QUEST
QUATERNARY SCIENTIFIC

TYDD SOLAR FARM, TYDD ST GILES, CAMBRIDGESHIRE & LINCOLNSHIRE

Geoarchaeological Written Scheme of Investigation

ECB Number: ECB7231
NGR: TF 3883 1293
Planning Application: F/YR22/1070/SC
Date: 20th October 2023
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DOCUMENT HISTORY:

Version	Date	Prepared By	Approved By	Reason for Issue
v1	20/10/23	M. Simmonds	C. R. Batchelor	First Edition
v2	07/11/23	M. Simmonds	C. R. Batchelor	Required amendments

CONTENTS

1. NON-TECHNICAL SUMMARY

This Written Scheme of Investigation presents the proposed geoarchaeological investigation of the Tydd Solar Farm site (ECB7231) and is based on the requirements as set out in the brief for archaeological evaluation (F/YR22/1070/SC). The work is to be carried out in accordance with relevant guidelines set out by the Chartered Institute for Archaeologists (CIfA) and Historic England. The site is an area of farmed land, rising in a northward and westward direction. The site is considered to have good geoarchaeological potential due to the presence of roddons identified within previous fieldwork on the site. The collection of geoarchaeological boreholes is therefore required in order to enhance our understanding of the sub-surface stratigraphy at the site, and to assess the potential of any alluvial deposits. A minimum of four boreholes are recommended to be collected from the site at predefined locations, prior to the creation of a deposit model.

2. QUALITY ASSURANCE

2.1. About us

Quaternary Scientific (Quest) provides an expert environmental archaeological (palaeoenvironmental and palaeoeconomic) service to academic departments, research projects, archaeological companies, environmental consultancies and government organisations. Since 1996, the business has expanded to include a network of specialist and technical staff (internal and external to the University of Reading) that service all aspects of archaeological science contract work. Utilising this academic support network, Quest endeavours to become the leading environmental archaeological contract service facility in Europe.

Quest has prepared a Quality Assurance Document (QAD) covering all procedures that are undertaken for both Archaeological and Environmental Science projects. This document is available upon request. This document has been submitted to the Chartered Institute for Archaeologists (ClfA), of which Quest is a Registered Organisation.

2.2. Management Structure & Core Staff

In order to ensure project continuity, individual projects are managed by Dr Rob Batchelor (Director) or Dr Mike Simmonds (Senior Project Manager). The core staff are based in the School of Archaeology, Geography and Environmental Science (SAGES) at the University of Reading. The positions, qualifications and specialisms of the core staff are listed below.

Dr Robert Batchelor - Director

BSc (Hons) Geology and Geography (Royal Holloway, University of London) PhD Geography (Royal Holloway University of London)

Archaeobotany (Palynology) & Geoarchaeology

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Dr Mike Simmonds - Archaeological Science Senior Project Manager

BSc (Hons) Physical Geography (University of Reading); MSc Geoarchaeology (University of Reading); PhD Archaeology (University of Reading).

Archaeobotany (Palynology) & Geoarchaeology

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Dr Chris Green - Senior Geoarchaeologist (Sedimentology and Geology)

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Hester Crothers – Palaeoecological and Geoarchaeological Technician

BSc (Hons) Geography (Oxford Brookes University); MSc Quaternary Science (Royal Holloway, University of London)

Geoarchaeological fieldwork and palaeoecological laboratory work

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Natasha Kozlowski – Geoarchaeologist

BA (Hons) Archaeology (University of Durham); MA Archaeology (University of Cambridge)

Geoarchaeological fieldwork and laboratory work

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All Quest staff operate according to the CIfA codes of conduct as set out within the following document: http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf

2.3. Insurances

Quest is covered by the University of Reading Public Liability (Insurers: Zurich Municipal; Policy Number NHE-18CA07-0013) and Professional Indemnity (Insurers: Royal & Sun Alliance Insurance plc; Policy Number: RKL233847) insurance policies (more details available upon request).

2.4. Health and Safety

The University of Reading has prepared various Policies, Safety Guides and Notes for Health and Safety procedures, each of which are applicable to Quest. A statement on the University's health and safety policy can be viewed using the following URL: http://www.reading.ac.uk/web/files/health-and-safety/Health_and_Safety_Policy_2018.pdf

Quest will provide a detailed Risk Assessment and Method Statement (RAMS) prior to the fieldwork. This document will be submitted to the client and the University of Reading Health and Safety Co-ordinator for approval and will be read and understood by all members of Quest staff in attendance on site.

