

Llechwedd Town Link Trail Blaenau Ffestiniog, North Wales

Archaeological Assessment



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Llechwedd Town Link Trail Blaenau Ffestiniog, North Wales

Archaeological Assessment

Project No. G2230

Report No. 1003

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December 2011

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Published by Gwynedd Archaeological Trust
Gwynedd Archaeological Trust
Craig Beuno, Garth Road,
Bangor, Gwynedd, LL57 2RT

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Mae Ymddiriedolaeth Archaeolegol Gwynedd yn Gwmni Cyfyngedig (Ref Cof. 1180515) ac yn Elusen (Rhif Cof. 508849)
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G2230 LLECHWEDD TOWN LINK TRAIL, MOELWYNION CYCLE TRACK, BLAENAU FFESTINIOG

ARCHAEOLOGICAL ASSESSMENT

SUMMARY

An archaeological Assessment has been carried out along the route of a new 1.94km long safe cycle/community linking trail from the existing mountain biking facility at Llechwedd to the town of Blaenau Ffestiniog. The proposed cycle track between Llechwedd to the Market Hall Car Park, Blaenau Ffestiniog passes through a dramatic industrialised landscape of international importance with a number of listed buildings close by, starting to the north within Llechwedd Quarry, and passing through the area of the Llechwedd Echchange Sidings and the former Oakeley Quarry, now known as the Welsh Slate Co. Quarry. The proposed route causes minimal impact on the historic landscape, and will not cause a significant visual impact from the surrounding area. However seven new river crossings will be required, and these need to be sympathetically designed, along with the ramp from the Market Hall car park.

1. INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Antur Stiniog Cyf to carry out an archaeological assessment of a new 1.94km long safe cycle/community linking trail from the existing mountain biking facility at Llechwedd to the town of Blaenau Ffestiniog (from NGR SH 698469 to SH 696462; Figs 1a and 1b).

The trail will enable the facility users to safely travel into the town without the need of using the main A470 trunk road, which is the only existing link. This will benefit the local community, as it will link the areas of Rhiw, and Maenofferen with the town centre.

The trail will also serve as a tourist resource, as it will create access to the dramatic industrial landscape of the huge slate tips, and the iconic zig-zag incline seen from the western end of the town.

The proposed route will be separated into three distinct sections.

Section A will be 510m and starts from the new visitor centre, initially being cut into the batter of the car park. This should be straightforward as the batter is made up of slate spoil. This section entails the construction of three bridges, two to cross the Barlwyd river, and one to cross the old incline. In order to maintain a suitable grade for use by cyclists and pedestrians, substantial building up using large boulders is required across the bottom of the slate tips along a section of the Barlwyd.

Section B will be 590m and makes use of an old existing track bed for its entire length, and the groundwork involved will focus mainly on removing any organic layer and the laying down of suitable crushed material. There will be three new bridged crossings of the Barlwyd, and it will pass underneath the network rail line at an existing crossing point.

Section C will be 840m and this section will link the community of Rhiw and Glanypwll to the town centre. This section will make use of a constructed ramp from the Market Hall car park to the lower ground level, but then run through the industrial estate, and ramp down on to the very edges of Cae Dolawel rugby field, before making use of Hospital Road, crossing Glanypwll Road, and on to Dinas Road and the crossing.

1.1 Acknowledgements

The staff of Gwynedd Archives at Caernarfon and Dolgellau, and Bangor University Archives are thanked for their help with providing archive material. Ashley Batten and Jenny Emmet of Gwynedd Archaeological Planning Service are thanked for their help and guidance.

2. DESIGN BRIEF AND SPECIFICATION

An archaeological mitigation brief has not been prepared by Gwynedd Archaeological Planning Services for this part of the scheme, however a brief was prepared in 2008 for an archaeological assessment and interpretive

scoping study for the creation of the mountain bike trail at Llechwedd (D1164). An archaeological assessment of the cycle route is to be undertaken according to guidelines set out in Welsh national planning guidance (Planning Policy Guidance Wales 2010) and Welsh Office Circular 60/96 (Planning and the Historic Environment: Archaeology). The archaeological programme will comprise a desk-based assessment, and walkover survey.

This design and the archaeological assessment will also conform to the guidelines specified in Standard and Guidance for Archaeological Desk-based Assessment (Institute for Archaeologists, 1994, rev. 2001, 2008).

A desk-based assessment is defined as ‘a programme of assessment of the known or potential archaeological resource within a specified area or site on land, inter-tidal zone or underwater. It consists of a collation of existing written, graphic, photographic and electronic information in order to identify the likely character, extent, quality and worth of the known or potential archaeological resource in a local, regional, national or international context as appropriate’. (*Standard and Guidance for Archaeological Desk-based Assessment*, IFA 2001, 2).

The aims of the assessment as given in the specification are:

- to identify and record the cultural heritage within the defined study area;
- to evaluate the importance of what has been identified;
- to recommend ways in which impact upon the cultural heritage can be avoided or minimised.

To comply fully with the aims expressed above it can be necessary to undertake a programme of Field Evaluation following the Desktop study and Field Visit. This is because some sites cannot be assessed by desktop or field visit alone, and additional fieldwork is therefore required. This typically takes the form of geophysical survey or trial excavation, although measured survey is also a possible option. A full programme of assessment and evaluation may therefore consist of:

- Desktop study
- Field walkover
- Initial report
- Field evaluation
- Draft report
- Final report

This phase of the project concerns the first three phases, and recommendations are made concerning further archaeological evaluation or mitigation.

3 METHODS AND TECHNIQUES

3.1 Desk top study

The desktop study comprised the consultation of maps, documents, computer records, written records and reference works, which form part of the Historic Environment Record (HER), located at Gwynedd Archaeological Trust (GAT), Bangor. Information about listed buildings was consulted by means of the CARN (Core Archaeological Index), which is the online index of the Royal Commission on Ancient and Historic Monuments, Wales. Relevant aerial photographs from the collection at RCAHM, Wales were examined.

Sites, buildings and find spots listed in the GAT HER were identified (Fig. 1), with GAT HER or PRN referring to the unique Primary Record Number given to each individual site.

3.2 Field Search

The field search was undertaken during August 2011, when the route of the proposed development was examined. Notes were taken, sketches and measurements were taken of sites of potential archaeological interest and a photographic record was made. Weather and ground conditions were good for a site visit.

3.3 Report

The available information was synthesised to give a summary of the archaeological and historic background and of the assessment and recommendations, as set out below. The separate features, their evaluation and recommendations are listed separately, and a summary of the overall assessment of the area is given at the end.

The criteria used for assessing the value of features was based upon those used by the Secretary of State for Wales when considering sites for protection as scheduled ancient monuments, as set out in the Welsh Office circular 60/96. The definitions of categories used for impact, field evaluation and mitigation are set out in Appendix 2.

4 ARCHAEOLOGICAL RESULTS

4.1 Topographic description

4.1.1 Section A

The northern extent of the proposed cycle track is located within the Llechwedd Slate Caverns site (Plate 01). Modern quarry workings and levelling of former spoil tips have obliterated much of the former evidence (Plate 02). A rock cut culvert through the slate survives where the Afon Barlwyd crosses the site of the 'Secret Waterfall'. A deep rock cut channel was cut to ensure the water which drains the upper moorland did not flood the quarry; it is now crossed by a modern wooden bridge. The trackway route crosses an area of hard standing, formed from the levelling of former quarry tippings before it reaches the A470 with which it runs parallel, crossing the Afon Barlwyd on a proposed new bridge, an area now heavily overgrown (Plate 03). The route then follows between the new A470 slate parapet wall and the Llechwedd Quarry slate tips, along the bank of the Afon Barlwyd (Plate 04). At a 2nd bridge crossing the route diverts slightly to hug the banks of the river and slate tips (Plate 05). The route then crosses the A470 onto the dismantled tramway to the west of it.

4.1.2 Section B

The route passes under the A470 just south of the monumental ornamented railway tunnel of 1879 (Plate 06), and under a railway bridge (Plate 11) and the incline piers before crossing the meandering Afon Barlwyd three times, the southern one at NGR SH 69544662, on the track bed of the former 1' 11½" Ffestiniog Railway. The bed of the track, orientated north-east south-west consists of slate covered in organic material and grass (Plate 07 & 09). The slate boundary wall is somewhat collapsed on the western side where there are Oakeley Quarry tips, (Plate 14) surviving in places between 0.5m and 1.1m high (Plate 12). At NGR SH 69484653 the slate wall has been rebuilt on the western side torevet a slate tip to a height of up to 2.1m (Plate 10). In places rock outcropping means that there is no boundary wall (Plate 08). Irregularities in the slate boundary walls suggest that they were placed after the slate tips and were required to accommodate them (Plate 13). The railway line is adjacent to the east, with the slate separating wall surviving in good condition (Plate 17). At Dinas Crossing the proposed route crosses the railway line and heads east into Blaenau Ffestiniog (Plate 16).

