



LIGHTSOURCE RENEWABLE ENERGY LTD

TRANCH FARM, WREXHAM

**PROJECT DESIGN FOR AN
ARCHAEOLOGICAL EVALUATION**

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PREPARED BY:

Frank Giecco Technical Director

APPROVED BY:

Frank Giecco Technical Director

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Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

UK Offices: Stoke-on-Trent, Cardiff, Carlisle, Edinburgh, Greater Manchester, London, Newcastle upon Tyne, Sheffield, Taunton, Truro, West Bromwich. International Offices: Almaty, Moscow

DESK BASED ASSESSMENTS
ARCHAEOLOGICAL EVALUATION
ARCHAEOLOGICAL EXCAVATION
GEOPHYSICAL SURVEY
TOPOGRAPHIC AND LANDSCAPE SURVEY
HISTORIC BUILDING RECORDING
ENVIRONMENTAL SERVICES

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1 INTRODUCTION

- 1.1 Wardell Armstrong Archaeology have been invited by Sam Clarke at Wardell Armstrong LLP, on behalf of their client Lightsource Renewable Energy Ltd, to produce a project design for an archaeological evaluation at the Trench Farm, Wrexham. This work is being undertaken in order to evaluate a double ditched feature of unknown date that may be impacted upon by the development of potential solar farm.
- 1.2 The proposed development area lies immediately to the north of Trench Farm Fisheries and Touring Park, to the southwest of Wrexham north of the Welsh border. The proposed development area is located north of Red Hall Lane, south of the Lightwood Plantation. The site is centred on Ordnance Survey grid reference SJ 385 397, and measures 21.3ha in total.
- 1.3 An archaeology and cultural heritage assessment has been prepared by Wardell Armstrong LLP, which sets out the archaeological and historical background of the site, and provides an assessment of the significance of known and potential heritage assets within the proposed development area (Wardell Armstrong 2014). The assessment has established that ten post-medieval ponds are recorded as being present within the proposed development area in the Historic Environment Record (HER), although none of these would be impacted by the proposed scheme. These are a typical characteristic of the Maelor Saesneg landscape, within which the proposed development is located.
- 1.4 This initial work was followed by a geophysical survey (Wardell Armstrong 2014b) which Areas of ridge and furrow cultivation were detected, which is believed to be medieval or post-medieval in date as this pre-dated a former field boundary and the marl pits/ponds. A number of other possible soil-filled features were detected the nature of which is uncertain. Two parallel features may represent soil-filled ditches or possibly plough furrows.
- 1.5 As a result, it has been agreed with Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust, that a single archaeological trench will be excavated over a section of this double ditched feature. This is in line with government advice as set out in Planning Policy Wales (Edition 7, July 2014) and Circular 60/96 Planning and the Historic Environment: Archaeology to provide information in relation to a proposed solar development at the site.

- 1.6 This project design is for archaeological evaluation, and has been prepared in accordance with the recommendations of English Heritage in *The Management of Archaeological Projects*, ^{2nd} ed. 1991. An updated project design for any necessary post-excavation analysis will be prepared once the results of the fieldwork project are known.

2 LOCATION AND GEOLOGICAL CONTEXT

- 2.1 The proposed development area lies immediately to the north of Trench Farm Fisheries and Touring Park, to the southwest of Wrexham north of the Welsh border. The proposed development area is located north of Red Hall Lane, south of the Lightwood Plantation. The site is centred on Ordnance Survey grid reference SJ 385 397.
- 2.2 The 21.3ha proposed development area occupies six fields of pasture, located on a slight north facing slope dropping from a height of c.70m AOD to a height of c.65m AOD. A small tributary stream of the River Dee is located through and to the west of the site boundary. The River Dee is located 2.3km to the north-east of the site.
- 2.3 The solid geology of the area comprises the Chester pebble beds formation, overlain by glacial till deposits (BGS 2001).
- 2.4 The site is located within the Penley Historic Character Area (HLC1123) of the Maelor Saesneg Historic Landscape. Outside of the settlements the Penley Historic Area is characterised by:
- Undulating farmland 30-70m AOD;
 - Wooded stream valleys;
 - Large irregular fields under pastures;
 - Small irregular fields under pasture;
 - Ridge and furrow earthworks and
 - Marl pits (ponds).
- 2.5 The site comprises 2% of the Penley Historic Character Area and 0.4% of the Maelor Saesneg Historic Landscape.

