

CPAT Report No. 1409

Maentwrog to Trawsfynydd 33kV Powerline




Archaeological Watching Brief



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Cover photo: Groundworks in progress to the west of Trawsfynydd nuclear power station. CPAT 4155-0016.



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CONTENTS

SUMMARY	ii
1 INTRODUCTION	1
2 HISTORICAL BACKGROUND	2
3 ARCHAEOLOGICAL WATCHING BRIEF	3
4 CONCLUSIONS	5
5 ARCHIVE DEPOSITION STATEMENT	5
6 SOURCES	6
APPENDIX 1: SITE ARCHIVE	7
APPENDIX 2: CPAT WSI 1621	8
APPENDIX 3: DETAILED PLANS	11

Summary

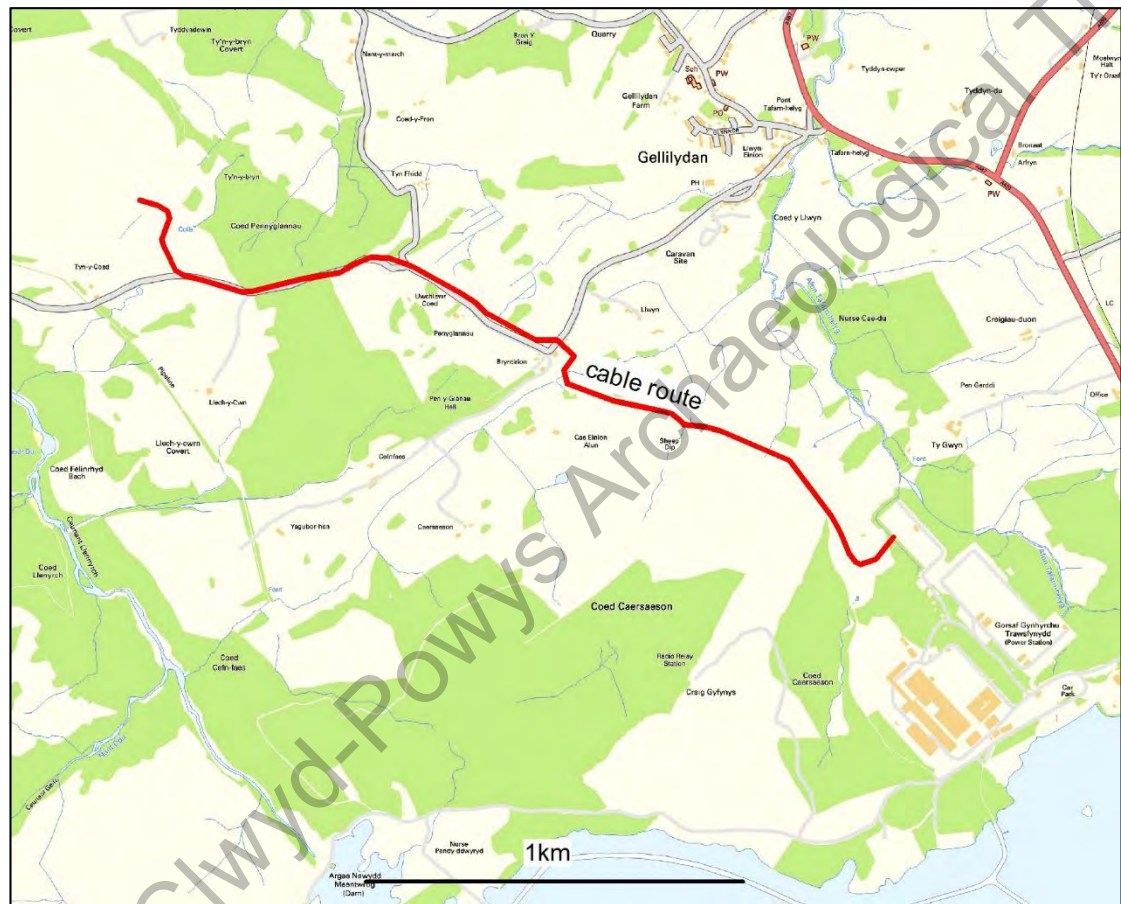
A watching brief was conducted by the Clwyd-Powys Archaeological Trust between February 25th and March 23rd 2016 to monitor topsoil stripping carried out during the construction of a new underground 33kV powerline from the Trawsfynydd Nuclear Powerstation towards Maentwrog, within Snowdonia National Park.