3. POLICIES, GUIDELINES & RESEARCH FRAMEWORKS

This document has been prepared in accordance with the guidelines and research frameworks set out by the Chartered Institute for Archaeologists (CIfA) and Historic England as described below:

3.1. National Guidance:

3.1 DCLG (2014) Planning Practice Guidance, Conserving and enhancing the historic environment.

3.2 DCMS (2013) Scheduled Monuments and nationally important but non-scheduled monuments.

3.3 Department of Communities and Local Government (2012) National Planning Policy Framework.

3.2. Chartered Institute for Archaeologists Guidelines:

3.4 The Chartered Institute for Archaeologists (2014) Code of Conduct, Available at: http://www.archaeologists.net/sites/default/files/CodesofConduct.pdf

3.5 The Chartered Institute for Archaeologists (2014) Standards and guidance for archaeological excavation. Available at: http://www.archaeologists.net/sites/default/files/CIfASandGExcavation_1.pdf

3.3. Historic England Guidelines:

3.6 Historic England (2016) Preserving Archaeological Remains. Decision-taking for Sites under Development

3.7 Historic England (2015) Piling and Archaeology. Guidelines and Best Practice

3.8 Historic England (2015) Historic Environment Good Practice Advice in Planning. Note 1, The Historic Environment in Local Plans

3.9 Historic England (2015) Historic Environment Good Practice Advice in Planning. Note 2, Managing Significance in Decision taking in the Historic Environment

3.10 Historic England (2015) Historic Environment Good Practice Advice in Planning. Note 3. The Setting of Heritage Assets

3.11 MAP2 (1991) Management of Archaeological Projects (Second Edition)

3.12 MoRPHE Management of Research Projects in the Historic Environment (2008) The MoRPHE Project Managers' Guide

3.13 MoRPHE Management of Research Projects in the Historic Environment (2008) PPN 3 Archaeological Excavation

3.14 Historic England (2018) Waterlogged Organic Artefacts: Guidelines on their Recovery, Analysis and Conservation.

3.15 Historic England (2017) Understanding the Archaeology of Landscapes: A Guide to Good Recording Practice (Second Edition).

3.16 English Heritage (2011) Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition).

3.17 English Heritage (2015) Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record.

3.18 Historic England (2020) Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits.

3.19 Historic England (2014) Animal Bones and Archaeology: Guidelines for Best Practice.

3.20 Historic England (2008) Research and Conservation Framework for the British Palaeolithic.

3.21 English Heritage (1998) Identifying and protecting Palaeolithic remains. Archaeological guidance for planning authorities and developers.

3.22 English Heritage (2008) Research and Conservation Framework for the British Palaeolithic.

3.23 Historic England (2015) Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning: 2.

4. SITE CONTEXT

This Written Scheme of Investigation (WSI) has been prepared by QUEST. It covers the geoarchaeological borehole assessment of the Tydd Solar Farm site led by QUEST (ECB7231), relating to the Cambridgeshire County Council planning application F/YR22/1070/SC. The site is centred at National Grid Reference (NGR) TF 3883 1293 (Figure 1). The site is partially situated within the administrative areas of Fenland District in Cambridgeshire and King's Lynn and the South Holland District of Lincolnshire.

The site is in the parish of Sutton St Edmund and comprises primarily of arable land. It is situated approximately 7.5km north-west of Wisbech, 2km east of Sutton St Edmund and 3km south-west of Tydd St Giles (Figure 1). Site boundaries are predominantly formed by drainage ditches, indicative of the former fenland environment the site is situated within. Current surface conditions at the site consist of areas of arable land and woodland. It is highly likely that the sites natural topography has been built up over time as a result of tidal deposit accumulation, which forms the superficial geology at the site, forming within the Holocene period (11,800 BP to present). These Tidal Flat Deposits commonly comprise sandy silt, sand and clay. Bedrock geology at the site is the West Walton Formation and Ampthill Clay Formation. This is a mudstone sedimentary bedrock formed between 163.5 and 157.3 million years ago.

The topography of the site appears to be variable, with elevations in the east, north and west of >0m, dropping to circa. -1m in the centre of the study area. BGS borehole records (BGS, 2023), coupled with previous investigations at the site (Oxford Archaeology, 2010) show that there is a considerable depth of fine-grained marine alluvium and peat units present across this area, (occasionally >11.0m).

These superficial deposits contain a complex network of silt in-filled channels (known in East Anglia as roddons), which are the remnants of tidal creek deposits, often seen represented at the surface as sinuous ridges. Roddonised tidal channels are typical surface features in this area with a roddon observed on the nearby Sandy Lane site (Figure 1, Batchelor and Simmonds, 2023) and the Elm High Road site (Young and Green, 2011), marking the former course of a natural channel cut through the otherwise rather uniform fenland sediments. In excavations for the Wisbech bypass, these roddon sediments comprised of two sequences of sands, silts and clays separated by a thin but persistent bed of peat present between 0.3 and 0.6m OD (Alderton and Waller, 1994).

