

BWFD11



PROJECT SUNRISE

Archaeological Evaluation

for ECUS Limited

October 2011

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Fieldwork

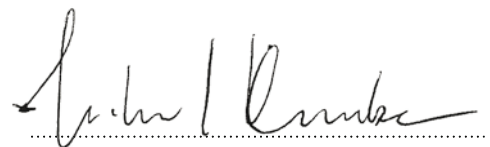
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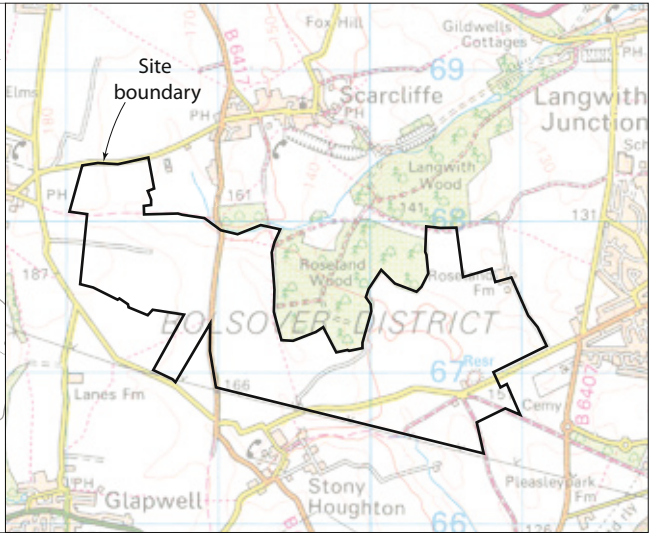
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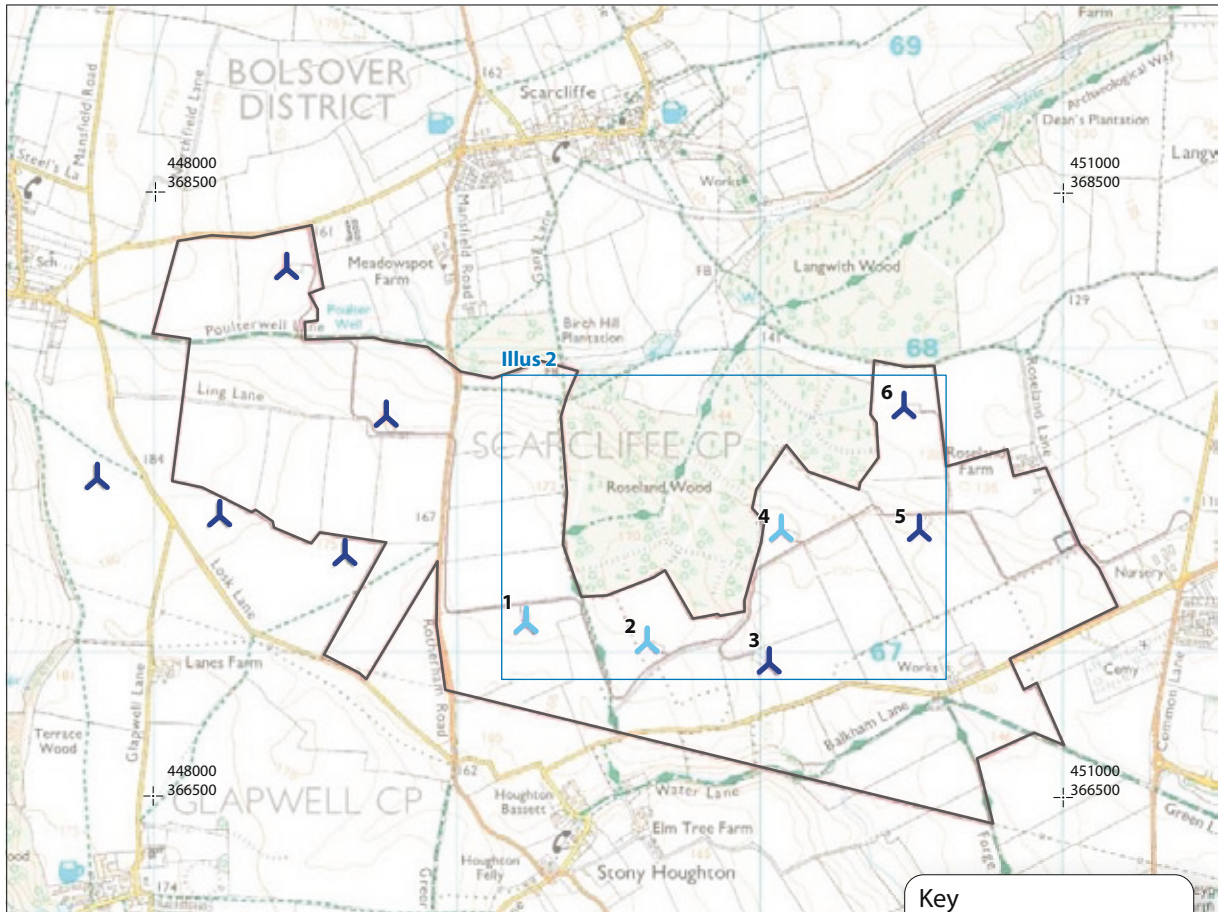
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Bolsover Wind Farm
Shirebrook
Derbyshire