4.1.3 Section C

The route continues south-eastwards along a footpath to the east of the railway line until it meets Dinas Road, crossing the Afon Barlwyd just east of the railway. The bridge and boundary walls are of slate, and the river has a stone embankment wall, some of which is recent. At NGR SH 69484637 the housing, of 19th and 20th century date, starts. The route crosses Glanypwll Road and heads down Hospital Road (Plate 18-20) and runs behind the housing along Glanypwll houses at the western edge of the Rugby Football ground (Plates 21-24). At the southern edge of the rugby ground it meets the coal yard, where there is an embanked walled area enclosing it. The route then passes through the Llwyn Geli Industrial Estate and Fire Station (Plate 25), finally reaching the railway track by way of a ramp near the Market Hall (Plate 26).

4.2 Archaeological and historical background

4.2.1. Prehistoric and Roman sites

There are no known settlements or burial sites of the prehistoric period within the corridor of interest. In an upland area such as this remains of funerary and ritual sites dating from the Bronze Age would be expected,

possibly taking the form of cairns and standing stones. The later developments associated with the slate industry in the study area is likely however to have obliterated any traces of such monuments in the study area.

There is one probable Roman site in the study area, the probable location of the Roman Road between Segontium to Bryn-y-Cefeiliau (**Site 11**), which is thought to run just to the north of the proposed scheme. A recently published book 'The Roman Roads of North Wales: Recent Discoveries' by Edmund Waddelove (1999) claims to be able to trace this Roman road across the pass. His evidence was reviewed during the mitigation works associated with the A470 improvements and no convincing road of Roman military style was identified (Hopewell 2009). There are also no known settlement sites in the study area, with Romano-British settlement noted to south at Tan y Grisiau and to the east in Cwm Teigl and to the north in the Lledr valley.

4.2.2 Medieval

Settlement during the medieval period is poorly documented and not well represented on the ground. The area is within the *cantrefi* of Dunoding and Arllechwedd. The land lies at the then sparsely inhabited and remote upland borders of the medieval township of Ffestiniog. There are no known sites of the period within the study area, the nearest being found in the area of Llan Ffestiniog, and further afield at Dolwyddelan, with its castle and church having medieval origins.

4.2.3 Post-Medieval

Prior to the industrial revolution the study area, and at least from the early 17th century, the land formed part of the extensive sheep pasture of the Gwydir and Tan-y-Bwlch (Oakeley) estates, the majority of the parish of Ffestiniog being in the hands of the Oakeley family.

The area around Blaenau Ffestiniog has a significant number of industrial archaeological remains including quarries, mines, tips, buildings and transport systems which all contribute to the importance of this landscape. Quarrying started in the area to the north of Blaenau during the late 18th century with the opening of Diffwys in 1760, and quarrying had been significantly developed in the wider area around Llechwedd by 1802 (Fig. 2). It was not until the early years of the 19th century that any systematic working began on the slopes above Rhiwbryfdir (Dodd 1971, 214). Llechwedd Quarry was opened initially in 1840 and made early use of mills and uphaulage systems from the underground workings as well as utilising one of the earliest hydro-electricity generating stations in the United Kingdom. In 1846 Messrs Shelton and Greaves leased Tal y Weunydd, the site of the future Llechwedd Quarry Main works, and two years later large scale production began. In the same year the road was begun from Blaenau Ffestiniog to Dolwyddelan, which has developed with alterations into the A470. Two attempts to build and maintain a road between Blaenau Ffestiniog and Dolwyddelan were made, probably both along the line of the current road. The first was between 1854 and 1857. An inn was erected after the road was completed, its name commemorating the recently concluded Crimean War. Contemporary accounts suggest that the road was poorly maintained and in 1864 the Portmadoc and Beaver Pool Turnpike Trust was set up to oversee the continued maintenance and construction of roads in the area. It is clear that a trackway preceded this road. A route is shown on Evans' map of 1796 and on the OS 1" map of 1841. Unfortunately these maps are not detailed enough to show its exact line. These showed it to be a simple but much-used trackway. In some places there was clear evidence of construction in others there was nothing more than a series of eroded hollow ways. Several short lengths of the trackway were destroyed during the construction of the new road and details were recorded during the general watching brief and are described below.

The original working level at Llechwedd was the adit now used by Quarry Tours and it was here that Llechwedd's first mill was built in 1852-3 to saw slabs, powered by a waterwheel. The unusable rock and the sawn ends from the mill were tipped down the hillside overlooking Pant yr Afon, and the earliest plans of Llechwedd Quarry, dating from 1871, show that the tip had already reached the edge of the present road. The later works, including a corrugated iron mill are higher up the slope and post date 1871. The Oakeley quarry to the west of the A470 came into being in 1838, and appears to have reached its present extent by 1863 (Gwyn 1996). In 1836 the Ffestiniog Railway was opened to a terminus at Dinas, but the only quarry to make use of it was Samuel Holland's, initially by carting the produce down by a circuitous route through the Rhiw Quarry and the Welsh Slate Company's Quarry and by Rhiwbryfdir House (Boyd 1975). Shortly after March 1839 Holland built an incline down to the Ffestiniog Railway (Site 3), following the Welsh Slate Company, and the Rhiwbryfdir quarry followed suit some time between 1838 and 1842 (*ibid.* 1). As quarrying developed in the earlier years of the 19th century, the dominant form of settlement was ribbon development along the pre-industrialised roads and later along the Ffestiniog Railway, as at Rhiwbryfdir (NGR SH 69584635) but from

the 1860s cottage dwellings began to be developed on the Wynn and Oakeley lands, along with elements of town planning. This gave Blaenau its urban characteristic (Gwyn 2006, 220). This can be noted where the proposed cycle route passes through the town along Dinas Road. The Tithe Map (Fig. 3) and apportionment of the parish of Ffestiniog of 1843 makes limited reference to the quarrying and developing housing in the area, although the quarry owners are named. The apportionment is given below with the main quarry area highlighted:

| Landowner | Occupier | Plan Nos. | Name and Description of Land and Premises | Quantities in Statute Measure | | |
|---|-----------------------------------|-----------|---|-------------------------------|----------|----------|
| | | | | A | R | P |
| Lord Newborough | Jane Evans | 88 | Sheepwalk | 789 | - | 15 |
| | Jane Evans | 84 | Cwm Bowydd | 449 | 1 | 36 |
| | Lewis Thomas | 85 | Maen y Fferam | 92 | 3 | 20 |
| George Casson | John Vaughan William Powell | 86 | Gelli sheep Gelli farm | 139 | - | 25 |
| Mrs L.S. Oakley, Lord Newborough & Repres. of the Late Richard Parry Esq | Samuel Humphrey and others | 81 | Llechwedd cŷd | 179 | 2 | 6 |
| Trustees of the late Richard Parry Esq | Elizabeth Richards | 79 | Gan y Pwll | 72 | 2 | 3 |
| | Margaret Williams | 77 | Ty'n ddol | 69 | - | 20 |
| | Margaret Griffith | 78 | Cefn y Cwiletiau | 120 | 2 | 7 |
| | Sarah Jones | 68 | Ddol wen | 85 | - | 23 |
| | Evan Jones | 83 | Ffudd bwlch | 224 | - | 13 |
| Mrs Louisa Jane Oakeley | Mathew & son | 80 | Llwyn y gell | 42 | 2 | 11 |
| | Samuel Humphrey | 76 | Rhiw Cryfdir | 571 | 2 | 29 |
| | “” | 82 | Talen waenydd | 113 | 3 | 28 |
| | Thomas Jones | 84a | Tan y bryn | 12 | 2 | 28 |
| | “” | 84b | Llanerch y moch | 15 | 1 | 21 |
| | Robert Owen | 84c | Newydd ddu | 27 | 3 | 19 |
| Mr John Vaughan | In hand | 87 | Tan y mannod | 252 | 3 | 10 |

Work began in 1875 on a standard gauge branch line from the existing railhead at Betws y Coed to a terminus alongside the Ffestiniog Railway's Diffwys branch to a railway tunnel at Pant-yr Afon, finally reaching the town in 1881. Most production had ended by the mid-20th century although some extraction continues at Llechwedd today, following a relentless economic decline in the slate industry in the 20th century. The A470 close to Blaenau has recently undergone significant redevelopment and improvement close to the study area. Extensive archaeological surveys were undertaken prior to works commencing on site. The listed crane was dismantled and stored at the start of the site works and was re-erected in the Llechwedd exchange sidings area after the temporary diversion works had been removed (Hopewell 2009).