Considerable debate exists over the number, type and date of main lithologies within the Fenland basin, given the variability of local systems, but has been broadly divided into four main categories by Gallios (1979), with additional definition by subsequent researchers. It is now widely accepted that

there is a six-part sequence of events: channel peat (1), marine incursion (2), basal peat (3), 'fen clay' (4), upper peat (5) and an upper silt (6), although not all phases are identified in all areas of the fenland basin.

The basal Holocene unit present in this environment is a peat unit (1). This peat is found circa -7 to -9m OD, often dominated by wood and herbaceous material, often dating to approximately 8000-7000 cal. BP (Shennan, 1986; French, 2003). This peat has been identified near to the site at Elm Tree Farm in Tydd St Giles Fen, found with a depth of -9.1m OD, and dating to 9500-8000 cal. BP (French, 2003).

In some parts of the Fenland basin, a period of marine incursion (2) then occurs, leading to the deposition of marine silts such as at Welney (Waller, 1994). Where identified, this period of incursion has been dated to approximately 7000-6500 cal. BP (Waller, 1994), but the spatial limit of this incursion is not known.

The main period of peat formation, the basal peat (3) was coincident with rising water levels across the region. This period of peat formation extended from circa. 5400 cal. BP (Wicken Fen, Adventurers Fen; French, 2003) and continued until circa 3900 cal. BP (Newborough Fen; French 2003).

The 'fen clay' (4) or Barroway Drove Beds represent a series of marine incursions which were not synchronous across the Fenland region. The earliest incursion is identified at Welney, dating to 6800-6300 cal. BP (Waller, 1994). In areas with fen-edge conditions, this 'fen clay' ceased at approximately 5000-4500 cal. BP (French, 2003). Outside the lowermost parts of the fen, this transgression continued somewhat longer, until around 4000cal. BP. This 'fen clay' represents a brackish environment, dissected by tidal creeks or roddons. On landward, fen-edge areas, peat sediments continued to form, rather than this 'fen clay'. The 'fen-clay' is rarely found above -1m OD.

From approximately 4500-4000 cal. BP, freshwater conditions began to dominate in most parts of the Fenland, with peat formation (5) occurring. As time progressed, there was widespread variation in sediment deposition across the region, with another period of marine transgression (the upper silt (6), also known as the Upper Barroway Drove Beds) identified in the north and northwest of the region (Wisbech and South Lincolnshire) dating to around 3000-2000 cal. BP. At a similar time, freshwater meres developed in the southern fens. Upper peat formation continued over much of the area not affected by mere formation or marine transgression until the advent of 17th century drainage systems (Waller, 1994; French, 2003).

