

Proposed Quarry Realingment Project, Penrhyn Quarry, Bethesda

Archaeological Watching Brief: Phase 1A Interim Report



Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

Proposed Quarry Realingment Project, Penrhyn Quarry, Bethesda

Archaeological Watching Brief: Phase 1A Interim Report

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Prepared for: SLR Consulting Limited

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1 INTRODUCTION

This report was commissioned by SLR Consulting Limited and forms the interim report for the Archaeological Watching Brief that was carried out during the initial groundworks for the realignment of Penrhyn Quarry, Bethesda (centred on SH 6106 6397) (hereafter referred to as 'the site'). The proposed realignment comprises of a c. 6.4 hectare extension to the existing Penrhyn Quarry incorporating an area of upland to the southwest of the current workings. These extension works will be completed in stages. This interim report is for the works carried out during Phase 1A, a 1.5 hectare extension to the immediate west of the red and blues domain quarry face (Figure 1).

A Project Design was prepared (GAT 2012b, Appendix I) which sets out the legislation framework and planning background in detail. The work was carried out as part of a staged programme of archaeological work undertaken by GAT on the site.

This report has been prepared in accordance with the *Standards and guidance for the collection, documentation, conservation, and research of archaeological materials* specified by the Institute of Field Archaeologists (IFA 2001), as well as the *standard and guidance for Archaeological Watching Briefs* specified by the Institute for Archaeologists (IfA 2008).

2 SITE LOCATION

Penrhyn Quarry lies within the Dyffryn Ogwen Landscape of Outstanding Historic Interest: 28 (CCW, Cadw, ICOMOS 1998), and forms one of the most important elements of this landscape. The site comprises of a 1.5 hectare extension to the immediate west of the red and blue quarry face towards the southeastern end of the quarry. A roughly rectangular stone structure, measuring approximately 7m by 5m, and aligned east-west (Feature 15) (PRN 12348) was excavated in this area by GAT in 2012 (GAT 2013a).

3 ARCHAEOLOGICAL BACKGROUND

Penrhyn Quarry was formalised during the 18th century when Richard Pennant acquired a number of small local workings, although slate is thought to have been extracted in this area from as early as the 13th century. Infrastructure including railways, quarrymen's cottages and a quay at Porth Penrhyn were constructed at the end of the 18th and start of the 19th centuries. The quarry dominated both the slate industry and the surrounding landscape throughout the 19th century. Today the quarry continues to be run as a commercial venture and markets a variety of slate products.

As well as the extensive industrial archaeological remains that exist within the locality, mainly associated with the extraction of slate, the uplands around Bethesda and Nant Ffrancon contain extensive and very well-preserved, relict remains of prehistoric and later land use. These include a prehistoric hut circle settlement (Primary Record Number (PRN) 5380), trackways (PRN 12305 & 12328), cairns (PRN 12348), potential prehistoric (PRN 12349) and post-medieval enclosures (PRN 12288) and other unidentified remains.

An archaeological assessment of the extension zone was undertaken in November 2009 (GAT 2009). The assessment identified a number of sites, the majority relating to a late prehistoric settlement and a post-medieval multi-cellular sheepfold. In order to better identify the significance of the archaeological remains and identify appropriate mitigation an archaeological survey and a phase of field evaluation was undertaken in July (Gat 2010a) and September (Gat 2010b) 2010 respectively.

The programme of field evaluation examined four sites identified during the desk based assessment and archaeological survey. These included a cleared terraced area (site 20), a suspected prehistoric structure (site 16), a possible burial cairn (site 15), and a possible ruined hut circle with sheepfold rebuild (site 14). The results of the evaluation proved the suspected prehistoric structure as being of natural origin. Furthermore, it showed that there was no evidence that the sheepfold utilised an

earlier hut circle and nor that there were any associated buried remains present on the cleared terrace area. It did however show that a relatively complex level of archaeology was revealed at the possible burial cairn site (Feature 15) (PRN 12348), and the evaluation indicated the presence of archaeological remains and archaeological excavation of the entire feature was recommended as appropriate mitigation prior to the extension works.

The excavation was completed in December 2012 (GAT 2013a), and revealed a roughly rectangular stone structure, measuring approximately 7m by 5m, and aligned east-west (Feature 15) (PRN 12348). The date and function of this structure was uncertain. However, given its shape and size, it was most likely the remains of a peat and/ or hay post-medieval drying platform. The report recommended an archaeological watching brief as appropriate mitigation during the extension works.