4.3 Statutory and non-statutory designations

The proposed development lies within the Blaenau Ffestiniog Registered Landscape of Outstanding Historic Interest (Blaenau Ffestiniog HLW (Gw) 3) and very close to a number of listed sites associated with the slate quarries. The Blaenau Ffestiniog Landscape of Outstanding Historic Interest is described as *the foremost slate mining and quarrying landscape in Wales, sited in an elevated natural basin and its tributary valleys in south Snowdonia, containing an undisputed wealth of industrial archaeological remains comprising visually imposing and extensive slate quarry and mine workings, waste tips, associated buildings, transport systems and settlements dating from the late 18th to the early 20th centuries. The area also includes the Tanygrisiau hydro-electric pumped storage scheme, the first of its kind in Britain* (Cadw/ICOMOS 1998, 80). The features within the confined area of the Pant yr Afon slate wharf have been defined as being of national importance (Roberts 1995, 7-8; Gwyn 1996). Four elements of this have been listed; the two bridges and the tunnel portal (Site 1) are Grade II, and the Llechwedd Power House is Grade II*. The complete cycle route lies partially within the Snowdonia National Park, although the study area covered in this report lies outside it. The route lies within

Historic Landscape Character Areas 1 *Blaenau Ffestiniog* and 13 *Blaenau Ffestiniog Slate Quarries* (GAT 2003).

4.4 The Archaeological Survey (Fig. 2)

The archaeological survey lists sites identified within the study area (outlined in red on Fig. 1) and within a short distance of it. Within a short distance of the proposed cycle route, particularly within the area of the Pant yr Afon Llechwedd exchange sidings and powerhouse, lie a significant number of sites of international importance. These are not all listed below, and are not directly impacted upon by the proposed scheme. Thirty two sites were identified by Dafydd Gwyn (1996) as forming part of a trans-shipment wharf, including the Hydro-Electric Power station (a rare example of an early 20th century hydro station), railway, road and quarrying features. A conservation plan for this area has been produced (Gwyn 2005). The location of all of these features are shown on Fig. 1, and also listed in Appendix 1. This area is part of a nationally important complex of industrial structures and transport systems. The exchange siding is one of only two surviving examples of a system for exchanging goods from a narrow gauge to a standard gauge railway. All other examples have now been destroyed, except that at Minffordd on the Ffestiniog Railway, which has been considerably altered. This is the only example to retain the narrow gauge rails, a crane and weighing machine (Hopewell 2009). The Llechwedd quarry incline forms part of the Ffestiniog Railway feeder system.

A 'C' after the grid reference indicates the centre of a feature or area of some size, and an 'A' indicates the approximate position of a feature.

| SITE 1 | SH 69684693 | Railway Tunnel (Plate 06) | | |
|--|----------------|---------------------------|-----------------------|-------------------------|
| Assessment of Importance | B | Impact: None | Site Status Reference | Grade II LB; PRN 29,329 |
| An ornamented tunnel mouth constructed out of granite on the Llandudno-Bettws-y-Coed Line. A plaque on the pediment reads '1879 W. Smith'. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Avoidance | | | | |

| SITE 2 | SH 69914723 | 'The Secret Waterfall' | | |
|--|----------------|------------------------|-----------------------|--|
| Assessment of Importance | B | Impact: None | Site Status Reference | |
| A waterfall created through a channel having been cut into the rock surface to ensure that the water draining off the upland areas on the lower levels of Llechwedd quarry | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Avoidance | | | | |

| SITE 3 | SH 69794703 C | Llechwedd Quarry Tips and Incline Crossing | | |
|---|------------------|--|-----------------------|--|
| Assessment of Importance | B | Impact: Slight | Site Status Reference | |
| Very large quarry tips associated with the Llechwedd Quarry. They are thought to have covered approximately their current area by the late 1860s. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Watching Brief if any of the tip is removed close to the incline | | | | |

| SITE 4 | SH 69424643 – SH 69754693 | Trackbed and Boundary walls of the former Ffestiniog Railway (Plate 7-10 & 12-15) | | |
|--|---------------------------------|---|-----------------------|------------|
| Assessment of Importance | B | Impact: Slight | Site Status Reference | PRN 25,229 |
| The trackbed of the 1' 11½" gauge Ffestiniog Railway. This made an end-on junction with the quarry railway, connecting via an incline. For much of the course of this along the proposed cycle track route it runs in a slab lined cutting, and the formation is overgrown. The bounding walls are | | | | |

| |
|--|
| of coursed, unbonded slate rubble. In some places on the western side they revet slate tips from the Oakely Quarry |
| Recommendation for Further Evaluation: None |
| Mitigation Recommendations: Basic Recording |

| | | | | |
|---|------------------------|--|-----------------------|-------------------------|
| SITE 5 | SH 69664678 | Oakeley Quarry Girder Viaduct Bridge (Plate 11) | | |
| Assessment of Importance | B | Impact: None | Site Status Reference | Grade II LB; PRN 25,200 |
| Piers which formerly carried a girder bridge for the 1' 11½" gauge double track incline railway | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Avoidance | | | | |

| | | | | |
|--|------------------------|---|-----------------------|--|
| SITE 6 | SH 69424644 | Dinas Crossing and Bridge (Plate 16) | | |
| Assessment of Importance | C | Impact: | Site Status Reference | |
| A crossing of the Llandudno-Bettws y Coed railway line from the proposed quarry railway and cycle track bed leading south eastwards on a trackway towards Dinas Road into the town of Blaenau. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: None | | | | |

| | | | | |
|--|------------------------|--|-----------------------|--|
| SITE 7 | SH 69624623 | Rugby Football Ground (Plate 21-24) | | |
| Assessment of Importance | C | Impact: Slight | Site Status Reference | |
| A 1km ² area of open playing fields, incorporating the Blaenau Ffestiniog Rugby Club. The impact of the laying of the track is thought to be limited. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Partial Watching Brief during groundworks | | | | |

| | | | | |
|--|--------------------------|--------------------------------------|-----------------------|--|
| SITE 8 | SH 69574615 C | Coal Yard (Plate 23 & 24) | | |
| Assessment of Importance | C | Impact: Slight | Site Status Reference | |
| An embanked coal yard on the rugby club ground side. It seems to be of 19 th century date and appears to have been associated with the railway line to the south. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Partial Watching Brief during works | | | | |

| | | | | |
|---|--------------------------|---|-----------------------|--|
| SITE 9 | SH 69644619 C | Llwyn Gelli Industrial Estate (Plate 25) | | |
| Assessment of Importance | D | Impact: Slight | Site Status Reference | |
| A 20 th century industrial estate, built on former industrial land associated with the railway. The proposed cycle route runs on or adjacent to the roadway and will have a limited impact | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: None | | | | |

| | | | | |
|---|------------------------|-----------------------------------|-----------------------|--|
| SITE 10 | SH 69724595 | Railway Cutting (Plate 26) | | |
| Assessment of Importance | B | Impact: | Site Status Reference | |
| The cycle route will be accessed via a ramp from the market hall car park onto the disused railway route. | | | | |
| Recommendation for Further Evaluation: None | | | | |

| |
|--|
| Mitigation Recommendations: Ensure appropriate design of ramp |
|--|

| | | | | |
|---|--------------------------|--|--------------------------|---------------|
| SITE 11 | SH 69864722 A | Roman Road from Segontium to Bryn-y-Cefeiliau | | |
| Assessment of Importance | E | Impact: None | Site Status Reference | PRN 17,604 |
| The probable line of a Roman Road between Segontium and Bryn-y-Cefeiliau has been suggested at this point (Waddelove 1999), although there is no clear evidence for it on the ground. | | | | |
| Recommendation for Further Evaluation: None | | | | |
| Mitigation Recommendations: Avoidance | | | | |

5. SUMMARY OF ARCHAEOLOGICAL POTENTIAL

5.1 Location Summary

The northern extent of the study area is located within the Llechwedd Slate Caverns site, to the north of Blaenau Ffestiniog. A deep rock cut channel was cut to ensure the water which drains the upper moorland did not flood the quarry; it is now crossed by a modern wooden bridge. The trackway route crosses an area of hard standing, formed from the levelling of former quarry tippings before it reaches the A470 with which it runs parallel, crossing the Afon Barlwyd on a proposed new bridge, an area now heavily overgrown. The route then follows between the new A470 slate parapet wall and the Llechwedd Quarry slate tips, along the bank of the Afon Barlwyd. At a 2nd bridge crossing the route diverts slightly to hug the banks of the river and slate tips. The route then crosses the A470 onto the dismantled tramway to the west of it. The route passes under the A470 just south of the monumental ornamented railway tunnel of 1879, and under a railway bridge and the incline piers before crossing the meandering Afon Barlwyd three times, the southern one at NGR SH 69544662, on the track bed of the former 1' 11½" Ffestiniog Railway (Boyd 1975). The slate boundary wall is somewhat collapsed on the western side where there are Oakeley Quarry tips, surviving in places between 0.5m and 1.1m high. At NGR SH 69484653 the slate wall has been rebuilt on the western side torevet a slate tip to a height of up to 2.1m. In places rock outcropping means that there is no boundary wall. Irregularities in the slate boundary walls suggest that they were placed after the slate tips and were required to accommodate them. The railway line is adjacent to the east, with the slate separating wall surviving in good condition. At Dinas Crossing the proposed route crosses the railway line and heads east into Blaenau Ffestiniog. The route continues south-eastwards along a footpath to the east of the railway line until it meets Dinas Road, crossing the Afon Barlwyd just east of the railway. The bridge and boundary walls are of slate, and the river has a stone embankment wall, some of which is recent. At NGR SH 69484637 the housing, of 19th and 20th century date, starts. The route crosses Glanypwll Road and heads down Hospital Road and runs behind the housing along Glanypwll houses at the western edge of the Rugby Football ground. At the southern edge of the rugby ground it meets the coal yard, where there is an embanked walled area enclosing it. The route then passes through the Llwyn Geli Industrial Estate and Fire Station, finally reaching the railway track by way of a ramp near the Market Hall.

