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**THE PUMPING STATION, STOKE ROAD,
CLARE, SUFFOLK**

ARCHAEOLOGICAL EVALUATION

Authors: Joseph Locke (Fieldwork & report)	
NGR: TL 766 449	Report No: 5848
District: St Edmundsbury	Site Code: CLA 128
Approved: Claire Halpin MCIfA	Project No: 7972
	Date: 13 June 2019

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PROJECT SUMMARY SHEET

Project details			
Project name	<i>The Pumping Station, Stoke Road, Clare, Suffolk</i>		
<p><i>In June 2019 Archaeological Solutions Ltd carried out archaeological evaluation on land at the Pumping Station, Stoke Road, Clare, Suffolk (NGR TL 766 449; Figs. 1 - 2). The evaluation was undertaken in compliance with a planning condition attached to planning approval for the proposed construction of a pair of semi-detached cottages (St Edmundsbury Borough Council Planning Ref. DC/18/2193/FUL). It was required based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT).</i></p> <p><i>The Suffolk Historic Environment Record notes that this is an area of archaeological potential, within part of the historic settlement area of Clare (HER CLA 058). The site fronts Nethergate Street which was an early area of suburban settlement. This has been confirmed by archaeological investigations to the immediate east (HER CLA 079) which identified medieval features. The site thus had a potential for the presence of medieval remains, and the site appears to have been relatively undeveloped in the post-medieval period which increases the potential for the survival of early settlement remains.</i></p> <p><i>Struck and burnt flint were present in the subsoil and residual within a medieval pit. The number of struck flint within the subsoil was relatively high (23) but of mixed prehistoric origin. Pit F1005 contained medieval (late 12th – mid 14th century) pottery. Animal bone, and sparse shell, fired clay and carbonised remains were found in association with the pottery.</i></p>			
Project dates (fieldwork)	<i>June 2019</i>		
Previous work (Y/N/?)	<i>N</i>	<i>Future work</i>	<i>TBC</i>
P. number	<i>7972</i>	<i>Site code</i>	
Type of project	<i>Archaeological Evaluation</i>		
Site status	<i>-</i>		
Current land use			
Planned development	<i>Residential</i>		
Main features (+dates)	<i>Medieval (late 12th – 14th C) Pit</i>		
Significant finds (+dates)	<i>Residual struck and burnt flint; medieval (late 12th – 14th C) assemblage</i>		
Project location			
County/ District/ Parish	<i>Suffolk</i>	<i>St Edmundsbury</i>	<i>Clare</i>
HER/ SMR for area	<i>Suffolk HER</i>		
Post code (if known)	<i>-</i>		
Area of site	<i>c.2.5^{ha}</i>		
NGR	<i>TL 766 449</i>		
Height AOD (min/max)	<i>c.47.9m AOD</i>		
Project creators			
Brief issued by	<i>Suffolk County Council Archaeological Service</i>		
Project supervisor/s	<i>Archaeological Solutions Ltd</i>		
Funded by	<i>Clare Park Lake Golf Course</i>		
Full title	<i>The Pumping Station, Stoke Road, Clare, Suffolk. An Archaeological Evaluation.</i>		
Authors	<i>Locke, J.</i>		
Report no.	<i>5848</i>		
Date (of report)	<i>June 2019</i>		

THE PUMPING STATION, STOKE ROAD, CLARE, SUFFOLK ARCHAEOLOGICAL EVALUATION

SUMMARY

In June 2019 Archaeological Solutions Ltd carried out archaeological evaluation on land at the Pumping Station, Stoke Road, Clare, Suffolk (NGR TL 766 449; Figs. 1 - 2). The evaluation was undertaken in compliance with a planning condition attached to planning approval for the proposed construction of a pair of semi-detached cottages (St Edmundsbury Borough Council Planning Ref. DC/18/2193/FUL). It was required based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT).

The Suffolk Historic Environment Record notes that this is an area of archaeological potential, within part of the historic settlement area of Clare (HER CLA 058). The site fronts Nethergate Street which was an early area of suburban settlement. This has been confirmed by archaeological investigations to the immediate east (HER CLA 079) which identified medieval features. The site thus had a potential for the presence of medieval remains, and the site appears to have been relatively undeveloped in the post-medieval period which increases the potential for the survival of early settlement remains.

Struck and burnt flint were present in the subsoil and residual within a medieval pit. The number of struck flint within the subsoil was relatively high (23) but of mixed prehistoric origin. Pit F1005 contained medieval (late 12th – mid 14th century) pottery. Animal bone, and sparse shell, fired clay and carbonised remains were found in association with the pottery.

1 INTRODUCTION

1.1 In June 2019 Archaeological Solutions Ltd carried out archaeological evaluation on land at the Pumping Station, Stoke Road, Clare, Suffolk (NGR TL 766 449; Figs. 1 - 2). The evaluation was undertaken in compliance with a planning condition attached to planning approval for the proposed construction of a pair of semi-detached cottages (St Edmundsbury Borough Council Planning Ref. DC/18/2193/FUL). It was required based on advice from Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT).

1.2 The evaluation was undertaken in accordance with a brief issued by SCC AS-CT (Abby Antrobus; dated 25th February 2019), and a specification prepared by AS (dated 12th March 2019), and approved by SCC AS-CT. It conformed to the Chartered Institute for Archaeologists (CIfA) *Guidance for an Archaeological Evaluation* (2014), and the document *Standards for Field Archaeology in the East of England* (Gurney 2003).

1.3 The principal objectives for the evaluation included:

- 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.

Planning Policy Context

1.4 The National Planning Policy Framework (NPPF 2018) 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.

1.5 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 The village of Clare is a market town on the north bank of the River Stour, located approximately some 23km from Bury St Edmunds and 14km from Sudbury. The site lies on the rear of a pumping station on the northern side of Stoke Road on the edge of Clare. It is proposed to erect a new residential development of two semi-detached cottages on the site.

3 TOPOGRAPHY, GEOLOGY AND SOILS

3.1 The site's underlying geology is chalk, overlain by soils of the Hanslope Association. These are characterised as 'Slowly permeable calcareous clayey soils. Some slowly permeable non-calcareous clayey soils. Slight risk of water erosion' (Soil Survey of England and Wales 1983, 7). These soils are suitable for the cultivation of winter cereals, with some other arable crops and grassland (*ibid.*).

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prehistoric

4.1 Evidence of prehistoric activity in the area surrounding the site is relatively limited. The earliest evidence of human activity comes in the form of a single Neolithic polished flint axe (HER CLA 002), located c.540m to the south-west of the site. The Bronze Age is also represented by a single find, a bronze tracer/awl recovered during metal detecting at the Old Dalgety Granary Site, some 140m west of the proposed development site (HER CLA 029). The remaining evidence for prehistoric activity in the area is a collection of Iron Age pottery and coins which were located within a predominantly Roman group, approximately 390m north-west of the site (HER CLA 018).

Romano-British

4.2 Evidence of Romano-British activity in the area surrounding the site is comparatively substantial. The majority of the evidence has been recovered during programmes of metal detecting; the Roman group previously noted at Church Farm (HER CLA 018), identified a number of finds including pottery, coins, brooches, pendants and a single key. A further, less substantial, Roman artefact scatter was also located c.500m north of the site and consisted of a harness, a bracelet, a coin and two brooches (HER CLA 022). Three Roman features, in addition to a number of finds, were also located at the Old Dalgety Granary Site previously described (HER CLA 029). During an archaeological evaluation carried out at the Nethergate Street Garage approximately 360m north-east of the development site, a multi-period occupation site was identified that included a Roman ditch and posthole in addition to a number of Roman finds (HER CLA 043).

