

Archaeological Monitoring & Recording

Chisbon Heath Solar PV Farm

St Osyth

Essex

ASE Project No: 8295

Site Code: STOCH14

ASE Report No: 2015TBC



July 2015

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NGR: TM 13250 18800

**ASE Project No: 8295
Site Code: STOCH14**

**ASE Report No: 2015TBC
OASIS No: 218239**

**by
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Illustrations by Andrew Lewsey**

July 2015

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Date of Issue:			
Revision:			

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Abstract

Archaeology South-East was commissioned by Martifer Solar UK Ltd to undertake a programme of archaeological monitoring and recording during groundworks associated with the construction of a 13 MWp solar park and associated infrastructure on land to the north of Frowick Lane, St Osyth Heath, Essex.

A series of cropmarks forming a possible small enclosure and fields have been recorded in the western part of the site, and are potentially of Prehistoric or Roman date. A geophysical survey of the site noted little correlation between the recorded cropmarks and anomalies of probable archaeological origin but did detect a number of possible pits, linear features and what may be part of an enclosure.

The monitoring works did not record any significant features within the development area, archaeological features being limited to a post-medieval field boundary ditch and an undated pit and gully.

The absence of remains is most likely a reflection of the narrow width of the cable trenches, the extremely poor weather conditions at the time of the works, which limited feature visibility, and limited opportunities for monitoring provided in some parts of the site, particularly in the western half of the development area. The area of greatest potential, that of the cropmark enclosure, was in part excluded from the working area as it is now crossed by a gas main, which limited opportunities for discoveries in the area most likely to have contained archaeological remains.

Limited and localised construction-related impacts have occurred to the archaeological remains present within the development area as a result of the excavation of cable trenches linking the rows of solar panels to the transformer/ inverter stations. This has been mitigated by the recording works undertaken in those areas that were subject to monitoring. Additional damage to the archaeological record has been reduced/ avoided across most of the solar farm due to the construction methods used for the installation of temporary access roads, which were placed directly on the ground surface, thereby eliminating any below ground impacts in those areas.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), the contracting division of the Centre for Applied Archaeology (CAA), Institute of Archaeology (IoA), University College London (UCL) was commissioned by Martifer Solar UK to undertake monitoring and recording of groundworks for the construction of a 13 MWp solar park and associated infrastructure on land to the north of Frowick Lane, St Osyth Heath, Essex.

1.2 Location, Topography and Geology

1.2.1 The site is located to the north of Frowick Lane and south of Wick Lane and generally to the west of the settlement of St Osyth Heath/Chisbon Heath (Fig.1). The 18.44 ha site is currently agricultural land, most recently having been in arable cultivation. Frowick Lane marks the southern boundary of the site while the northern edge is partially bounded by Milton Wood, an area of Ancient Woodland and an agricultural reservoir. The remaining site limits are defined by hedged field boundaries of varying height and density.

1.2.2 In general the site slopes gently from west to east, from c.25mOD to c.19mOD. In the wider landscape the topography to the north of the site comprises the Tendring Plateau, a relatively flat area. To the south and west the land is undulating, generally sloping downwards towards the River Colne and associated tributaries.

1.2.3 According to the British Geological Survey (BGS) 1:50,000 scale geological mapping available online, the solid geology of the site comprises London Clay which outcrops at the surface of the eastern part of the site. The western part of the site is covered by superficial deposits of Pleistocene date; sands and gravels of the Kesgrave and Lowestoft formation and sands and silts of the Lowestoft formation.

1.3 Planning Background

1.3.1 A planning application (13/00360/FUL) was submitted to Tendring District Council in April 2013 for the construction of a 13 MWp solar park and associated infrastructure. As the site is located in an area of high archaeological potential, containing a number of cropmarks of probable archaeological origin, ECC Place Services, in their capacity as archaeological advisors to the local planning authority, recommended that an integrated heritage impact assessment be undertaken as a first phase in understanding and mitigating the impact of the scheme on the historic environment.

