

# PROPOSED HYDRO-ELECTRIC SCHEMES IN GWYNEDD

## ARCHAEOLOGICAL IMPLICATIONS

REPORT NO. 76

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Ymddiriedolaeth Archaeolegol Gwynedd  
Gwynedd Archaeological Trust

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## ARCHAEOLOGICAL IMPLICATIONS

produced for Shawater Ltd.

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# REPORT ON HYDRO-ELECTRIC SCHEMES

## INTRODUCTION

This report offers initial comments on the archaeological implications of seven proposed hydro-electric schemes. All the schemes are relatively small, and the greatest threat to the archaeology arises from the digging of the pipeline, although notice must also be taken of the siting of the generator. A number of the sites can already be seen to involve archaeological remains, either of the industrial period or earlier. The proposed locations were visited on the 15th and 16th of December, 1993, and limited further documentary research has subsequently been carried out.

## GENERAL APPROACH

Proposed developments which are likely to affect archaeological remains are more likely to receive sympathetic treatment if they recognise the archaeological component at the outset. Ideally, an application would: (i) recognise and acknowledge the presence and significance of any archaeological remains; (ii) show how the design of the development minimises the effect it will have on the archaeology; (iii) make full allowance for an adequate archaeological response (eg recording, excavation etc); (v) make allowance for archiving the findings, with the possibility of publication in a academic journal; (vi) allow for re-instatement of archaeological features which form an intrinsic part of the landscape.

## ARCHAEOLOGY AND PLANNING

The main Government guidance for archaeology and planning is set out in Planning Policy Guidance note 16 (PPG 16(Wales), a copy of which is enclosed. The Gwynedd Structure Plan, and the District Local Plans (including the Snowdonia National Park plan) provide the principal policies for archaeology and planning in Gwynedd.

The Curatorial Section of the Gwynedd Archaeological Trust advises the local authorities in Gwynedd on the necessary archaeological response to planning applications. In addition the SNP also employs an archaeological officer who offers advice on planning applications within the Park.

The guidance given in PPG 16 is quite clear where sites of national importance are concerned: paragraph 27 states that *"where nationally important archaeological remains, whether scheduled or not, and their settings, are affected by proposed development there should be a presumption in favour of their physical preservation in situ.*

Paragraph 28 discusses sites of lesser importance, where the local planning authority are required to decide between the value of the archaeological resource and the value of the proposed development: *"where remains of lesser importance are involved ... planning authorities may decide that the significance of the archaeological remains is not sufficient [to justify preservation in situ] when weighed against all other material considerations, including the need for development.*

The archaeological advice given in the the regional structure plan (Gwynedd Structure Plan, 1991) is set out in policies D15 and D16 (copies enclosed). Generally the advice is very similar to that given in PPG 16 with nationally important sites and their settings to be preserved, and for provision to be made for the recording of sites not meriting preservation. The local plans largely follow the policies as set out in the Structure Plan.

It was suggested by yourself that an environmental assessment would be undertaken for each of the sites, resulting in an environmental statement to accompany the planning application. An archaeological evaluation of the route of the proposed pipeline and the generating station would typically form a part of the environmental assessment, and would usually take the form of a desktop assessment (using printed sources, maps, material held in county and other archives, aerial photographs etc) combined with a field visit, when the area to be affected would be walked over and examined for visible archaeological remains. Any potential sites could then be further evaluated using geophysical survey techniques and, if necessary, limited trial excavations to establish the status of a site. Recommendations would then be made on how best to mitigate the effect the development would have on the archaeology. In the present instance, because of the nature of the development, it would usually be possible to move the pipeline away from potential sites, and so avoid the cost of the further evaluation. On occasions, a "watching brief", where an archaeologist observes the digging of the pipeline, may be recommended.

## **SITES VISITED**

### **AFON GAMMALLT, FFESTINIOG**

#### **Historical Background**

An interesting area, with evidence of activity from prehistoric times onwards. The adjacent hillfort of Bryn y Castell has been fully excavated, and produced evidence for iron working from Late Prehistoric and Roman times. In addition, the Roman road "Sarn Helen" crosses the river at the west end of the suggested route.

The house at Hafod Ysbytty is a medieval (probably 14th century) cruck built hall house, and the land about was probably an upland grange of the Knights Hospitars, based at Ysbytty Ifan. A number of nearby rectangular huts are evidence of occupation during medieval and later times, and not far away are the mounds at "Beddau Ardudwy", possibly graves, although some are certainly peat stacks.

#### **Archaeological Response**

Because of the wealth of archaeological material in the area, the likely planning restraints would include the need for a desk top and field survey to be done along the line of the proposed route. This could be done in advance as part of an environmental assessment.

