

The Landscape Research Centre



The Landscape Research Centre

The Old Bridge Barn

Yedingham

North Yorkshire

YO17 8SL

☎ 01944 728 441

Email: d.powlesland@btinternet.com

www.landscaperesearchcentre.org

Registered Charity No. 326710

Registered Company No. 01852824

Friday 23rd September 2011

Proposal

West Heslerton Wold Wind-farm

Archaeological Evaluation

Interim Report

For Attn.
Mark Turner
Associate Director
Arcus Renewable Energy Consulting Ltd
2F Swinegate Court East
3 Swinegate
York
YO1 8AJ

Table of Contents

Table of Contents	1
Table of Contents	2
Table of Figures	2
Introduction	3
The Site	3
Archaeological Background	3
Evaluation - Aims and Objectives	4
Methodology	4
Setting Out	4
Machine Excavation	4
Mapping	4
Recording	4
Results	5
Site 323	6
Site 342	7
Site 343	8
Site 349	9
Site 350	10
Site 318	10
Site 327	11
Site 325	12
Site 542	13
Conclusion	14
Copyright	14
Bibliography	14

Table of Figures

Figure 1: Site location showing the original areas of geophysical survey	3
Figure 2: Site location showing the location of the turbines and related access roads	6
Figure 3: Site 323 showing the results of the geophysical survey and location of trenches	6
Figure 4: Site 342 showing the results of the geophysical survey and location of trenches	7
Figure 5: Site 343 showing the results of the geophysical survey and location of trenches	8
Figure 6: Sites 349 and 350 showing the results of the geophysical survey and location of trenches	9
Figure 7: Site 318 showing the results of the geophysical survey and location of trenches	10
Figure 8: Site 327 showing the results of the geophysical survey and location of trenches	11
Figure 9: Site 325 showing the results of the geophysical survey and location of trenches	12
Figure 10: Site 542 showing the results of the geophysical survey and location of trenches	13

Introduction

This document serves as an interim report for the evaluation by trial trenching of the Phase 1 wind farm installation over an area to the south of East Heslerton Wold, North Yorkshire (NGR SE 492820 474090).

The work is being carried out as part of a staged evaluation of the site on behalf of Arcus Renewable Energy Consulting Ltd.

The Site

The Yorkshire Wolds consist of a series of low rolling hills marking the northern limit of the Cretaceous chalk deposits in Britain. They are punctuated by a series of dry valleys filled with colluviums, and the Great Wold Valley traverses the area to the south of the current survey area in a roughly east-west direction. The Gypsy Race, a small stream which periodically runs through the Great Wold valley, formed the focus for much prehistoric activity.



Figure 1: Site location showing the original areas of geophysical survey

Archaeological Background

The Wolds have long been known to contain a large number of both buried and upstanding archaeological monuments, and many round barrows (Bronze Age burial monuments) were excavated across the Wolds during the late 19th Century, primarily by Mortimer (Mortimer 1905) and Greenwell (Greenwell & Rolleston, 1877).

Early Neolithic long barrows are also present across the Wolds, as well as henge and cursus monuments (primarily in the Rudston area). The Wolds are also the location of a number of long boundary monuments, many beginning as pit alignments. Sometimes these alignments were left as a series of regularly spaced pits, while others were ultimately unified by the creation of ditches and banks. Collectively, these features are known as the 'Wold Entrenchments', and served to divide the Wolds into a number of distinct areas.

Evaluation - Aims and Objectives

An evaluation of the area potentially impacted by the proposed installation of ten wind turbines, together with their accompanying construction infrastructure, was undertaken by the insertion of forty two trial trenches. These trenches were positioned to best characterise the archaeological potential of the site in accordance with the principles set out in PPS5 (Planning for the Historic Environment – Planning Policy 5). This initial stage of trenching ran concurrently with the farming activity in the area.

The trenching targeted the geophysical anomalies identified in the LRC survey with a view to providing information regarding their character, date and archaeological potential.