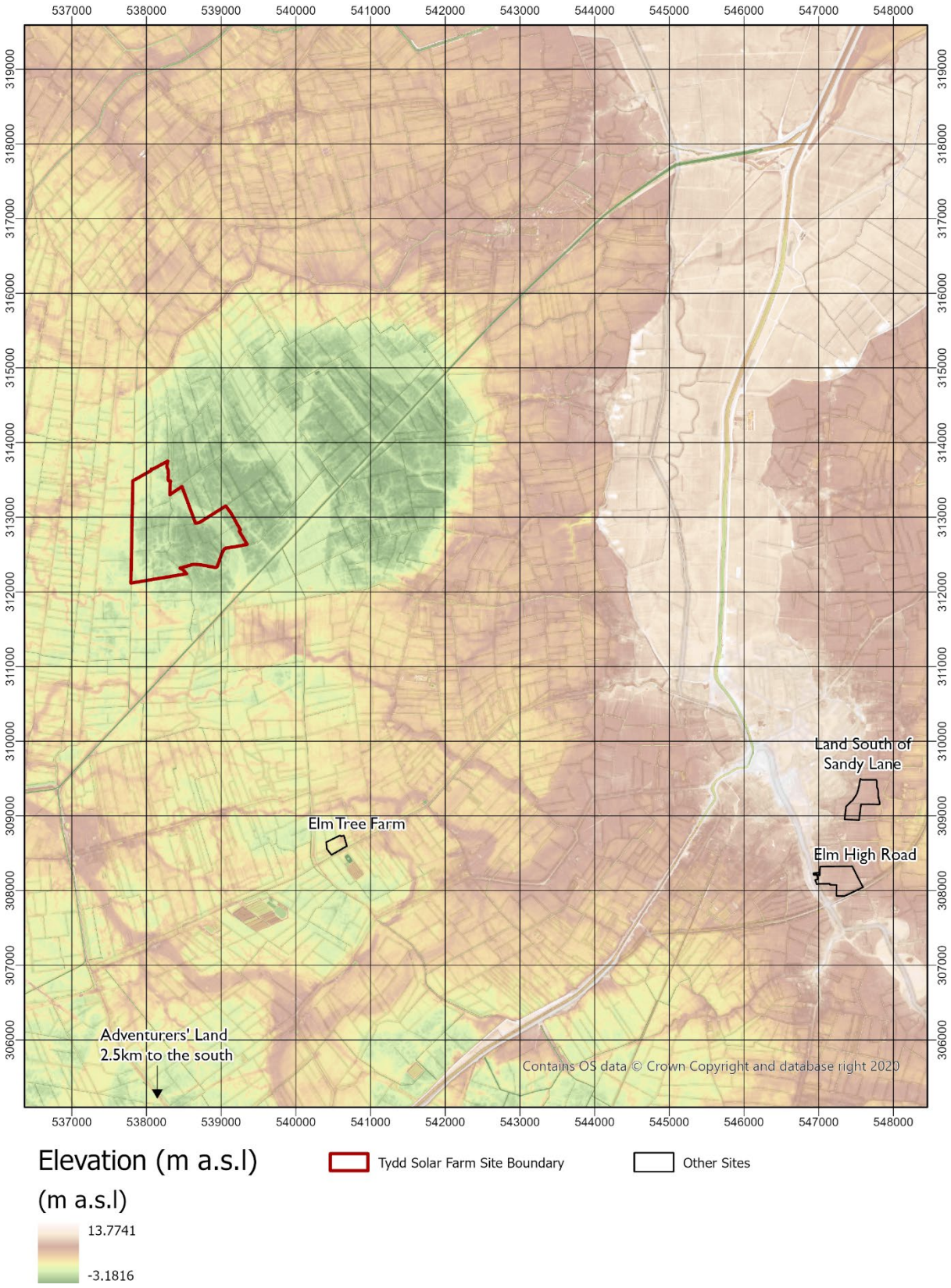

Figure 1: Location of the site at Tydd Solar Farm and the approximate positions of local sites mentioned in the text.