An archaeological assessment carried out in 2014 identified a small number of heritage assets in close proximity to the proposed powerline route. A mitigation strategy was developed to include a programme of watching brief on pre-determined sections of the powerline route.

The watching brief revealed that no features of archaeological significance during the course of these works.

1 Introduction

- 1.1. In 2014 the Field Services Section of the Clwyd-Powys Archaeological Trust (CPAT) conducted an archaeological assessment (Jones and Hankinson 2014). The assessment identified a small number of heritage assets in close proximity to the proposed powerline route. A mitigation strategy was developed in order to reduce the risk to known heritage assets in the vicinity of the pipeline. This assessment also identified several areas of the powerline requiring an archaeological watching brief.



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Fig. 1. Plan showing powerline route (marked in red)

- 1.2. The powerline route runs between a substation located to the south of Maentwrog (SH 66950 39520), and the Trawsfynydd substation, immediately to the west of the former Magnox power station (SH 68950 38590) located on the north shore of Llyn Trawsfynydd.
- 1.3. This report presents the results of a watching brief conducted during topsoil stripping along the 33kV route. Detailed plans of the route are provided in Appendix 3.

2 Historical Background

- 2.1. The geology of the area comprises shallow loamy well drained soils, overlying geological formations of sandstone, mudstone and siltstone laid down during the Cambrian Period. The soils are typically quite nutrient poor and suitable only for upland grazing.
- 2.2. The wider landscape surrounding the study area contains visible remains of human activity from the prehistoric period to the present day. The earliest indications of settlement are provided by a number of prehistoric hut circles, some lying within an enclosure, such as that near Nurse Cae Du. Finds too provide an indication of early activity, including a knife or dagger found close to the powerline route near Penyglannau.
- 2.3. The exceptionally well-preserved earthworks of the Roman fort at Tomen-y-mur, 1.5km from the eastern end of the powerline route are surrounded by a complex of contemporary features which is unparalleled in Wales and includes the fort itself, a bath house, an amphitheatre, a parade ground, and a civilian settlement. Part of the associated road system remains visible, while other sections, including one which crosses the study area, have yet to be located with certainty.
- 2.4. Tomen-y-mur is also cited as one of the courts in the early Welsh Mabinogi tale of Math fab Mathonwy and its military significance continued into the medieval period with the construction of a motte.
- 2.5. The modern landscape, which is heavily wooded, is characterised by small, irregular fields defined by rubble stone walling, the stone having been largely derived from field clearance. Small farmsteads were once scattered throughout the area, some of which could have their origins in the medieval period, although the visible remains appear to be largely later. Many of these farmsteads have since been abandoned and their ruins stand in various stages of decay, including several within the study area. The area also contains the remains of industrial activity in the form of a now-abandoned gold mine at Felenrhyd Fach and some mining trials.
- 2.6. The modern history of the area is dominated by the generation of electricity, initially with the construction of the hydro-electric power station at Maentwrog, which was opened in 1928 and is fed by a substantial pipe which forms a prominent feature in the landscape from its source taking at Trawsfynydd reservoir. The nuclear power station at Trawsfynydd was built between 1959 and 1965, closing 26 years later, and is currently in the process of being decommissioned.
- 2.7. There is a possible cultural association with the Mabinogion, a collection of eleven prose stories collated from medieval Welsh manuscripts. According to local tradition the farm known as Felinryd-fach is thought to be Felen Rhyd, where Prederi, the king of Dyfed, was killed in single combat by Gwydion, the king of Gwynedd.

3 Archaeological Watching Brief

- 3.1. The powerline route was stripped of topsoil to a general width of 8m to 10m prior to trenching for the insertion of the cable, except where the route followed existing roads or tracks.
- 3.2. The soils across the entire length of the powerline route comprised very thin silt or loamy silt topsoils, typically 0.1m in thickness, overlying soft, light brown silty subsoils containing large rounded or sub-rounded sandstones. Bedrock was revealed close to the surface in the field to the north of Bryntirion (SH 67959 39164) and immediately to the west of the laydown area (SH 68327 38922).
- 3.3. The fields immediately to the north-west and north-east of Penyglannau (SH 67790 38070) contained the predicted line of a Roman road running broadly east-west, although previous geophysical survey (Fry 2014) had failed to identify any such feature. The watching brief also produced no evidence for a Roman road and identified no finds earlier in date than approximately 1850 within this area.