1.3.2 The following recommendation was made in line with guidance contained in the National Planning Policy Framework (DCLG 2012):

'Full Condition: No demolition or preliminary ground works of any kind shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the planning authority.'

1.3.3 Following the completion of the heritage impact assessment for the site, which suggested that archaeological remains were likely to be present and would potentially be damaged or destroyed by construction works associated with the development, the need for a second phase of archaeological work was identified; principally, the detailed archaeological monitoring and recording of any groundworks associated with the

development, including, but not limited to, areas of hard standing, access roads, sub-stations, etc.

1.3.4 The archaeological monitoring and recording work was duly undertaken in accordance with a Written Scheme of Investigation (WSI) prepared by Archaeology South-East (2013b) in response to a Design Brief produced by ECC Place Services (2013). The WSI was submitted to, and approved by, ECC Place Services in their capacity as archaeological advisors to Tendring District Council.

1.4 Aims and Objectives

1.4.1 The general aim of the archaeological work was to sufficiently excavate and record any remains that were exposed during groundworks in order to ensure their preservation by record.

1.4.2 The specific objectives of the archaeological work were to:

- Determine the date and nature of the land use/ activity indicated by the cropmarks previously recorded within the site
- Determine the date and nature of the landuse/ activity indicated by the anomalies of probable archaeological origin identified by the geophysical survey

1.4.3 In the event that significant discoveries were made the initial research objectives for the project were to be reviewed as part of any post-excavation assessment and reporting work that is required, in line with those laid out in *Research and Archaeology: a Framework for the Eastern Counties, 2. research agenda and strategy* (Brown and Glazebrook 2000) and *Research and Archaeology Revisited: a revised framework for the East of England* (Medlycott 2011).

1.5 Scope of Report

1.5.1 This report details the results of monitoring and recording carried out by Paulo Clemente (Archaeologist) during construction groundworks between the 24 November 2014 and 01 January 2015. The fieldwork was managed by Adrian Scruby and the post-excavation and reporting by Mark Atkinson.

2.0 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 2.1 The following archaeological background utilises the integrated heritage impact assessment previously prepared for the scheme (ASE 2013a).
- 2.2 There are no nationally designated assets within the proposed development site itself and only one, a Grade II Listed Building, within 500m of the site.
- 2.3 A series of cropmarks (EHER 17025) forming a possible small enclosure and fields have been recorded in the western part of the site, and are potentially of Prehistoric or Roman date.
- 2.4 A geophysical survey of the site, undertaken as part of the heritage impact assessment, noted little correlation between the recorded cropmarks and anomalies of probable archaeological origin but did detect a number of possible pits, linear features and what may be part of an enclosure within the site (ASE 2013a, appendix 1).
- 2.5 No intrusive archaeological investigations have previously been carried out either within the site or its immediate vicinity.
- 2.6 Historic OS mapping depicts the post-Medieval land use within the site as agricultural. Some of the cropmarks identified within the site itself, and within the wider landscape, coincide with the locations of field boundaries which are shown on historic map but are no longer extant (e.g. EHER 2967, EHER 46964). These reflect the general trend of the loss of field boundaries to create larger fields in the late 19th and 20th centuries.

3.0 ARCHAEOLOGICAL METHODOLOGY

3.1 Fieldwork Methodology

3.1.1 Monitoring was undertaken by a professional archaeologist on groundworks that had the potential to expose, damage or destroy any archaeological remains that were present. Such groundworks comprised:

- Excavation of cable trenches;
- Strip of topsoil for transformer centres;

3.1.2 It was originally envisaged that construction of the access and service roads serving the solar farm would also be monitored; however, due to temporary nature of the solar farm and planned low-impact construction methodology the roads were not stripped of topsoil and were instead formed from reinforced mesh matting laid directly on the ground surface (see Figure 2).

3.1.3 Exposed sections/excavation faces of the trenches were examined and any significant remains recorded. Manual excavation and detailed recording were undertaken where important remains were encountered, but not pursued beyond the confines of the groundworks. Spoilheaps were rapidly inspected for archaeological material.

3.1.4 Recording comprised of written, drawn and photographic records. Significant remains were accurately located by GPS survey.