3 ARCHAEOLOGICAL BACKGROUND

- 3.1 **Introduction:** an archaeology and cultural heritage assessment has been prepared by Wardell Armstrong LLP (Wardell Armstrong 2014), a summary of which is provided below. This historical background is compiled mostly from secondary sources and from records consulted during the assessment. It is intended only as a summary of historical developments around the study area. References to the CPAT and Shropshire Historic Environment Records (HER) are included where known.
- 3.2 **Prehistoric (up to AD 410):** No prehistoric or Roman activity is recorded in the vicinity of the site.
- 3.3 **Early Medieval (c. 410 – c.1066):** The HER does not record any evidence for early medieval activity within the boundary of the site, which during this period was situated within the kingdom of Mercia. Whilst the element ‘tun’ in the place names of Knolton and Overton (located 580m south-west and 2km north-west of the site respectively), may indicate settlements established by the end of this period, it is unlikely to be the case, certainly for Overton. The element ‘leah’ in Penley, located 2km east of the site, may refer to a clearing in a wood and may indicate settlement of this date (Wardell Armstrong 2014, 6).
- 3.4 **Medieval (c.1066 to 1540AD):** A moat is recorded 840m north of the site (FL095), and two possible moats are recorded 670m southeast and 890m east of the site respectively (HER 106047 and 101830). These most likely date to the thirteenth and early fourteenth centuries and represent settlement away from the main settlements at Overton and at Penley (ibid).
- 3.5 Ridge and furrow earthworks are located 750m east and 940m north of the site (HER 128344 and 61009). It is suggested that the proposed development area was within a sparsely populated and extensive area of common pasture or waste, which contained within it large tracts of woodland. Possible settlement of the common pasture or waste, in the vicinity of the site during the latter part of the period, is indicated by the record of ‘Lightwoode’ in 1484 (HER 15680). The nature of any settlement is, however, unknown.
- 3.6 **Post-medieval and Modern (c.1540 to 1901):** The earliest cartographic evidence studied as part of the assessment was the Overton Tithe map, dated 1837. This showed the land within the site as being within six fields, the boundaries of which indicate possible assarting of former woodland. Richard Francis is recorded as owner

of the two northern and two westernmost fields (plots 794 Little Cae Coed, 796 Big Cae Coed, 824 Cae Hillock and 826 Rough Lenerack). The intersecting band of land was owned by Sir Watkin Williams Wynn (plot 1152: Cae Whith).

- 3.7 The 1873 Ordnance Survey Map, shows no change within the boundary of the site apart from addition of eight ponds relating to HER references 61059, 61060, 62507, 62488, 62489, 62491/62492 and 62496. No pond was depicted relating to HER reference 62510. This was, however, shown on the 1898 Ordnance Survey which also showed the establishment of the Wrexham and Ellesmere Railway to the immediate east of the site (HER 72342/08459). A further pond is recorded in the HER (HER 62490), but was not depicted.

Previous Archaeological Work

- 3.8 No archaeological interventions have been undertaken in the area.

4 METHODOLOGY

Project Aims

- 4.1 The aims and objectives of the project will be achieved through a programme of archaeological evaluation and post excavation assessment.
- 4.2 Wardell Armstrong Archaeology is actively remodelling its project management systems to MoRPHE (English Heritage 2006) standard, and is also in the process of getting these systems certified to meet the requirements of BS/EN/ISO 9001:2008. We are also an IfA Registered Archaeological Organisation.

Stages, Products and Tasks

Project Set-Up

- 4.3 Project set-up will include the creation of a site plan utilising up-to-date Ordnance Survey data. The plan will be created using AutoCAD 2015 software, and will form the basis of all future project work. It is understood that the mapping data will be provided by the Client.

Evaluation

- 4.4 This will comprise the excavation of a single, 25m x 1.8m trench. This trench will be used to target the double ditched feature identified in the geophysical survey and as required by Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust (pers comm. 06 November 2014).
- 4.5 This work will be undertaken according to the guidance of the Institute for Archaeologists (IfA 2008).
- 4.6 The evaluation trench will be located using GPS survey equipment to ensure that they are targeting the features identified during the geophysical survey. The final trench position will also give a minimum 10m buffer to a high pressure gas main that crosses the development site.
- 4.7 Topsoil and overburden will be removed by machine using a toothless ditching bucket under close archaeological supervision until the uppermost archaeological horizon or subsoil is reached. The trenches will then be cleaned by hand and all features

investigated and recorded according to the Wardell Armstrong Archaeology standard procedure as set out in the Excavation Manual (Giecco 2013).