5.2 Environmental Remains and Soil Morphology

The potential for the survival of environmental remains is considered to be extremely low, since all of the ground has undergone disturbance from the 18th to 20th centuries, and some of the route is located on substantial slate tips.

5.3 Artefactual Potential

The potential for the survival of artefacts is likely to be moderate for post-medieval artefacts associated with industrial activity, although the limited amount of clearance work makes this likely to be not substantial. The potential for the recovery of medieval and earlier artefacts is thought to be low.

6. SUMMARY OF RECOMMENDATIONS

6.1 Summary of Specific Recommendations

| Number | Name | Importance | Impact | Recommendation for further evaluation | Mitigation recommendations |
|--------|--|------------|--------|---------------------------------------|--|
| 1 | Railway Tunnel | B | | None | Avoidance |
| 2 | 'The Secret Waterfall' | B | | None | Avoidance |
| 3 | Llechweidd Quarry Tips | B | | None | Basic Recording if any of the tip is removed |
| 4 | Trackbed and Boundary walls of the former Ffestiniog Railway | B | | None | None |
| 5 | Oakeley Quarry Girder Viaduct Bridge | B | | None | Avoidance |
| 6 | Dinas Crossing and Bridge | C | | None | None |
| 7 | Rugby Football Ground | C | | None | Partial Watching Brief during ground works |
| 8 | Coal Yard | C | | None | Partial Watching Brief during ground works |
| 9 | Llwyn Gelli Industrial Estate | D | | None | None |
| 10 | Railway Cutting | B | | None | Ensure appropriate design of ramp |
| 11 | Roman Road from Segontium to Bryn-y-Cefeiliau | E | | None | Avoidance |

6.2 General Recommendations

The features within the confined area of the Pant yr Afon slate wharf have been defined as being of national importance (Roberts 1995, 7-8; Gwyn 1996). Four elements of this have been listed; the two bridges and the tunnel portal (Site 1) are Grade II, and the Power House is Grade II*. The archaeology of the site demonstrates the complexity of transport needs generated by the Welsh Slate Industry. It underlies the vital economic importance of the slate industry not only to the local community but to the British economy as a whole. In the same vein, the Ffestiniog Railway, whose upper terminus the Pant yr Afon site formed, though primarily of local transport concern, is of international importance as its narrow gauge technology formed the basis of many such railways in the future, particularly in areas of British influence, such as at the Darjeeling Himalayan Railway in India.

Having said this, the impact of the proposed cycle trackway on the historic environment will be limited, and in its lower reaches there will be limited visibility from the surrounding area. It is proposed that the three new river crossings of the Afon Barlwyd which should be required on the track-bed route (Section B) should be **sensitively designed to reflect the important industrial setting in which they are placed**, as they are located close to a number of listed buildings and within an industrial area of acknowledged international importance. The route will provide public access to areas that had hitherto been inaccessible and this must be viewed as a benefit.

A **partial watching brief** should be carried out over those parts of the route where ground disturbance is to be expected.

Although the proposed route lies within the Blaenau Ffestiniog Landscape of Outstanding Historic Interest, an **Assessment of the Significance of Impacts of Development on Historic Landscape (ASIDHOL)** report is

not considered to be necessary, as the development proposals are on small scale and the visual impact on the surrounding landscape is thought to be limited.

7. CONCLUSIONS

The proposed cycle track between Llechwedd to the Market Hall Car Park, Blaenau Ffestiniog passes through a dramatic industrialised landscape of international importance. However the proposed route causes minimal impact on the historic landscape, and will not cause a significant visual impact from the surrounding area. However seven new river crossings will be required in total, and these need to be sympathetically designed with particular attention paid to the design of the crossings of the Afon Barlwyd on the former track bed in Section B, and the crossing of the former incline in Section A (Site 3). This is also the case with the ramp from the Market Hall car park in Section C (Site 10).

8. ARCHIVE

The archive consists of historic maps, plans and aerial photographs, along with notes and digital images taken on the field visit. The archive is currently held by GAT under project code **G2230**.

One copy of the bound report will be sent to the GAPS archaeologist, and a further copy sent to the HER Archaeologist at the curatorial division of Gwynedd Archaeological Trust, Bangor, for deposition in the Regional HER. A copy of the report will be provided to the National Monument Record, Royal Commission on the Ancient and Historic Monuments of Wales, Aberystwyth.

9. REFERENCES AND OTHER SOURCES CONSULTED

GAT Historic Environment Record

Gwynedd Archives, Caernarfon

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National Library of Wales

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APPENDIX 1
Sites on the Gwynedd HER within 1km of the proposed Cycle Track

| PRN | NAME | NGR | TYPE | PERIOD |
|-------|--|------------|------------------|---------------|
| 6515 | Unicorn Cottage, Blaenau Ffestiniog | SH70304610 | COTTAGE | Modern |
| 12497 | Unicorn Cottage; tai Unicorn | SH70304610 | BUILDING | Post-Medieval |
| 12739 | Duffws Station Ffestiniog Rlwy | SH70204594 | RAILWAY STATION | Post-Medieval |
| 14625 | Leat, Ffestiniog | SH70744710 | LEAT | Post-Medieval |
| 14656 | Mine Shaft | SH70454747 | MINE SHAFT | Post-Medieval |
| 14665 | Trial | SH69644784 | TRIAL MINE | Post-Medieval |
| 14667 | Meandering Bank | SH69904773 | BANK (EARTHWORK) | Post-Medieval |
| 14700 | Slate Fence | SH69864761 | FENCE | Post-Medieval |
| 14766 | Poss Peat Cutting | SH70634730 | PEAT CUTTING | Post-Medieval |
| 14767 | Track from Quarry | SH70444746 | TRACKWAY | Post-Medieval |
| 14779 | Trial | SH69914765 | TRIAL MINE | Post-Medieval |
| 14780 | Boundary | SH69854765 | FIELD BOUNDARY | Post-Medieval |
| 14783 | Leat | SH70404730 | LEAT | Post-Medieval |
| 14784 | Peat Stack Base | SH70544735 | PEAT STAND | Post-Medieval |
| 14785 | 3 Stone Pillars | SH70554734 | STONE PILE | Post-Medieval |
| 14789 | Sheep Dipping Enclosure | SH70354746 | ENCLOSURE | Post-Medieval |
| 14798 | Peatstack | SH70714721 | PEAT STAND | Post-Medieval |
| 17604 | Part of Roman Road, Segontium - Bryn-y-gefeiliau | SH69864722 | ROAD | Roman |
| 18221 | Plas Weunydd Landscape | SH69794729 | LANDSCAPE | Multi-period |
| 20293 | Slate Quarry, Hollands | SH69004660 | SLATE QUARRY | Post-Medieval |
| 20294 | Slate Quarry, Welsh Slate | SH69304730 | SLATE QUARRY | Post-Medieval |
| 20295 | Slate Quarry, Gloddfa Ganol | SH69404700 | SLATE QUARRY | Post-Medieval |
| 20296 | Slate Quarry, Oakeley | SH69504700 | SLATE QUARRY | Post-Medieval |
| 20297 | Pant yr Afon, Llechwedd Exchange Sidings | SH69704690 | RAILWAY SIDING | Post-Medieval |
| 20298 | Slate Quarry, Glan Y Don (tip and Mill) | SH69704670 | SLATE QUARRY | Post-Medieval |
| 20300 | Slate Quarry, Llechwedd | SH70004700 | SLATE QUARRY | Post-Medieval |
| 20301 | Owain Goch (water Wheel) | SH70404730 | WATER WHEEL | Post-Medieval |