3.1.5 Standard ASE excavation, artefact collection and recording methodologies were employed throughout. Artefacts were retrieved from all deposits in which they occurred and were retained for processing, identification and appropriate study.

3.1.6 All work was carried out in accordance with ClfA (Chartered Institute for Archaeologists) by-laws and guidelines and complied with *Standards for Field Archaeology in the East of England* (Gurney 2003).

3.2 Site Archive

3.2.1 The site archive is currently held at the offices of ASE and will be deposited at Colchester Museum in due course. The contents of the archive are summarised below (Table 1).

Number of Contexts	9
Trench sheets	1
Plan and sections sheets	1
Photographs	111 colour digital images
Finds	None
Environmental samples/residues	None

Table 1: Quantification of site archive

4.0 RESULTS

- 4.1 The deposit sequence revealed across the site consisted of an approximately 0.3m thick layer of mid-brown silt clay topsoil (1) overlying a 0.28m thick light grey clay sand subsoil with grey-brown mottles (2). This sealed undisturbed natural geology which varied across the site, varying between a mid orange-brown sandy clay with dark brown clay mottles and lenses of gravel or light grey sandy clay with orange mottles (3).
- 4.2 Due to the relatively shallow depth of the groundworks the principle opportunity to observe and record any archaeological remains that were present was afforded by the cable trenches that link the rows of panels to the transformer/ inverter stations. Cable trenches were on average 0.8m deep, cutting through the full thickness of the topsoil and subsoil, into the top 20cm (average) of the natural deposit (Figure 3).
- 4.3 Observation of the cable trenches in the northern part of the site revealed the upper part of an east-west aligned ditch, seemingly curving away to the south west at the eastern edge of the site. Where seen in the easternmost cable trench the ditch (8) was 2.63m wide and of unknown depth, the base of the feature lying below the bottom of the cable trench. The fill (9) consisted of a compact mid-grey sandy silt containing occasional subangular gravels and fragments of wood (not retained). The presence of wood fragments in a feature that was clearly not waterlogged indicates that the ditch fill is of comparatively recent origin. The geophysical survey detected a linear anomaly to the south of the observed ditch, running broadly east – west, while cartographic sources also show a field boundary in this approximate location on maps dating from 1814, 1839 and 1938 (ASE 2013).
- 4.4 In the central part of the site topsoil stripping for a transformer/ inverter station revealed a single roughly circular pit (4), approximately 0.67m wide, that contained a compact light blue-grey silt clay fill with frequent charcoal flecks and occasional subrounded gravel (5), and a north – south orientated gully (6). The gully was approximately 0.54m wide, extending across the full length of the area stripped for the transformer base, and also contained a light blue-grey silt clay fill with occasional gravels and dark grey mottles (7). The area was subsequently preserved in-situ beneath a geotextile membrane and layer of roadstone (see Figure 4).
- 4.5 Observation of the cable trenches in the western part of the site was hampered by continuing poor weather and ground conditions, which made it difficult to recognise features in the narrow and often partially flooded trenches (see Figures 5 and 6), while some cable trenching works were not notified and took place without an archaeologist present. The southwestern part of the site was also crossed by a gas main, the line of which, along with a suitable buffer, was excluded from the working area. The route of the pipeline crossed a possible enclosure recorded on aerial photographs but not detected by the geophysical survey (ASE 2013) and consequently, as no ground works were undertaken in this area it was not possible to determine if the cropmarks corresponded with any underlying features of archaeological origin.
- 4.6 The monitoring works encountered numerous agricultural land drains running broadly east to west across the site and parallel to Frowick Lane, which corresponded with linear anomalies (noted as being of agricultural origin) recorded on the geophysical survey.

5.0 FINDS AND ENVIRONMENTAL

- 5.1 No finds were recovered during the monitoring works and no features worthy of environmental sampling were encountered. The absence of any finds is most likely to be a reflection of the relatively small area examined, given the narrow width of the cable trenches, and the distance at which the site lies from any nearby settlement focus – cultural material incorporated into the fields via agricultural manuring generally becoming sparser with distance from settlement foci.