Methodology

A total of forty one trenches have been excavated by a JCB excavator fitted with a toothless bucket, targeting the anomalies recorded in the geophysical survey (Figure 1). It is envisaged that ten wind turbines will be erected, and three trenches in each of the areas to be impacted by their construction have been investigated. The individual trenches measure an average of 10m in length and 2m in width.

Setting Out

All trenches were set out in accordance with the approved layout using total station or GPS equipment to ensure accurate positioning.

Machine Excavation

All of the trenches were excavated by a JCB mechanical excavator fitted with a toothless ditching bucket under the direction of an experienced archaeologist. Plough soil and subsoil were removed in a series of level spits down onto the first archaeological horizon or natural subsoil. Plough soil and subsoil was stockpiled separately.

Mapping

After hand excavation of all archaeological and natural features, the stripped area was planned at an appropriate scale (generally 1:20). All images used in this interim report use Google Earth imagery as a background map.

Recording

All archaeological features and deposits encountered during the evaluation were recorded using hand held computers and a continuous unique numbering system.

Plans at appropriate scales have been prepared, showing the trenches investigated and their relation to more permanent topographical features. The plans also show the location of contexts observed and recorded during the course of the investigation. Other plans, sections and elevations of archaeological features and deposits were drawn at scales of 1:10, 1:20 and 1:50 as appropriate.

The spot heights of all principal features and levels have been calculated in metres relative to Ordnance Datum, correct to two decimal places.

Digital photographs were taken as necessary, producing an additional visual record which will serve to support report preparation and will form part of the archive standard material.

Results

A series of evaluation trenches were distributed across nine individual sites, themselves under the ownership of three separate farmsteads. The farms and their respective owners are as follows: Ling Hall Farm (Mr and Mrs Mason), East Heselton Wold Farm (Mr and Mrs Cornforth) and Manor Farm (Mrs Ireland).

The rationale behind the chosen location for each trench, given the limited overall area of excavation, maximised the potential understanding of any impact upon the underlying archaeology by the installation of the ten turbines and related access routes.

For the purpose of this interim report, the excavation results of the trial trenches are summarised collectively for each of the nine sites. A fully detailed account of each individual trench in turn will be produced within the final report.