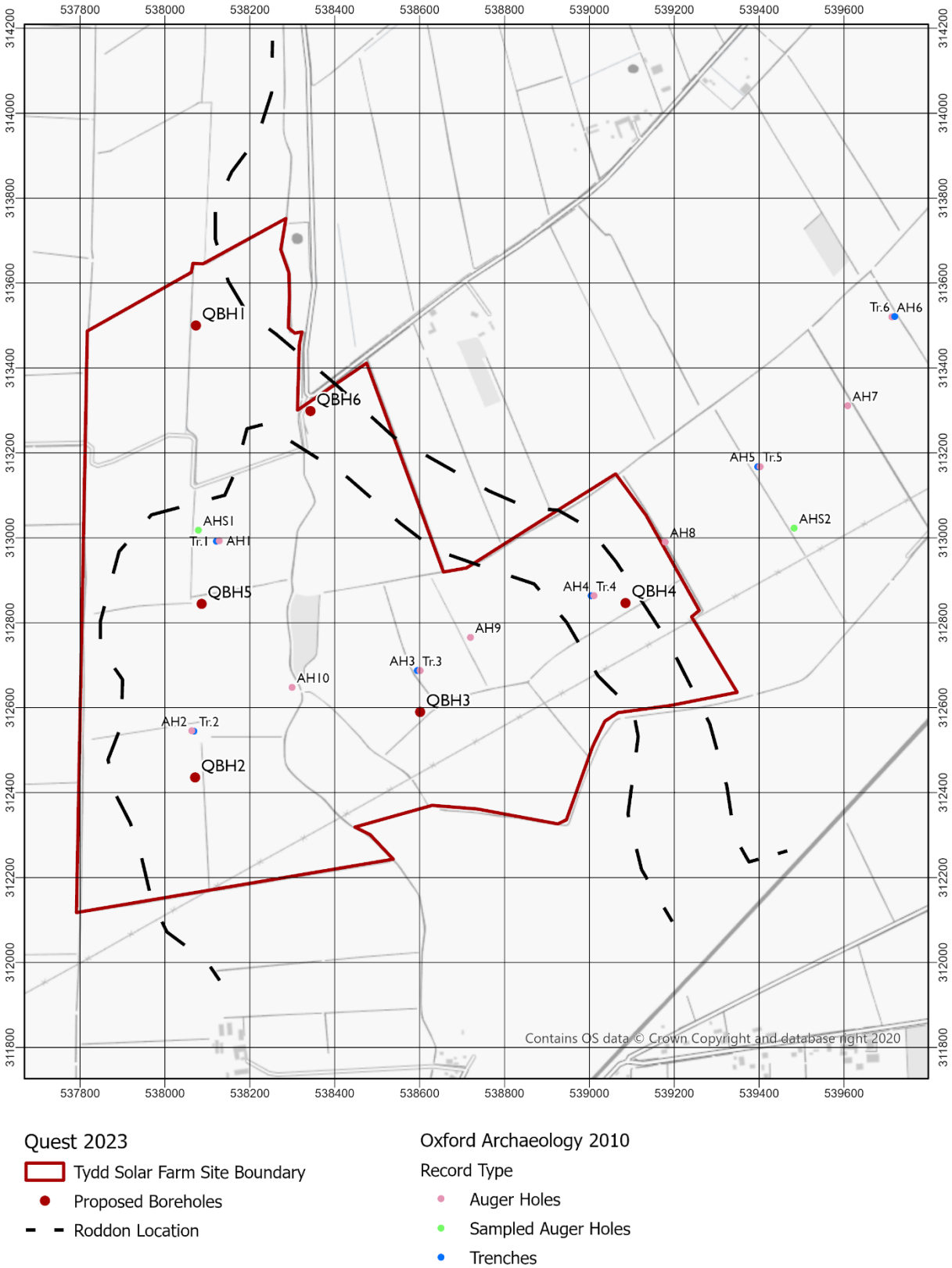

Figure 2: Location of the site at Tydd Solar Farm and the proposed positions of new Quest boreholes, alongside other previous work undertaken at the site.

5. GEOARCHAEOLOGICAL, ARCHAEOLOGICAL AND PALAEOENVIRONMENTAL SIGNIFICANCE

Through desk-based evaluation of the site and other sites in the local area, there is variation in the type, thickness and character of superficial geological deposits. Such variations represent different environmental conditions that would have existed in a given location. For example: (1) the presence of peaty or highly organic alluvium may represent former terrestrial or semi-terrestrial land-surfaces, and (2) the various sedimentary units represent periods of changing hydrological conditions or depositional characteristics (i.e. an infilling roddon). Thus by studying the sub-surface stratigraphy across the site in greater detail, it will be possible to build an understanding of the former landscapes and environmental changes that took place across space and time.

Organic-rich sediments (in particular peat) also have high potential to provide a detailed reconstruction of past environments on both the wetland and dryland. In particular, they provide the potential to increase knowledge and understanding of the interactions between hydrology, human activity, vegetation succession and climate. Vegetation changes include the Mesolithic/Neolithic decline of elm woodland, the Neolithic colonisation and decline of yew woodland; the Late Neolithic/Early Bronze Age growth of elm on Peat, and the general decline of wetland and dryland woodland during the Bronze Age. Such investigations are carried out through the assessment/analysis of palaeoecological remains (e.g. pollen, plant macrofossils & insects) and radiocarbon dating. Such investigations are routinely carried out where required as part of planning conditions; and well-preserved evidence has been recorded at localities close to the site: including at Elm Tree Farm in Tydd St Giles Fen (Waller, 1994) and Adventurers Land (Shennan, 1986)

Finally, areas of high gravel topography, soils and peat represent potential areas that might have been utilised or even occupied by prehistoric people, evidence of which may be preserved in the archaeological (e.g. features and structure) and palaeoenvironmental record (e.g. changes in vegetation composition).

6. AIMS AND OBJECTIVES

Geoarchaeological borehole records from the site are required in order to enhance our understanding of the sub-surface stratigraphy of the site, and to assess its palaeoenvironmental potential. Five research aims relevant to the geoarchaeological investigations at the site are outlined here:

1. To clarify the nature of the sub-surface stratigraphy across the site.
2. To enhance our understanding of the nature, depth, extent and date of any former land surfaces, roddons, alluvial and peat deposits.
3. To investigate the archaeological potential of the deposits and landscape features (including artefact and ecofact evidence).
4. To investigate whether the sequences contain any evidence for natural and/or anthropogenic changes to the landscape (wetland and dryland), including evidence associated with the use/function of the valley or the historic crossing point.
5. To disseminate the geoarchaeological data, including (if appropriate) publication of the results.