6.0 DISCUSSION AND CONCLUSIONS

- 6.1 The monitoring works did not record any significant features within the development area, archaeological features being limited to a post-medieval field boundary ditch and an undated pit and gully, although aerial photographic evidence and a geophysical survey had suggested that there was some, albeit low, potential for archaeological remains to be present, particularly in the western part of the site, where aerial photographs had suggested the presence of an enclosure.
- 6.2 The absence of remains is most likely a reflection of the narrow width of the cable trenches, the extremely poor weather conditions at the time of the works, which limited feature visibility, and limited opportunities for monitoring provided in some parts of the site, particularly in the western half of the development area. The area of greatest potential, that of the cropmark enclosure, was in part excluded from the working area as it is now crossed by a gas main, which limited opportunities for discoveries in the area most likely to have contained archaeological remains.
- 6.3 Limited and localised construction-related impacts have occurred to the archaeological remains present within the development area as a result of the excavation of cable trenches linking the rows of solar panels to the transformer/inverter stations. This has been mitigated by the recording works undertaken in those areas that were subject to monitoring. Additional damage to the archaeological record has been reduced/ avoided across most of the solar farm due to the construction methods used for the installation of temporary access roads, which were placed directly on the ground surface, thereby eliminating any below ground impacts in those areas.

ACKNOWLEDGEMENTS

ASE would like to thank Martifer Solar UK Ltd for commissioning the archaeological work. The archaeological monitoring and recording was undertaken by Paulo Clemente. Andrew Lewsey produced the figures for this report. Adrian Scruby project managed the fieldwork and Mark Atkinson project managed the post-excavation process. The project was monitored by Adrian Gascoyne of ECC Place Services on behalf of Tendring DC.

BIBLIOGRAPHY

- | | | |
|------------------------------|-------|--|
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| ECC Place Service | 2013 | <i>Brief for detailed archaeological monitoring and recording during construction of a solar park on land north of Frowick Lane, St Osyth</i> , ECC Place Services HE team |
| Medlycott, M. | 2011 | <i>Research and Archaeology Revisited: a revised framework for the East of England</i> , E. Anglian Archaeol. Occ. Paper 24 |

Appendix 1: EHER Summary Form

Site name/Address: Chisbon Heath Solar Park, Frowick Lane, St Osyth Heath, Essex	
Parish: St Osyth	District: Tendring
NGR: TM13250 18800	Site Code:
Type of Work: Archaeological Monitoring and Recording	Site Director/Group: Paulo Clemente, Archaeology South-East
Date of Work: 24 Nov – 01 Dec 2014	Size of Area Investigated: c.18.44ha
Location of Finds/Curating Museum: Colchester Museum	Funding source: Client
Further Seasons Anticipated?: No	Related HER Nos: 17025
Final Report: EAH roundup	OASIS No: 218239
Periods Represented: Undated, Post-medieval	
SUMMARY OF FIELDWORK RESULTS:	
<p>Archaeology South-East was commissioned by Martifer Solar UK Ltd to undertake a programme of archaeological monitoring and recording during groundworks associated with the construction of a 13 MWp solar park and associated infrastructure on land to the north of Frowick Lane, St Osyth Heath, Essex.</p> <p>A series of cropmarks forming a possible small enclosure and fields have been recorded in the western part of the site, and are potentially of Prehistoric or Roman date. A geophysical survey of the site noted little correlation between the recorded cropmarks and anomalies of probable archaeological origin but did detect a number of possible pits, linear features and what may be part of an enclosure.</p> <p>The monitoring works did not record any significant features within the development area, archaeological features being limited to a post-medieval field boundary ditch and an undated pit and gully.</p> <p>The absence of remains is most likely a reflection of the narrow width of the cable trenches, the extremely poor weather conditions at the time of the works, which limited feature visibility, and limited opportunities for monitoring provided in some parts of the site, particularly in the western half of the development area. The area of greatest potential, that of the cropmark enclosure, was in part excluded from the working area as it is now crossed by a gas main, which limited opportunities for discoveries in the area most likely to have contained archaeological remains.</p> <p>Limited and localised construction-related impacts have occurred to the archaeological remains present within the development area as a result of the excavation of cable trenches linking the rows of solar panels to the transformer/ inverter stations. This has been mitigated by the recording works undertaken in those areas that were subject to monitoring. Additional damage to the archaeological record has been reduced/ avoided across most of the solar farm due to the construction methods used for the installation of temporary access roads, which were placed directly on the ground surface, thereby eliminating any below ground impacts in those areas.</p>	