Fig. 2. General view from the west of powerline route northwest of Penyglannau
CPAT 4155-0001

- 3.4. The powerline route crossed a lane opposite Beudy Bach (SH 68030 339098) and traversed a field immediately to the east in a southerly direction, then turned to the east to follow the general line of a trackway. Two linear features revealed during topsoil stripping to the south of Beudy Bach (SH 68760 39000) were interpreted as gullies or open drains, recently backfilled. A small quantity of 18th- or 19th-century pottery was identified within the topsoil in this area.



Fig. 3. View from the north-west of drain or gully in the field to the south of Beudy Bach CPAT 4155-0008

- 3.5. To the east of Beudy Bach the pipeline route was modified slightly to the south of a trackway running broadly east-west between the lane and the northern side of Llyn Trawsfynydd. The easement ran through two small fields to the north of a derelict building (SH 68212 38929), marked on the 1889 Ordnance Survey mapping as Pant-yr-orien, probably a smallholding. The topsoil yielded a few sherds of 19th-century pottery but no earlier finds or features were revealed.



Fig. 4 View from the east of easement to the north of Pant-yr-orien (visible in the background) CPAT 4155-0013

- 3.6. To the east of this was a laydown area (SH 69190 39340), accessed by an existing farm track from Llwyn farm, located to the north. This area had already been heavily disturbed by modern farming activity, no evidence of archaeological activity was revealed in this area.
- 3.7. The powerline route followed the line of a trackway and footpath into fields to the south-east of Gwylan farm (SH 68832 38741). The 1889 map recorded a number of sheepfolds, and a large unnamed building probably a barn, in this location which was still extant. The soils excavated in this area contained no finds and no features were revealed.

4 Conclusions

- 4.1. No finds or features of archaeological importance were revealed during the watching brief on the powerline route. With the exception of the power station and the associated infrastructure there seems to have been little development in the immediate vicinity of the route since the early 19th century.
- 4.2. Although the predicted line of a Roman road crossed the route in the fields near Penyglennau the watching brief revealed no evidence for its presence.

5 Archive deposition Statement

- 5.1. The project archive has been prepared according to the CPAT Archive Policy and in line with the CIfA *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives guidance* (2014). The archive will be deposited with the regional Historic Environment Record, maintained by Gwynedd Archaeological Trust. A summary of the archive is provided in Appendix 1.

6 Sources

Published Sources

Fry, R., 2014. *Trawsfynydd, Gwynedd, Wales. Geophysical Survey Report*. ArchaeoPhysica Report TGW131.

Jones, N. W. and Hankinson, R., 2014. Maentwrog to Trawsfynydd Powerlines: Revised Cultural Heritage Assessment. Unpublished report. CPAT Report No 1326.

Cartographic Sources

1841 Maentwrog Tithe map

1889 Ordnance Survey 1st edition 1:2500 map (Merioneth 11.11)

1889 Ordnance Survey 1st edition 1:2500 map (Merioneth 11.12)

1889 Ordnance Survey 1st edition 1:2500 map (Merioneth 12.09)

1889 Ordnance Survey 1st edition 1:2500 map (Merioneth 12.13)

Appendix 1: Site Archive

5 Watching brief visit forms

16 Digital photographs, film CPAT 4155

Appendix 2: CPAT WSI 1621

1 INTRODUCTION

- 1.1. The Field Services Section of the Clwyd-Powys Archaeological Trust (CPAT) have been invited by Iberdrola to prepare a specification for undertaking a watching brief during the construction of a new underground powerline within Snowdonia National Park (SNP).
- 1.2. An assessment was conducted in 2014 (Jones and Hankinson 2014) to determine the potential impacts on the cultural heritage resource which may result from the installation of two new underground electricity cables between the existing substations at Maentwrog and Trawsfynydd in Gwynedd. The scheme comprises a 132kV cable leading west from Trawsfynydd (SH 6902 3850) and a 33kV leading east from Maentwrog (SH 6544 3946), although the initial stage only covers the installation of the 132kV route.
- 1.3. The assessment identified a small number of heritage assets within 100m of the proposed routes, including a number of listed buildings, although these will not be affected by the works. A mitigation strategy was suggested which may be summarised as follows:
 - Demarcate and avoid footbridge (site 33) during site access.
 - Watching brief during soil stripping and/or cable trench excavation adjacent to a trackway, site 6 (PRN 3886) and the place where a prehistoric knife or dagger was found (site 7; PRN 4348).
 - Watching brief during soil stripping within any 5m wayleave through pasture.
 - Watching brief during soil stripping for compound and any drainage works.
 - Use existing breaks in stone boundary walls or rebuild in same style with original stone.
 - Care must be taken to avoid accidental damage to standing buildings and structures adjacent to the routes, particularly within the village of Maentwrog, where there are numerous listed buildings.