Medieval

4.3 The proposed development site lies within the south-east section of the medieval core of Clare (HER CLA 058). Clare was the centre of one of two, along with Eye, of the largest feudal honours in Suffolk in 1086. By 1080 the market was already in existence and by 1090 the castle was mentioned in a grant to the monks of Becre (HER CLA 008). A church was also built by Richard de Clare in 1250 to the north of the castle (HER CLA 037). The priory (HER CLA 001, DSF 9587; 9567) is believed to be the first house of the Austin friars and was also founded by Richard de Clare, in 1248. Stone Hall (CLA 042), opposite the castle, was also documented in 1307.

4.4 Evidence of Saxon activity was located during the excavation of the multi-phased Church Farm site, where a silver sceat, half a pair of tweezers, a Middle Saxon buckle, a 6th century brooch fragment and a saucer were identified (HER CLA 018). A medieval artefact scatter that included pottery and metalwork, some of which was located in an area of cropmarks, was also located at Church Farm (HER CLA 018; 022). The evaluation carried out at Nethergate Street Garage identified two medieval pits (HER CLA 054).

4.5 An excavation at Richmond House identified a number of medieval and post-medieval pits, including an animal bone assemblage which may indicate medieval hide working in the vicinity, some 230m north-east of the proposed development site (HER CLA 071). A late-medieval occupation site, quarrying site and brick kiln was also located c.50m west of the site (HER CLA 079). The site produced evidence of 12th century to post medieval occupation and domestic activity, as well as large scale quarrying of clay and an associated late medieval/16th century kiln producing brick and tile.

4.6 The medieval period is also represented by a number of NHLE Listed Buildings, most of which are located to north-east of the development site. These structures include 15th century timber-framed structures (DSF 7717; 9433; 7859), and a number of 16th century timber framed buildings (DSF 7719; 9064; 8411; 8493; 7882; 9381; 8284; 8762; 7720).

Post-medieval

4.7 Evidence of post-medieval activity in the area surrounding the site is relatively limited. Monitoring on the High Street revealed a single early post-medieval well (HER CLA 073), located c.400m north east of the site, while the multi-phased Church Farm site revealed a number of post-medieval metalworking finds (HER CLA 018). A post-medieval bridge over the River Stour, shown on a map of 1575 and subsequently demolished and rebuilt as a cast iron bridge in 1813 (HER CLA 030, DSF 7848), is situated some 160m south-east of the site. The Stour Valley Railway Line (Great Eastern Rail), opened between 1849 and 1866, also runs in close proximity (HER SUF 075).

4.8 The majority of the NHLE Listed Buildings are located to north-east of the development site. These structures include a number of 17th century timber-framed houses (DSF 7721; 7885; 7722; 9063), 18th century timber-framed houses (DSF 7719; 8763; 7718; 8492; 7883), an early-19th century gault brick house (DSF 8801), an early-19th century former Police Station (DSF 9563) and a 19th century red brick house (DSF 9103).

5 METHODOLOGY

5.1 SCC AS-CT required a single 10m long by 1.8m wide evaluation trench to be opened located across the footprint of the proposed new dwellings (Fig. 4).

5.2 The archaeological evaluation comprised the inspection of the subsoil and natural deposits for archaeological features, the examination of spoil heaps and the recording of soil profiles. Encountered features and deposits were cleaned by hand and recorded using *pro forma* recording sheets, drawn to scale and photographed as appropriate.

5.3 Open trench and excavated spoil were manually / visually searched and scanned by metal detector to enhance the recovery of archaeological finds.

6 DESCRIPTION OF RESULTS

6.1 The individual trench description is presented below:

Trench 1 Fig. 5

Sample Section 1 0.00 = 47.91m AOD		
0.00 – 0.48m	L1000	Topsoil. Friable, dark grey brown clayey sandy silt with moderate small to medium sized sub-rounded to sub-angular flint and gravel and occasional CBM fragments.
0.48 – 0.82m	L1001	Subsoil. Friable, mid to dark yellow brown clayey silt with occasional small to medium sized sub-angular to rounded gravels.
0.82 – 1.1	L1002	Subsoil. Friable, mid brown yellow silty sand with very occasional small angular gravel.
1.1m+	L1003	Natural Deposits. Compact, pale red yellow sand with very occasional small to medium sized angular flints.

Test Pit 1		
0.00 = 47.92m AOD		
0.00 – 0.37m	L1000	Topsoil. As above.
0.37 – 0.69m	L1001	Subsoil. As above.
0.69 – 0.84	L1002	Subsoil As above.
0.84m +	L1003	Natural Deposits. As above.

Description: Trench 1 contained Pit F1005, which contained medieval (late 12th – mid 14th century) pottery. Residual struck flints (23; 95g) were also recovered from Subsoil L1001.

Pit F1005 was sub-circular in plan (1.91 x 1.83+ x 0.8m). It had moderately sloping sides which tapered to near vertical towards the bottom and a flattish base. It contained three fills. The basal fill (L1004) was a friable, mid brown grey sandy silt with very occasional small to medium sized angular gravel. It contained medieval (late 12th – mid 14th century) pottery (20; 745g), animal bone (22g), struck flints (3; 79g), burnt flint (32g) and shell (1g). L1004 was overlain by L1006, a friable, mid to dark grey brown sandy silt with very occasional small angular gravel. Overlying L1006 was L1007, a firm mid grey/yellow brown silty clay with occasional CBM flecks and moderate small to medium sized angular flints and gravel. It contained medieval (late 12th – mid 14th century) pottery (5; 45g), animal bone (12g), struck flints (6; 45g), burnt flint (24g) and fired clay (111g). The uppermost deposit L1008 was a friable, mid yellow brown clayey silt with occasional CBM flecks and small to medium sized sub-angular flints and gravel. It contained patches of clay. It also contained medieval (late 12th – mid 14th century) pottery (15; 129g), animal bone (264g), struck flints (8; 67g), burnt flint (13g), and fired clay (15g).

7 CONFIDENCE RATING

7.1 It is not felt that any factors restricted the identification of archaeological features or finds.

8 DEPOSIT MODEL

8.1 Uppermost was Topsoil L1000, which comprised a c. 0.37- 0.48m thick layer of friable, dark grey brown clayey sandy silt with moderate small to medium sized sub-rounded to sub-angular flint and gravel and occasional CBM fragments. Below Topsoil L1000 was Subsoil L1001. The latter was a friable, mid to dark yellow brown clayey silt with occasional small to medium sized sub-angular to rounded gravels approximately 0.27 – 0.3m in thickness. It overlay Subsoil L1002, which comprised a friable, mid brown yellow silty sand with very occasional small angular gravel c. 0.12 – 0.18m in thickness.

8.2 At the base of the sequence between 0.84m and 1.10m below the present ground surface were natural deposits, L1003. The latter comprised

compact pale, red yellow sand with very occasional small to medium sized angular flints.