### **AFON CWMORTHIN**

#### **Historical Background**

A slate quarry, the first known development of which started about 1810 by the Casson family, who worked the nearby Dyffwys quarry. The quarry was leased out from 1830 onwards, and in 1861 the Cwm-Orthin Slate Company was formed with a capital of £100,000. Expansion was fairly rapid after this time, aided by a link to the Ffestiniog Railway. In 1884 a major collapse underground contributed to the general financial problems of the quarry, although sporadic production continued until 1902, when all the underground machinery was stripped out by the Oakeley Company. Work at the quarry began again in the 1920's, and has continued to the present in intermittent bursts.

#### **Archaeological Response**

The proposed route for the pipeline runs partly down the exit tramway which formed the link for Conglog and Cwmorthin quarries onto the Ffestiniog Railway, and partly down the main access road for Cwmorthin, Conglog and Rhosydd quarries. Both sites are landscape features forming part of the industrial archaeology of the area, and a possible solution would be to record them in advance of work starting, and then re-instate them after completion of the work.

### **AFON GAMLAN**

#### **Historical Background**

The proposed scheme lies in an area which originally formed part of the Dolmelynlyn Estate. No archaeological features were noted at the time of the visit, and none are known from records.

## **Archaeological Response**

An archaeological assessment of the proposed route would usually be expected to form part of the Environmental Statement.

### **AFON NANMOR**

#### **Historical Background**

The area around Gelli Iago contains a number of Late Prehistoric round-hut settlements, medieval long-huts and the house at Gelli Iago which is 17th century. No known sites would be affected by the proposed route, but field work may identify additional sites.

#### **Archaeological Response**

An archaeological assessment would determine the route which would do least damage to the archaeology.

### **AFON LAS/BABI**

#### **Historical Background**

This proposed pipeline follows, for the first half of the route, a leat which fed water to the Glasdir mine. Although established as a copper mine, gold and silver were also recovered from the rock. The mine worked from around 1852 until 1914, and is famous for having been the first mine in the world to use the Elmore Oil Flotation Process for the extraction of ore from fine sediments. The Elmore family bought the mine in 1896, and invented the process at Glasdir shortly afterwards. The process came to be used throughout the world, and was of vital importance for the economic extraction of metals from rocks which up to that time had proved uneconomic to work.

#### **Archaeological Response**

The historic importance of the mine adds to the value of the leat. I believe that the idea was to hand dig a pipe into the base of the existing leat. In which case the preservation of the leat as a landscape feature would be important, as would the minimising of the damage by hand-digging rather than using a machine. However, the historic importance of the site and its state of preservation mean that the mine and associated works could be considered as a site of national importance, and suitable for scheduling. In addition it is a forest park and an SSSI. It may therefore be advisable to look for a route which would not involve disturbing the archaeology.

### **AFON LLIW**

#### **Historical Background**

This stone leat fed the Carndochan gold mine, which worked from around 1863 to 1905. A map of c.1860 shows a proposed water course running from the Lliw, and carried over the Fwy by an aqueduct. An additional supply of water was to be fed into the leat from the Fwy by a short feeder leat which was to merge with the main leat above the aqueduct. The 25" OS County Series of 1901 shows that the leat was constructed roughly as proposed.

## **Archaeological Response**

The proposed pipeline is to make use of the first section of the leat, at least as far as the forest plantation. A fairly large diameter pipe was proposed for this site, the installation of which would mean the destruction of the existing stone leat. An alternative was discussed of using the leat as a water course, which would have the value of retaining it as a landscape feature. The archaeological value (ie as a resource of information) of the leat is limited, and although some further documentary and fieldwork may be necessary, the main response would be recording (ie measured survey and some excavated sections) in advance of disturbance.

## **AFON CROESOR**

### **Historical Background**

The proposal here is to take water from the Afon Croesor in the village, and for the pipeline to run between the river and the Croesor tramway to just below the top drum-house. After this the line would follow the tramway, but running alongside rather than on the line of the tramway. The tramway was built between 1862 and 1864 to serve the Croesor slate quarry and, later, the Rhosydd, Fron Boeth and Park quarries. Its good state of preservation and fine examples of civil engineering make it an archaeological site of some importance, and therefore as a candidate for scheduling as a monument of national importance.

### **Archaeological Response**

The historic importance of the tramway suggests that the route of the pipeline should be designed to minimise its impact on the tramway. Looking at the map, it would appear to be best to run it north of the tramway as far as Park, to avoid interfering with the Park quarry link, although further fieldwork and documentary work would be needed to confirm this, and also the best place for crossing the tramway if this is necessary.