2 METHODOLOGY

- 2.1. The watching brief will be conducted according to the Chartered Institute for Archaeologists' (CIfA) Standard and Guidance for an Archaeological Watching Brief (2014). The watching brief will be undertaken to monitor the removal of topsoil along a short section of wayleave, as well as in association with the establishment of a construction compound and access. The excavation of any archaeological features or deposits will be undertaken by hand using the conventional techniques for archaeological excavation:
 - The presence or absence of archaeological features encountered during the ground works will be noted.
 - Where features of archaeological interest are identified during the ground works they will be systematically investigated by hand with sufficient work being undertaken to determine their date, character and function, using the

conventional techniques for archaeological excavation and in accordance with ClifA Standard and Guidance.

- All features will be located as accurately as possible on an overall plan of the development at an appropriate scale, showing boundaries depicted on Ordnance Survey mapping.
- Contexts will be recorded on individual record forms, using a continuous numbering system, and be drawn and photographed as appropriate.
- Plans will be drawn on permatrace to a scale of 1:10, 1:20 or 1:50, as appropriate.
- All photography will be taken using a digital SLR camera with a minimum resolution of 12 mega pixels, including a metric scale in each view, with views logged in a photographic register. Images will be saved in RAW format and subsequently converted to TIFF and JPG.
- In the event of human burials being discovered the Ministry of Justice will be informed. The remains will initially be left in situ, and if removal is required, a MoJ licences will be applied for under the Burial Act 1857.
- In the event of finding any artefacts covered by the provisions of the Treasures Act 1996, the appropriate procedures under this legislation will be followed.

2.2. All artefacts and environmental samples will be treated in a manner appropriate to their composition and a sampling strategy will be developed as appropriate:

- All stratified finds will be collected by context, or where appropriate, individually recorded in three dimensions. Unstratified finds will only be collected where they contribute significantly to the project objectives or are of particular intrinsic interest.
- All finds and samples will be collected, processed, sorted, quantified, recorded, labelled, packed, stored, marked, assessed, analysed and conserved in a manner appropriate to their composition and in line with appropriate guidance.
- arrangements to assess and study any artefacts, assemblages and environment samples.
- Any artefacts recovered during the evaluation will be deposited with an appropriate museum, subject to the permission of the owner.

2.3. Following the on-site work an illustrated report will be prepared containing conventional sections to include:

- Non-technical summary
- Introduction
- Site location
- Topography and Geology
- Archaeological Background
- Watching brief
- Conclusions
- References
- Appropriate appendices on archives and finds

- 2.4. A PDF will be submitted to SNPA for review and comment prior to completion of the final report. Copies of the final report will be provided to the client in PDF format. Three archive hard copies will be provided to SNPA, two to the regional HER and CPAT, one copy to RCAHMW. All relevant digital material, including images, plans and the report, will be provided on a DVD to SNPA, HER, RCAHMW.
- 2.5. The site archive will be prepared to specifications in English Heritage's Management of Research Projects in the Historic Environment (MoRPHE) system and the ClfA Standard and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives (2014), to be deposited with the regional Historic Environment Record (HER).

3 RESOURCES AND PROGRAMMING

- 3.1. The watching brief will be undertaken by a skilled archaeologist under the overall supervision of Nigel Jones, a senior member of CPAT's staff who is also a member of the Chartered Institute for Archaeologists (CIfA). CPAT is also a ClfA Registered Organisation (RAO No 6) and as such agrees to abide by their Code of Conduct (2014) and the Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology (2014).
- 3.2. All report preparation will be completed by or with the assistance of the same field archaeologist(s) who conducted the site work. Copies of the report will be deposited with the client and the regional Historic Environment Record within one month of the completion of on-site works. If appropriate, a short report will be published in Archaeology in Wales.
- 3.3. The project will be monitored by the Archaeologist for Snowdonia National Park Authority, who will be kept informed of progress and any significant discoveries. Monitoring visits will be made as appropriate.
- 3.4. Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.
- 3.5. CPAT is covered by appropriate Public and Employer's Liability insurance, as well as Professional Indemnity insurance.

4 REFERENCES

Jones, N. W. and Hankinson, R., 2014. *Maentwrog to Trawsfynydd Powerlines: Revised Cultural Heritage Assessment*. Unpublished report. CPAT Report No 1326.

N W Jones

7 January 2016

Appendix 3: Detailed Plans