9 DISCUSSION

9.1 The Suffolk Historic Environment Record notes that this is an area of archaeological potential, within part of the historic settlement area of Clare (HER CLA 058). The site fronts Nethergate Street which was an early area of suburban settlement. This has been confirmed by archaeological investigations to the immediate east (HER CLA 079) which identified medieval features. The site thus had a potential for the presence of medieval remains, and the site appears to have been relatively undeveloped in the post-medieval period which increases the potential for the survival of early settlement remains.

9.2 Struck and burnt flint was present in the subsoil and residual within a medieval pit. The number of struck flint within the subsoil was relatively high (23), but the technology present in the overall flint assemblage was of a decidedly mixed prehistoric character, including Mesolithic and Early Neolithic blade cores and debitage, and a probable Bronze Age scraper and flakes. Although this material may not be in its primary depositional contexts, it does have the potential to contribute to studies of prehistoric flint procurement strategies and technological types, including questions regarding whether different sources of flint can be identified, whether different types of flint are used for different tools, and if the choice of flint used is a cultural decision (Medlycott 2011, 7 & 14).

9.3 Pit F1005 contained medieval pottery, potentially indicative of a primary rubbish deposit. Initially suspected on site as a Roman jar, the pottery in Pit F1005 was predominantly comprises large cross-joining fragments from single locally-produced grey ware jar, with an everted bead rim, girth grooves, occasional vertical thumb-impressed strips and a slightly sagging base. These traits indicate it was manufactured in the late 12th – mid 14th centuries, with soot on the exterior suggesting it was utilised as a cooking pot and the pattern of breakage that it was broken in the immediate vicinity of the pit. Associated pottery in the pit group is represented by sparse sherds of other locally-produced cooking pots, and a sherd of contemporary glazed ware from Hedingham, Essex. The pottery is supplemented by small fragments of probable oven or hearth lining; low quantities of domestic food waste in the form of butchered meat waste from sheep and cattle; isolated oyster shell; and sparse carbonised remains representing cereals and peas. The presence of a medieval pit containing domestic rubbish is consistent with the location of the site fronting on to Nethergate, an area of medieval suburban occupation. There is a known area of contemporary activity, including domestic occupation and quarrying, close by. Although small, the medieval evidence from this site has the potential to contribute to understanding of the medieval development of Clare and changes to its internal layout over time; the pottery assemblage, including material deriving from outside the immediate area, can provide information relating to infrastructure, trade links, and industry; and, the

faunal assemblage may provide detail regarding local diet and the way in which towns interacted with their hinterland. All of these are areas of research identified as being of importance for the region by Medlycott (2011, 70-71).

DEPOSITION OF THE ARCHIVE

Archive records, with an inventory, will be deposited at Suffolk County Museum. The archive will be quantified, ordered, indexed, cross referenced and checked for internal consistency.

ACKNOWLEDGEMENTS

Archaeological Solutions Ltd (AS) would like to thank Clare Park Lake Golf Course for funding the project and for their assistance.

AS is also pleased to acknowledge the advice of Dr Abbey Antrobus of Suffolk County Council Archaeological Service Conservation Team and the Suffolk County Historic Environment Record

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**APPENDIX 1 - Concordance of Finds
CLA128 - P7972, Pumping Station, Clare**

Feature	Context	Segment	Trench	Description	Spot Date (Pot Only)	Pot Qty	Pottery (g)	CBM (g)	A. Bone (g)	Other Material	Other Qty	Other (g)
1005	1002		1	Subsoil						S.Flint	23	195
	1004		1	Fill of Pit	Late 12th-Mid 14th C	20	745		22	S.Flint B.Flint Shell	3	79 32 1
	1007		1	Fill of Pit	Late 12th-Mid 14th C	5	45		12	B.Flint S.Flint F. Clay	6	24 45 111
	1008		1	Fill of Pit	Late 12th-Mid 14th C	15	129		264	S.Flint B.Flint F. Clay	8	67 13 15

APPENDIX 2 SPECIALIST REPORTS

The Struck Flint

Andrew Peachey

The evaluation recovered a total of 40 pieces (386g) of struck flint in a generally un-patinated, sharp condition. The assemblage is of mixed prehistoric character, including pieces of Mesolithic to early Bronze Age date (Table 1), which may reflect the residual nature of the assemblage, which was contained in a single medieval pit: F1005 (17 pieces), with the remainder recovered from Subsoil L1002.

Date?	Implement/flake type	Frequency	Weight (g)
Mesolithic	Core	1	21
	Blade	1	4
Mesolithic-Early Neolithic	Debitage (blade-like)	12	30
Early Neolithic	Core	1	52
	Core Fragment	1	26
	Blade	2	13
	Debitage (blade-like)	17	132
Late Neolithic-Early Bronze Age+	End Scraper	1	64
	Debitage (broad-squat)	4	44
Total		40	386

Table 1: Quantification of struck flint

Methodology & Terminology

The flint was quantified by fragment count and weight (g), with all data entered into a Microsoft Excel spreadsheet that will be deposited as part of the archive. Flake type (see 'Dorsal cortex,' below) or implement type, patination, colour and condition were also recorded as part of this data set, along with free-text comments. Terms used to describe implement and core types follow the system adopted by Healy (1988, 48-9). The term 'cortex' refers to the natural weathered exterior surface of a piece of flint, and the term 'patination' to the colouration of a flaked surface exposed by human or natural agency. Dorsal cortex is categorised after Andrefsky (2005, 104 & 115) with 'primary flake' referring to those with cortex covering 100% of the dorsal face; 'secondary flake' with 50-99%; 'tertiary' with 1-49% and 'un-corticated' to those with no dorsal cortex.

Discussion

The struck flint was manufactured using a good quality mid to dark grey flint typically with, where extant a thin off-white to pale-brown cortex, except for the Bronze Age scraper which has a smooth white cortex and may represent river flint.

The Mesolithic flint includes a single bi-polar blade core and a blade with edge wear. The core, from L1002, had been heavily reduced with blades removed all around both platforms resulting in a narrow cylindrical profile, and an

exhausted core. The blade, in Pit F1005 (L1007) was removed from a bipolar core, albeit not that in the subsoil, and exhibits fine wear along one lateral edge.

Subsoil L1002 also contained a small group of blade-like debitage flakes that are consistently very neat, and include several flakes that may be classified as bladelets, possibly a deliberate product, but more likely the result of careful platform trimming and preparation. All these debitage flakes are close to true blades and could have been produced in the Mesolithic or early Neolithic periods.

The most substantial proportion of the assemblage demonstrates technological traits that are most consistent with the blade technology that characterizes early Neolithic flint work, notable a core from Subsoil L1002 and a burnt core fragment in Pit F1005 (L1007). The complete core has been heavily reduced and likely exhausted, following its rotation to exploit at least three striking platforms that are at right angles to one another (with each created by the removal of a perpendicular platform rejuvenation flake). The core fragment represents a comparable reduction strategy but it remains unclear if it was a deliberate removal (potentially to create a new platform) or whether it fractures due to the burning that had crackled its surfaces. A blade in L1007 exhibits fine wear along one lateral edge; while a larger blade in Pit F1005 (L1004) is notably thin, with a small-lipped bulb-of-percussion that suggests it was carefully removed by soft hammer percussion. The remaining debitage from Pit F1005 is distinctly blade-like and comprised of tertiary and un-corticated flakes, but is fairly unremarkable though noticeably not as neat and regular as the potentially Mesolithic to early Neolithic group from Subsoil L1002.

