

FWFN12/001



FENROTHER WIND FARM, MORPETH, NORTHUMBERLAND

archaeological evaluation

for CgMs on behalf of EnergieKontor UK Ltd

May 2013

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Introduction

A programme of trial trenching was undertaken at the site of a proposed wind farm near Fenrother, Northumberland for CgMs on behalf of EnergieKontor UK Ltd. The work was undertaken as part of Northumberland County Council Conservation Team's customary requirements for such work. The sampling strategy and trench plan was designed by CgMs and agreed with Northumberland CCCT. Subsequently, A Written Scheme of Investigation was prepared by Headland Archaeology and approved by Northumberland CCCT prior to works commencing.

The trial trenching targeted features previously identified through geophysical survey, however, none were seen to be archaeological in origin. No archaeological remains were identified during the evaluation.

Site Location

The proposed development site lies approximately 1km north of the village of Fenrother, near Morpeth, Northumberland (Illus 1). The site is centred on NGR 418090 593080. It is currently occupied by gently rolling enclosed farmland and lies between 100m and 110m above Ordnance Datum.

The five turbine locations lie within five different fields, separated by hedgerows and fences.

Archaeological Background

A desk-based assessment was undertaken by CgMs in 2011 (Bourne 2001). This established that whilst there were no known sites within the wind farm, there was moderate potential for Iron Age/Roman remains and medieval agricultural remains, and low potential for remains of all other archaeological periods.

Geophysical survey was also undertaken at the location of the five proposed turbines over an area of 1 ha each (ASDU 2012). As the most likely remains at this site would be cut features ,fluxgate gradiometry was considered the most suitable technique to identify buried remains. The results of the geophysical survey identified anomalies at all 5 turbine locations. The majority of these were thought to be negative soil-filled features such as ditches and pits. This, combined with the results of the desk-based assessment made it most likely that these were of Iron Age date.

Objectives

The objective of the trial trenching evaluation was to ascertain whether there are any archaeological constraints within the development which may affect the proposed development. In particular;

- To determine the presence or absence of archaeological remains within the area and ascertain their quality, nature, extent and character

Methodology

The area subject to evaluation comprised the five locations of the proposed turbines (Areas T1 – T5). At each turbine location, between 150m and 160m of trenching was undertaken. At the time the fieldwork was being carried out, the field occupied by Turbine 5 was unavailable for trenching due to crops. Between the four remaining turbines a total of 1134 sq m of trenching was excavated.

The location of trenches within each turbine location was determined by the presence of geophysical anomalies which required to be tested. Further trenches were excavated to achieve good spatial coverage across the turbine locations and to test 'blank' areas. All trenches were numbered and laid out using a pole-mounted Trimble G6 differential GPS programmed with the relevant co-ordinates. On site, Trench 21 had to be relocated due to the presence of hedgerows.

Trenches were excavated using a tracked mechanical excavator equipped with a 1.8m wide toothless ditching bucket operating under constant archaeological supervision. Topsoil was removed and machining continued in small spits until either clean geological sediments or archaeological deposits were encountered. The resulting surfaces were hand-cleaned where necessary and any potential archaeological features investigated. Where numerous features of similar types were identified, a suitable sample of them was investigated.

All trenches were hand drawn at a scale of 1:100 on pro-forma sheets. Any deposits were recorded using standard archaeological methods and pro-forma record sheets. Photographs were taken using colour slide and black and white print film.

Results

A total of twenty-one trenches were excavated, over four turbine locations (Illus 1).

Turbine 1

Turbine 1 was located in a field of young crop. Two of the trenches (Trench 4 and Trench 6) were located over geophysical anomalies and the remainder to evaluate the extent of proposed construction. Across the field the topsoil was c 0.3m deep, comprising a mid to light greyish brown very clayey silt, with occasional small stones. The interface with the natural

subsoil was very clear, with no interface material present. The natural subsoil at this location was a firm mottled yellow boulder clay. Frequent evidence was seen of current farming activities in the form of modern plough scars running in a north-east to south-west direction.

A number of dark linear features were identified cut into the subsoil, all of which ran north-east to south-west, concurrent with the lines of crop. Where several of these linear features were found within a single trench (Trench 1, Trench 5 and Trench 6), they were found to be on rough 5m spacings. A sample of the features was investigated and the majority found to be linear cut features containing ceramic field drains. These are likely to date to the last two hundred years and relate to agricultural works undertaken to improve drainage in the field.

A small number of the possible linear features were found to be very shallow dips in the subsoil which had filled with topsoil. Some of the field drains could be matched up to geophysical anomalies from the survey, however many had not been identified.

No features or deposits of archaeological origin were identified at Turbine 1.

Turbine 2

Turbine 2 was located in a field of pasture, on a slight east-facing slope. Two trenches (Trench 8 and Trench 11) were located over geophysical anomalies with the remainder spread across the extent of proposed construction. Across the field the topsoil was 0.3m deep and comprised a mid-light greyish brown clayey silt with occasional small stones. The natural subsoil was a yellow boulder clay (Illus 2).