4.8 In summary, the main objectives of the excavation will be:

- to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record where these are observed;
- to establish the character of archaeological features in terms of cuts, soil matrices and interfaces;
- to confirm the results of the geophysical survey;
- to recover artefactual material, especially that useful for dating purposes;
- to recover palaeoenvironmental material and industrial residuals where it survives in order to understand site and landscape formation processes and any industrial activity that may have been undertaken on the site and
- to place the site within its local, regional and national context.

4.9 The mechanical excavator will mound all spoil neatly along the trench sides allowing a suitable, safe gap between the spoil and the trench edge.

4.10 All subsequent excavation following the exposure of archaeological deposits will be by hand by a team of experienced archaeologists. The field team will carry out all excavation, cleaning, recording and sampling of surfaces and archaeological features within the trial trench using appropriate hand tools.

4.11 Features will be recorded (in plan and section) with sampling as appropriate. A minimum of 50% of identified archaeological features will be excavated and complete features, such as pits and postholes, will be excavated by half-section and linear features, such as ditches and gullies, will be sectioned appropriately (sampling no less than 25% of the feature).

4.12 All written records will utilise the WAA pro-forma record sheets. Plans and sections will be drawn on water resistant permatrace. Plans will be drawn to a scale of 1:20 and sections at 1:10. A combination of multi and single context planning system will be utilised. A full photographic record in monochrome and digital formats will be maintained. All electronic survey work will be undertaken using a TST and will be transferred into a CAD environment. The site will be levelled with respect to the Ordnance Datum, and the excavation will be tied into the National Grid.

4.13 Finds will be managed by Megan Stoakley, WAA Finds and Archives Officer. Wardell Armstrong Archaeology will undertake first aid conservation, but if further

conservation is required there will be extensive consultation with appropriate specialists. All non-modern finds will be collected and retained for processing. Ceramics and animal bone will be collected in bulk and recorded by context. Significant *in situ* finds will be recorded in three dimensions prior to collection. All appropriate procedures will be followed in the event of the discovery of artefacts covered by the provisions of the Treasure Act 1996.

- 4.14 Any environmental evidence found during the work will be sampled as recommended by the IFA, the recommended archaeobotanical sample sizes for dry deposits being 30-60 litres and for wet deposits the sample sizes should be approximately 5-10 litres. In the case of animal bones the recommended size for all deposits will be 80-100 litres for wet sieving.
- 4.15 Should any human remains be encountered, the Client, Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust, the police and the Coroner's office will be informed immediately upon the discovery of the remains. The removal of any human remains will be done under a Section 25 Licence obtained from the Ministry of Justice and Environmental Health Regulations. The relevant English Heritage guidelines, in particular the '*Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England*' (English Heritage 2005) will be adhered at all times.
- 4.16 The fieldwork programme will be followed by an assessment of the data as set out in the *Management of Archaeological Projects* (English Heritage 2nd Edition, 1991).
- 4.17 The site is presumed to be secure and will be locked to prevent any access by unauthorised persons.

Post-excavation

- 4.18 An assessment of each category of artefactual and palaeoenvironmental material will be undertaken by suitably qualified archaeological specialists as soon as possible following the completion of the fieldwork.
- 4.19 Finds assessment will be under the direction of Megan Stoakley, WAA Finds and Archives Officer. WAA will undertake first aid conservation, but if further conservation is required following the production of an assessment report, there will be extensive consultation with appropriate specialists, Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust and the client.

4.20 Assessment of each category of artefactual and palaeoenvironmental material will be undertaken by suitably qualified archaeological specialists as soon as possible following the completion of the fieldwork. Specialist services may be provided, as necessary by:

- | | |
|-------------------------|---|
| • Prehistoric Pottery | Blaise Vyner, Freelance specialist |
| • Lithics | David Jackson, WAA |
| • Roman Pottery | Louise Hird, Freelance specialist |
| • Medieval Pottery | Ian Miller, Oxford Archaeology |
| • Post Medieval Pottery | Jo Dawson, Greenlane Archaeology |
| • Glass | Rachel Tyson, Freelance specialist |
| • Wood | Ian Panter, York Archaeological Trust |
| • Leather | Tim Padley, Tullie House Museum |
| • Textiles | Eleanor Palmer (Lancashire Museums Service) |
| • Conservation | Archaeological Services, Durham University |
| • Archaeometallurgy | Gerry Macdonnell; Freelance specialist |
| • Coins | David Shotter; Freelance specialist |

4.21 Detailed work on any environmental samples will take place at the unit's premises at Carlisle. Further specialist services will be utilised at the University of Durham, if required. Any environmental evidence found during the work will be sampled according to the Wardell Armstrong Archaeology standard environmental sampling procedure and nationally agreed procedures (English Heritage 2002 Environmental Archaeology: A Guide to the Theory and Practice of Methods from Sampling and Recording to Post-Excavation).