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Key

-  site boundary
-  investigated turbine
-  uninvestigated turbine

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Scale 1:25,000 @ A4 



Illus 1
Site location

PROJECT SUNRISE

Archaeological Evaluation

Headland Archaeology undertook a programme of archaeological evaluation at Roseland Wood, Shirebrook, Derbyshire as part of the Environmental Assessment phase of a proposed six turbine wind farm development. The evaluation consisted of six trial trenches located in the footprints of three turbines over anomalies found during a geophysical survey of the site prior to this investigation. No archaeological remains were discovered.

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1. INTRODUCTION

Headland Archaeology undertook a programme of archaeological evaluation at Roseland Wood, Shirebrook, Derbyshire, c. 5km north east of the centre of Mansfield. The evaluation was conducted as part of the planning application process, with the results to form part of an Environmental Impact Assessment. The Environmental Assessment is being prepared by ECUS Ltd on behalf of Rider Levett Bucknall UK Ltd.

The site is situated along the southern slope of a low hill that runs east to west just south of Roseland Wood and to the west of the village of Shirebrook, and the local topography is generally flat with some gentle slopes. The natural geology consists of dolomitised limestone overlain by clay deposits and the land within the site boundary is currently agricultural.

There is evidence for human activity from the prehistoric to the Romano British periods within the site boundary, though this is limited to isolated find spots and a possible enclosure suggested by crop marks to the north east of the site. Within 5km of the site are several notable historic sites, including Hardwick Hall and Bolsover Castle.

The evaluation was undertaken in accordance with a Written Scheme of Investigation agreed by the client's consultants with the planning authority (Burn 2011).

1.1 Previous work

A programme of geophysical survey was carried out at the site prior to the archaeological evaluation stage (Harrison 2011). Linear anomalies that were interpreted as potentially representing derelict field boundaries were identified at Turbines 1, 2, 4 and 5; at Turbine 4, two other potentially significant anomalies were located: an irregular anomaly located on top of a small hillock, and a curvilinear anomaly towards the north-east of the turbine base area that was interpreted as a possible prehistoric enclosure.

2. OBJECTIVES

The primary objectives of the project were:

- To identify any archaeological features in the specific areas identified by geophysical survey
- Where possible to establish the date, nature and level of preservation of any archaeological remains within these areas.
- To produce and deposit a satisfactory archive and disseminate the results of the work via grey-literature reporting and publication as appropriate.



3. METHODOLOGY

Six archaeological trial trenches were excavated in pre-agreed locations, specifically targeted over geophysical anomalies that may have represented archaeological features. One trench was excavated at Turbine 1 measuring 15m x 2m, targeted over two intersecting linear anomalies. Two trenches were excavated at Turbine 2, each measuring 7.5m x 2m and each targeted over linear anomalies. Three trenches, each measuring 15m x 2m, were excavated at Turbine 3 as this area appeared to have the greatest archaeological potential. One trench was targeted over two parallel north-south linear anomalies, one was targeted over an irregular anomaly on the summit of a small hillock, and one was targeted over a curvilinear anomaly to the east of the site.

Trenches were excavated using a mechanical excavator equipped with a toothless ditching bucket, under constant archaeological supervision. Topsoil was removed and excavation ceased at either undisturbed geological deposits (sondages were dug in some trenches to establish whether deposits had any sign of disturbance) or when potential archaeological features/deposits were identified. These were then further investigated by hand excavation. Trenches were left to weather for a minimum of one day, so as to increase the chances of feature identification. Each trench was cleaned by hand where necessary to assist the identification and interpretation of any potential exposed archaeological features.