APPENDIX 1
Sites on the Gwynedd HER within 1km of the proposed Cycle Track

| PRN | NAME | NGR | TYPE | PERIOD |
|-------|--|--------------|-----------------------------|---------------|
| 20302 | Slate Quarry, Votty | SH70604650 | SLATE QUARRY | Post-Medieval |
| 25199 | Crane, Llechwedd Exchange Sidings | SH6970046816 | CRANE | Post-Medieval |
| 25200 | Girder Bridge, Llechwedd Exchange Sidings | SH6969246875 | BRIDGE | Post-Medieval |
| 25284 | Girder Bridge, Llechwedd Exchange Sidings | SH6969246848 | BRIDGE | Post-Medieval |
| 25285 | Revetment Wall, Llechwedd Exchange Sidings | SH6971246825 | REVETMENT | Post-Medieval |
| 25286 | Incline Tunnel, Llechwedd Exchange Sidings | SH6974446927 | TUNNEL | Post-Medieval |
| 25287 | Afon Barlwyd Tunnel, Llechwedd Sidings | SH6973546904 | TUNNEL | Post-Medieval |
| 25288 | Link Tunnel, Llechwedd Exchange Sidings | SH6972946888 | TUNNEL | Post-Medieval |
| 25289 | Hydro-Electric Powerstation, Llechwedd | SH6971446878 | HYDROELECTRIC POWER STATION | Modern |
| 25290 | Railway Bridge, Llechwedd Exchange | SH6974946910 | RAILWAY BRIDGE | Post-Medieval |
| 25291 | Section of Railway, Llechwedd Exchange | SH6974546900 | RAILWAY | Post-Medieval |
| 25292 | Railway Incline, Llechwedd Exchange | SH6980546952 | RAILWAY INCLINED PLANE | Post-Medieval |
| 25293 | Railway Bridge, Llechwedd Exchange | SH6977546939 | RAILWAY BRIDGE | Post-Medieval |
| 25294 | Pipeline, Llechwedd Exchange | SH6974146889 | PIPELINE | Modern |
| 25295 | Weighbridge House, Llechwedd Exchange | SH6970346844 | WEIGH HOUSE | Post-Medieval |
| 25296 | Shed, Remains of, Llechwedd Exchange | SH6971046797 | SHED | Post-Medieval |
| 25297 | Loading Area, Llechwedd Exchange | SH6970446826 | LOADING BAY | Post-Medieval |
| 25298 | Railway Sidings, Llechwedd Exchange | SH6968846819 | RAILWAY SIDING | Post-Medieval |
| 25299 | Railway, Llechwedd Exchange | SH6971146901 | RAILWAY | Post-Medieval |
| 25300 | Revetment, Llechwedd Exchange | SH6972946926 | REVETMENT | Post-Medieval |
| 29327 | Drainage Adit, Llechwedd Exchange | SH6979046954 | ADIT | Post-Medieval |
| 29328 | Railway, Llandudno to Blaenau Ffestiniog | SH6967346831 | RAILWAY | Post-Medieval |
| 29329 | Ffestiniog Tunnel, Llechwedd Exchange | SH6968946929 | RAILWAY TUNNEL | Post-Medieval |
| 29330 | Railway Bridge, Llechwedd Exchange | SH6968646867 | RAILWAY BRIDGE | Post-Medieval |
| 29331 | Structure, Llechwedd Exchange | SH6969846897 | STRUCTURE | Post-Medieval |
| 29332 | Gateposts, Llechwedd Exchange | SH6969746867 | GATE POST | Post-Medieval |
| 29333 | Tank, Llechwedd Exchange | SH6971146859 | WATER TANK | Post-Medieval |

APPENDIX 1

Sites on the Gwynedd HER within 1km of the proposed Cycle Track

| PRN | NAME | NGR | TYPE | PERIOD |
|-------|--|--------------|------------|---------------|
| 29334 | Field Barn, Tal y Waenydd | SH6967547506 | FIELD BARN | Post-Medieval |
| 29338 | Footpath, Llechwedd Quarry | SH6974846867 | FOOTPATH | Post-Medieval |
| 29339 | Structure, Llechwedd Exchange | SH6972346745 | STRUCTURE | Unknown |
| 29340 | Revetment, Crimea Road | SH6975346937 | REVETMENT | Post-Medieval |
| 29341 | Structures, Possible, Llechwedd Exchange | SH69724692 | STRUCTURE | Unknown |
| 29342 | Culvert, Afon Barlwyd | SH6977047050 | CULVERT | Post-Medieval |
| 29343 | Slate Tips, Llechwedd Quarry | SH6981147042 | SPOIL HEAP | Post-Medieval |
| 29344 | Revetting Walls, Afon Barlwyd | SH6977047110 | WALL | Post-Medieval |
| 29345 | Graffiti Stone, Tal y Waenydd | SH6966047390 | GRAFFITI | Unknown |
| 29346 | Graffiti Stone, Tal y Waenydd | SH6967047380 | GRAFFITI | Unknown |
| 29347 | Retaining Wall, Oakley Complex | SH6960047690 | REVETMENT | Modern |
| 29348 | Spoil Heap, Possible, S of Bryntirion | SH6958047740 | SPOIL HEAP | Unknown |
| 29349 | Dry Stone Wall, Bryntirion | SH69504776 | WALL | Post-Medieval |
| 29350 | Quarry Scoops, Nr. Bryntirion | SH6959047780 | QUARRY | Unknown |
| 29364 | Slate Tips & Trackway, Oakeley Complex | SH69734705 | SPOIL HEAP | Post-Medieval |

APPENDIX 2

Categories of importance

The following categories were used to define the importance of the archaeological resource.

Category A - Sites of National Importance.

Scheduled Ancient Monuments, Listed Buildings of grade II* and above, as well as those that would meet the requirements for scheduling (ancient monuments) or listing (buildings) or both.

Sites that are scheduled or listed have legal protection, and it is recommended that all Category A sites remain preserved and protected *in situ*.

Category B - Sites of regional or county importance.

Grade II listed buildings and sites which would not fulfil the criteria for scheduling or listing, but which are nevertheless of particular importance within the region.

Preservation *in situ* is the preferred option for Category B sites, but if damage or destruction cannot be avoided, appropriate detailed recording might be an acceptable alternative.

Category C - Sites of district or local importance.

Sites which are not of sufficient importance to justify a recommendation for preservation if threatened.

Category C sites nevertheless merit adequate recording in advance of damage or destruction.

Category D - Minor and damaged sites.

Sites that are of minor importance or are so badly damaged that too little remains to justify their inclusion in a higher category.

For Category D sites, rapid recording, either in advance of or during destruction, should be sufficient.

Category E - Sites needing further investigation.

Sites, the importance of which is as yet undetermined and which will require further work before they can be allocated to categories A - D are temporarily placed in this category, with specific recommendations for further evaluation. By the end of the assessment there should usually be no sites remaining in this category. In this case several areas of unknown potential have been allocated to this category.

Definition of Impact

The impact of the proposed development on each feature was estimated. The impact is defined as *none, slight, unlikely, likely, significant, considerable or unknown* as follows:

None:

There is no construction impact on this particular site.

Slight:

This has generally been used where the impact is marginal and would not by the nature of the site cause irreversible damage to the remainder of the feature, *e.g.* part of a trackway or field bank.

Unlikely:

This category indicates sites that fall within the band of interest but are unlikely to be directly affected. This includes sites such as standing and occupied buildings at the margins of the band of interest.

Likely:

Sites towards the edges of the study area, which may not be directly affected, but are likely to be damaged in some way by the construction activity.

Significant:

The partial removal of a site affecting its overall integrity. Sites falling into this category may be linear features such as roads or tramways where the removal of part of the feature could make overall interpretation problematic.

Considerable:

The total removal of a feature or its partial removal which would effectively destroy the remainder of the site.

Unknown:

This is used when the location of the site is unknown, but thought to be in the vicinity of the proposed works.

Definition of field evaluation techniques

Field evaluation is necessary to fully understand and assess most class E sites and to allow the evaluation of areas of land where there are no visible features but for which there is potential for sites to exist. Two principal techniques can be used for carrying out the evaluation: geophysical survey and trial trenching. Topographic survey may also be employed where sites are thought to survive as earthworks.

Geophysical survey most often involves the use of a magnetometer, which allows detection of some underground features, depending on their composition and the nature of the subsoil. Other forms of geophysical survey, including resistivity survey and ground penetrating radar might also be of use.

Trial trenching allows a representative sample of the development area to be investigated at depth. Trenches of appropriate size can also be excavated to evaluate category E sites. Trenching is typically carried out with trenches of between 20 to 30m length and 2m width. The topsoil is removed by machine and the resulting surface is cleaned by hand, recording features. Depending on the stratigraphy encountered the machine may be used to remove stratigraphy to deeper levels.

Definition of Mitigatory Recommendations

Below are the measures that may be recommended to mitigate the impact of the development on the archaeology.

None:

No impact so no requirement for mitigatory measures.

Detailed recording:

This requires a full photographic record and measured survey prior to commencement of works.

Archaeological excavation may also be required depending on the particular feature and the extent and effect of the impact.

Basic recording:

Requiring a photographic record and full description prior to commencement of works.

Strip, Map and Sample:

The technique of Strip, Map and Sample involves the examination of machine-stripped surfaces to identify archaeological remains. The stripping is undertaken under the supervision of an archaeologist. Stripping and removal of the overburden is undertaken in such a manner as to ensure damage does not take place to surfaces that have already been stripped, nor to archaeological surfaces that have not yet been revealed.

Stripping is undertaken in as careful a manner as possible, to allow for good identification of archaeological features. A small team of archaeologists will be responsible for subsequently further cleaning defined areas where necessary. Complex sites which cannot be avoided will need to be fully excavated.

Watching brief:

This is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.

Avoidance:

Features, which may be affected directly by the scheme, or during the construction, should be avoided. Occasionally a minor change to the proposed plan is recommended, but more usually it refers to the need for care to be taken during construction to avoid accidental damage to a feature. This is often best achieved by clearly marking features prior to the start of work.