Previous Summaries/Reports:

Archaeology South-East. 2013, *Chisbon Heath Solar Farm, Frowick Lane, St Osyth Heath, Clacton-on-Sea, Essex: Heritage Impact Assessment*, ASE rep. 2013218

Author of Summary: Mark Atkinson

Date of Summary: July 2015

Appendix 2: OASIS Form

OASIS ID: archaeol6-218239

Project details

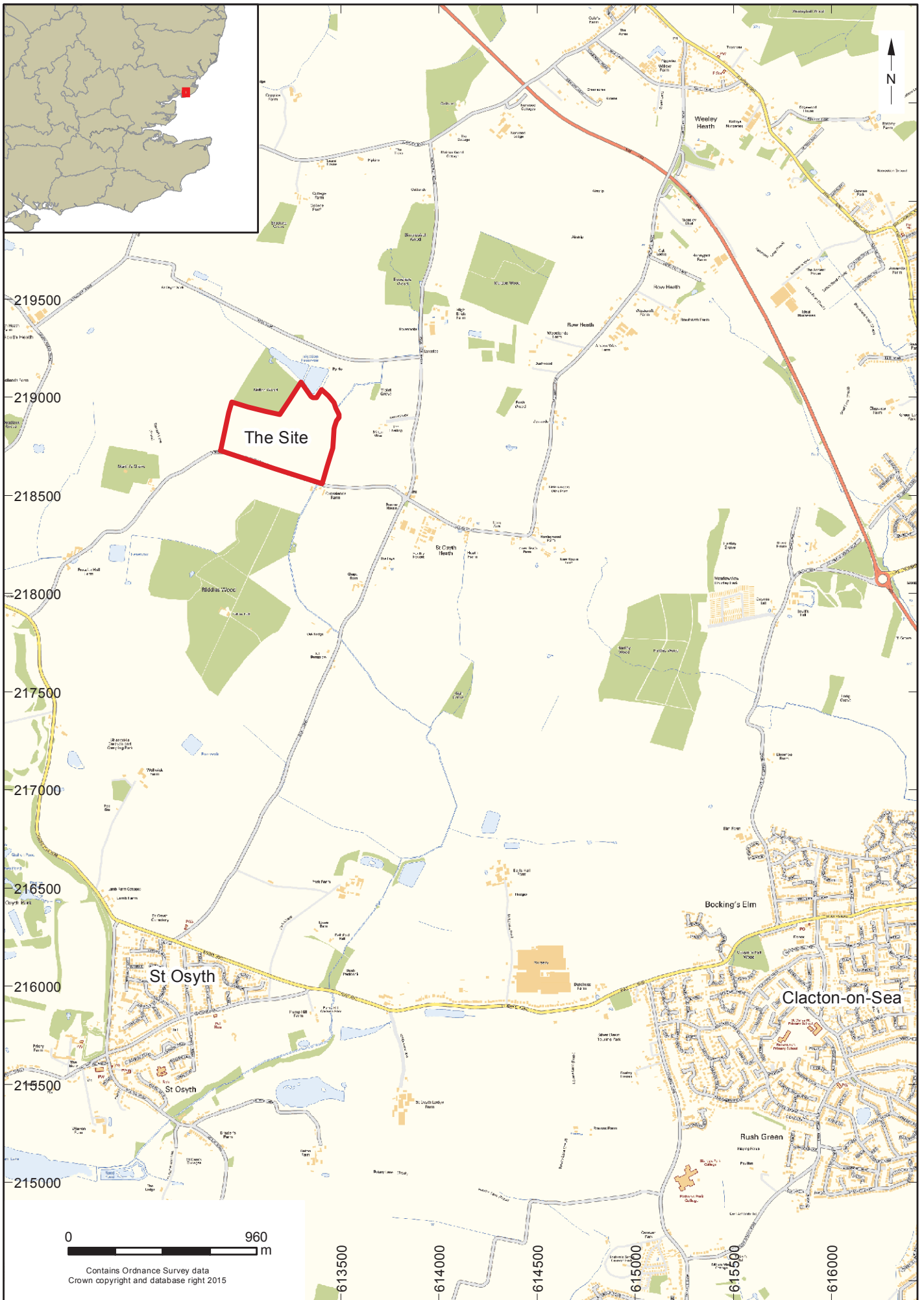
Project name	Chisbon Heath Solar PV Farm
Short description of the project	Archaeology South-East was commissioned by Martifer Solar UK Ltd to undertake a programme of archaeological monitoring and recording during groundworks associated with the construction of a 13 MWp solar park and associated infrastructure on land to the north of Frowick Lane, St Osyth Heath, Essex. The monitoring works did not record any significant features within the development area, archaeological features being limited to a post-medieval field boundary ditch and an undated pit and gully.
Project dates	Start: 24-11-2014 End: 01-01-2015
Previous/future work	Yes / No
Any associated project reference codes	8295 - Contracting Unit No.
Type of project	Recording project
Site status	None
Current Land use	Cultivated Land 2 - Operations to a depth less than 0.25m
Monument type	PIT Uncertain
Monument type	GULLY Uncertain
Monument type	DITCH Post Medieval
Significant Finds	NONE None
Investigation type	""Watching Brief""
Prompt	National Planning Policy Framework - NPPF