4.22 Any wooden structures identified will be recorded in situ where possible, and sampled in accordance with English Heritage recommendations (English Heritage 2011 Waterlogged Wood: Guidance on the recording, sampling, conservation and curation of waterlogged wood). Representative samples will be selected in order to answer specific questions, including species identification, environmental conditions, and for dendrochronological dating, in agreement with Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust. Large timbers will be lifted and stored on site, until they can be delivered to York Archaeological Trust for specialist conservation if required.

4.23 Environmental samples will be processed under the direction of Don O'Meara, WAA Environmental Officer. This is in order to assess the environmental potential of

deposits across the site, including the fills of ditches, gullies, pits and postholes, buried soils, silts and occupation layers. Don O'Meara will also assess any animal bone recovered during the excavation and make recommendations for full analysis. Articulated human remains will be assessed by Megan Stoakley, WAA Finds and Archives Officer, who is a professionally trained osteoarchaeologist.

- 4.24 The fieldwork programme will be followed by an assessment of the data, the process being adopted as set out in the Management of Archaeological Projects (2nd Edition, 1991).

Archive Report

- 4.25 If required, and following on from the recommendations of the assessment document - an appropriate programme of post-excavation analysis will be undertaken to prepare a research archive for the project, as detailed in 'Appendix 6' of MAP2.
- 4.26 As necessary, this could involve the compilation of an 'Archive Report', detailing the stratigraphic history of the site and a full textual account setting out the significance of the structural, artefactual and palaeoenvironmental evidence.
- 4.27 The 'Archive Report' will include the results of full analysis of palaeoenvironmental samples and ceramic material and all other categories of artefacts, as well as the results of appropriate absolute dating analysis, such as radiocarbon dating.
- 4.28 A separate costing for the full post-excavation analysis and production of a final report will be provided upon request, following consultation with the Clwyd-Powys Archaeological Trust and the relevant archaeological specialists.

5 PUBLICATION

- 5.1 If justified, a publication article may be produced for submission to a suitable specialist journal, in agreement with the client and the Clwyd-Powys Archaeological Trust. The cost of this article will be provided upon completion of all post-excavation analysis.
- 5.2 Wardell Armstrong Archaeology and the Clwyd-Powys Archaeological Trust support the Online Access to the Index of Archaeological Investigations (OASIS) project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this study will be made available by Wardell Armstrong Archaeology, as a part of this national project.

6 HEALTH AND SAFETY

- 6.1 Wardell Armstrong Archaeology is fully compliant with HSE guidance and legislation. It is the duty of all personnel, under the Health and Safety at Work Act etc 1974, to take reasonable care for the health and safety of him/herself and other persons who may be affected by his/her acts or omissions at work. He/she must also co-operate with the Technical Director regarding any duty or requirement imposed on the Technical Director or any other person by or under any of the relevant statutory provisions so far as it is necessary to enable that duty or requirement to be performed or complied with. Any personnel contravening relevant statutory provision may be prosecuted in a Sheriff Court (Scotland) or Magistrates' Court. All personnel taking part in field work have a responsibility to adhere to sensible standards of behaviour. Personnel are made aware that fieldwork activities have inherent hazards which staff members minimise with appropriate safety precautions. However, the potential dangers make it imperative that personnel co-operate by behaving responsibly in order to reduce the risk of accidents.
- 6.2 Wardell Armstrong Archaeology Health and Safety Statement conform to the provisions of the Standing Conference of Archaeological Unit Managers (SCAUM) Health and Safety Manual. Field projects are undertaken according to the SCAUM Health and Safety in Field Archaeology (SCAUM 1986) and according to the Wardell Armstrong Standard Safety Procedure. Risk assessments are undertaken prior to any fieldwork taking place and staff are fully briefed regarding on site hazards and safe working procedure. Full consideration will be given to health and safety issues during all fieldwork for this project.