Pit F1005 (L1004) also contained a single large and fairly crude end scraper that is likely of late Neolithic to early Bronze Age date, if not entirely of Bronze Age origin. It has coarse retouch around a slightly jagged distal end, with the butt entirely encased by cortex, thus forming an expedient hand tool. Potentially contemporary with this tool are four tertiary flakes of debitage from Subsoil L1002, that exhibit broad-squat (and slightly irregular) profiles and the wide, pronounced bulbs-of-percussion typical of flakes removed by direct, hard-hammer percussion.

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The Pottery

Peter Thompson

The archaeological evaluation recovered 40 medieval sherds weighing 919g from a pit (F1005) which contained three fills that had pottery in them. The pottery was mainly in good condition indicating a primary deposition. The assemblage almost exclusively comprised sandy coarsewares with grey or brown surfaces sometimes exhibiting external girth grooves. Most notably large fragments of a large jar with 30cm rim diameter survived in L1004. The body contained girth grooves and dispersed vertical thumb impressed clay strips. The exception to the above was a single sherd of green glazed Hedingham fine ware from Fill L1008, which provides a date of late 12th to mid 14th centuries date for the group overall.

Methodology

The sherds were examined under x35 binocular microscope and recorded 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.

KEY:

(3.20) MCW1: Medieval coarseware 1 - medieval greyware (equivalent to Essex Fabric 20) with fine to medium sub-angular quartz, rare coarse quartz or flint, but rarely any other inclusions 12th-14th.

(3.20) MCW2: Medieval coarseware 2 – medieval grey ware very fine sand with moderate white shell 12th-14th

(3.20) MCW2a: Medieval coarseware 2a – as MCW2 but slightly coarser quartz sand and sparse shell 12th-14th

(3.20) MCW3: Medieval coarseware 3 – as for MCW1 but fabric slightly coarser and surfaces usually brown 12th-14th

(3.20) MCW4: Medieval coarseware 4 – dark grey throughout with common medium rounded quartz 12th-13th/14th

(4.23) HFW: Hedingham fine ware: mid 12th to mid 14th

Feature	Context	Quantity	Date	Comment
Pit 1005	1004	20x745g MCW1	late 12 th - mid 14 th	MCW1: prob all one vessel, good condition. Jar with large C3 beaded, everted rim 30cm diam (0.21 reve) with girth grooves along the body with occasional vertical thumb impressed applied clay strips.
	1007	2x7g MCW1 3x38g MCW3	late 12 th - mid 14 th	MCW1: x1 large C1 square beaded rim; x1 incised zig-zag deco to body sherd MCW3: x3 girth grooves; x1 (17g) sparse shell on outer surface

	1008	4x23g MCW1 1x13g MCW2 8x72g MCW3 1x7g MCW4 1x14g HFW	late 12 th - mid 14 th	MCW1: x1 girth grooves, x1 sooting on outer surface MCW3: x1 C4 small round beaded everted rim with slight pie crust deco on inner lip (0.05 reve); x1 external girth grooves 1x1g daub
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Table 2: Quantification of pottery by context

Bibliography

Slowikowski, A., Nenck, B. and Pearce, J. 2001 *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics*, Medieval Pottery Research Group Occasional Paper 2

The Ceramic Building Materials

Andrew Peachey

The evaluation recovered a total of nine fragments (126g) of fired clay from a medieval pit, F1005 (L1007 & L1008). The fragments potentially represent daub or the lining or an oven or hearth. The fired clay has orange 'external' surfaces on one side fading to a pale orange-brown core. It has been tempered with common rounded chalk (1-10mm) and has been exposed to a significant heat, resulting in a moderate hardness, but is not sooted or burnt. The external surface of the daub is slightly rough and hackly, and its function remains unclear, with the exposure to heat and surface finish perhaps most consistent with the lining of a hearth or oven, but a deliberately constructed daub panel or similar object cannot be discounted.

The Faunal Remains and Mollusc Analysis

Julie Curl

The bone assemblage

A total of 298g of bone, consisting of 17 pieces, was recovered from this site. The assemblage is quantified in Table 3.

The bone is in good condition with clearly defined butchering evidence, although most is fragmented from the butchering. No canid gnawing or burnt bone was recorded. Invertebrate (insect, isopod and molluscs) damage was low, indicating that this waste was buried rapidly, preventing invertebrate scavenging. All of the remains in this assemblage were recovered with ceramic material of a Late 12th to Mid 14th century date range.

Ctxt	Trench	Feature	Type	Ctxt Qty	Wt (g)	Species	NISP
1004	1	1005	Pit	1	22	Sheep/ goat	1
1007	1	1005	Pit	2	12	Sheep/ goat	2
1008	1	1005	Pit	14	264	Cattle	14

Table 3. Quantification of the bone assemblage from CLA128

Sheep/goat remains from one or more adult animals were seen in two pit fills (L1004 and L1007), which produced a chopped and cut tibia from fill L1004 and a chopped and cut radius from fill L1007, the latter also produced a mandible fragment.

Cattle was seen in Pit fill L1008, with a heavily fragmented right mandible with the teeth (P3, P4, M1, M2 and M3) all in isolation; the fill also produced a chopped and cut proximal ulna, probably from the same cow. The wear on the teeth included a heavily worn third molar, which would suggest a mature animal of around 8 to 10 years old or possibly older. The cut marks include knife cuts on the mandible from skinning and fine cuts on the inner jaw bone from removal of the tongue for meat.

Discussion

This is a small assemblage that appears to be derived from skinning and meat waste. The meat waste from the cattle includes removal of the tongue, which would provide additional meat. The remains and species identified are typical of small assemblages of this date range. The age of the cattle bone suggests it may have been kept for traction prior to culling for its skin and range of meats. During the Medieval period the popularity of sheep was on the rise for supplying fleeces for the increasing wool trade. The lack of small mammals

(such as rabbit) and the lack of birds (particularly fowl for eggs and meat) is surprising, but this may reflect a recovery bias with such a small assemblage or it may suggest a very simple lifestyle that relied on the basic farm stock for its needs.

The mollusc assemblage

A total of 1g of shell, consisting of a single piece, was found at this site, with this quantified in Table 4. The shell was recovered from a single pit fill and found with ceramics of a Late 12th to Mid 14th Century date range. The shell is in quite poor condition, leaving an incomplete shell that is covered in a cess deposit, which would suggest a used for a variety of household waste.

Context	Trench	Type	Feature	Ctxt Qty	Weight	Freshwater	Marine	Land	Species	NISP
1004	1	Pit	1005	1	1		1		Oyster	1

Table 4. Quantification of the mollusc remains from CLA128

The shells from Pit fill L1004 belongs to the marine species the Common Oyster (*Ostrea edulis*). The shell is from an adult and consist of the apex and part of the body of a top shell. Traces of marine sponge and worms were noted on the shells, attesting to their recovery from a marine environment, rather than from farmed oysters.

Discussion and conclusions

This is a very small shell assemblage that contains the remains of the most frequent food species on archaeological sites. Common Oyster are found all around the British coast, even in quite shallow waters. Such molluscs could be collected by individuals, but are perhaps more likely to be sold locally, especially given the distance of this site from the coast. It is possible, given that this is only fragment in poor condition, it may be residual.