Reinstatement:

The feature should be re-instated with archaeological advice and supervision.

APPENDIX 3

LLECHWEDD/TOWN LINK TRAIL

PROJECT DESIGN FOR ARCHAEOLOGICAL ASSESSMENT (T0022)

Prepared for
Simon Williams (Antur Stiniog Cyf)

November 2011

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

LLECHWEDD/ TOWN LINK TRAIL

PROJECT DESIGN FOR ARCHAEOLOGICAL ASSESSMENT (T0022)

Prepared for Simon Williams (Antur Stiniog Cyf), November 2011

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| Stages 1 - 2 Report, Illustration and Archiving | Error! Bookmark not defined. |

APPENDIX 3: PROJECT DESIGN

LLECHWEDD/ TOWN LINK TRAIL

PROJECT DESIGN FOR ARCHAEOLOGICAL ASSESSMENT (T0022)

Prepared for Simon Williams (Antur Stiniog Cyf), November 2011

1. INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by Antur Stiniog Cyf to provide a cost and project design for carrying out an **archaeological assessment** of a new 1.94km long safe cycle/community linking trail from the existing mountain biking facility at Llechwedd to the town of Blaenau Ffestiniog (from **NGR SH 698469 to SH 696462**).

The trail will enable the facility users to safely travel into the town without the need of using the main A470 trunk road, which is the only existing link. This will benefit the local community, as it will link the areas of Rhiw, and Maenofferen with the town centre.

The trail will also serve as a tourist resource, as it will create access to the dramatic industrial landscape of the huge slate tips, and the iconic zig-zag incline seen from the western end of the town.

The proposed route will be separated into three distinct sections.

Section A will be 510m and starts from the new visitor centre, initially being cut into the batter of the car park. This should be straightforward as the batter is made up of slate spoil.

This section does have some engineering difficulties and will entail the construction of three bridges, two to cross the Barlwyd river, and one to cross the old incline.

In order to maintain a suitable grade for use by cyclists and pedestrians, substantial building up using large boulders will be required across the bottom of the slate tips along a section of the Barlwyd. Materials will be sourced from the Llechwedd quarry to minimise cost.

Section B will be 590m and makes use of an old existing track bed for its entire length, and the groundwork involved will focus mainly on removing any organic layer and the laying down of suitable crushed material.

There will be three new bridged crossings of the Barlwyd, and a will pass underneath the network rail line at an existing crossing point.

Section C will be 840m and this section will link the community of Rhiw and Glanypwll to the town centre. This section will make use of a constructed ramp from the Market Hall car park to the lower ground level, but then run through the industrial estate, and ramp down on to the very edges of Cae Dolawel rugby field as discussed on site, before making use of Hospital Road, crossing Glanypwll Road, and on to Dinas Road and the crossing.

The proposed development lies within the Blaenau Ffestiniog Registered Landscape of Outstanding Historic Interest (Blaenau Ffestiniog HLW (Gw) 3) and very close to a number of sites associated with the slate quarries.

The current archaeological programme will be completed as part of the planning application stage.

An archaeological mitigation brief has not been prepared by Gwynedd Archaeological Planning Services for this part of the scheme, however a brief was prepared in 2008 for an archaeological assessment and interpretive scoping study for the creation of the mountain bike trail at Llechwedd (D1164). An **archaeological assessment** of the cycle route is to be undertaken according to guidelines set out in Welsh national planning guidance (*Planning Policy Guidance Wales 2010*) and Welsh Office Circular 60/96 (*Planning and the Historic Environment: Archaeology*). The archaeological programme will comprise a **desk-based assessment, and walkover survey**.

GAPS should be consulted prior to the start of the project.

This design and the archaeological assessment will also conform to the guidelines specified in *Standard and Guidance for Archaeological Desk-based Assessment* (Institute for Archaeologists, 1994, rev. 2001, 2008).

1.1 Archaeological Background

The area around Blaenau Ffestiniog has a significant number of industrial archaeological remains including quarries, mines, tips, buildings and transport systems which all contribute to the importance of this landscape. Quarrying started in the area to the north of Blaenau during the late 18th century with the opening of Diffwys in 1760. Llechwedd Quarry was opened in 1840 and made early use of mills and uphaulage systems from the underground workings as well as utilising one of the earliest hydro-electricity generating stations in the United Kingdom. Most production had ended by the mid-20th century although some extraction continues at Llechwedd today.

2. ARCHAEOLOGICAL AIMS

An archaeological assessment is defined as “a programme of assessment of the known or potential archaeological resource within a specified area or site on land, inter-tidal zone or underwater. It consists of a collation of existing written, graphic, photographic and electronic information in order to identify the likely character, extent, quality and worth of the known or potential archaeological resource in a local, regional, national or international context as appropriate” (IFA 2008, 2)

The aims of the assessment are:

- to identify and record the cultural heritage within the defined study area;
- to evaluate the importance of what has been identified;
- to recommend ways in which impact upon the cultural heritage can be avoided or minimised.

For the purposes of this design, the assessment/evaluation area is defined as indicated in **Antur Stiniog Cyf** client brief.

A full programme of assessment and evaluation may therefore consist of:

- Desktop study
- Field walkover
- Field evaluation
- Draft report
- Final report

This design is for the first **two** phases only, and recommendations will be made for any further field evaluation required.

3. PROGRAMME OF WORK

3.1 Introduction

Stage 1 Desk-based study - This stage will consist of a desk-based study of all readily available secondary documentary, cartographic, pictorial, and aerial/ground photographic sources in order to provide a historical framework for any surviving archaeological remains.

Stage 2 Field Survey - This stage will consist of a field survey of the whole development area in order to identify both specific sites and broader areas of archaeological sensitivity.

Stage 3 Evaluation – such as a geophysical investigation may be required in certain areas. The assessment report will make recommendations for any evaluation work required.

Stage 4 Further Evaluation/Mitigation - The requirement for any further archaeological work at this stage will be dependant upon the results of stages 1 to 3 and the final layout of the proposed works. A separate brief and report on the results will be required for this stage. The brief and report may be combined with stage 3 in some circumstances.

3.2 Stage 1 - Desk-based assessment

The desk-based assessment will involve a study of the following records

The regional Historic Environment Register (HER, Gwynedd Archaeological Trust) will be examined for information concerning the study area. This will include an examination of the core HER, and secondary information held within the record which includes unpublished reports, the 1:2500 County Series Ordnance Survey maps, and the National Archaeological Record index cards.

The National Monuments Record (NMR RCAHMW, National Monuments Record of Wales, Plas Crug, Aberystwyth, SY23 1NJ) will be checked for sites additional to the HER, and if required additional supporting information will be examined at the NMR.

Information about Listed Buildings and Scheduled Ancient Monuments from Cadw will be examined in the regional HER, with supporting information from Cadw if required. The Register of Outstanding and Special Historic Landscapes and the Register of Parks and Gardens will be checked, and also the location of World Heritage Sites.

Secondary sources will be examined, including the Inventories of the Royal Commission on Ancient and Historical Monuments for Wales, and works held within the regional libraries. Indices to relevant journals, including county history and archaeology society journals and national society journals such as *Archaeologia Cambrensis* will be checked. Also at this stage 19th century topographical dictionaries, antiquarian tours and trade directories will be examined where relevant.

Evidence from aerial photographs will be collated. Vertical and oblique collections held by the NMR, CCW and Welsh Assembly Government will be considered for examination. All photographs examined will be listed in the assessment report.

Archive repositories will be examined at the Gwynedd Archives (Caernarfon Record Office, Swyddfa'r Cyngor, Caernarfon, Gwynedd LL55 1SH).

3.3 Stage 2 - Field survey

This part of the assessment will involve targeted field walking to assess the sites identified during the desk-based study. Any additional sites noted will also be assessed. The location of potentially well-preserved environmental deposits will be noted.

The aims of this stage of the work are to:

- verify the results of the desk based assessment
- identify any further archaeological sites which may exist as above ground features
- assess the potential for the preservation of below-ground archaeology
- assess the impact upon the historic landscape
- photograph and record the present condition of all sites noted.

Field walking will be carried out along the route of the cycle track and any proposed access routes and bridges. Field walking will also be undertaken where other direct impact may occur.

Located sites or finds will be accurately fixed by means of GPS satellite navigation and/or related to fixed local topographic features and the OS national grid by means of measured survey.

The character, function, condition, vulnerability, potential dating and relationship to other features of each identified site or find will be described fully. The importance of the site or find will be assessed in terms of local, regional or national significance.

Photographs in high resolution digital format of each recorded site or artefact/object identified will be taken. Both specific photographs of the site and wider angle views of the site within its landscape context will be included.

Access onto land is to be arranged by the Clients.