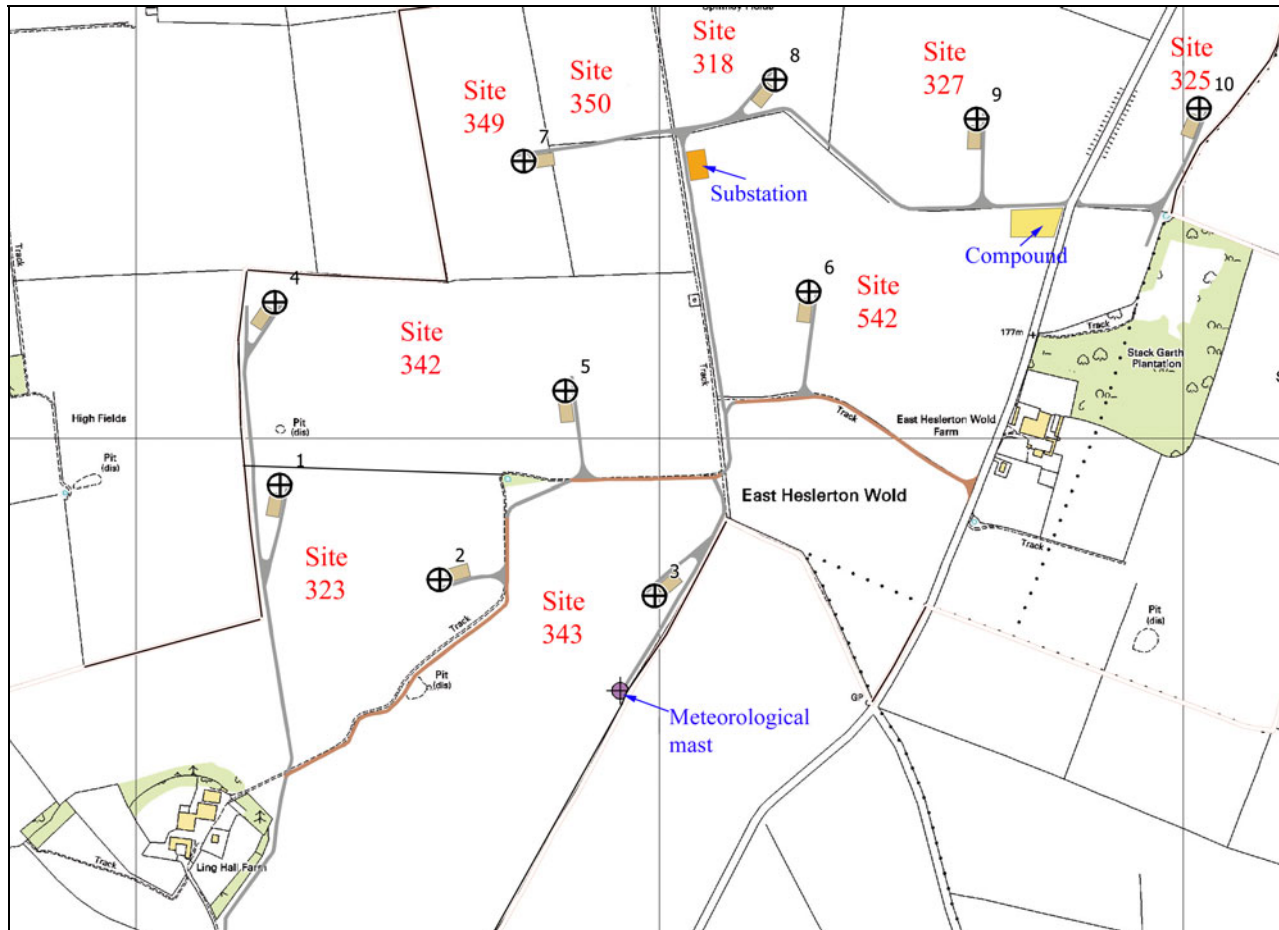


Figure 2: Site location showing the location of the turbines and related access roads

Site 323

Site 323 (Figure 2) is located to the north east of Ling Hall Farm, and consists of a series of small dry valleys sloping on a north-west to south-east orientation. A series of eight trenches were positioned in order to investigate the impact of turbines 1 and 2 and the related access road.