Bibliography

- Baker, P. and Worley, F. 2014. *Animal Bones and Archaeology, Guidelines for best practice*. English Heritage.
- Davis, S. 1992. *A rapid method for recording information about mammal bones from archaeological sites*. English Heritage AML report 71/92
- Winder, J.M. 2011. *Oyster shells from archaeological sites. A brief guide to basic processing and recording*.

The Environmental Samples

Dr John Summers

Introduction

During the evaluation, three fills (L1004, L1007 and L1008) within late 12th to mid 14th century Pit F1005 were sampled for environmental archaeological assessment. The samples were investigated with the intention of evaluating the preservation and distribution of ecofactual macrofossil remains, and providing some insights into the medieval arable economy at the site.

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 reference literature (Cappers *et al.* 2006; Jacomet 2006) and a reference collection of modern seeds. 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 5.

Preservation of ecofactual remains was by carbonisation only. Carbonised plant macrofossils were preserved in all three of the sampled deposits. These were dominated by cereal grains, with free-threshing type wheat (*Triticum aestivum/ turgidum* type) dominating, followed by hulled barley (*Hordeum* sp.), oat (*Avena* sp.) and rye (*Secale cereale*). Also present were seeds of pea/bean (large Fabaceae), which are also likely to have been economically significant. This range of crops is quite typical for the medieval period (e.g. Summers 2018; 2019).

A small range of non-cereal, probable arable weed taxa were identified, including vetch/ tare (medium Fabaceae), knapweed (*Centaurea* sp.), brome grass (*Bromus* sp.) and indeterminate wild grasses (Poaceae). Charcoal remains were present in relatively low concentrations and no identification was attempted. No archaeological mollusc shells were present in the samples.

Conclusions

The carbonised plant remains from the bulk sample light fractions indicate the deposition of carbonised debris from most likely domestic sources. The dominance of cereal grains over chaff and arable weed taxa indicates debris from domestic food preparation and consumption activities. The range of crops is typical for the period and, if locally produced, reflects a relatively diverse arable economy.

Based on the evidence of this feature, it can be predicted that other potential features outside the trial trench also have the potential to preserve carbonised remains relating to arable and domestic activity associated with the site during the medieval period. Should any further excavation work be undertaken at the site, it is recommended that detailed bulk sampling of the deposits is implemented in order to obtain a larger assemblage of carbonised plant macrofossils. This will enable a more detailed investigation of medieval diet and economy to be undertaken.

References

Cappers, R.T.J., Bekker R.M. and Jans J.E.A. 2006, *Digital Seed Atlas of the Netherlands. Groningen Archaeological Studies Volume 4*, Barkhuis Publishing, Eelde

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

Summers, J.R. 2018, 'The environmental samples', in Barlow, G., Muir, T., Mustchin, A.R.R. and Peachey, A. *Land to the Rear of 1–2 Chapel Cottages, Darsham, Suffolk. An Archaeological Excavation: Research Archive Report*, Archaeological Solutions Ltd Report 5574

Summers, J.R. 2019, 'The environmental samples', in Mustchin, A.R.R., Monahan, V. and Peachey, A. *Phase 1, Land East of Moreton Hall, Great Barton, Suffolk. An Archaeological Excavation: Research Archive Report*, Archaeological Solutions Ltd Report 5708

Site code	Sample number	Context	Feature	Description	Trench	Spot date	Volume taken (litres)	Volume processed (litres)	% processed	Cereals			Non-cereal taxa		Charcoal		Contaminants												
										Cereal grains	Cereal chaff	Notes	Seeds	Notes	Charcoal>2mm	Notes	Molluscs	Notes	Roots	Molluscs	Modern seeds	Insects	Earthworm capsules	Other remains					
CLA128	1	1004	1005	Fill of Pit	1	Late 12th-mid 14th C	20	10	50%	XX	-	Hord (3), FTW (3), Trit (4), Oat (1), NFI (3)	-	-	X	-	-	XX	-	-	-	-	-	-	-	-	-		
												HB (3), Hord (1), FTW (10), Trit (15), Oat (5), Rye (1), NFI (33), FTW rachis (1), Culm (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CLA128	2	1007	1005	Fill of Pit	1	Late 12th-mid 14th C	20	10	50%	XX	X	-	X	-	X	-	-	XX	-	-	-	X	-	-	-	-	-	-	
												Large Fabaceae (4), Medium Fabaceae (1), <i>Centaurea</i> sp. (1), <i>Bromus</i> sp. (1), Large Poaceae (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CLA128	3	1008	1005	Fill of Pit	1	Late 12th-mid 14th C	20	10	50%	XX	-	Hord (1), FTW (7), Trit (6), NFI (9)	X	-	X	-	-	-	X	-	-	X	-	-	-	-	-	-	
												Large Fabaceae (1), Medium Fabaceae (1), Large Poaceae (3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5: Results from the assessment of bulk sample light fractions from the Pumping Station, Claire. Abbreviations: HB = hulled barley (*Hordeum* sp.); Hord = barley (*Hordeum* sp.); FTW = free-threshing type wheat (*Triticum aestivum/turgidum*); Trit = wheat (*Triticum* sp.); Oat (*Avena* sp.); Rye (*Secale cereale*); NFI = not formally identified (indeterminate cereal grain).

Appendixes for Bone (1) and Shell (2)

1. Catalogue of the bone from CLA128

Ctxt	Trench	Feature	Type	Ctxt Qty	Wt (g)	Species	NISP	Age	Element range	Butchering	Comments
1004	1	1005	Pit	1	22	Sheep/ goat	1	Adult	Tibia	Chopped and cut	
1007	1	1005	Pit	2	12	Sheep/ goat	2	Adult	Radius shaft and fragment of mandible	Chopped and cut	
1008	1	1005	Pit	14	264	Cattle	14	Mature	Mandible, isolated teeth, fragments of mandible, proximal ulna fragment	Chopped and cut	Cuts of mandible from skinning and tongue removal. Ulna chopped and cut

2. Catalogue of the shell from CLA128

Context	Trench	Type	Feature	Ctxt Qty	Weight	Freshwater	Marine	Land	Species	NISP	Top	Base	MNI	Apex	Fragment	Distort	Worms	Sponge	Barracles	Attached	Cuts	Burnt	Condition	Pigment?	Comments
1004	1	Pit	1005	1	1		1		Oyster	1	1		1	1			1	1							Some cess deposits

APPENDIX 3 THE WRITTEN SCHEME OF INVESTIGATION

THE PUMPING STATION, STOKE ROAD, CLARE, SUFFOLK

**WRITTEN SCHEME OF INVESTIGATION FOR
ARCHAEOLOGICAL EVALUATION**

12th March 2019

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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THE PUMPING STATION, STOKE ROAD, CLARE, SUFFOLK

ARCHAEOLOGICAL EVALUATION

1 INTRODUCTION

1.1 This specification (written scheme of investigation) has been prepared in response to a brief issued by Suffolk County Council Archaeological Service Conservation Team (SCC AS-CT, Abby Antrobus, dated 25th February 2019) for archaeological evaluation prior to the proposed construction of a new residential development of a pair of semi-detached cottages on land at the Pumping Station, Stoke Road, Clare, Suffolk (NGR TL 766 449). The work is required to comply with a planning condition on approval for the development, on advice from SCC AS-CT (West Suffolk DC Planning Appeal Approval Ref. DC/18/2193/FUL). The WSI has been prepared for the approval of SCC AS-CT and the LPA. The WSI alone will not discharge the planning condition.

