association with the cremated human bone. Undated Pit F4014 contained abundant charcoal. Given the proximity of Pit F4014 (Trench 36) to Urned Cremtion F4006 (Trench 37) it was considered that the feature may have been a remnant cremation pit broadly contemporary with Cremation Pit F4004 but the samples did not contain cremated bone. The feature may represent a charcoal production pit. Although a specific function cannot be ascribed based on the present data, small charcoal production pits have been identified on other sites in proximity to late Saxon to medieval urban settlements, such as a significant number distributed across a large area at Lodge Farm, Costessey on the outskirts of Norwich (e.g. Lloyd- Smith 2018). The location of the present site on the outskirts of Lowestoft is in keeping with this pattern.
Project dates	Start: 01-10-2018 End: 07-08-2019
Previous/future work	Yes / Not known
Any associated project reference codes	P5758 - Contracting Unit No.
Any associated project reference codes	OUL037 - Sitecode
Type of project	Field evaluation
Site status	Area of Archaeological Importance (AAI)
Current Land use	Other 15 - Other
Monument type	CHARCOAL PIT Uncertain
Monument type	DAMAGED URNED CREMATION Early Medieval
Significant Finds	URNED CREMATION WITH 2 GLASS BEADS Early Medieval
Significant Finds	SHERD OF EBA POTTERY Early Medieval
Methods & techniques	"Targeted Trenches"
Development type	Rural residential
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

Project location

Country	England
Site location	SUFFOLK WAVENEY OULTON Land Off Limes Avenue, Oulton, Suffolk, NR32 3QT Phase 4
Postcode	NR323QT
Study area	2 Hectares
Site coordinates	TM 518 941 52.48599838666 1.709190562785 52 29 09 N 001 42 33 E Point
Height OD / Depth	Min: 17m Max: 17m

Project creators

Name of Organisation	Archaeological Solutions Ltd
Project brief originator	SCC
Project design originator	Jon Murray
Project director/manager	Jon Murray
Project supervisor	Archaeological Solutions
Type of sponsor/funding body	Persimmon Homes/Charles Church (Anglia)
Name of sponsor/funding body	Persimmon Homes/Charles Church (Anglia)

Project archives

Physical Archive recipient	SCCAS
Physical Contents	"Ceramics","Human Bones","other"
Digital Archive recipient	SCCAS
Digital Contents	"Ceramics","Human Bones","other"
Digital Media available	"Database","Images raster / digital photography","Spreadsheets","Text"
Paper Archive recipient	SCCAS
Paper Contents	"Ceramics","Human Bones","other"
Paper Media available	"Survey ","Section","Context sheet","Drawing","Map","Photograph","Plan","Report"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	Land off Lime Avenue, Oulton, Suffolk. An Archaeological Trial Trench Evaluation Phase 4
Author(s)/Editor(s)	Diggons, K-J
Other bibliographic details	5690
Date	2019

Issuer or publisher	Archaeological Solutions Ltd
Place of issue or publication	Bury St Edmunds

Entered by	Hollie Wesson (admin@ascontracts.co.uk)
Entered on	11 April 2019

OASIS:

Please e-mail Historic England for OASIS help and advice

Cite only: http://www.oasis.ac.uk/form/print.cfm for this page

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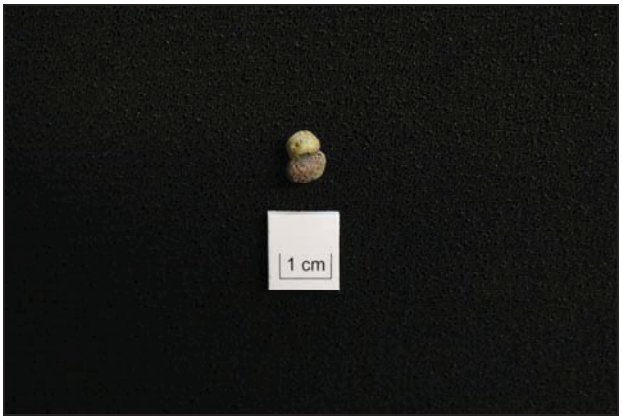