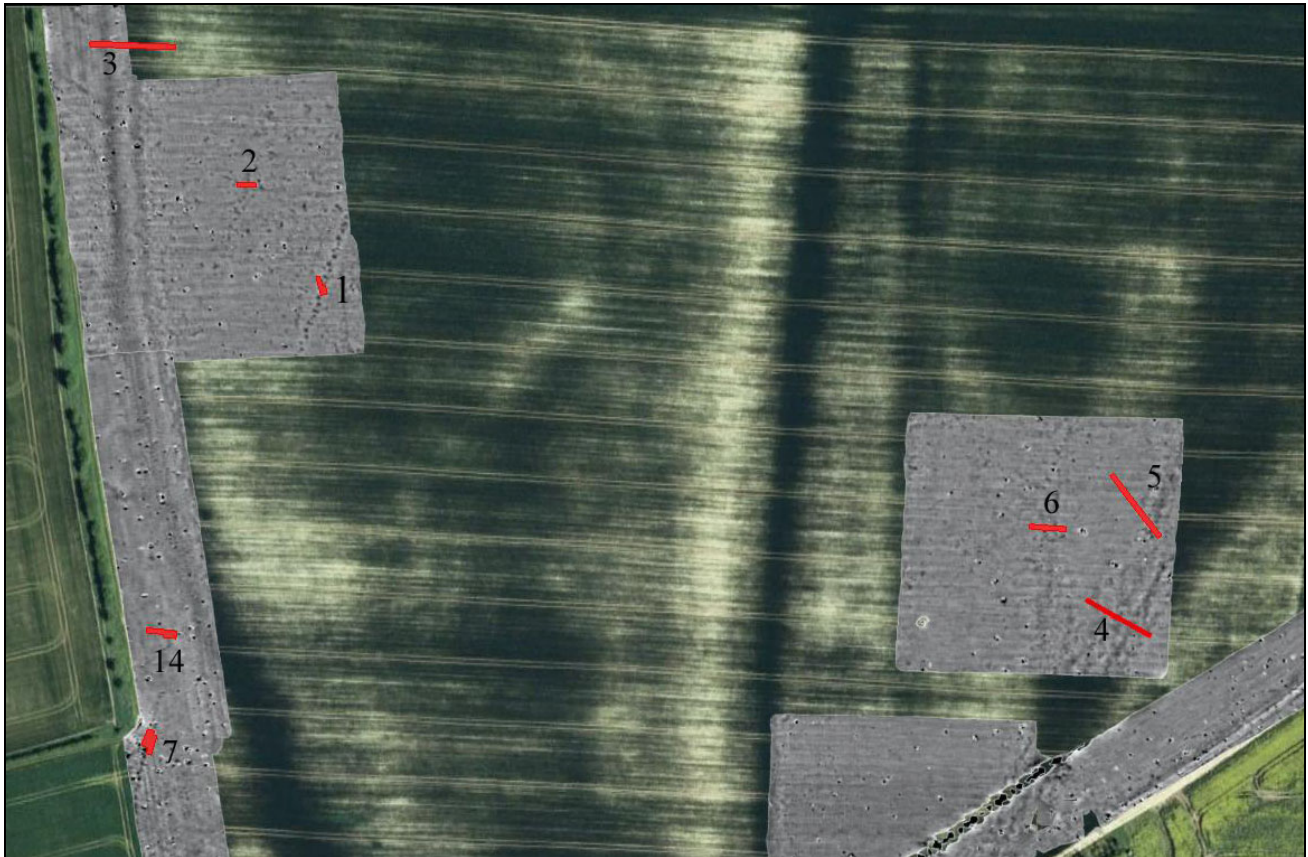


Figure 3: Site 323 showing the results of the geophysical survey and location of trenches

Three trenches (Nos. 1, 7 and 14) were positioned in order to investigate the north-east/south-west pit alignment identified through geophysical survey and crossing the north-west part of the site. A total of four pits with average dimensions of 1.50m in length, 1.20m in width and 0.70m in depth were excavated. The gap within each pit appeared to be no wider than 1.00m. All the pits were filled with a uniformed brown silty clay deposit mixed with sporadic small fragments of chalk.

The proposed location of both turbines lies within the area of a dry valley geographical feature. Two trenches (Nos. 3 and 4) were positioned in order to determine the depth and nature of the accumulated deposits which typically infill the base of these natural features. The natural bed rock was reached at an average depth of 1.7m from ground surface, overlain by several light brown sandy silt deposits.

The remaining three trenches (Nos. 2, 5 and 6) were positioned in order to investigate the nature of several linear anomalies discovered by the geophysical survey. Each anomaly was found to possess an irregular profile and shape once excavated, with the same reddish brown silty clay single fill throughout. These characteristics identified the anomalies as natural features associated with periglacial activity.

Site 342

Rectangular in shape, this site is located between 323 and 343 to the south and 349 and 350 to the north (Figure 2). Two turbines are proposed within this site; turbine 4 located towards the north-west corner and turbine 5 positioned to the centre.

