

INTRODUCTION

This report describes the results of an archaeological watching brief at a site where an existing electricity sub-station is to be extended. It also includes the results of a walk-over survey along the route of a new 33kv power cable connecting the sub-station with a new windfarm to be built on the side of Beinn an Tuirc. Both elements of the project were sponsored by Scottish & Southern Energy (SSE) and undertaken by John Lewis of Scotia Archaeology during August and September 2009.

DESK STUDY

Fieldwork was preceded by a desk study of known sites and monuments located in the vicinity of the watching brief and the survey route. They are listed under the numbers allocated by the Royal Commission on the Ancient and Historical Monuments of Scotland (eg NR73NE 9) and by the West of Scotland Archaeology Service (eg WoSAS 3428). There are no Scheduled Ancient Monuments near the sub-station or along the cable route.

Evidence of prehistoric occupation has been identified along the banks of the Carradale Water, a short distance from the sub-station, and a few archaeological sites and monuments are located close to the new cable route. These are all described below.

NR73NE 9/NR73NE 12 (WoSAS 3428/3436) Auchnasavil: flint tools, charcoal, bones etc

In 1956 a large flint end-scraper and a flint knife were found on the right bank of the Carradale Water around NR 791 386 (DES 1957, 9).

In 1985 layers of charcoal, fragments of human bone and archaeological features were noted in the banks of the river where erosion had altered its course. From that time a number of excavations were undertaken in fields adjacent to the river, producing evidence of occupation from the Neolithic to the Iron Age. Features exposed by excavation include four hearths, pits containing heat-split stones and post-pits. Among the finds retrieved were pottery of probable late Bronze Age date, fragments of iron and iron slag, hammer stones, flint tools, a possible saddle quern, a whetstone and calcined bone, both human and animal (DES 1986, 27; DES 1987, 40; DES 1988, 21-2; DES 1989, 56; DES 1990, 33; DES 1991, 55; Carter & Tipping 1992; Siggins & Carter 1993).

A sample taken from a hearth yielded a radio-carbon date of 2370 ±100 bp, confirming that the site was occupied during the Iron Age although artefactual evidence suggests that there was human habitation along the river banks long before that.

The river's meandering course has clearly changed over the years, removing some of the evidence of the settlement (or settlements) that once existed along its banks.

NR73NE 22 (WoSAS 46496) Carradale: watching brief

A watching brief carried out in 2000 uncovered what appeared to be a fire-pit a short distance south of the sub-station, at approximately NR 795 382 (DES 2001, 23).

NR73NE 20 Beinn An Tuirc: watching brief

An archaeological watching brief was undertaken during excavations for an underground power line connecting another windfarm to the Carradale sub-station. The trench ran from approximately NR 795 385 to NR 792 376. It contained a spread of charcoal-rich material, interpreted as the possible remnants of a charcoal-burning platform, and an earlier field boundary (DES 2001, 23), these findings perhaps being associated with the sites listed above.

NR73NE 11 (WoSAS 3427) Church Wood: platform

There is a possible platform in a forestry fire lane, at NR 792 378.

NR73NE 10 (WoSAS 3426) Rhonadale Wood: platform

Two platforms, possibly for charcoal-burning, are located at NR 788 378 and NR 787 380.

NR73NE 13 (WoSAS 21176) Guesdale Water: shieling huts

Four possible shieling huts are located around NR 758 352.

DES 1998 Beinn an Tuirc: possible cairn or stone circle

A possible cairn or stone circle has been located on level ground 100m due east of Beinn an Tuirc, at NR 753 362. The circle measures approximately 15m in diameter (DES 1998, 24).

THE WATCHING BRIEF

The existing sub-station is centred on NR 7938 3853, on the west side of the B842 which runs along the east side of the Kintyre peninsula. It is located close to the east bank of the Carradale Water, 2km west of the village of Carradale and 20km north of Campbeltown. The compound is to be extended westwards and the area covered by it, including buffer zones around it, comprised the subject of the watching brief.

The watching brief was undertaken during the removal of topsoil and other modern materials from an area measuring some 61m north/south by 62m east/west and centred on NR 7935 3851. It was bounded on its east by the existing sub-station, on its north by a fence dividing it from a neighbouring field and to the south by a small stream, beyond which was another field. The western limit of the site was defined by the bank of the Carradale Water.