4 METHODOLOGY

All works were carried out in accordance with the Project Design for the works (GAT 2012, Appendix I) and the GAT standard operating procedures as set out in the GAT fieldwork Manual (*in prep*)).

- Topsoil and subsoil were stored on site, adjacent to the excavations.
- Once the area had been stripped, no vehicles were allowed to cross it until archaeological investigation had finished.
- A written record of the area and all identified features was completed via GAT pro-formas
- All work was recorded photographically, with detailed notations. The photographic record was completed using a digital SLR camera set to maximum resolution in the JPEG format.
- The topsoil stripping was carried out using a Caterpillar 336 DL 36 tonne tracked excavator fitted with a toothed bucket

5 ARCHAEOLOGICAL RESULTS

Phase 1B was stripped using from north east to south west using a Caterpillar 336 36 tonne excavator equipped with a toothed bucket.

A thin layer of turf, 0.05m thick, was removed across the entire site. This revealed an on average 0.15m thick layer of subsoil, consisting of a dark brownish black peaty soil. Protruding through the turf line and within the subsoil were stones and boulders, ranging from 0.2m x 0.2m x 0.2m to 2m x 1.5m x 0.6m in size which were rounded or sub-rounded in character.

Below this was a mid-brown friable clay subsoil, containing sub-angular stones and boulders from 0.1m x 0.1m x 0.1m to 1m x 1m x 1m in size. Interspersed within this were patches of a very clean orange sandy clay, the largest of which was 2m x 2m and at least 0.1m in depth.

No archaeological finds, features or deposits were encountered during the topsoil stripping.

6 CONCLUSIONS AND RECOMMENDATIONS

The natural topography of the site was fairly close to the surface, lying on average only 0.2m below ground level and consisting of a light orange sandy clay. A large number of natural sub-angular stones and boulders were located throughout the site, with only a few small patches being relatively stone free. No archaeological features or deposits were uncovered during the watching brief, with no evidence of any activity related to Feature 15 uncovered.

No further work in this area is recommended. However, the area directly to the northeast (Phase 1B), contains areas that are stone free, and a watching brief during the topsoil stripping of this area will be needed.

7 ACKNOWLEDGEMENTS

The author would like to thank SLR Consulting Limited for commissioning the work. Thank you also to Mark Wayne Jones, the HSE&Q Manager for Welsh Slate. The work on site was carried out by David McNicol and Jane Kenney.

8 BIBLIOGRAPHY

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GAT 2009 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Assessment*, GAT unpub report # 837

GAT 2010a *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Survey*, GAT unpub report # 880

GAT 2010b *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Evaluation*, GAT unpub report # 899

GAT 2013a *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Excavation of suspected Bronze Age Cairn (Feature 15)*, GAT unpub report # 1105

GAT 2013b *Quarry Realignment Projecy, Penrhyn Quarry, Bethesda: Project Design for Archaeological Watching Brief (G2098)*

GAT in prep *Archaeological Site Manual*

Institute of Field Archaeologists (IFA), supplement 2001, *By-Laws, Standards and Policy Statements of the Institute of Field Archaeologists: Standards and guidance for the collection, documentation conservation and research of archaeological materials*

Institute for Archaeologists (IfA) 2008, *Standard and Guidance for Archaeological Watching Briefs*

APPENDIX I: PROJECT DESIGN

**QUARRY REALIGNMENT PROJECT, PENRHYN
QUARRY, BETHESDA**

**PROJECT DESIGN FOR ARCHAEOLOGICAL
WATCHING BRIEF (G2098)**

Prepared for
Welsh Slate Limited
March 2013

Ymddiriedolaeth Archaeolegol Gwynedd
Gwynedd Archaeological Trust

QUARRY REALIGNMENT PROJECT, PENRHYN QUARRY, BETHESDA

PROJECT DESIGN FOR ARCHAEOLOGICAL WATCHING BRIEF (G2098)

Prepared for *Welsh Slate Limited*, March 2013

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1.0 INTRODUCTION

Gwynedd Archaeological Trust (GAT) has been asked by *Welsh Slate Limited* to provide a cost and project design for completing an archaeological watching brief during initial groundworks for the realignment of the Penrhyn Quarry, Bethesda, Gwynedd (centred on NGR SH61146396). The proposed realignment comprises a c.6.4 ha extension to the existing Penrhyn Quarry incorporating an area of upland to the south west of the current workings. These extension works will be completed in stage. The current project design is for the completion of a 1.5ha extension to the immediate west of the existing red and blues domain quarry face (as indicated in client supplied drawing WPENG1212; reproduced as Figure 01). This extension zone is further sub-divided into Phases 1A and 1B; these two phases will be completed between January and March 2013. *Note: separate project designs will be completed for the remaining extension areas/phases.*

The groundworks will be completed by *Welsh Slate Limited*.