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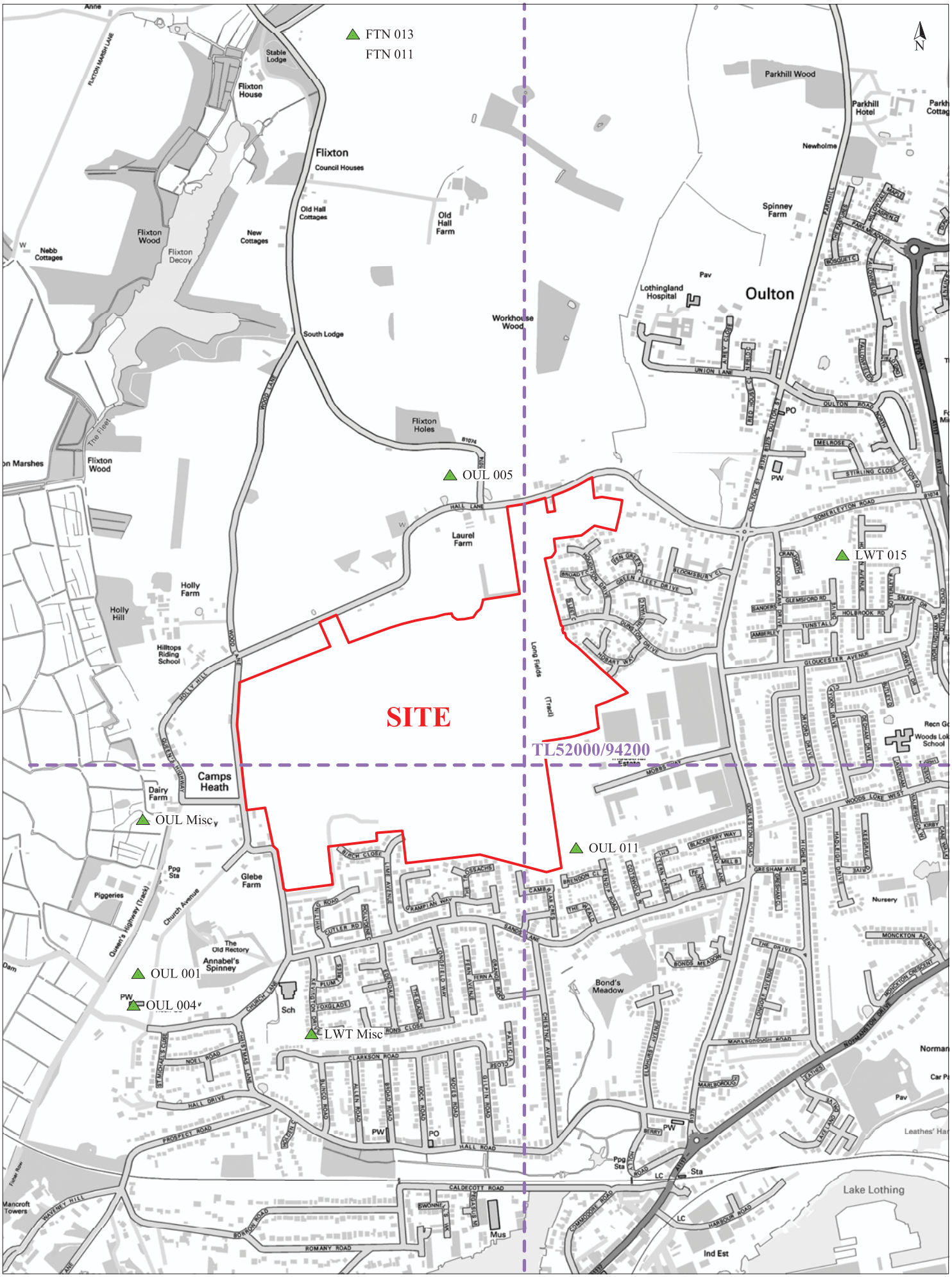
Fig. 1 Site location plan

Scale 1:25,000 at A4

Oulton, Lowestoft, Suffolk (P5758)



0 750m

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▲ SHER point

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Fig. 2 Detailed site location plan

Scale 1:12,500 at A4

Oulton, Lowestoft, Suffolk (P5758)