A possible ditch was identified at the western end of Trench 8, although not in the location of the geophysical linear anomaly. This feature was subsequently investigated and proved to be a change in the natural subsoil, with clay banding present. Field drains were present in most trenches, running north-east to south-west. No features or deposits of archaeological origin were identified at Turbine 2.

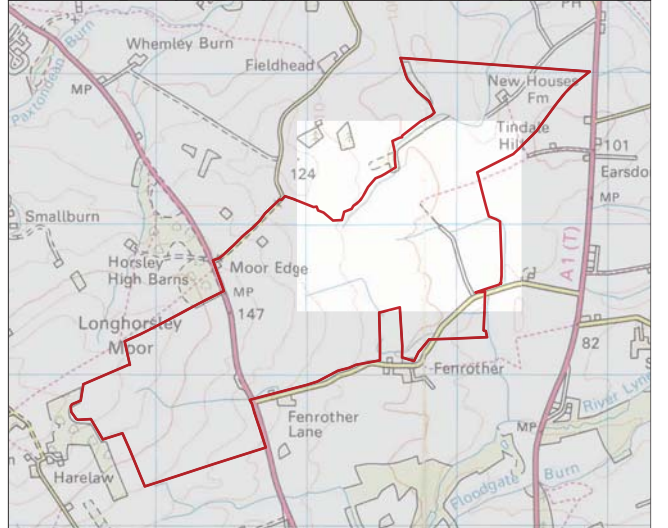
Turbine 3

Turbine 3 was located in a field of young crop. Two trenches were located to target geophysical anomalies (Trench 14 and Trench 16). Across the area, the topsoil was between 0.3m and 0.4m in depth. The subsoil in the two eastern trenches comprised a yellow boulder clay, similar to that seen at Turbines 1 and 2. In Trenches 15 and 17 the natural subsoil was an orangey brown mottled gravel, with patches of manganese and some iron panning.

In Trench 14, a large patch of grey clay was present, c 6m wide. This matched up with one of the geophysical anomalies identified during the survey. Investigation showed it was natural in origin, potentially the result of puddling of clay naturally. Field drains were also identified in several trenches running north-east to south-west. No features or deposits of archaeological origin were identified at Turbine 3.

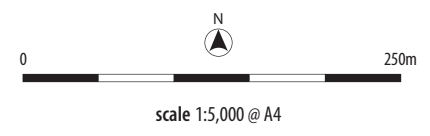
Turbine 4

Turbine 4 was located in a field of young crop. Three trenches (Trench 18, Trench 19 and Trench 20) were located to target geophysical anomalies. The planned location of Trench 21 was found to run across an existing hedgerow so was moved. Across the area, the topsoil was



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- application boundary
- proposed development layout
- geophysical survey area
- trenches
- geophysical anomalies
- underground services



Illus 1
 Site location

0.3m deep and was a mid-light greyish brown clayey silt, with occasional stones. The natural subsoil was a yellow boulder clay. Evidence of current agricultural activities was seen during excavation in the form of modern plough scars which cut into the natural subsoil running in an east-west direction.

A number of possible features were identified during trenching and investigated. The majority of these possible features were found to be shallow pockets of topsoil in the natural subsoil. Some were shown to be field drains. One wide linear feature was identified at the west end of Trench 19, which matched up with a geophysical anomaly from the survey. A slot through the feature revealed it was a large field drain, running across the lowest part of the field which the other smaller drains presumably ran into. In Trench 21, a possible pit was investigated and proved to be a tree bole (Illus 3). No features or deposits of archaeological origin were identified at Turbine 4.

Conclusion

No features of archaeological significance were found during the evaluation. Extensive evidence was uncovered of relatively recent agricultural improvement in the form of field drains. In some cases, the geophysical anomalies could be matched up to field drains, or to changes in the natural subsoil across the site. However, many of the anomalies were found to be false signals with no archaeological remains discernible. From the evaluation, it would seem that this area of land has been largely used for agriculture in the past, most likely pasture as no evidence of crop production (ploughing) was visible.

References

Archaeological Services Durham University 2012 Fenrother Wind Farm, Morpeth, Northumberland. Geophysical Survey. Unpublished Client report

Bourn, R 2011 Archaeological Desk-Based Assessment. Fenrother Wind Farm, Northumberland. Unpublished Client Report

Appendices

- Appendix 1: Site Registers – 1.1 Trench Register
 1.2 Context Register
 1.3 Photographic Register