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The recording was in accordance with I/A standards and the Headland Archaeology site recording manual. All contexts were given unique numbers. A general photographic record was maintained during the course of the fieldwork and colour slide, black and white and digital photographs were taken. An overall site plan was recorded and related to the National Grid. Trench record sheets were completed and recorded digitally, or by hand at 1:100 where features were present. Sample sections were hand drawn at a scale of 1:10. All recording was undertaken on pro forma record cards.

4. RESULTS

4.1 General soil layers on the site

The undisturbed geological horizon (1001, 2001, 3001, 4001 and 6001) over the whole site comprised light yellowish red silty clay, with occasional sub-rounded dolomitised limestone fragments averaging between 5–40mm, and occasional manganese flecks. The deposit was identified beneath topsoil at a depth of between 0.23–0.29m across the whole site except for Trench 2, and was 0.06–0.24m thick. Beneath the clay deposit lay dolomitised limestone bedrock, except in Trench 2 where the bedrock directly underlay the topsoil.

4.2 Turbine 1

A single trench, Trench 6, was excavated at Turbine 1, targeted near the intersection of two crossing linear anomalies. No features were identified in this trench. It is possible that the geophysical anomalies identified are the result of slight changes in the composition of the clay horizon, as this deposit is slightly variable across the site.

4.3 Turbine 2

Two trenches, Trench 4 and Trench 5, were excavated at Turbine 2, each targeted over a separate linear anomaly. In Trench 4 beneath the topsoil, a very irregular feature, [3003], was identified, coinciding with the position of an east-west linear anomaly revealed by geophysical survey. A slot was excavated through this feature, and it was subsequently found to be a dip in the bedrock filled with clay.

No features were identified in Trench 5 other than ploughmarks relating to modern cultivation; these were also visible in Trench 4.

4.4 Turbine 4

Three trenches were excavated at Turbine 4, Trench 1, Trench 2 and Trench 3.





Trench 1 was targeted over a curvilinear anomaly situated towards the north-east part of the turbine base area. Beneath the topsoil a possible feature, [6003], was identified and investigated, proving to be a composition change in the natural. No features were identified coinciding with the curvilinear anomaly identified in the geophysical survey.

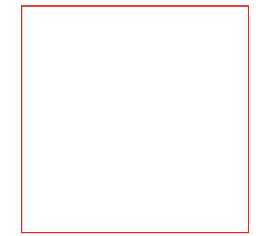
Trench 2 was targeted over an irregular magnetic anomaly situated at the summit of a small hillock near the centre of the turbine base area. The anomaly was identified as being the result of a rise in the bedrock in this part of the site and not of any archaeological significance.

Trench 3 was targeted over two parallel north-south linear anomalies running from the south-east corner of the turbine base. Beneath the topsoil, two possible north-south linear features roughly in position of the geophysical anomalies (4003 and 4004) were identified. [4003] was hand cleaned and slot – excavated, and was found to have a very irregular profile and a diffuse interface with deposit [4001]. [4004] was similarly investigated, and was found to be even more diffuse than [4003], with undefined edges and voids indicating possible animal burrowing. Both features were interpreted as natural due to their extremely irregular character and are possibly the result of depth variations in the geological deposits, as this part of the site was located at the bottom of a slope in the local topography.

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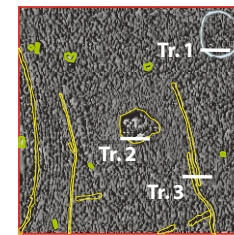
Key

-  high archaeological potential
-  moderate archaeological potential
-  low archaeological potential
-  proposed turbine area

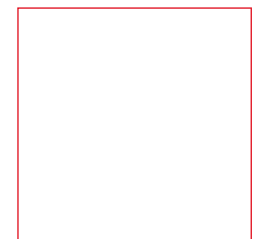


Turbine 6 (uninvestigated)

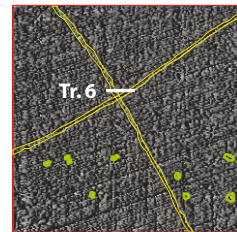
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367680



Turbine 4

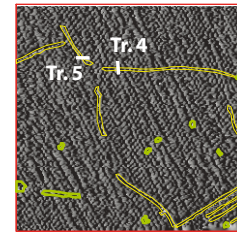


Turbine 5 (uninvestigated)

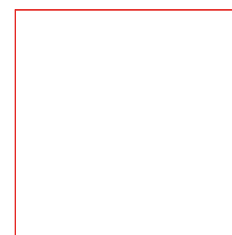


Turbine 1

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Turbine 2



Turbine 3 (uninvestigated)

450500
366980



Illus 2
Trench locations



Illus 3

Trench 3 facing west, showing geology at east of site

Illus 4

Trench 6 facing west, showing geology at west of site

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Modern ploughmarks were observed in all trenches located at Turbine 4.