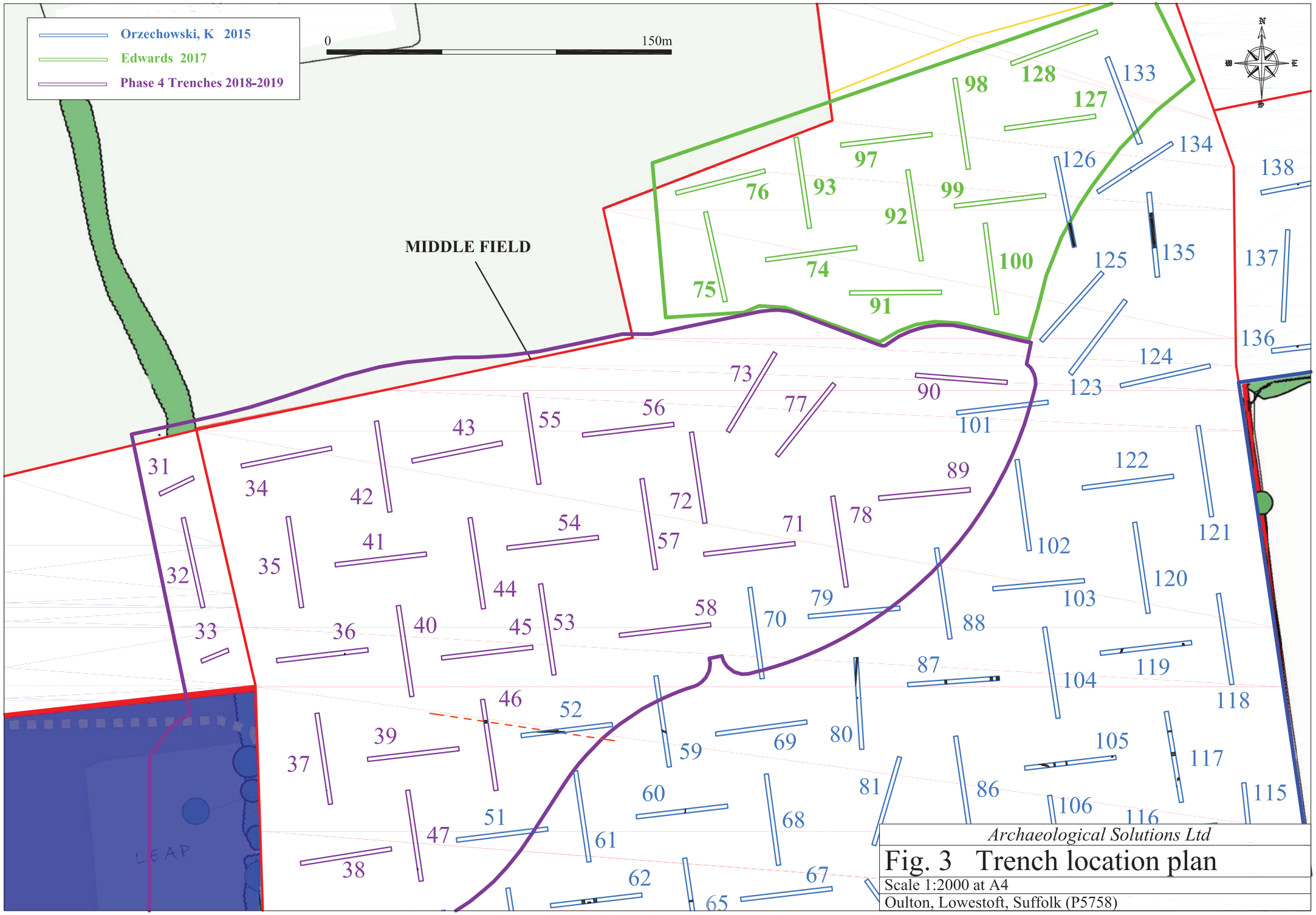

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Fig. 3 Trench location plan

Scale 1:2000 at A4

Oulton, Lowestoft, Suffolk (P5758)

0 250m

Orzechowski, K 2015

Edwards 2017

Phase 4 Trenches 2018-2019

EAST FIELD

MIDDLE FIELD

WEST FIELD

COUNTRY PARK (POS / LEAP)

LINK TO DUNSTON DRIVE

EXISTING FOOTPATH TO BE INVERTED

RESIDENTIAL AREA

Mustchin 2016 excavation

FLOOD ATTENUATION FEATURE

KEY

ARCHAEOLOGY

- Positive anomaly, probable cut feature of archaeological origin
- Negative anomaly, probable bank or earthwork of archaeology origin
- Probable ridge and furrow/ Modern argicultural features
- Thermoremament Feature.