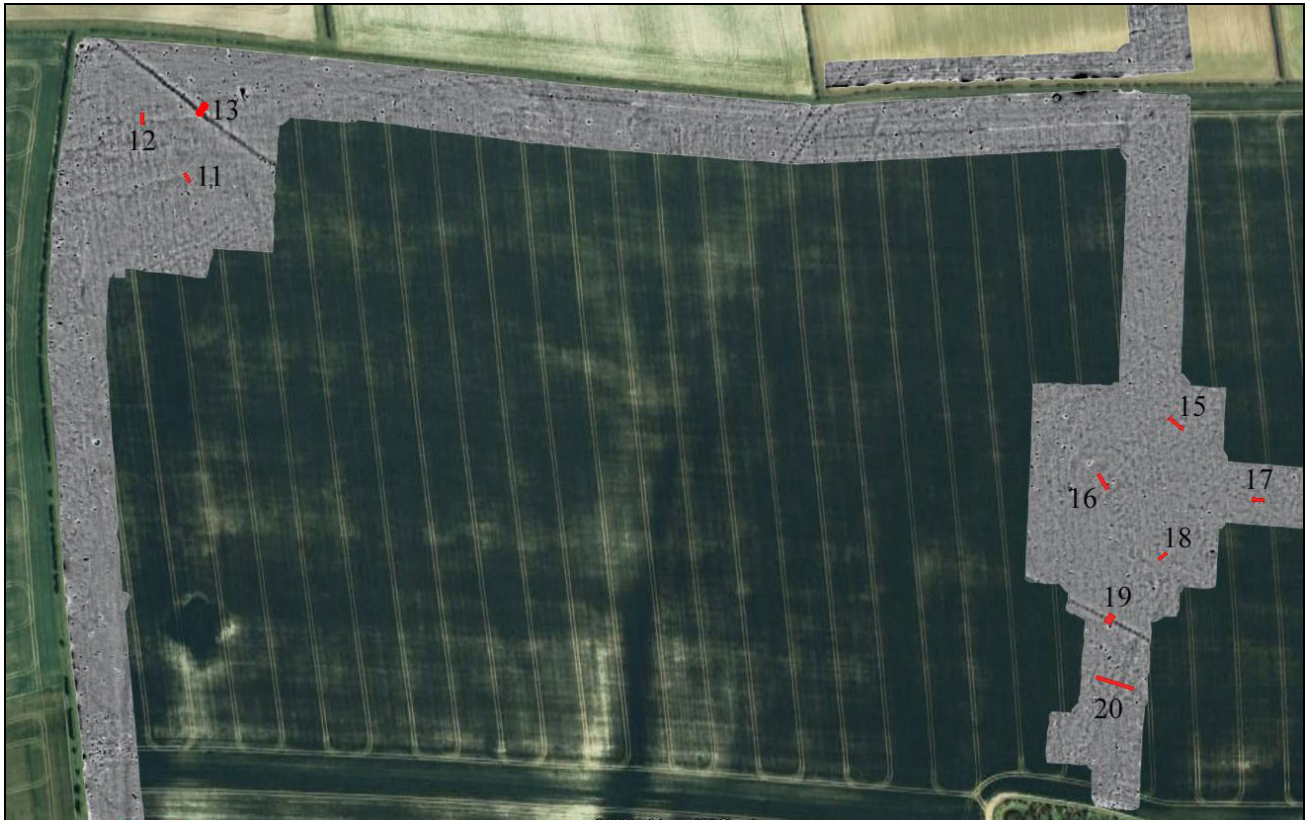


Figure 4: Site 342 showing the results of the geophysical survey and location of trenches

Excavation in 342 was divided into nine trenches, two (Nos. 3 and 16) positioned over the north-west/south-east pit alignment, with the remaining seven targeting linear geophysical anomalies of potential archaeological significance.

The pits in this alignment are somewhat larger than those identified at site 323, each measuring around 2.50m in length, 2.10m in width and approximate depth of 0.80m. and set at circa 0.50m apart. The excavation of these features revealed that, at a later stage, the pits were connected by the digging of a shallow ditch, measuring an average of 3.10m in width and 0.50m in depth, filled by a single compact brown silty clay deposit.

All the geophysical anomalies excavated within the other seven trenches were determined to be to the result of periglacial rather than human activity in the. All features possessed an irregular shape in both plan and profile, and were filled by a reddish brown sandy silt deposit. In one of these natural features two fragments of flint and several extremely abraded fragments of pottery were found, redeposited through animal action from a source outside the excavated area.

Site 343

Located east of Ling Hall Farm, to the south of site 342 and east of site 342, site 343 is sub-rectangular in shape and follows a north-east to south-west orientation, with its surface sloping downwards to the south-west. It is proposed to erect a single turbine (turbine 3) and a meteorological mast along the south-eastern edge of this site (Figure 2).