Project location

Country	England
Site location	ESSEX TENDRING ST OSYTH Frowick Lane, St Osyth/Chisbon Heath
Postcode	CO16 8HJ
Study area	18.44 Hectares
Site coordinates	TM 13250 18800 51.8264935962 1.09502473431 51 49 35 N 001 05 42 E Point
Height OD / Depth	Min: 19.00m Max: 25.00m

Project creators

Name of Organisation	Archaeology South-East
Project brief originator	Essex County Council Place Services
Project design originator	Archaeology South-East
Project director/manager	Adrian Scruby
Project supervisor	Paulo Clemente
Type of sponsor/funding body	Client
Name of sponsor/funding body	Martifer Solar



© Archaeology South-East		Chisbon Heath, Solar PV Farm, St Osyth	Fig. 1
Project Ref: 8295	July 2015	Site location	
Report No:	Drawn by: APL		



Figure 2: Temporary roads formed from mesh matting laid directly on the existing ground surface.



Figure 3: Typical cable trench section showing topsoil overlying subsoil and illustrating ground conditions.



Pit 004, 1m scale



Gully 006, 1m scale

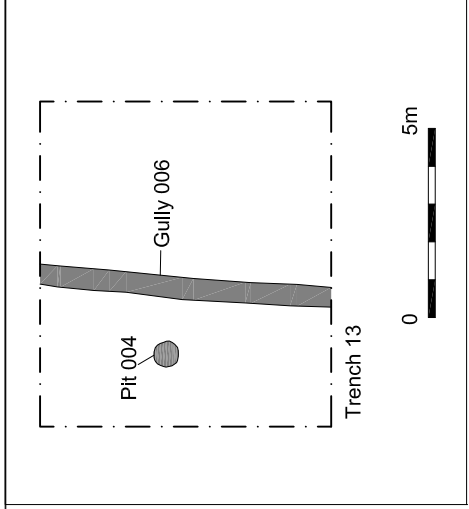
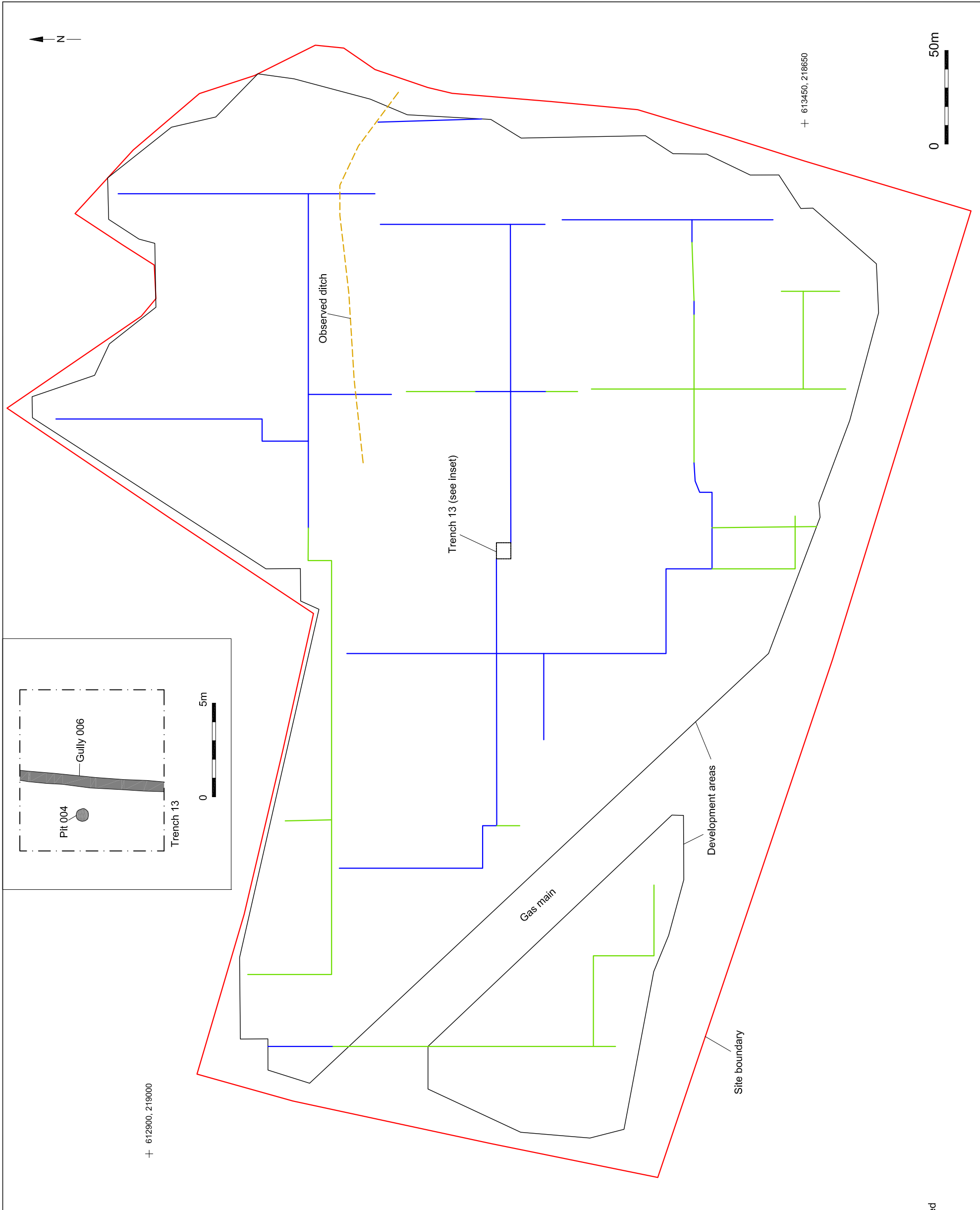


Trench 13 with 004 and 006 looking north-east



Trench 13, preservation in-situ

- Monitored cable trench
- Cable trench not monitored



© Archaeology South-East		Chisbon Heath, Solar PV Farm, St Osyth	
Project Ref: 8295	July 2015	Location of monitored trenches	
Report Ref:	Drawn by: APL		

Fig.4



Figure 5: General view of cable trench under excavation illustrating poor ground conditions – November 2014.



Figure 6: General view of pipe trench under excavation – November 2014.

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