In order to address the first two of these aims and establish the potential of addressing aims 3 to 5, the following objectives are proposed:

1. To retrieve geotechnical borehole sequences at selected locations across the site.
2. To use the stratigraphic data from the new geoarchaeological boreholes to create a deposit model of the elevation and thickness of the main stratigraphic units at the site and within the wider area, including any peat and alluvium.
3. To carry out an environmental archaeological assessment (if necessary) of selected borehole core samples incorporating: (1) range finder radiocarbon dating to determine the approximate chronology of any periods of peat formation recorded within the borehole samples; (2) a basic assessment of their archaeobotanical content, and (3) recommendations for further environmental archaeological investigations (if necessary).
4. To carry out environmental archaeological analysis (if necessary, pending the results of the archaeological investigations) incorporating the recommendations made during the assessment.
5. To publish the results of the site investigations in an academic journal, either as a standalone site, or integrating the results of other nearby investigations, depending on the findings.

7. METHODS

Up to six geotechnical boreholes will be put down within the proposed development footprint (Table 1 and Figure 2). The location of the six geoarchaeological boreholes has been designed to permit deposit modelling across the widest possible area. In all cases the exact location of the boreholes may change slightly due to site constraints, underground services or other factors.

Table 1: Location of the boreholes.

Borehole	Easting	Northing	Location
QBH01	538073.1	313500.2	Roddon
QBH02	538070.7	312435.8	Potential Roddon
QBH03	538601.2	312589.6	Lower Lying Land
QBH04	539085.3	312846.9	Roddon
QBH05	538086.3	312844.8	Lower Lying Land
QBH06	538342.8	313298.1	Roddon

In order to address the aims and objectives of the project, the following methods will be employed:

7.1 Continuous, undisturbed borehole core samples will be obtained by using a window sampling rig. In most sediment types, this coring technique is a suitable method for the recovery of continuous, undisturbed core samples and provides sub-samples suitable for not only sedimentary and microfossil assessment and analysis, but also macrofossil analysis. Any recovered core samples will be wrapped in clear plastic to prevent moisture loss, labelled with the depth (metres from ground surface) and orientation (top and base) and returned to Quaternary Scientific (University of Reading) for storage in a purpose-built facility at 2^0C. This temperature prevents fungal growth on the core surface, which may lead to anomalous radiocarbon dates, and moisture loss.

7.2 Boreholes will be drilled to a depth that is as deep as is practicable. In all cases boreholes will aim to reach the depth of the bedrock, in order to see how the sediment sequence differs across the site. Drilling may have to stop short of the bedrock if difficulties are encountered drilling through dense minerogenic units, especially if loose sand is present within the Holocene sequence, which can run back up to coring tube rendering progress impossible.

7.3 A deposit model will be created using new and existing geoarchaeological data, providing spatial coverage across the site. This deposit model will be created using Rockworks 21 and ArcGIS Pro 2.8 and will assist in reconstructing of former land surfaces or channels, and site formation and transformation processes, such as alluvial sedimentation or peat formation.

7.4 Following the results of the deposit modelling, a report will be produced including the following sections:

- Introduction *(inclusive of site location and borehole location figures)*
- Methods
- Results and interpretation of the geoarchaeological deposit modelling *(inclusive of topographic surface and thickness models and cross sections)*
- Discussion *(inclusive of appropriate tables and figures)*
- Conclusions and recommendations for further geoarchaeological assessment
- References

7.5 The draft report will be circulated to the client for comment and submitted within 4 weeks. The final, approved report will be submitted to the Historic Environment Record and uploaded to OASIS.

8. RESOURCING

The fieldwork element of the project will be undertaken by a team of up to 2 geoarchaeologists and 2 geoarchaeological drillers over 8 working days. Preparation of the WSI, Risk Assessment and Method Statement, Deposit Modelling, Reporting, Management & Administration will be completed by the Project Manager over a period of 6 working days.

9. FURTHER GEOARCHAEOLOGICAL & PALAEOENVIRONMENTAL INVESTIGATIONS

The potential for laboratory-based assessment/analysis will be assessed during the field investigations and deposit modelling. Recommendations for further geoarchaeological or palaeoenvironmental investigations in order to assess aims 4-5 will then be made in the fieldwork report.

Should palaeoenvironmental investigations be recommended, these may include one or more of the following: radiocarbon dating, pollen, macrofossils, diatoms, insects and Mollusca. Following the assessment and/or analysis a report will be produced, detailing the results of the findings.

10. ARCHIVE DEPOSITION

Cambridge Archaeology Archive is the main repository for archaeological material found as part of archaeological fieldwork in the county. No physical archive is anticipated upon completion of the fieldwork element of the project, since the only thing derived will be core samples that will be retained within cold storage for further assessment / analysis (if recommended). However, should any finds be

recorded within the borehole core samples, the Cambridgeshire County Council Guidelines for Deposition of archaeological archives in Cambridgeshire will be followed. Should further assessment / analysis of the core samples be undertaken as part of the project, these works, and the archiving strategy will outlined within a separate WSI. Reports and relevant data will be uploaded and deposited with the ADS, and local HER (via OASIS).