Figure 5: Site 343 showing the results of the geophysical survey and location of trenches

The area to be impacted by the location of turbine 3 was investigated by the excavation of three trenches (Nos. 8-10), each targeting geophysical anomalies. A fourth trench (No 42.) was excavated in order to determine the presence or absence of any archaeological features under the sub-station footprint.

Excavation confirmed that all the targeted anomalies within the turbine 3 area were of natural origin relating to periglacial activity. All features demonstrated the characteristic irregular shape in both plan and profile.

The excavation of the trench located within the area of the proposed meteorological mast revealed the presence of a hitherto unidentified small linear feature running in a north-west to south-east direction, and interpreted as a possible boundary ditch.

Site 349

Site 349 is rectangular in shape and follows a north/south alignment, its boundaries meeting to the south with site 342 and to the west with site 350 (Figure 2). The ground here is relatively level.

The proposed location of turbine 7 lies in the centre of this site, with an access road running east to west, across site 350 into site 318 to connect with turbine 8. Four trenches (Nos.26-29) were positioned within the footprint of turbine 7.



Figure 6: Sites 349 and 350 showing the results of the geophysical survey and location of trenches

A double pit alignment, previously identified by the geophysical survey, was investigated through the excavation of two of the pits (Trench 29), both having average dimensions of 2.00m in length, 1.60m in width and 0.55m in depth, filled by a single brown silty clay deposit. This double pit alignment runs on a north-east/south-west orientation with the width between the parallel pits maintaining an average of 12 metres, where the gap between each singular pit is not greater than 1.00m. The feature runs across site 342 into site 323, where it reduces to a single line of pits. Unfortunately, it was not possible to determine through the geophysical survey, how this double line of pits merge into a single one.

The remaining three trenches (Nos. 26, 27 and 28) were excavated to investigate the remaining geophysical anomalies within the area of turbine 7, each of which were determined to be of natural origin with no archaeological significance, with the exception of a single ditch running on an east to west alignment, measuring 0.58m in width and 0.33m in depth, filled by a single gravelly brown silty clay deposit.

Site 350

A track running from north to south serves as a boundary between site 350 and site 318; site 350 also shares boundaries with site 349 to the west and site 342 to the south (Figure 2). Turbines 7 and 8 are intended to be joined by a corridor which would run from east to west across the centre of site 350. A single trench (No. 30) was positioned along the proposed corridor to target a linear anomaly revealed by the geophysical survey. Once more, excavation revealed the anomaly to be a geological feature associated with periglacial rather than human activity (Figure 6).

Site 318

Located between sites 350, 327 and 542, site 318 contains the proposed location of turbine 8, along its southern edge. A corridor running along the southern boundary of this site and into site 327 is intended to connect turbines 8 and 9 (Figure 2).



Figure 7: Site 318 showing the results of the geophysical survey and location of trenches

Three trenches (Nos. 31-33) were excavated in site 318 in order to investigate the linear anomalies identified through the geophysical survey. Two were placed within the area which will be impacted by turbine 8, with a third trench targeting the route the corridor between turbines 8 and 9.

The only archaeological feature identified was within the boundaries of the proposed corridor (Trench 33); a shallow linear feature running from north-east to south-west across the south-east corner of the site. This feature has been identified as a possible boundary ditch, measuring 0.90m in width and 0.15m in depth, filled by a single brown silty clay deposit. Each of the other anomalies were determined to be of geological nature, one a sink hole and the remaining two representing the effects of paleoglacial forces.

Site 327

The area under threat by Turbine 9 is situated along the southern edge of site 327. This site is located to the east of site 318 and north of site 542, and is flanked by White Gate road to the east (Figure 2).



Figure 8: Site 327 showing the results of the geophysical survey and location of trenches

Three trenches (Nos. 35-37) were positioned within the proposed turbine zone and one (No. 34) within its associated corridor area. Each trench was positioned to determine the nature of geophysical anomalies and to assess their archaeological value.

