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Wind Turbines at Castlemains Farm, Dirleton, East Lothian

Archaeological Archive Assessment and Monitored Soil Strip

Report No. 2047

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1. INTRODUCTION

1.1 General

This report presents the results of an archaeological archive assessment and monitored soil strip undertaken by CFA Archaeology Ltd (CFA) in April 2012 on land at Castle Mains Farm, Dirleton, East Lothian (NGR: NT 51829 83497 (centred) and NT 51772 83863) (Fig 1). The work was commissioned by Ross of Mull Wind Turbine Installations.

A Written Scheme of Investigation (WSI) dated 05 April 2012 was produced by CFA on behalf of Ross of Mull Wind Turbine Installations. The WSI was designed to fulfil the requirements of East Lothian Council Archaeology Service (ELCAS).

1.2 Background

Planning Permission has been granted for the construction of four wind turbines (T1 – T4) on land at Castle Mains Farm, Dirleton. T1 – T3 fall under planning application 11/01120/P, while T4 forms a separate planning application numbered 11/01121/P. Both planning applications were subject to an archaeological condition requiring an archive assessment and monitored soil strip.

T1 – T3 are located on the southern side of the A198 c. 400m to the south of the Scheduled Monument and Inventory Gardens and Designed Landscape of Dirleton Castle (SM no. 90096, IDGL 135). They are situated within agricultural land close to a large field boundary ditch. Due to problems relating to field drains exiting into the field boundary ditch, the trenches excavated for these turbine bases were prone to flooding.

T4 is located on the northern side of the A198 on the southern edge of the building complex associated with Castle Mains Farm. The farm lies immediately to the south-east of Dirleton Castle.

No previous invasive archaeological work is known to have taken place within either of these two areas prior to this programme of monitored soil stripping.

1.3 Objectives

The objectives of the programme of archaeological works were:

- To conduct an appropriate programme of archaeological investigation (monitored strip) to monitor all groundbreaking works for the construction of the turbine, to ensure works are cleared of topsoil and other modern overburden to identify either undisturbed natural subsoil or archaeological features (whichever comes first).
- To mitigate the effects of construction on any archaeological deposits or features identified through excavation and recording and produce a report on them.

2. WORKING METHODS

2.1 General

CFA Archaeology Ltd follows the Institute for Archaeologists' Code of Conduct, Standards and Guidance for Archaeological Field Evaluations.

2.2 Archaeological Archive Assessment

The historic map collection held by the National Libraries of Scotland (NLS) was examined for information on pre-recent land use within the proposed development area. The maps examined included the Ordnance Survey 6" and 25" map editions, together with other readily available cartographic information.

The National Monuments Record of Scotland (NMRS) and the 'Pastmap' (<http://jura.rcahms.gov.uk/PASTMAP/Map>) website were consulted to obtain information on known archaeological sites within the proposed development area.

2.3 Monitored Strip

Four turbine bases (T1 – T4) (Fig. 1), each measuring 5m by 5m, were stripped of topsoil and checked for archaeological features. They were then excavated to formation level at a depth of 1m.

A cable trench was excavated linking T1 – T3. The trench measured 135m long by 0.6m wide by 0.6m deep.

Topsoil and modern overburden was removed by a 360° mechanical excavator equipped with a smooth-bladed bucket. All groundbreaking work was carried out under constant archaeological supervision. All further excavation required to fulfil the objectives of the WSI was carried out by hand.

The stratification of all excavated areas was recorded, whether or not significant archaeological deposits were identified.

3. ARCHAEOLOGICAL RESULTS

3.1 Archive Assessment

NMRS Sites

The closest recorded NMRS site is Castle Mains Cart Sheds (NMRS No. NT58SW 42), which lies a short distance to the north of T4. Other significant sites within close proximity include Dirleton Castle and associated features (NMRS No. NT58SW 1.00 – 1.04). Dirleton Castle is a Category A-Listed building (HB No. 1525), a Scheduled Ancient Monument (SAM No. 90096), and sits within a Designed Gardens and Landscape recorded on the national Inventory (IDGL 135). Seventy-nine sites were recorded within and around Dirleton, with the vast majority of these being medieval or later in date. The only earlier feature was a findsite (NMRS No. NT58SW 16) consisting of a Roman coin of Augustus.

Cartographic Sources

The earliest map consulted was Adair's map of 1682, which depicts Dirleton Castle (annotated '*Dirlestone C.*'), but does not show any detail of the development area. Adair's 1736 map is very similar in nature, but shows the current spelling of Dirleton.