5. DISCUSSION

The trenching undertaken at the site did not reveal any archaeological features other than ploughmarks relating to modern cultivation, identified as such as they were aligned with both recent ploughing observed at surface level and current field boundaries. The potential features revealed through the geophysical survey appear to be the result of localised variations in the depth of the bedrock.

The fieldwork has succeeded in establishing that the geophysical anomalies are not of archaeological origin within the areas investigated.

6. ARCHIVE

The archive is currently located at Headland Archaeology's premises (Unit 1, Premier Business Park, Faraday Road, Westfield Trading Estate, Hereford, HR4 9NZ) and will be deposited with Derbyshire Record Office within six months of report acceptance.

7. REFERENCES

- Burn, A, 2011, *Project Sunrise, Shirebrook, Derbyshire; Archaeological Evaluation*, Unpublished client report, ECUS Ltd, 2011.
- Harrison, S, 2011, *A Magnetic Gradiometer Survey of Turbine Locations at a Windfarm Development, Roseland Wood, Shirebrook, Derbyshire*, Unpublished client report, Headland Archaeology (UK) Ltd.



APPENDIX 1 – SITE REGISTERS

Context register

Context no.	Area	Description
1000	Trench 6, Turbine 1	Topsoil – reddish brown friasble loamy silt
1001	Trench 6, Turbine 1	Natural subsoil – yellowish red clay
1002	Trench 6, Turbine 1	Natural bedrock – creamy yellow dolomitised limestone
2000	Trench 5, Turbine 2	Topsoil – reddish brown friasble loamy sand
2001	Trench 5, Turbine 2	Natural subsoil – yellowish red clay
2002	Trench 5, Turbine 2	Natural bedrock – creamy yellow dolomitised limestone
3000	Trench 4, Turbine 2	Topsoil – reddish brown friasble loamy sand
3001	Trench 4, Turbine 2	Natural subsoil – yellowish red clay
3002	Trench 4, Turbine 2	Natural bedrock – creamy yellow dolomitised limestone
3003	Trench 4, Turbine 2	Patch of natural depression in bedrock
4000	Trench 3, Turbine 4	Topsoil – reddish brown friasble loamy silt
4001	Trench 3, Turbine 4	Natural subsoil – yellowish red clay
4002	Trench 3, Turbine 4	Natural bedrock – creamy yellow dolomitised limestone
4003	Trench 3, Turbine 4	Irregular linear feature – probable geological anomaly
4004	Trench 3, Turbine 4	Irregular linear feature – probable geological anomaly
5000	Trench 2, Turbine 4	Topsoil – reddish brown friasble loamy silt
5001	Trench 2, Turbine 4	Natural bedrock – creamy yellow dolomitised limestone
6000	Trench 1, Turbine 4	Topsoil – reddish brown friasble loamy silt
6001	Trench 1, Turbine 4	Natural subsoil – yellowish red clay
6002	Trench 1, Turbine 4	Natural bedrock – creamy yellow dolomitised limestone
6003	Trench 1, Turbine 4	Very slight colour change in [6001] – geological anomaly

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Photographic register

Photo no.	Colour slide	B&W	Digital	Direction facing	Description
001	Y	Y	Y	–	ID shot
002	Y	Y	Y	W	Trench 6, excavated
003	Y	Y	Y	S	S-facing sample section of Trench 6
004	Y	Y	Y	E	Trench 5, excavated
005	Y	Y	Y	S	N-facing sample section of Trench 5
006	Y	Y	Y	N	Trench 4, excavated
007	Y	Y	Y	E	W-facing sample section of Trench 4
008	Y	Y	Y	W	Trench 3, excavated
009	Y	Y	Y	N	S-facing sample section of Trench 3
010	Y	Y	Y	W	Trench 2, excavated

<i>Photo no.</i>	<i>Colour slide</i>	<i>B&W</i>	<i>Digital</i>	<i>Direction facing</i>	<i>Description</i>
011	Y	Y	Y	N	S-facing sample section of Trench 2
012	Y	Y	Y	W	Trench 1, excavated
013	Y	Y	Y	N	S-facing sample section of Trench 1