Two trenches, 35 and 37, were excavated in order to investigate the north-south pit alignment. Two large pits from within this feature were tested, both having average dimensions of 2.20m in length, 1.60m in width and 0.50m in depth, and set at circa 1.00m apart from each others. No dating material was recovered during the excavation of these pits.

Another archaeological feature was identified in trench 34, in the form of a possible shallow boundary ditch, 1.70m in width and 0.20m in depth containing a single gravelly fill. The remaining geophysical anomaly was determined to be no more than a further example of glacial forces once at work in the Wolds.

Site 325

Located north of East Heselton Wold Farm and flanked to the west by White Gate road (Figure 2), the surface of site 325 is of an undulating nature, sloping quite steeply downwards towards north.



Figure 9: Site 325 showing the results of the geophysical survey and location of trenches

This site is intended to house turbine 10 along its eastern edge, half way down the slope. Two trenches (Nos. 38 and 39) were positioned in order to investigate linear anomalies revealed in the geophysical survey. One of these anomalies appeared to be the base of a north sloping dry valley filled by three large sandy silt deposits, while the other was revealed to be of geological origin.

Site 542

Site 542 lies between sites 342 and 350 to the west, sites 318 and 327 to the north, and East Heslerton Wold Farm to the east (Figure 2).

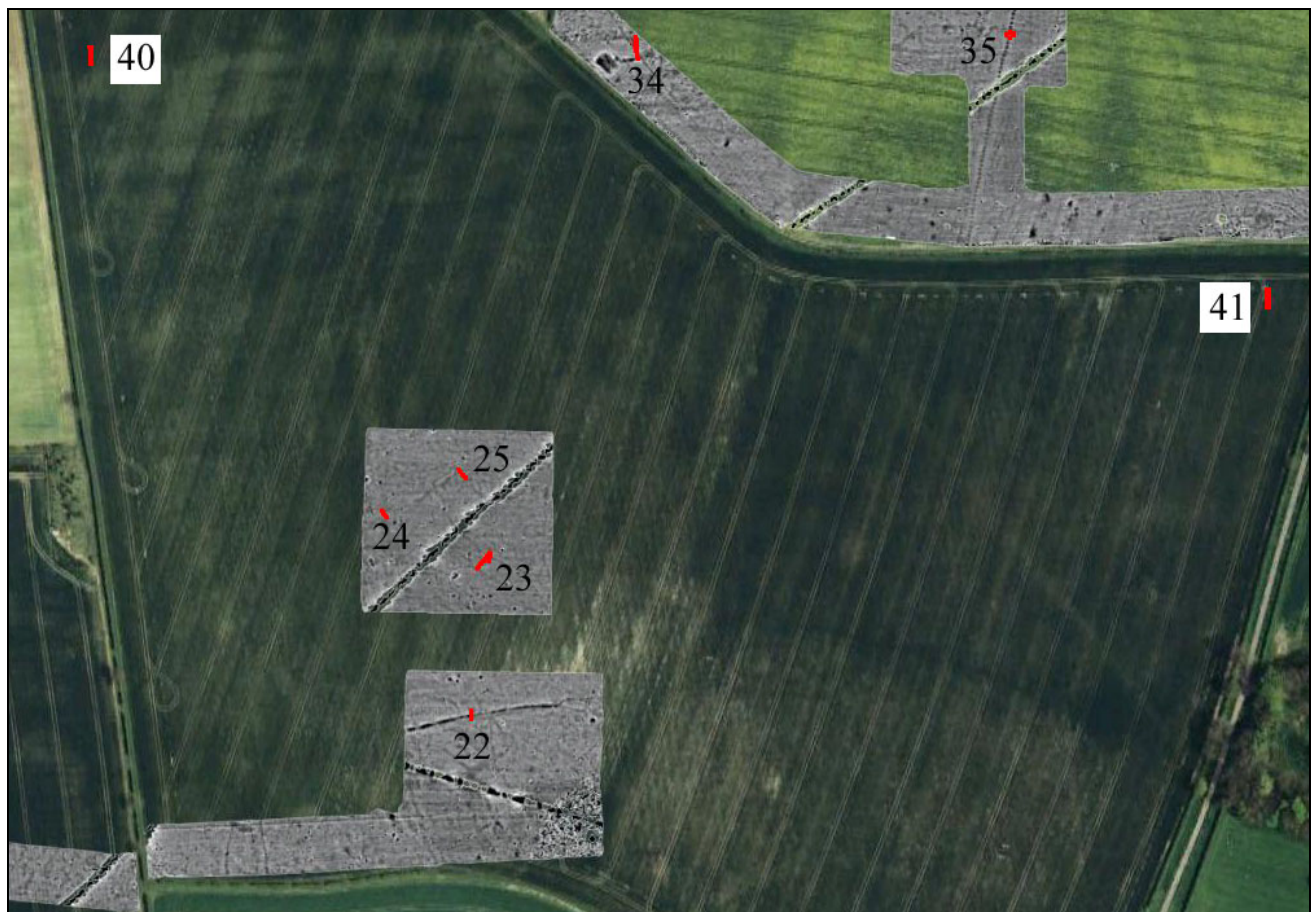


Figure 10: Site 542 showing the results of the geophysical survey and location of trenches

The north-east corner of this site will be occupied by the turbine construction compound (Trench 41), while a sub station is to be positioned in the north-west corner (Trench 40). As no geophysical survey was undertaken over these areas, locations within the footprint of both proposed facilities were selected to test for the presence of archaeological features. A further four trenches (Nos. 22-25) were positioned within the intended locations of turbine 6 and its associated access road, targeting linear geophysical anomalies.

The two trenches excavated in the compound and sub station areas revealed the presence of two natural features of paleoglacial origin.