3.4 Stage 4 - Mitigation

This stage will essentially include a specific mitigation strategy based on the results of the preceding stages. The mitigation strategy will be prepared by the archaeological curator and will seek to preserve all archaeological sites in situ, within the framework of the development. The mitigation strategy may commonly include any or all of the following components:

- a) Preservation in-situ by exclusion. Sites identified as being within 50m of any proposed ground disturbance must be clearly and robustly marked and/or fenced off to protect them from accidental damage during construction. The location, marking and/or fencing of archaeological sites must be completed in the presence of a monitoring archaeological contractor who will be engaged by the developer to oversee this work. Every exclusion area must be completed prior to construction commencing on the site and must remain in place for the duration of all construction works.
- b) Preservation by record. Where damage is unavoidable specifically targeted programmes of intensive archaeological investigation will be recommended which may include measured/drawn survey or full excavation.

c) Watching brief. A watching brief may be maintained over the whole development area during the early stages of any new ground disturbance so that previously unrecorded features revealed by this work can be monitored and recorded where necessary.

A separate brief and report on the results will be required for this stage. The brief and report may be combined with stage 3 in some circumstances.

3.5 Data processing and report compilation

Following completion of the stages outlined above, a report will be produced incorporating the following:

Non-technical summary

1. Introduction
2. Aims and purpose
3. Specification and Project Design
4. Methods and techniques, including details and location of project archive
5. Archaeological Background
6. Results of assessment
7. Assessment of impacts
8. Proposals for further field evaluation and/or mitigation
9. Summary and conclusions
10. List of sources consulted.

Illustrations will include plans of the location of the study area and archaeological sites. Historical maps, when appropriate and if copyright permissions allow, will be included. Photographs of relevant sites and of the study area where appropriate will be included.

A draft copy of the report will be sent to the regional curatorial archaeologist and to the client prior to production of the final report.

4. DISSEMINATION AND ARCHIVING

For the purposes of this project the full site archive will be deposited within one month of the completion of the final report. The archive will be deposited at a time and location to be agreed with the curator. Normally the paper/drawing/digital archive will be deposited with the regional curator and the regional HER and the finds at an appropriate local museum.

The archive will include all site notes, finds, documents, drawings, photographs, digital data and a copy of the final report and any prior draft versions. In the archive deposition statement, located at the rear of the interim and final clients report, all of the above items must be clearly quantified in tabular form and their ultimate location and proposed date of deposition stated.

5. PERSONNEL

The project will be supervised by John Roberts, Head of Contracts and Richard Cooke, Senior Archaeologist.

The work will be carried out by fully trained Project Archaeologists who are experienced in conducting watching briefs and working with contractors and earth moving machinery. (Full CV's are available upon request). The work will be carried out by an experienced field archaeologist and surveyor. (Full CV's are available upon request).

6. MONITORING AND TIMING

Monitoring meetings can be arranged during the course of the project if required.

7. HEALTH AND SAFETY

The Trust subscribes to the SCAUM (Standing Conference of Archaeological Unit Managers) Health and Safety Policy as defined in **Health and Safety in Field Archaeology** (2006). Risks will be assessed prior to and during the work.

8. INSURANCE

Liability Insurance - Aviva Policy 24765101CHC/00045

- Employers' Liability: Limit of Indemnity £10m in any one occurrence
- Public Liability: Limit of Indemnity £5m in any one occurrence
- Hire-in Plant Insurance: £50,000.00 any one item;
£250,000.00 any one claim

The current period expires 21/06/12

Professional Indemnity Insurance – RSA Insurance Plc P8531NAECE/1028

- Limit of Indemnity £5,000,000 any one claim
- The current period expires 22/07/12

9. OTHER

Any queries concerning the above should be directed to Mr John Roberts or Mr Richard Cooke at the Gwynedd Archaeological Trust Offices, Garth Road, Bangor. Telephone (01248) 352535 (ext. 229).

10. SOURCES CONSULTED

Antur Stiniog Llechwedd/ town link trail brief. 2011

GAPS design brief D1164. 2008.

GAT Project Design T0022. 2008

Standard and Guidance for Archaeological Desk-based Assessment (Institute for Archaeologists, 1994, rev. 2001)

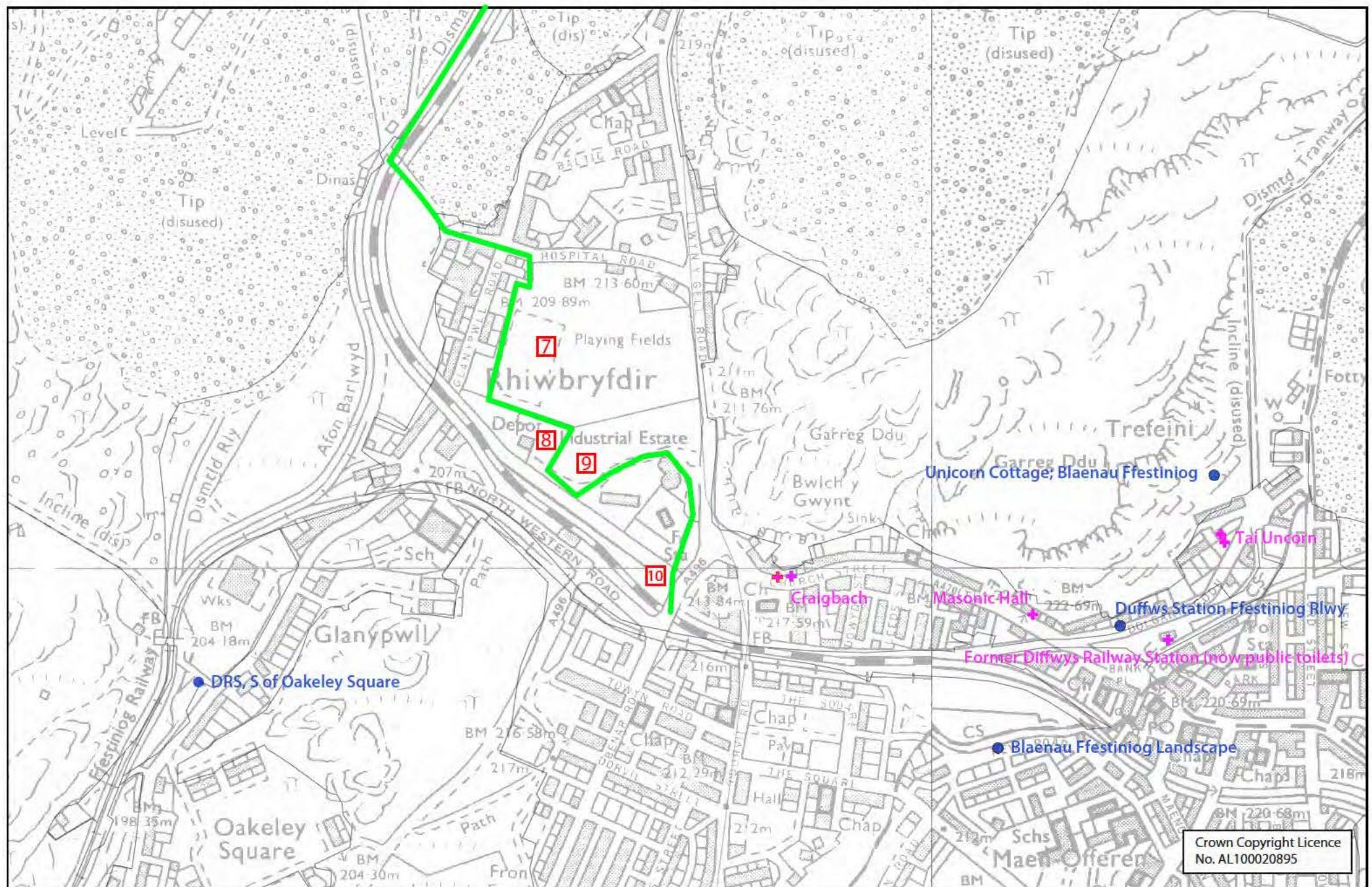


Figure 1b: The southern section of the proposed cycle track, with sites noted on the Gwynedd HER noted with blue dots. Listed Buildings highlighted in pink. Sites referred to in the text are numbered. Base map taken from Ordnance Survey 1:10 000 series sheets SH64NE and SH74NW. Scale 1:4000



Figure 02: Festiniog Quarries - Maenyferan Cwymbowydd & Intended Road May 1802
 (Gwynedd Archives XD2A/394)