Trench register

<i>Trench no.</i>	<i>Area</i>	<i>Description</i>	<i>Length (m)</i>	<i>Depth (m)</i>
1	Turbine 4	Excavated at the north-eastern part of the base for Turbine 4 on ground sloping slightly to the east. Orientated east-west. Targeted over a curvilinear anomaly identified through geophysical survey. No archaeological features. Modern ploughmarks visible.	14m	0.25m (trench), 0.49m (sondage)
2	Turbine 4	Excavated at the centre of the base for Turbine 4 at the summit of a small hillock. Orientated east-west. Targeted over an irregular geophysical anomaly. No archaeological features. Bedrock lies directly beneath topsoil in this trench. Modern ploughmarks visible.	14m	0.32m
3	Turbine 4	Excavated towards the south-eastern part of the base for Turbine 4. Orientated east-west. Targeted over two parallel linear geophysical anomalies. No archaeological features. Modern ploughmarks visible.	14m	0.28m (trench), 0.39m (sondage)
4	Turbine 2	Excavated towards the north part of the base for Turbine 2 on flat ground, targeted over an east-west linear geophysical anomaly. Orientated north-south. One possible feature, [3003], was revealed upon investigation to be a dip in the bedrock. No archaeological features. Modern ploughmarks visible.	7.5m	0.29m (trench), 0.42m (sondage)
5	Turbine 2	Excavated towards the north eastern part of the base for Turbine 2 on flat ground, targeted over a north-south linear geophysical anomaly. Orientated east-west. No archaeological features. Modern ploughmarks visible.	7.5m	0.28m (trench), 0.12m (sondage)
6	Turbine 1	Excavated on flat ground near the centre of the base for Turbine 1, targeted to catch two intersecting linear anomalies identified through geophysical survey. Orientated east-west. No archaeological features. No ploughmarks noted.	15m	0.25m (trench), 0.45m (sondage)

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Drawing register

<i>Drawing no.</i>	<i>Plan</i>	<i>Section</i>	<i>Description</i>
1	Y	-	1:100 plan of Trench 6
2	-	Y	1:10 sample section of Trench 6, N - facing
3	Y	-	1:100 plan of Trench 5
4	-	Y	1:10 sample section of Trench 5, N - facing
5	Y	-	1:100 plan of Trench 4
6	-	Y	1:10 sample section of Trench 4, W - facing
7	Y	-	1:100 plan of Trench 3
8	-	Y	1:10 sample section of Trench 3, S - facing
9	Y	-	1:100 plan of Trench 2
10	-	Y	1:10 sample section of Trench 2, S - facing
11	Y	-	1:100 plan of Trench 1
12	-	Y	1:10 sample section of Trench 1, S-facing



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OASIS ID: headland3-111081

Project details

Project name	Project Sunrise, Shirebrook, Derbyshire; Archaeological Evaluation; 12-15/09/2011
Short description of the project	Headland Archaeology undertook a programme of archaeological evaluation at Roseland Wood, Shirebrook, Derbyshire as part of an Environmental Assessment for a proposed 6 turbine wind farm development. The evaluation consisted of 6 trial trenches located in the footprints of 3 turbines over anomalies found during a geophysical survey of the site prior to this investigation. No archaeological features were found.
Project dates	Start: 12-09-2011 End: 15-09-2011
Previous/future work	Yes / Not known
8 Any associated project reference codes	BWFD11 - Sitecode
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 2 - Operations to a depth less than 0.25m
Monument type	NONE None
Significant Finds	NONE None
Methods & techniques	'Targeted Trenches'
Development type	Wind farm developments
Prompt	Environmental Assessment regulations Schedule 1 projects (Obligatory)
Position in the planning process	Pre-application

Project location

Country	England
Site location	DERBYSHIRE BOLSOVER SCARCLIFFE Project Sunrise
Postcode	NG19 8TR
Study area	3.00 Hectares
Site coordinates	SK 495 670 53.1974874946 -1.258946386170 53 11 50 N 001 15 32 W Point
Height OD / Depth	Min: 153.00m Max: 167.00m

Project creators

Name of Organisation	Headland Archaeology (UK) Ltd.
Project brief originator	Consultant
Project design originator	Headland Archaeology (UK) Ltd.
Project director/manager	Mike Kimber AlfA
Project supervisor	Dale Rouse
Type of sponsor/funding body	Developer

Project archives

Physical Archive Exists?	No
Digital Archive Exists?	No
Paper Archive recipient	Derbyshire Records Office
Paper Contents	'none'
Paper Media available	'Context sheet','Correspondence','Diary','Drawing','Map','Photograph','Report'

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Project bibliography 1

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Title	Mr
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