The earliest map to allow the approximate position of the wind turbines to be identified is Roy's military map of c.1750 (Fig. 2), which depicts a large irregular shaped enclosure extending southwards from Dirleton Castle. The exact outline of the enclosure is hard to determine on the current map, but the track giving access to T1 – T3 appears to have formed part of the western edge, placing these turbines within the enclosure. Rig-and-furrow cultivation is depicted immediately outwith the enclosure, but the interior may have been uncultivated land associated with the castle. A substantial lochan is depicted to the south-east of the enclosure. There is no rig-and-furrow cultivation immediately around the lochan suggesting that this area may have been bog. On this map Dirleton is annotated '*Dirletoun*'.

Subsequent maps by Forrest (1799), Thomson (1822) (Fig. 3) and Sharp, Greenwood and Fowler (1824 and 1844) all depict Castle Mains. The farm is shown lying on a crossroads. One of these roads is on the same alignment as the part of the A198 that bypasses Dirleton, but on these maps it only extends a little beyond the farm on either side. Another road links the farm with the road running through the centre of the village, while a further road gives access to the fields to the south and appears to be within the location of the current track giving access to T1 – T3. Dirleton is depicted with the current spelling, and there are no features depicted within the location of T1 – T3.

The earliest map to show the development area in detail is the First Edition Ordnance Survey map of 1854 (surveyed 1853) (Fig. 4). This map depicts the area in which T1 – T3 are located as undeveloped farmland. The track from the current A198 giving access to the turbines is depicted along with the large field boundary ditch running immediately to the east of T1 – T3. Castle Mains Farm is depicted in more detail than on the earlier maps and suggests that T4 lay on undeveloped land immediately to the east of the farm, positioned between the farm buildings and an access track.

3.2 Monitored Strip

T1 – T3 and Cable Trench

The turbine bases each measured 5m by 5m. The cable trench linking T1 – T3 was 135m long by 0.6m wide by 0.6m deep.

The deposits within T1 to T3 (Fig. 5 – Fig. 7) and the connecting cable trench (Fig. 9) consisted of 0.3m-0.5m of mid-brown clayey-silt topsoil (**001**) overlying 0.15m–0.2m of orangey-yellow subsoil (**002**). This in turn overlay mid to dark grey sandy clay natural (**003**). The natural deposits were very poorly draining, with the lochan depicted on Roy's c.1750 map (Fig. 2) suggesting that this area may have been bog prior to recent agricultural improvements.

Numerous ceramic field drains were identified within the three turbine bases and throughout the length of the cable trench indicating 19th century agricultural improvement. There were no features, deposits or artefacts of archaeological significance identified.

T4

The deposits within T4 (Fig. 8) consisted of 0.3m-0.5m of mid brownish-grey sandy silt topsoil (**4001**) containing rubble and modern debris overlying 0.2m-0.3m of mid orange-brown sandy-silt subsoil (**4002**). These in turn overlay mid orangey-brown sandy-gravel natural (**4003**).

There were no features, deposits or artefacts of archaeological significance identified.

4. CONCLUSIONS

An archaeological archive assessment and monitored soil strip were carried out at land at Castle Mains Farm, Dirleton for the construction of four wind turbines. This development was approved under two separate planning consents, with a single turbine in close proximity to the farmyard forming one consent and a group of three turbines in the field to the south forming the other.

The archive assessment showed that the single turbine at Castle Mains Farm lay in close proximity to Dirleton Castle, which is Category A-Listed and a Scheduled Monument, but there were no known features within close proximity to the three turbines in the field to the south. Cartographic evidence suggested that there had been no pre-recent development within any of the turbine locations.

The monitored soil strip identified numerous field drains indicating a programme of 19th century agricultural improvements, but there were no features, deposits or artefacts of archaeological significance identified.

A summary statement of the results of this evaluation will be submitted for publication in *Discovery and Excavation in Scotland* (Appendix 3).

The project archive, comprising all CFA record sheets, maps and reports, will be deposited with the National Monuments Record of Scotland (NMRS) and copies of reports will be lodged with the East Lothian Council Sites and Monuments Record.

5. REFERENCES

5.1 Cartographic

Adair, J 1682 *East Lothian*.

Adair, J 1736 *A map of East Lothian*.