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 archaeological evaluation has been prepared for the approval of SCC AS-CT. Further archaeological works may be required by SCC AS-CT following the evaluation, should remains be present, in order to comply with the requirements of the condition, for which an additional brief/WSI will be required.

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 The site lies to the rear of a pumping station on the northern side of Stoke Road on the edge of Clare. It is proposed to erect a new residential development of two semi-detached cottages on the site. A condition of planning approval requires a programme of archaeological work.

3.2 The Suffolk Historic Environment Record notes that this is an area of archaeological potential, within part of the historic settlement area of Clare (HER CLA 058). The site fronts Nethergate Street which was an early area of suburban settlement to the main core of the settlement. This has been confirmed by archaeological investigations to the immediate east (HER CLA 079) which identified medieval features and settlement plots. The site thus retains a potential for the presence of medieval remains associated with early occupation, and the site

appears to have been relatively undeveloped in the post-medieval period, which increases the potential for survival of early settlement remains.

3.3 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). 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.

4.2.2 Medlycott (2011, 57) states that the 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).

4.2.3 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).

4.2.4 As set out above, the principal research objectives will be to identify any further evidence of suburban medieval settlement in this part of Clare.

References

Brown, N & Glazebrook, J (eds), 2000, *Research and Archaeology: A Framework for the Eastern Counties. 2. Research Agenda and Strategy*, East Anglian Archaeology Occasional Papers 8

Glazebrook, J (eds), 1997, *Research and Archaeology: A Framework for the Eastern Counties. 1. Resource Assessment*, East Anglian Archaeology Occasional Papers 3

Medlycott, M & Brown, N, 2008, *Revised East Anglian Archaeological Research Frameworks*, www.eaareports/algaooe

Medlycott, M. (ed.) 2011, *Research and Archaeology revisited: a revised framework for the East of England*, ALGAO East of England Region, East Anglian Archaeology Occasional Papers 24

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 ClfA.

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 2017*.

5.1.4 SCC AS-CT require a programme of archaeological evaluation by trial trenching of the development area. This is to take the form of a trial trench parallel to the road across as much of the width of the footprint of the new dwellings as possible. The trench is proposed to be 10m x 1.8m. A trench plan is appended. AS is happy to review the scale/location of the trench/es 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.

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 monument number will be obtained from the County HER Officer.

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 (10 days is required)

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.

11.5 No trenches will be backfilled until signed off by SCC AS-CT

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/waterlogged ground/alluvium are encountered (which is unlikely on this site) the upper levels of the trench 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 1.8m 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. Any metal finds from the metal detector survey will be located by GPS.

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. The spoil tips will also be surveyed. 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 coordinator 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 CfA

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 Lydinge 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 OFFICER

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
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.

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 Environmental Impact 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, Cambridgeshire. 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.

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.

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ROMAN POTTERY	A Peachey MCIIfA
SAXON & MEDIEVAL POTTERY	P Thompson
POST-MEDIEVAL POTTERY	P Thompson
FLINT	A Peachey MCIIfA
GLASS	H Cool
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SMALL FINDS	R Sellwood
SLAG	A Newton
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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

PHOTOGRAPHIC INDEX (P7972)



1
Trench 1 looking south-west



2
Trench 2 looking north-east



3
Sample section 1 looking north-west



4
F1005 looking north-west

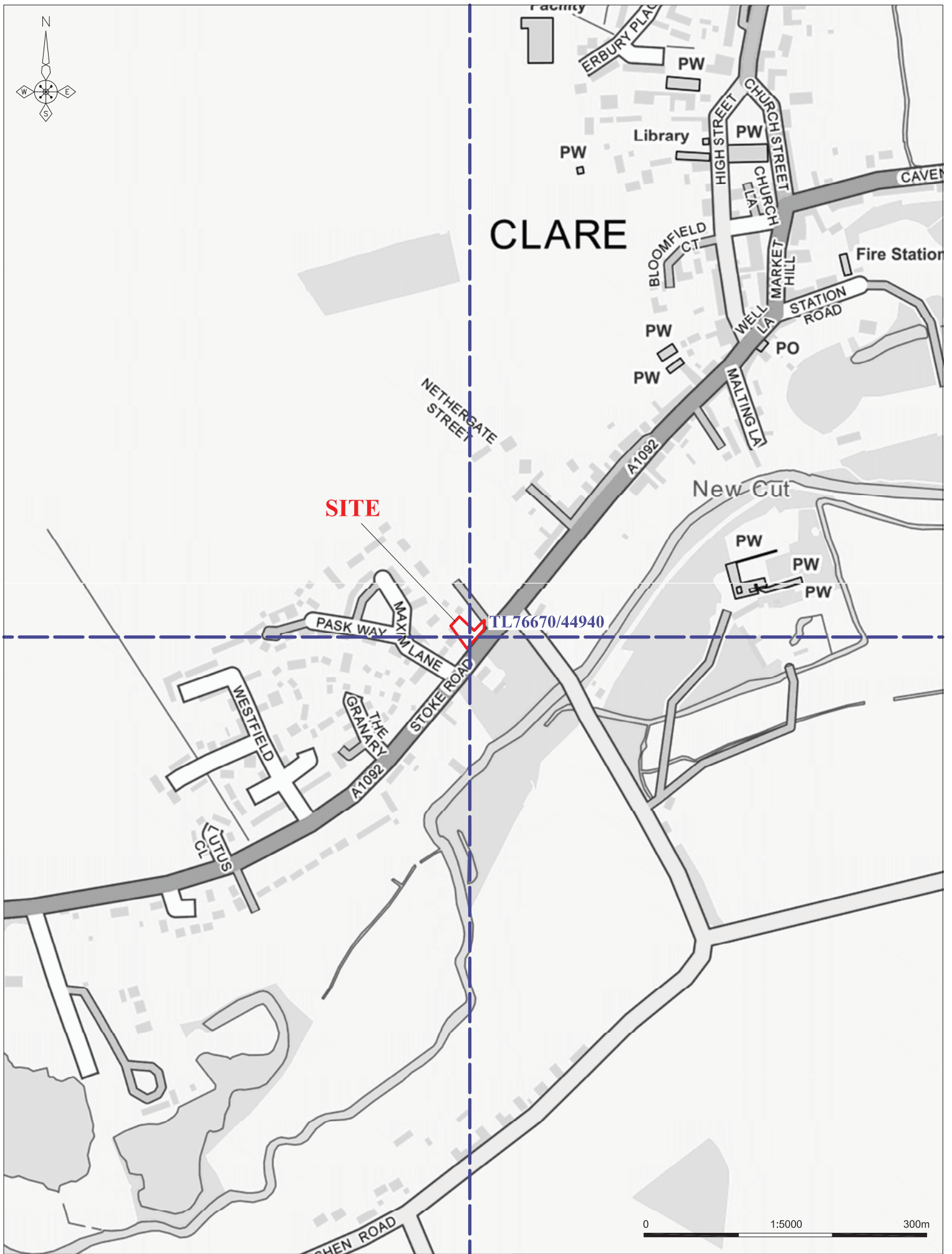


5
F1005 looking south-east



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Fig. 1 Site location plan
 Scale 1:25,000 at A4
 The Pumping Station, Clare, Suffolk (P7972)