OTHER ANOMALIES

- Linear anomaly- possible land drain
- Linear anomaly- possible modern service (pipe/cable)
- Magnetic Spike- probable ferrous object
- Scattered magnetic debris
- Area of natural magnetic variation
- Strong magnetic debris- disturbed ground
- Footpath
- Pylon

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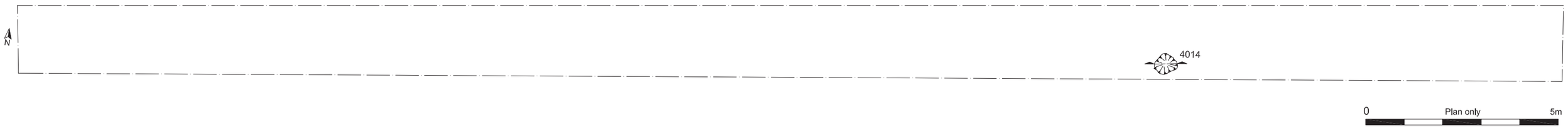
Fig. 4 Trenches overlying geophysical data

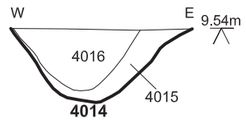
Scale 1:4000 at A3

Oulton, Lowestoft, Suffolk (P5758)

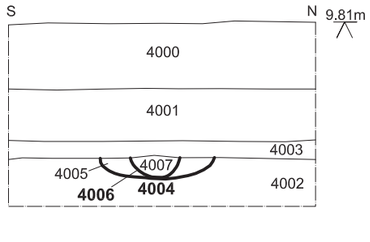
Trench 36



0 Plan only 5m



Trench 37



0 Sections only 1m

Trench 46

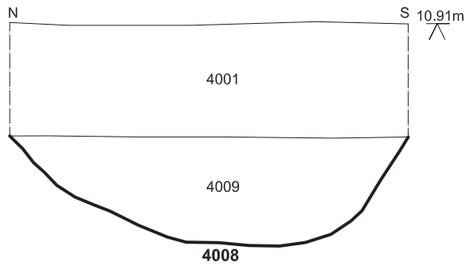


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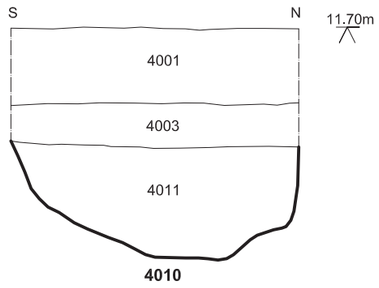
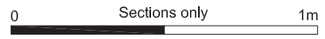
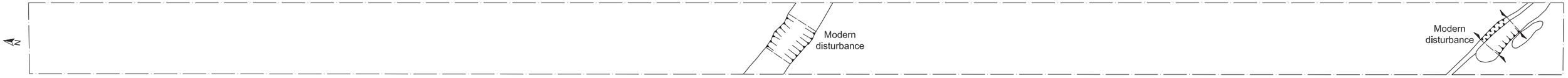
Fig. 5 Phase 4 trench plans
Scale Plans 1:100, sections 1:20 at A3
Oulton, Lowestoft, Suffolk (P5758)

Trench 47

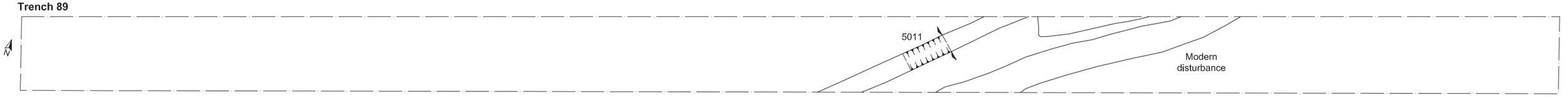




Trench 57



Trench 89



Archaeological Solutions Ltd
Fig. 6 Phase 4 trench plans
Scale Plans 1:100 and 1:125, sections 1:20 at A3
Oulton, Lowestoft, Suffolk (P5758)