7 STAFFING AND COMPANY SUMMARY

- 7.1 The work will be undertaken under the overall direction of Frank Giecco, BA (Hons) Dip Arc MIfA, WAA Technical Director. Day to day management of the project will be undertaken by Martin Railton, BA (Hons), MA, MIfA WAA Senior Project Manager, who will liaise with Frank Giecco on a weekly basis.
- 7.2 The archaeological evaluation will be undertaken by a WAA Project Archaeologist at supervisor level, and a Project Assistant, to be confirmed at commencement of the project. All staff are highly experienced archaeologists with significant experience of rural sites throughout the UK.
- 7.3 Wardell Armstrong Archaeology (formerly North Pennines Archaeology) is the archaeological contracting division of Wardell Armstrong LLP. The company has a fully staffed professional field team and is highly experienced in the assessment and recording of archaeological sites and monuments throughout the UK. Based in Carlisle, Cumbria, the company has considerable experience extending over more than fifteen years of archaeological investigation.

8 WORK TIMETABLE

- 8.1 It is anticipated that the project will commence within one week following the acceptance of the project design by Mark Walters, Development Control Archaeologist at Clwyd-Powys Archaeological Trust. It is expected that the evaluation will be undertaken over 2 days.
- 8.2 An Client report detailing the results of the fieldwork will be available within two weeks of the completion of the fieldwork.
- 8.3 Copies of the assessment report will be deposited with the Clwyd-Powys Archaeological Trust and the WAA archive no later than six months following the completion of all fieldwork.

9 ARCHIVE, OWNERSHIP AND STORAGE OF FINDS

- 9.1 The site archive will be prepared to the standard specification in the Management of Archaeological Projects, appendix 3 (1991), and Brown, DH, 2011, *Archaeological Archives A Guide to Best Practice in Creation, Compilation, Transfer and Curation*.
- 9.2 All finds belong to the landowner, but initially they will be transferred to the Wardell Armstrong Archaeology's premises at Carlisle. Agreement will be sought on the final deposition of finds prior to the fieldwork commencing.
- 9.3 During and after the excavation, all recovered artefacts will be stored in the appropriate conditions to ensure minimal deterioration and loss of information (this will include controlled storage, correct packaging, regular monitoring of conditions, immediate selection for conservation of vulnerable materials). All work will be carried out in compliance with IFA Guidelines for Finds Work and those set by UKIC.
- 9.4 Ultimately it is recommended that the curation of both finds and the site archive should be vested in a local specialist museum.

10 BIBLIOGRAPHY

British Geological Survey (2001) Solid Geology Map: UK North Sheet, 4th edition

Brown, D.H (2011) *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*, Archaeological Archives Forum

English Heritage (1991) Management of Archaeological Projects (MAP2),. London: English Heritage

English Heritage (2002) *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*, London: English Heritage

English Heritage (2005) *Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England*, London: English Heritage

Giecco, F O (2012) *Wardell Armstrong Archaeology Ltd Excavation Manual*, Unpublished document

IfA (2008a) *Standards and Guidance for Archaeological Watching Briefs*. Reading: Institute for Archaeologists. Revised 2008

IfA (2008b) *Standards and Guidance for Archaeological Excavation*. Reading: Institute of Field Archaeologists. Revised 2008

Wardell Armstrong (2014) Trench Farm Archaeology and Cultural Heritage Assessment

Wardell Armstrong (2014b) *Trench Farm Geophysical Survey Report*

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)845 111 7777

CARDIFF
22 Windsor Place
Cardiff
CF10 3BY
Tel: +44 (0)29 2072 9191

EDINBURGH
Suite 2/3, Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GREATER MANCHESTER
2 The Avenue
Leigh
Greater Manchester
WN7 1ES
Tel: +44 (0)1942 260101

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)20 7242 3243

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

PENRYN
Tremough Innovation Centre
Tremough Campus
Penryn
Cornwall
TR10 9TA
Tel: +44 (0)1872 560738

SHEFFIELD
Unit 5
Newton Business Centre
Newton Chambers Road
Thorncliffe Park
Chapelton
Sheffield
S35 2PH
Tel: +44 (0)114 245 6244

TRURO
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EH
Tel: +44 (0)1872 560738

WEST BROMWICH
Thynne Court
Thynne Street
West Bromwich
West Midlands
B70 6PH
Tel: +44 (0)121 580 0909

International offices:

ALMATY
29/6 Satpaev Avenue
Rakhat Palace Hotel
Office Tower, 7th Floor
Almaty
050040
Kazakhstan
Tel : +7-727-3341310

MOSCOW
Suite 2, Block 10,
Letnikovskaya St.
Moscow, Russia
115114
Tel: +7(495) 980 07 67

Wardell Armstrong Archaeology:

CUMBRIA
Cocklakes Yard
Carlisle
Cumbria
CA4 0BQ
Tel: +44 (0)1228 564820