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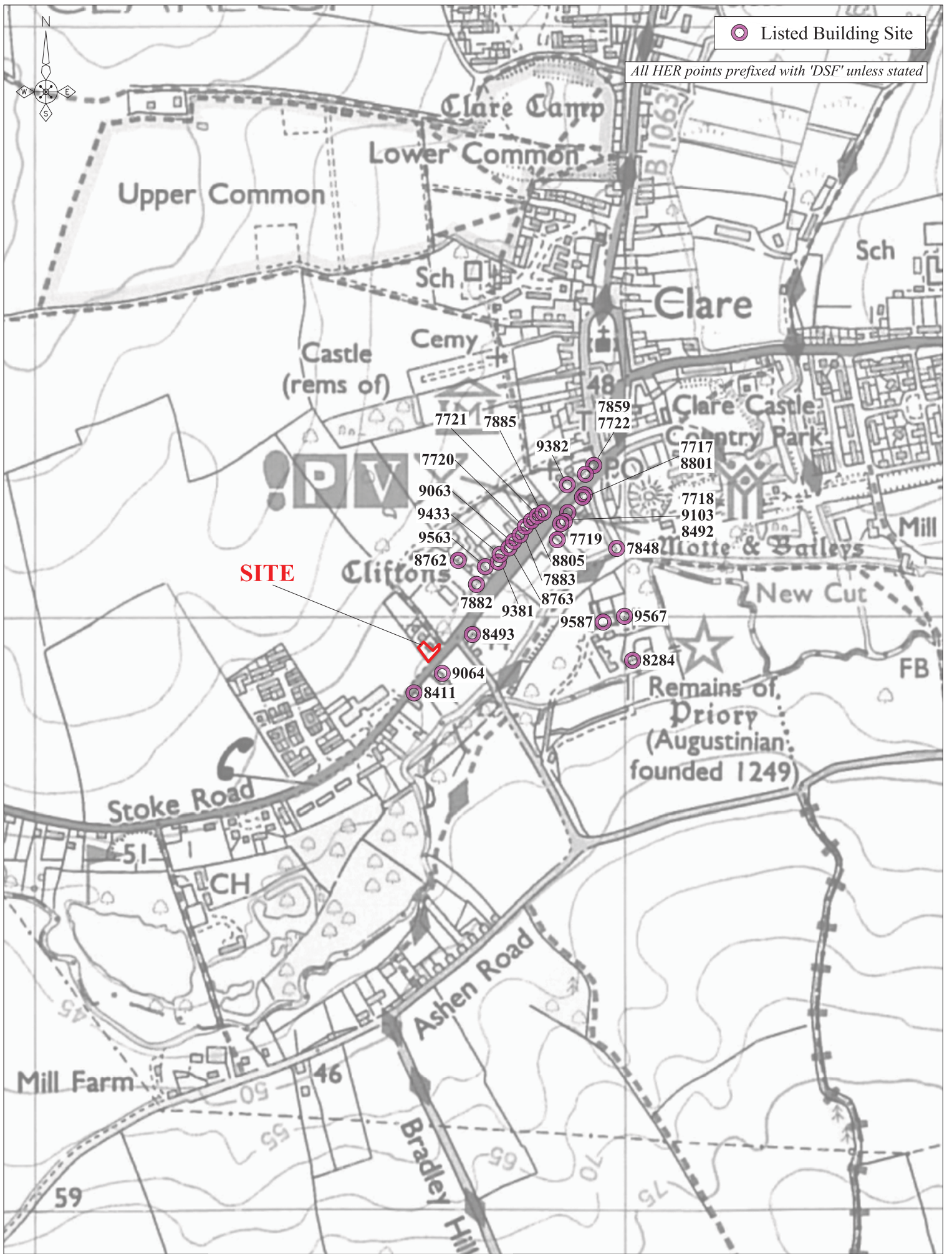
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Fig. 2 Detailed site location plan
 Scale 1:5000 at A4
 The Pumping Station, Clare, Suffolk (P7972)



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Fig. 3a HER Data
 Scale 1:10,000 at A4
 The Pumping Station, Clare, Suffolk (P7972)