Prior to this investigation, the site was covered with rhododendron trees and bushes, most of which had been removed before the watching brief commenced. Another obstacle to the development was the presence of several animal burrows along the banks of the Carradale Water and the stream on the south edge of the site. These burrows, most of which appeared to be abandoned badger setts, were removed during the investigations.

Excavation was carried out using a toothless ditching bucket on a 13-tonne, tracked, mechanical excavator operated by CHAP Construction who undertook the ground works for Balfour-Beatty on behalf of SSE. Overburden was removed in two stages. The uppermost level contained numerous tree roots and was stockpiled separately from the underlying, cleaner soil. These materials were removed to separate landfill sites.

Topsoil was very peaty and, for most of the period of the excavation, waterlogged. It was approximately 0.5m deep over most of the site although somewhat deeper at its east end where spoil had been deposited during the construction of the original sub-station. Immediately beneath the topsoil was a layer of grey clay, 15-30mm thick, perhaps deposited under lacustrine conditions when the valley was flooded. Below the clay was fine sand through which trial pits were excavated to a total depth of some 2.2m to investigate ground conditions for construction. As expected, water collected on the surface of the clay but even when the clay was removed water did not drain from the surface of the underlying sand.

A few features of possible archaeological significance were found during the watching brief. However, all of them proved to be either recent in date or of natural origin. Remnants of several 19th-/20th-century field drains ran east to west across the site and were identified as narrow lines of topsoil in the clay and sand subsoil. Some of them retained fragments of tile drains and other modern artefacts. Many tree stumps and roots, preserved by the waterlogged conditions, penetrated well into the sandy subsoil and numerous tree-root holes and throw holes were uncovered below the peaty topsoil.

Two possible timber posts were retrieved from the west side of the site. One of them was quite large but appeared to be set into a relatively small pit (F004); the other was considerably smaller and set into what resembled a large, irregular pit (F005). On further examination, it was clear that the smaller of these objects was simply a tree stump whereas the larger timber was forwarded to the laboratories of Headland Archaeology Ltd for more detailed examination. A summary of the report on this timber, which proved to be another tree stump, is given below.

Timber identification

Method

The stump measures approximately 750mm in width and 550mm in length. Samples were sliced thinly along radial, tangential and transverse sections and then stained using bleach before being mounted on a slide in glycerol and examined under a microscope at X100 and X400. Wood sections were identified using features described by Schweingruber (1978; 1990) and IAWA (1989).

Results

Examination of the timber demonstrated that it is a stump of *Quercus* sp (oak) and that there are no signs of workings on it. Given its proximity to the river and its location within lowland valley deciduous woodlands, the sample is probably from the damp-tolerant *Quercus robur* (pedunculate oak) (Rodwell 1991; Stace 1997). *Quercus robur* can grow to a height of 25-30m and may achieve a girth of up to 9m (Stuijts 2005). It is likely that this tree had a fairly open canopy which would have allowed for the growth of plants in the field layer surrounding the tree.

THE WALK-OVER SURVEY

The walk-over survey began at NR 79280 38468, on the west bank of the Carradale Water opposite the sub-station, continuing a short distance along the flood plain of the Carradale Water before climbing onto the ridge on the south-west side of the valley. From the summit

of the ridge the new cable will run westwards, following closely the route of an existing underground cable from a windfarm already standing on Beinn an Tuirc. The new cable will deviate southwards at approximately NR 760 375, terminating on the south side of the mountain at roughly NR 7445 3504, some 5.5km to the south-west of the sub-station. Most of this route crosses rough, undulating ground covered with coarse grass, heather and some bracken through which many outcrops of bedrock protrude.

Most of the new cable route was devoid of archaeological features, the exception being two lines of structures located along the bank of an unnamed stream roughly 1km north-east of the summit of Beinn an Tuirc. One line of seven structures, aligned north/south and centred on NR 75835 36885, was sandwiched between the east side of the burn and a commercial forestry plantation. The second group comprised two similar features, 7m apart and centred on NR 75839 36803. To aid identification in photographs, the latter two features were designated Structures A and B (see Photographic Archive).