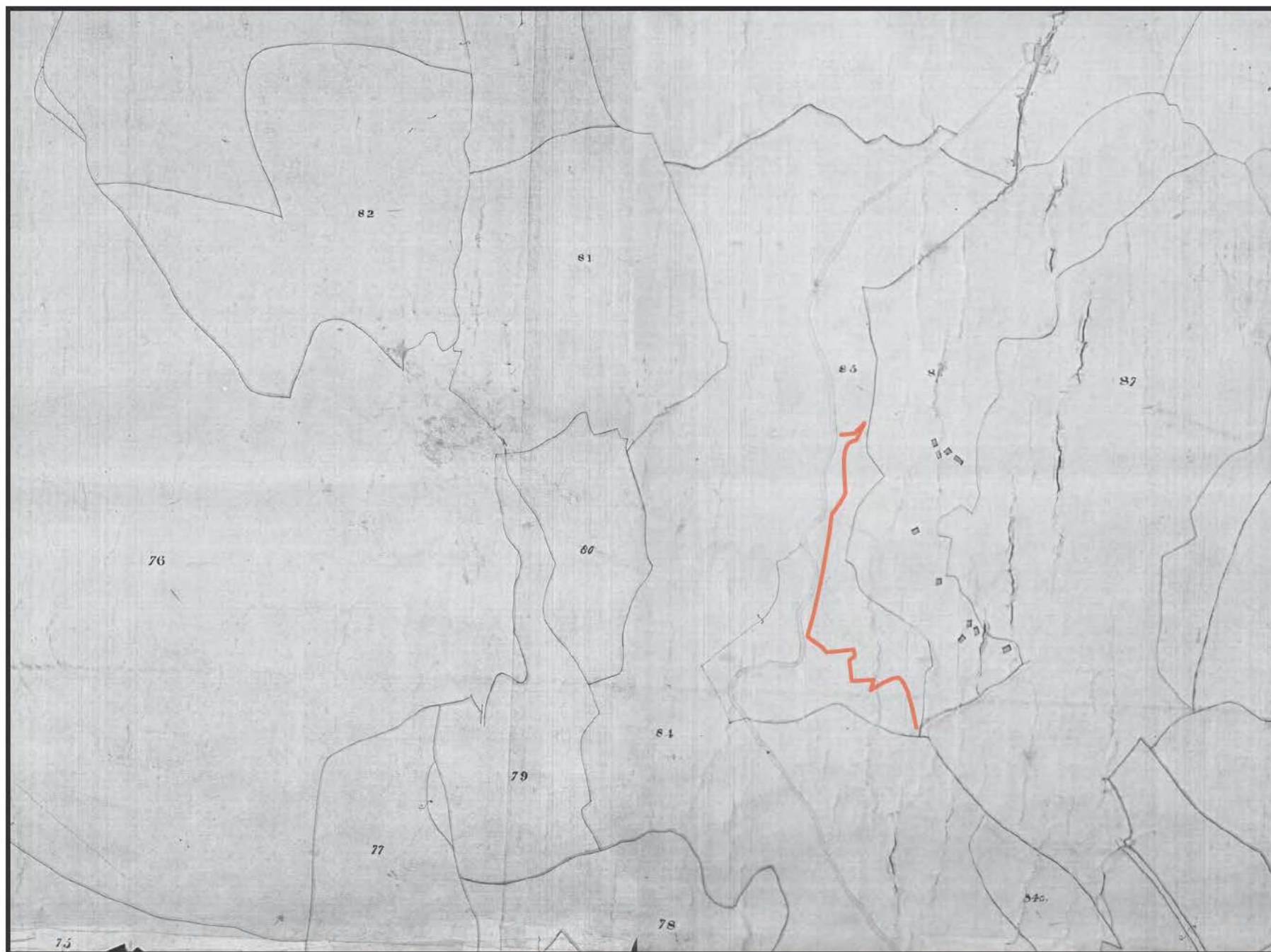


Figure 03: Tithe Map of the Parish of Festiniog 1843. Bicycle route highlighted in red



Figure 04: Map showing land ownership of Quarries in 1901 (Based on Ordnance Survey 6" Second Edition Map (2/DAF/2418)) Bicycle route highlighted in red



Plate 01: Llechwedd Quarry track (site 02). Photograph taken from the north - east



Plate 02: Llechwedd Quarry levelled tip, on quarry route



Plate 03: The Afon Barlwyd. Photograph taken from the north



Plate 04: The A470, with recent parapet. Photograph taken from the north

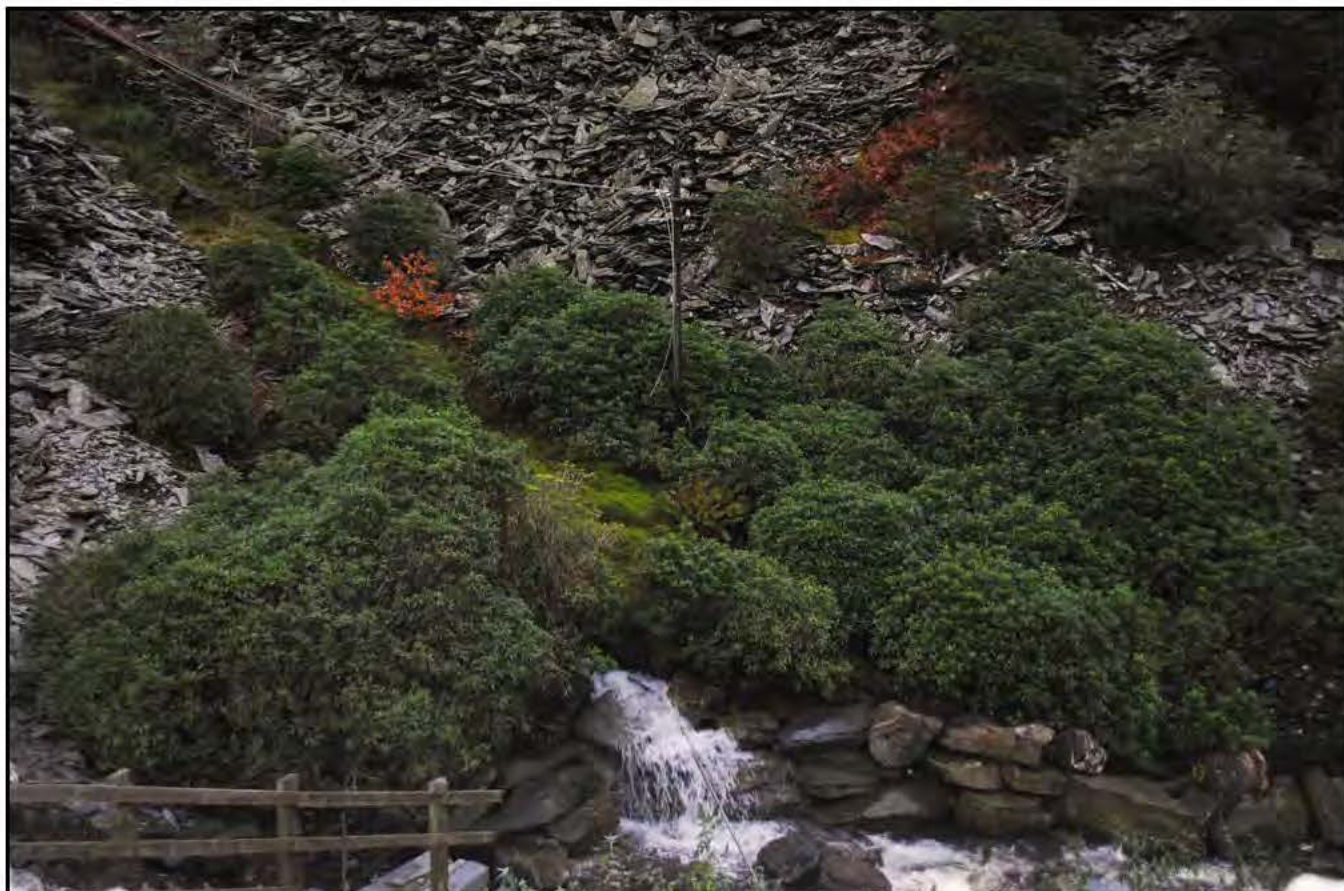


Plate 05: View of the route of the cycle track on the banks of the Afon Barlwyd east of the A470. Photograph taken from the west



Plate 06: View of the railway tunnel portal on Llandudno - Betws y Coed railway (site 01).



Plate 07: View of the former Ffestiniog railway track to be used for the cycle route. Photograph taken from the south



Plate 08: View of the former Ffestiniog railway track to be used for the cycle route, with rock outcrops. Photograph taken from the south



Plate 09: View of the former Ffestiniog railway track bed to be used for the cycle route. Photograph taken from the north



Plate 10: View of drystone slate walling, revetting slate tips. Photograph taken from the east



Plate 11: View of the railway bridge at track way river crossing.



Plate 12: Detailed shot showing slate drystone walling.



Plate 13: View looking north along former track way.



Plate 14: View of Oakley Quarry incline from Dinas crossing.



Plate 15: View looking eastward down the track which is west of Dinas railway crossing.



Plate 16: View of Dinas crossing.



Plate 17: View of slate walling west of Dinas crossing.



Plate 18: View of Junction of Dinas crossing with Glanypwll Road, Blaenau Ffestiniog.



Plate 19: View of slate walling west of Dinas crossing. Photograph taken from the west



Plate 20: View of Junction of Dinas road, from the west, crossing with Hospital Road.



Plate 21: General view looking east across the rugby field (site 07).



Plate 22: General view looking west across the rugby field (site 07).



Plate 23: View of embankment of coal yard on the northern edge of the rugby field (site 08).



Plate 24: View across rugby field from coal yard (site 08).



Plate 25: View of Llwyn Celli Industrial Estate (site 09).



Plate 26: View of railway cutting (site 10). Photograph taken from the south



Gwynedd Archaeological Trust
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