Forrest, W 1799 *Map of Haddingtonshire*.

Ordnance Survey 1st Edition 6” 1854 *Haddingtonshire, Sheet 2*

Roy, W 1747-55 *Military Survey of Scotland*.

Sharp, T Greenwood, C and Fowler, W 1824 *Map of the County of Haddington*

Sharp, T Greenwood, C and Fowler, W 1844 *Map of the County of Haddington*

Thomson, J 1822 *Haddington*.

APPENDIX 1: Digital Photographic Register

No.	Description	From	Conditions
1	T3, pre-excavation	SE	Overcast
2	T2, pre-excavation	SE	Overcast
3	T3 following topsoil removal onto natural	SW	Overcast
4	T1 following topsoil removal onto natural	NE	Overcast
5	T3 following topsoil removal onto natural	SW	Overcast
6	T3, west-facing section	W	Overcast
7	T4, pre-excavation	SE	Rain
8-10	T4 excavated to natural sand and gravel	W/E/NE	Cloud
11	T4, NE-corner, SW-facing section	SW	Cloud
12	T4 excavated to formation depth	E	Rain
13	T3 excavated to formation depth	NE	Sun
14	T2 excavated to natural subsoil	SW	Sun
15	Stone field drain within T1	E	Sun
16	T1 excavated to natural subsoil	NW	Sun
17	General shot of cable trench	NW	Sun
18	T2 excavated to formation depth	NW	Sun
19	General shot of cable trench	NW	Sun