These structures were all roughly circular with diameters of approximately 5m and walls surviving only to one or two courses and covered with low vegetation. They are thought likely to be shieling huts although this could not be proved during the survey.

CONCLUSIONS AND RECOMMENDATIONS

The watching brief

Perhaps unexpectedly, nothing of archaeological significance was uncovered during the watching brief. The only man-made features were confirmed as recent in date while the two timbers proved to be simply tree stumps. Excavation continued well below the base of the topsoil and into (and sometimes beyond) the underlying clay, making it unlikely that anything of archaeological importance was missed.

Although the site was devoid of archaeological features, earlier investigations have demonstrated that the banks of the Carradale Water were populated, perhaps temporarily and probably intermittently, over a long period of prehistory. As a consequence, it is likely that more evidence of early occupation will be uncovered should the area be subject to further development.

The walk-over survey

Most of the proposed route of the new cable ran through areas where vegetation was not very high, even in late summer, and it is highly unlikely that any archaeological features were missed during the survey.

The two groups of putative shieling huts lie close to the cable route and they should be avoided during all works associated with the installation of the cable. It is recommended that these structures should be marked off with clearly visible fencing or tape prior to any ground-breaking activities or the use of machinery associated with this project. The area to be cordoned off should also include a substantial buffer zone (perhaps 10m around the structures) to ensure full protection.

REFERENCES

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Stuijts, I 2005 'Wood and charcoal identification' in Gowen, M., O'Neill, J O & and Phillips, M (eds) *The Lisheen Mine Archaeological Project 1996-8*. Wicklow.

DRAWINGS

Four drawings are included in this report.

- 1 Site plan showing the area of the watching brief and the adjacent sub-station
- 2 Map 1: north section of the walk-over survey, showing the route of the new cable marked in red
- 3 Map 2: middle section of the walk-over survey, showing the route of the new cable marked in red
- 4 Map 3: south section of the walk-over survey, showing the route of the new cable marked in red

PHOTOGRAPHIC ARCHIVE

The photographs listed below form part of the site archive and are available digitally. They are not included in the bound copy of the report.

The watching brief

- 1-2 Site prior to excavation, viewed from the north-east
- 3-5 Site prior to excavation, viewed from the west
- 6 Test pit towards the south-east corner of the site, viewed from the north
- 7 Test pit on the north side of the site, showing stratigraphic sequence, viewed from the east
- 8 The north-east corner of the site cleared, viewed from the south
- 9 Pit F001 (a modern post-pit) prior to excavation, viewed from the west
- 10 Location of Pit F001, viewed from the west
- 11 Pit F001 section, viewed from the west
- 12 East end of field drain F002, viewed from the west
- 13 Section 1 across field drain F002, viewed from the north
- 14 Section 2 across field drain F002, viewed from the east
- 15 Typical soil profile on site
- 16 The existing sub-station, viewed from the north-west
- 17 Moving spoil heaps
- 18 The site on 6th August 2009
- 19 Section across Pit F003, viewed from the north
- 20 Pit F004, viewed from the east
- 21 Pit F005, viewed from the east
- 22-23 Pit F005, viewed from the south
- 24-25 Pit F004 after attempt to section it, viewed from the east
- 26-27 Pit F005 sectioned, viewed from the south
- 28-29 Pit F006 (a tree root hole), viewed from the east
- 30 Pit F006 sectioned, viewed from the north
- 31-32 The site on 13th August 2009

The walk-over survey

- 1 View to the north-east, towards the sub-station, from NR 79093 38257
- 2 View to the south, showing Rhonadale Wood, from NR 79093 38257
- 3 View to the east towards Carradale with Arran beyond, from NR 78901 37524
- 4 View to the east from NR 78039 37909
- 5 View to the west from NR 78039 37909
- 6 View to the north from NR 75898 37320
- 7 View to the south from NR 75898 37320
- 8 Existing windfarm on Beinn an Tuirc from NR 75898 37320
- 9 Row of seven possible shieling huts centred on NR 75835 36885, viewed from the north
- 10 Possible shieling Structure A at NR 75839 36803, viewed from the south
- 11 Possible shieling Structure B at NR 75839 36803, viewed from the south
- 12 Location of Structures A and B, viewed from the south
- 13-15 Views to the south over an existing windfarm on Beinn an Tuirc, viewed from NR 75022 35807.