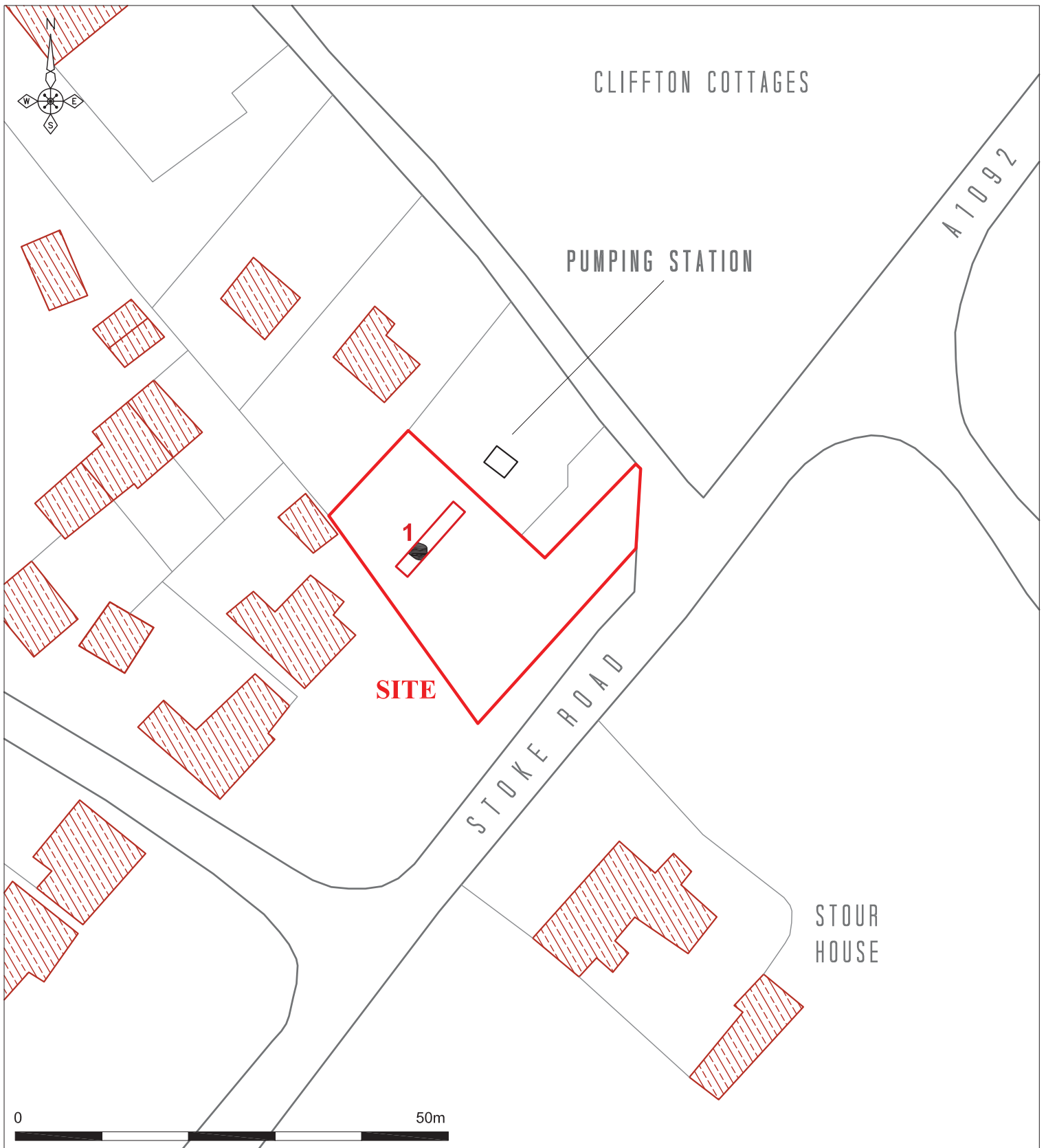
○ Listed Building Site

All HER points prefixed with 'DSF' unless stated

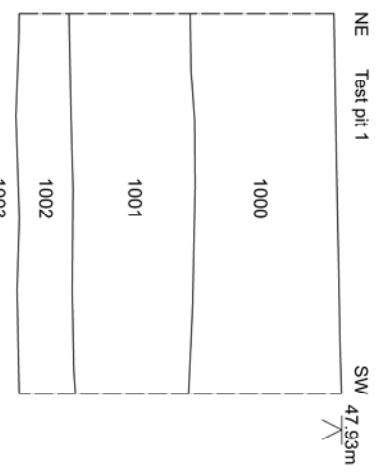
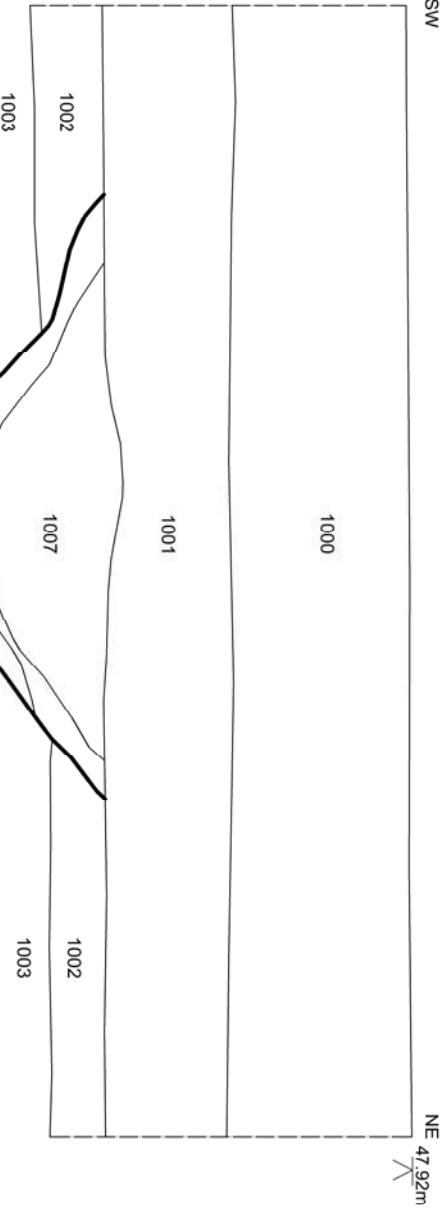
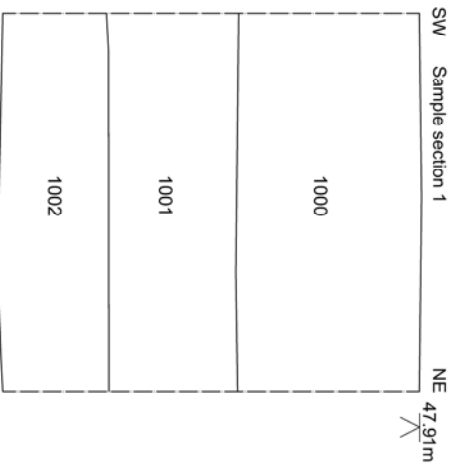
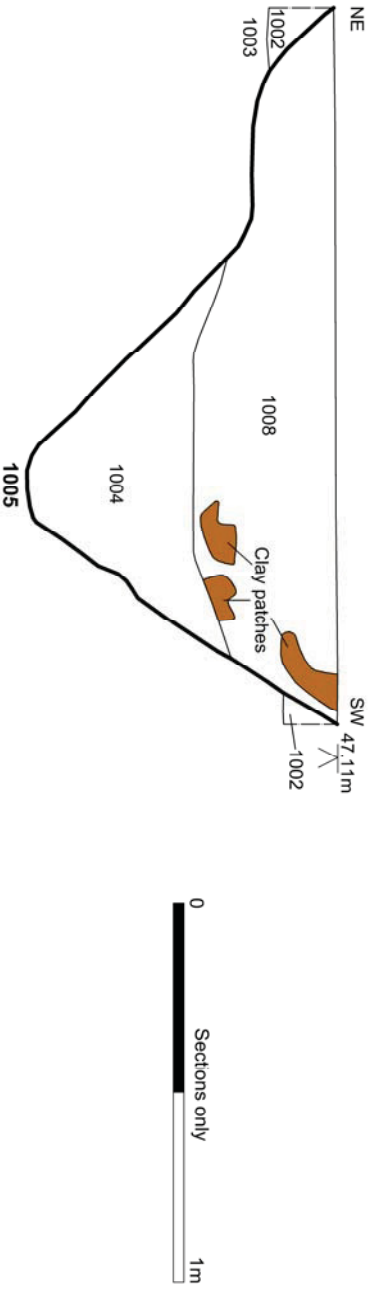
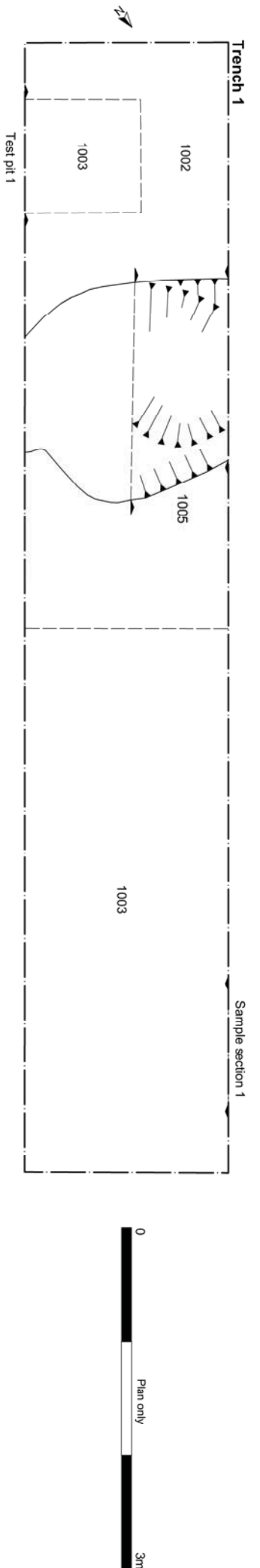
SITE

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Fig. 3b Listed Buildings
 Scale 1:8,000 at A4
 The Pumping Station, Clare, Suffolk (P7972)



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Fig. 4 Trench location plan
Scale 1:600 at A4
The Pumping Station, Clare, Suffolk (P7972)



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Fig. 5 Trench plan and sections

Scale Plan 1:50, sections 1:20 at A4

The Pumping Station, Clare, Suffolk (P7972)