APPENDIX 2: Context Register

T1 – T3

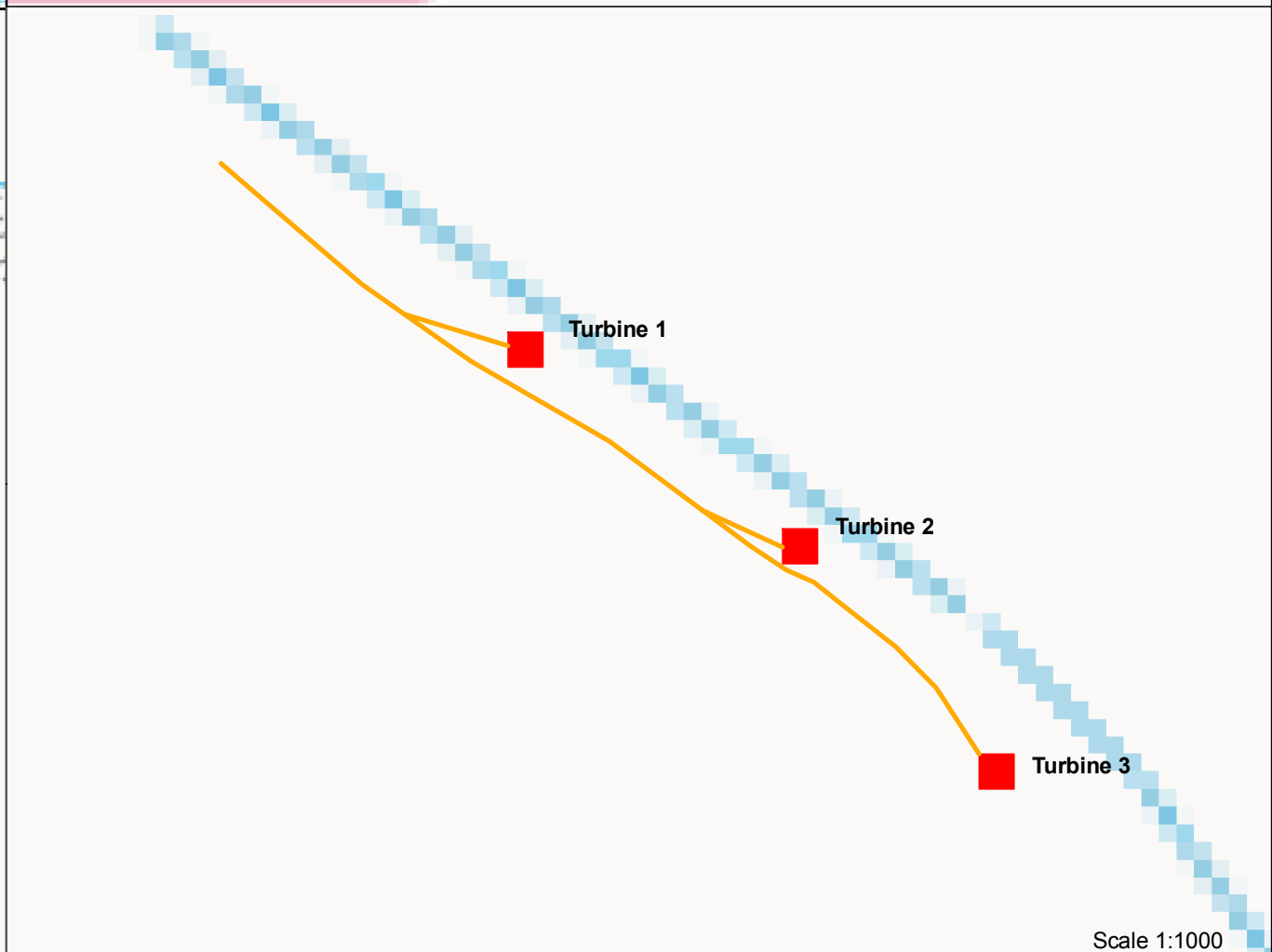
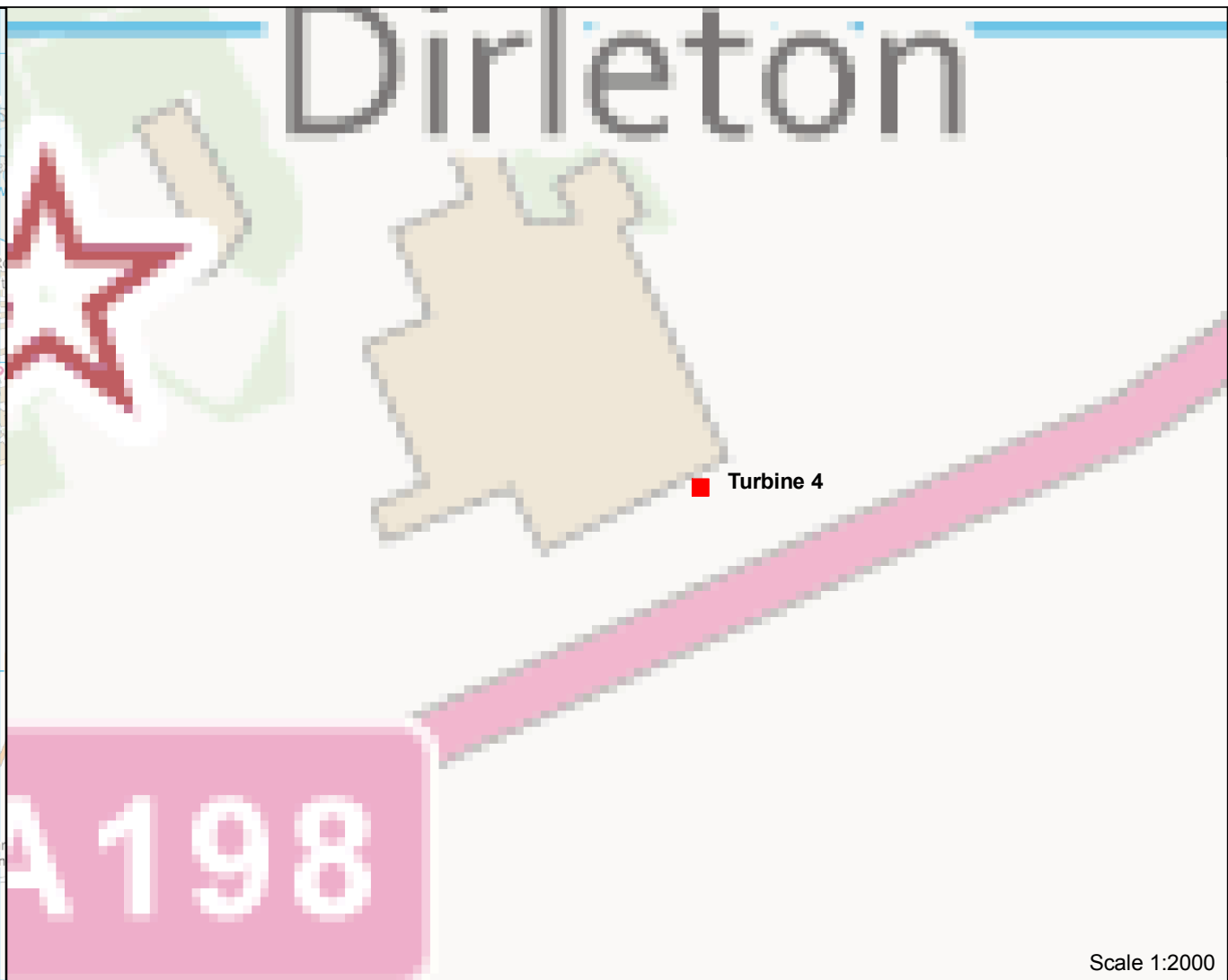
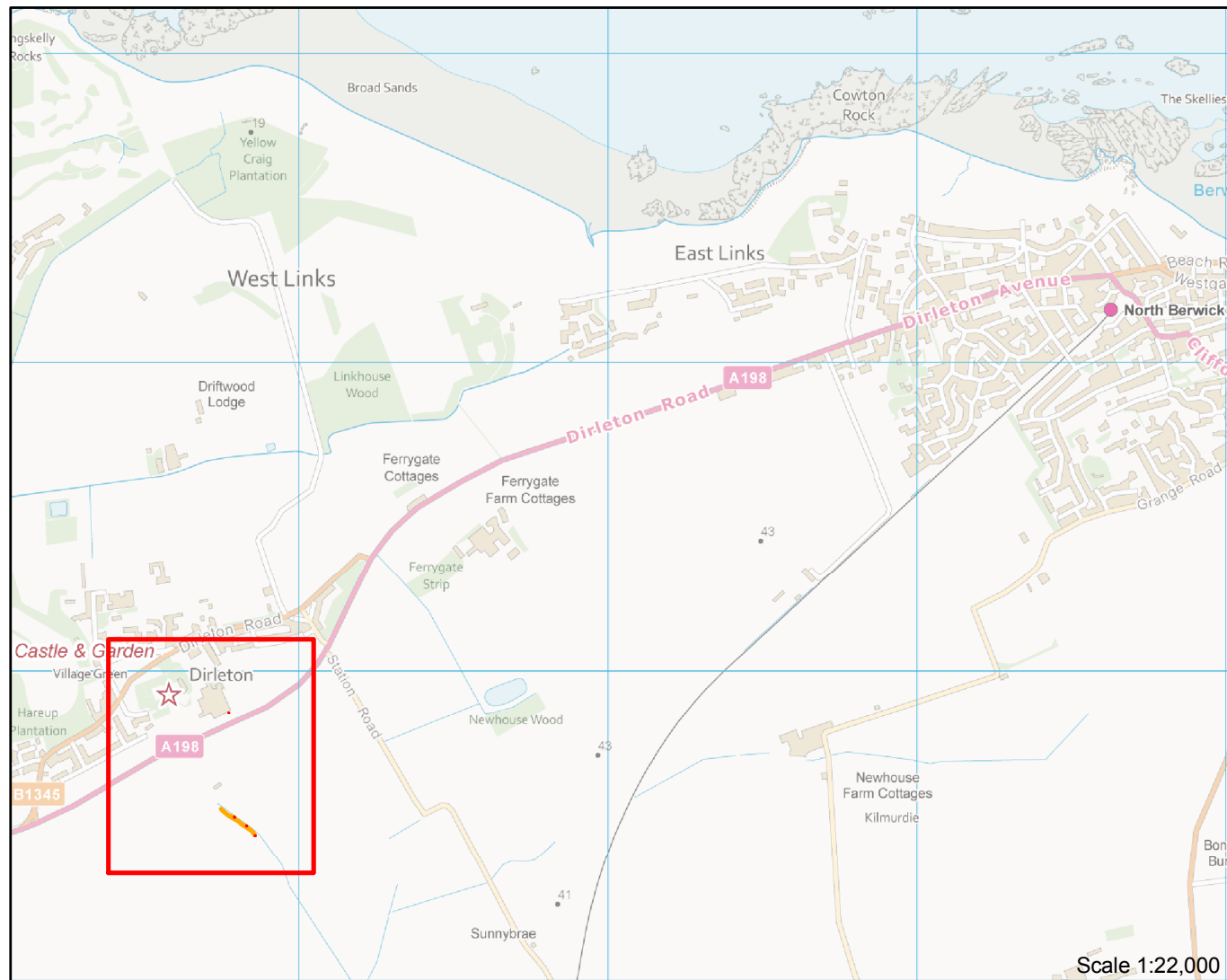
Context No.	Area	Turbine	Description
001	N/A	T1 – T3	Topsoil – mid brownish-grey clayey-silt
002	N/A	T1 – T3	Subsoil – orangey-yellow and mottled grey sandy-clay
003	N/A	T1 – T3	Natural subsoil – mid to dark brownish-grey sandy -clay