11. DEALING WITH HUMAN REMAINS

Quest is not involved with the excavation of human remains, and the potential of recovering any within the proposed borehole investigations is negligible. If a find was made however, guidelines on the ethical, archaeological, scientific and legal considerations of human remains will be followed, such as:

1. 'Human bones from archaeological sites' (Historic England, 2004)
2. 'Guidance for best practice for treatment of human remains from Christian burial grounds in England' (Historic England, 2005)
3. 'Standard and guidance for forensic archaeologists' (CIFA, 2014)

12. REFERENCES

Alderton, A. and Waller M. (1994) The Wisbech Bypass. In Waller, M. (ed.) *The Fenland Project, Number 9: Flandrian Environmental change in Fenland*. East Anglian Archaeology Report No. 70. Cambridge County Council.

Batchelor, C.R. & Simmonds, M. (2023) *Sandy Lane Wisbech Cambridgeshire & Norfolk. Geoarchaeological Fieldwork & Deposit Modelling Report.* Quaternary Scientific (QUEST) Unpublished Report May 23; Project Number 128/22

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Oxford Archaeology (2010) Archaeological Evaluation and Palaeoenvironmental Assessment: Treading Wind farm Site Sutton St Edmund Lincolnshire Archaeological Evaluation Report. OA East Report No: 1210 Unpublished Report November 2010.

Shennan, I. (1986) Flandrian sea level changes in the Fenland I: the geographical setting and evidence of relative sea level change. *Journal of Quaternary Science*. 1. 119 – 154

Tröels-Smith, J. (1955) Karakterisering af løse jordater (Characterisation of unconsolidated sediments), *Danm. Geol. Unders.,* ***Ser IV* 3**, 73.

Waller, M. (1994) *The Fenland Project, Number 9: Flandrian Environmental change in Fenland*. East Anglian Archaeology Report No. 70. Cambridge County Council.

Wheeler, A. J. and Waller, M. P. (1995) The Holocene lithostratigraphy of Fenland, eastern England: a review and suggestions for redefinition. *Geological Magazine*, 132, 223 – 233.

Young, D.S. & Green, C. (2011) *Geoarchaeological Field Investigations at Elm High Road, Wisbech, Cambridgeshire (NGR: 5474 3081).* Quaternary Scientific (QUEST) Unpublished Report April 2011; Project Number 165/10.

13. DATA MANAGEMENT PLAN

Section 1: Project administration/details

Project name
Tydd Solar Farm
Quest project number
120/22
External references
Local Planning Authority and planning reference(s): ECB7231
Project description & methods
Tydd Solar Farm (NGR centred on TF 3883 1293) is considered to have good archaeological and geoarchaeological potential due to the presence of roddons identified by LiDAR imagery and during previous fieldwork on a site in the local area. A brief for the archaeological evaluation has been prepared for the pre-application by the Cambridgeshire Historic Environment Team (CHET), comprising a non-intrusive geophysical survey and geoarchaeological borehole survey. This project refers only to the geoarchaeological borehole survey; other elements of the brief are to be dealt with separately elsewhere. A WSI prepared by Quest proposes that up to 6 boreholes be put down across the site at predefined locations, prior to the creation of a deposit model. The boreholes are to be put down using a combination of hand coring and mechanical means, with select sequences retained for further work (if necessary).

The potential for laboratory-based assessment/analysis will be assessed during the field investigations and deposit modelling. Should such work be recommended, this may include one or more of the following: radiocarbon dating, pollen, macrofossils, diatoms, insects and Mollusca.

Client

Commissioned by Abrams Archaeology on behalf of PACE Titan Energy Ltd, Central House, 20 Central Avenue, St Andrews Business Park, Norwich, NR7 0HR

Project manager

Rob Batchelor (Director) or Mike Simmonds (Senior Project Manager), Quest, University of Reading

Principal investigator/researcher

Rob Batchelor (Director) or Mike Simmonds (Senior Project Manager), Quest, University of Reading

Data contact person

Rob Batchelor (Director) or Mike Simmonds (Senior Project Manager), Quest, University of Reading

Version control

Issue	*Date*	*Description/summary of revisions*
1	06/11/2023	DMP created

Related documents, data management policies and guidance

Project design/project-specific documentation

- Batchelor, C.R. (2023) *Tydd Solar Farm, Tydd St Giles, Cambridgeshire/Lincolnshire: Geoarchaeological Written Scheme of Investigation.* Quaternary Scientific (QUEST) Unpublished Report November 23; Project Number 120/22
- Cambridgeshire Historic Environment Team (2022) *Brief for Archaeological Evaluation: Land at Treading Field, Treading Drain, Tydd St Giles, Cambridgeshire*. Unpublished document October 2022.