At the proposed site of turbine 6 only natural features of geological origin were discovered, again with a characteristically irregular shape and profile and reddish brown silty fill. On the site of the access road a linear anomaly was determined to be archaeological in nature, most likely the terminus of an east/west orientated boundary ditch, and measuring 1.70m in width and 0.32m in depth. Evidence of burning activity of unknown date was also discovered, in the form of a reddish burnt clay and associated charcoal contained within a shallow sub circular scoop approximately 1.20m in diameter and no deeper than 0.04m.

Conclusion

Considering the limited scale of the investigation with regard to the many linear anomalies revealed by geophysical survey the results have confirmed the archaeological nature of most of those linear anomalies. A total of forty one trenches were excavated to determine the nature of those anomalies likely to be impacted by the installation of ten wind turbines and associated access roads, extending over nine large fields/sites.

An average of three trenches were positioned within each of the proposed turbine locations. The remainder targeted geophysical anomalies occurring along the access corridors, and within the compound and sub station areas.

In conclusion, ten large sub circular pits, eight linear features, an area with evidence of burning, and forty natural paleoglacial anomalies were excavated and recorded. The pits are components of three pit alignments, two of which follow a north-east to south-west alignment crossing sites 323, 342, 349 and 327, while the third traverses site 342 in a north-west to south-east direction. All the linear features were interpreted as possible field boundary ditches.

No material was recovered to enable the secure dating of any archaeological features, with the exception of some small charcoal fragments from within the burnt area in Site 542, which could provide a radiocarbon date.

Copyright

Copyright for the archaeological work will lie with the Landscape Research Centre.

Bibliography

English Heritage, 1991. Management of Archaeological Projects. 2nd Edition

English Heritage, 2002. Environmental Archaeology: a guide to the theory and practice of methods, sampling and recovery to post-excavation.

Museum and Galleries Commission 1992 Standards in the Museum Care of Archaeological Collections

United Kingdom Institute for Conservation, 1990. Guidelines for the preparation of excavation Archives for long-term storage.

Watkinson D, & Neal A V, 1998. First Aid for Finds. United Kingdom Institute for Conservation and Rescue: The British Archaeological Trust.

Greenwell, W and Rolleston, G. 1877 *British Barrows*, Oxford University Press.

Mortimer, J.R. 1905, *Forty Years Research in British and Saxon Burial Mounds of East Yorkshire*. A. Brown and Sons: London.