1.1: Trench Register

Trench Number	Orientation	Turbine	Description
1	NW-SE	1	Excavated across flat cropped field. Contained modern field drain running NE-SW & several plough furrows. No archaeological finds or features. 21m Long 0.35m deep
2	NE-SW	1	Excavated across flat cropped field. Modern plough scars identified. No archaeological find or features. 20.90m long 0.3m deep
3	NE-SW	1	Excavated across flat cropped field. No archaeological finds or features. 20.10m long. 0.3m deep
4	NE-SW	1	Excavated across flat cropped field, targeting geophysical anomalies. Field drain running E-W. No archaeological finds or features. 21.0m long 0.40m deep
5	NW-SE	1	Excavated across flat cropped field. Field drains running NE-SW. No archaeological finds or features. 20.90m long 0.3m deep
6	N-S	1	Excavated across flat cropped field targeting geophysical anomalies. Field drain running NE-SW and several plough furrows. No archaeological finds or features. 40.80m long 0.30m deep
7	E-W	1	Excavated across flat cropped field. No archaeological finds or features. 20m long 0.30m deep
8	NW-SE	2	Excavated down W-facing gentle slope targeting geophysical anomalies. Field drain running NE-SW. Manganese & iron panning in natural. No archaeological finds or features. 25m long 0.30m deep
9	NE-SW	2	Excavated down W-facing gentle slope. Field drain running NE-SW. No archaeological finds or features. 21.50m long 0.30m deep
10	NE-SW	2	Excavated down gentle W-facing slope. Field drain running NE-SW. No archaeological finds or features. 21m long 0.40m deep
11	NE-SW	2	Excavated down gentle W-facing slope targeting geophysical anomalies. No archaeological finds or features. 40.10m long 0.30m deep.
12	NW-SE	2	Excavated across flat field. Field drain running NE-SW. No archaeological finds or features. 25mlong 0.30m deep.
13	NE-SW	2	Excavated down gentle W-facing slope. No archaeological finds or features. 20m long 0.30m deep
14	E-W	3	Excavated across flat cropped field targeting geophysical anomalies. Two field drains running NE-SW. no archaeological finds or features. 51m long 0.30m deep
15	N-S	3	Excavated across flat cropped field. No archaeological finds or features. 26m long 0.30m deep

Trench Number	Orientation	Turbine	Description
16	E-W	3	Excavated across flat cropped field targeting geophysical anomalies. Field drain running NE-SW and several plough furrows. No archaeological finds or features. 40m long 0.30m long
17	NW-SE	3	Excavated across flat field. No archaeological finds or features. 40m long 0.30m deep.
18	NW-SE	4	Excavated in cropped field targeting geophysical anomalies. Several field drains running NE-SW . Areas of manganese in natural. No archaeological finds or features. 36m long 0.30m deep.
19	NW-SE	4	Excavated in cropped field targeting geophysical anomalies. Several field drains running NE-SW. Possible pit investigated - natural stone hole. No archaeological finds or features. 50m long 0.30m deep.
20	NE-SW	4	Excavated in cropped field targeting geophysical anomalies. Several furrows, field drain running NE-SW. 3 pits investigated - burrow, stone hole and plough mark respectively. No archaeological finds or features. 51.50m long 0.30m deep.
21	E-W	4	Excavated across cropped field. Location altered from original due to presence of hedgerow. Pit investigated - found to be tree bole. 20.95m long 0.30m deep.

1.2: Context Register

Context

No.	Description
001	Topsoil. Moderately firm mid to light greyish brown clayey silt. Present across all trenches and little variation in make up or consistency. Lay straight above the natural subsoil. 0.3m to 0.4m in depth.
002	Natural subsoil. Firm slightly mottled yellow/grey boulder clay. At the west of Turbine 3, gravelly natural appeared.

1.3: Photographic Register

Photo No.	Colour Slide	Black and White	Direction facing	Description
1	Y	N	N/A	ID Shot
2	Y	N	N/A	ID Shot
3	Y	Y	E	Turbine 2, Trench 13.
4	Y	Y	NW	Turbine 2, Trench 12.
5	Y	Y	SW	Turbine 2, Trench 11.
6	Y	N	E	Turbine 3, Trench 14.
7	Y	N	E	Turbine 3, Trench 16.
8	Y	N	N	Turbine 3, Trench 15.
9	Y	N	N	Turbine 3, Trench 17.

Photo No.	Colour Slide	Black and White	Direction facing	Description
10	Y	Y	NE	Turbine 4, Trench 18.
11	Y	N	E	Turbine 4, Trench 19.
12	Y	N	SE	Turbine 4, Trench 20.
13	Y	N	E	Turbine 4, Trench 21.
14	Y	N	E	Turbine 2, Trench 13.
15	Y	N	NW	Turbine 2, Trench 10.
16	Y	N	NW	Turbine 2, Trench 9.
17	Y	N	SE	Turbine 2, Trench 8.
18	Y	N	SW	Turbine 1, Trench 1.
19	Y	N	NE	Turbine 1, Trench 2.
20	Y	N	NE	Turbine 1, Trench 4.
21	Y	N	NW	Turbine 4, general shot of excavated tree bole Trench 21.
22	Y	N	N	Turbine 4, N-facing section through tree bole Trench 21.
23	Y	N	NW	Turbine 1, Trench 5.
24	N	N	NW	Turbine 1, Trench 6.
25	N	N	NE	Turbine 1, Trench 7.
26	N	N	SW	Turbine 1, Trench 3.



Illus 2

View of Trench 11 at Turbine 2, looking south-west



Illus 3

Shot of tree bole excavated in Trench 21, Turbine 4



Illus 2

View of Trench 11 at Turbine 2, looking south-west



Illus 3

Shot of tree bole excavated in Trench 21, Turbine 4