Internal documents and guidance

- Batchelor, C.R. (2022) *Archaeological Science Quality Assurance Document*. Quaternary Scientific (QUEST) Unpublished Document; August 2022.

Key external/national standards and guidance

- English Heritage (2011) *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation (second edition).*
- English Heritage (2015) *Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record.*
- Historic England (2020) *Deposit Modelling and Archaeology: Guidance for Mapping Buried Deposits.*

Section 2: Data collection/creation

Type	*Format*	*Volume*
Grey literature report(s) (Written Scheme of Investigation (WSI), Geoarchaeological Fieldwork Report)	Word (docx) and PDF (report)	1-5 objects (generally <10mb)
Spreadsheets – Rockworks data export	Excel (.xlsx) & csv	1 x xlsx, 3 x csv (location, stratigraphy, stratigraphy tables (<1 MB total)
Borehole survey comprising up to 6 locations with selected sequences being retained for potential further work. Each point will be recorded using a differential GPS. Sedimentary data is recorded using standard techniques (e.g. Munsell, Troels Smith, 1955) in the field/laboratory, and gouge augers / cores photographed using a 64mb camera. The sedimentary descriptions are tabulated in the report, with relevant digital photos. These sedimentary descriptions are grouped into stratigraphic units; these and positional data are transcribed into an Excel spreadsheet and imported into Rockworks 21 (sqlite format). Rockworks data is exported as Excel and csv files for archive.		

Section 3: Documentation and metadata

- The project report (docx / PDF format) explains the digital dataset and is the metadata.
- All measurements provided in the report/data accord with the SI system (e.g. meters, kilometres)
- Those aspects of the digital dataset requested by the HER are transferred.
- Data documentation meets the requirements of the Project Brief and methodology described in the WSI.

Section 4: Ethics and legal compliance

- Data will be transferred to the HER on completion of the project (assuming consent provided)
- The digital archive is GDPR compliant (no individuals are named).
- The digital archive contains no sensitive data.
- Intellectual property of the digital archive rests with the authors, Quest and the University of Reading (unless otherwise stated). Formal permission to include data from external specialists and contractors is secured on the engagement of the specialist.

Section 5: Storage and backup

- Computing services at the University of Reading is managed by Digital Technology Services (DTS) and Information Management and Policy Services (IMPS).
- The University of Reading's Information Security Policy can be viewed at: https://www.reading.ac.uk/imps/-/media/a00cedaa1230433d920a6e4d6795d762.ashx.
- All electronic project data provided to or produced by Quest (email correspondence, financial data, raw data, reports etc.) is stored on a dedicated Network Drive which is automatically stored on a University of Reading computer server and is backed up on an hourly basis.
- The Quest Network Drive can be accessed on site and off campus. For the latter, access is through an intranet portal using a University username, password and two factor authentication.
- Field / lab based sedimentary descriptions are manually transcribed into Excel as soon as possible following completion and saved on the Network Drive. Spatial data and photographs are uploaded in the same way.

Section 6: Selection and preservation

- All project data (as outlined in Section 2) will be preserved.
- Data is held on the Quest Network Drive and transferred to the HER when requested.
- The project report is uploaded to OASIS
- The digital data archive is ordered, with files named and structured in a logical manner, and accompanied by relevant documentation and metadata (as outlined in Sections 2 & 3 of this DMP).

Section 7: Data sharing and accessibility

- The project is added to the OASIS index of archaeological investigations on its completion.
- The OASIS documentation includes a summary of the project results and the report (as outlined in Sections 3 & 6) as a .docx and PDF file.
- Those parts of the digital dataset required/requested by the HER will be transferred.
- Data sharing will be subject to any restrictions identified in consultation with the client and other project stakeholders.

Section 8: Responsibilities

- Rob Batchelor and/or Mike Simmonds as Project manager(s) will be responsible for overseeing all aspects of the project from initiation to completion, including the implementation of the DMP and ensuring it is revised at relevant stages
- Data capture, metadata production and data quality is the responsibility of the Project Team, assured by the Project Manager
- Storage and backup of the data is the responsibility of the field team
- Once data is transferred onto the Network Drive, storage and backup is managed by the University's Digital Technology Service.
- Data archiving is the responsibility of the Project Manager(s)
- Details of the Project Team can be found in the WSI.