T4

Context No.	Area	Turbine	Description
4001	N/A	T4	Topsoil – mid brownish-gray sandy-silt with rubble and modern debris
4002	N/A	T4	Subsoil – mid orange-brown sandy silt with gravel inclusions
4003	N/A	T4	Natural-subsoil – mid orange-brown coarse sand and gravel

APPENDIX 3: Discovery and Excavation in Scotland Entry

LOCAL AUTHORITY:	East Lothian
PROJECT TITLE/SITE NAME:	Wind Turbines at Castle Mains Farm, Dirleton
PROJECT CODE:	CAMA
PARISH:	Dirleton
NAME OF CONTRIBUTOR:	Magnus Kirby
NAME OF ORGANISATION:	CFA Archaeology Ltd
TYPE(S) OF PROJECT:	Archive Assessment and Monitored Soil Strip
NMRS NO(S):	N/A
SITE/MONUMENT TYPE(S):	N/A
SIGNIFICANT FINDS:	None
NGR (2 letters, 10 figures)	NT 51829 83497 (centred) and NT 51772 83863
START DATE (this season)	April 2012
END DATE (this season)	April 2012
PREVIOUS WORK (incl. DES ref.)	None
MAIN (NARRATIVE) DESCRIPTION: (May include information from other fields)	<p>An archaeological archive assessment and monitored soil strip were carried out at land at Castle Mains Farm, Dirleton for the construction of four wind turbines. This development was approved under two separate planning consents, with a single turbine in close proximity to the farmyard forming one consent and a group of three turbines in the field to the south forming the other. Archive assessment showed that the single turbine at Castle Mains Farm lay in close proximity to Dirleton Castle, which is Category A-Listed and a Scheduled Monument, but there were no known features within close proximity to the three turbines in the field to the south. Cartographic evidence suggested that there had been no pre-recent development within any of the turbine locations.</p> <p>The monitored soil strip identified numerous field drains indicating a programme of 19th century agricultural improvements, but there were no features, deposits or artefacts of archaeological significance identified.</p>
PROPOSED FUTURE WORK:	None
CAPTION(S) FOR ILLUSTRS:	N/A
SPONSOR OR FUNDING BODY:	Ross of Mull Wind Turbine Installations
ADDRESS OF MAIN CONTRIBUTOR:	The Old Engine House, Eskmills Park, Musselburgh, EH21 7PQ
EMAIL ADDRESS:	cfa@cfa-archaeology.co.uk
ARCHIVE LOCATION (intended/deposited)	National Monuments Record of Scotland East Lothian Council Sites and Monuments Record



Areas monitored

- Turbine base
- Cable trench

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Fig. No: 1	Revision:
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Title:
Location map and areas monitored

Project:
Wind turbines at Castle Mains Farm, Dirleton

Scale at A3:
1:2,000

Client:
Ross of Mull Wind Turbine



Fig. 2 - Extract from Roy's c.1750 map



Fig. 3 - Extract from Thomson's 1822 map



Fig. 4 - Extract from First Edition Ordnance Survey map 1854



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Fig. No:	2-4	Revision:	A
Title:	Historic Map Regression		
Project:	Wind Turbine at Castle Mains Farm		
Client:	Ross of Mull Wind Turbine		
Drawn by:	LW	Checked by:	LW
Report No:	2047		



Fig. 5 - Turbine 1 fully excavated



Fig. 6 - Turbine 2 fully excavated


Key:	Fig. No:	5-6	Revision:	A	Client:	Ross of Mull Wind Turbine					
	Title:										
	Project:	Wind Turbine at Castle Mains Farm									
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Fig. 7 - Turbine 3 fully excavated



Fig. 8 - Turbine 4 fully excavated


Key:	Fig. No:	7-8	Revision:	A	Client:	Ross of Mull Wind Turbine					
	Title:										
	Project:	Wind Turbine at Castle Mains Farm									
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Fig. 9 - Cable Trench from NW

Key:

Fig. No:	9	Revision:	A	Client:	Ross of Mull Wind Turbine
Title:					
Project:	Wind Turbine at Castle Mains Farm				



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