A mitigation brief has not been prepared for this work by **Gwynedd Archaeological Planning Services** (GAPS) but GAPS has requested a programme of archaeological monitoring (**watching brief**) during any groundworks completed as part of this scheme. **GAPS must approve this project design.**

Reference will also be made to the guidelines specified in *Standard and Guidance for Archaeological Watching Brief* (Institute for Archaeologists, 1994, rev. 2001 & 2008).

2.0 BACKGROUND

An archaeological assessment of the extension zone was undertaken in November 2009 (GAT report **837**). The assessment identified a number of sites, the majority relating to a late prehistoric settlement and a post-medieval multi-cellular sheepfold. In order to better identify the significance of the archaeological remains and identify appropriate mitigation an archaeological survey and a phase of field evaluation was undertaken (GAT reports **880** and **899**) in July and September 2010 respectively.

The programme of field evaluation examined four sites identified during the desk based assessment and archaeological survey. These included a cleared terraced area (site 20), a suspected prehistoric structure (site 16), a possible burial cairn (site 15), and a possible ruined hut circle with sheepfold rebuild (site 14). The results of the evaluation proved the suspected prehistoric structure as being of natural origin. Furthermore, it showed that there was no evidence that the sheepfold utilised an earlier hut circle and nor that there were any associated buried remains present on the cleared terrace area. It did however show that a relatively complex level of archaeology was revealed at the possible burial cairn site (Feature 15), and the evaluation indicated the presence of archaeological remains and archaeological excavation of the entire feature was recommended as appropriate mitigation prior to the extension works.

The excavation was completed in December 2012 and the report in March 2013 (GAT Report **1105**). The excavation revealed a roughly rectangular stone structure, measuring approximately 7m by 5m, and aligned east-west. The date and function of this structure was

uncertain. However, given its shape and size, it was most likely the remains of a peat and/ or hay post-medieval drying platform. The report recommended an archaeological watching brief as appropriate mitigation during the extension works.

3.0 METHOD STATEMENT

3.1 DEFINITION OF AN ARCHAEOLOGICAL WATCHING BRIEF

(Reproduced from *Institute for Archaeologists 1994 rev. 2001 and 2008 Standard and Guidance for an archaeological watching brief*)

The definition of an archaeological watching brief 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.

This definition and *Standard* do not cover chance observations, which should lead to an appropriate archaeological project being designed and implemented, nor do they apply to monitoring for preservation of remains *in situ*.

An archaeological watching brief is divided into four categories according to the *Institute for Archaeologists 2001 & 2008 Standard and Guidance for an archaeological watching brief*:

- comprehensive (present during all ground disturbance)
- intensive (present during sensitive ground disturbance)
- intermittent (viewing the trenches after machining)
- partial (as and when seems appropriate).

GAT has recommended an **intensive** watching brief for the scheme, monitoring the removal of the topsoil and subsoil to the glacial horizon.

3.2 PURPOSE OF A WATCHING BRIEF

The purpose of a watching brief is:

- to allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- to provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard

- A watching brief is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

The objective of a watching brief is:

- to establish and make available information about the archaeological resource existing on a site.

3.3 OCCURRENCE

A WATCHING BRIEF MAY ARISE:

- in response to a development which threatens the archaeological resource
- as part of the planning process (within the framework of appropriate national planning policy guidance notes) and/or development plan policy
- as part of an Environmental Impact Assessment (EIA)
- outside the planning process (e.g. ecclesiastical development, coastal erosion, agriculture, forestry and countryside management, works by public utilities and statutory undertakers). A watching brief may therefore be instigated or commissioned by a number of different individuals or organisations, including local planning authorities, national advisory bodies, government agencies, private landowners, developers or their agents.

3.4 METHODOLOGY

- **The watching brief is to be undertaken in a manner that allows for the immediate cessation of the main contractor groundworks for the recording of archaeological evidence. This will involve close liaison between the archaeologist and the site agent.**
- A photographic record will be maintained throughout, using a digital SLR camera set to maximum resolution.
- Any subsurface remains will be recorded photographically, with detailed notations and a measured survey.

The archive will then be held by GAT under an appropriate project number (**G2098**)

4.0 FURTHER ARCHAEOLOGICAL WORKS

- **The identification of significant archaeological features during the groundworks/archaeological watching brief may necessitate further archaeological works. This may require the submission of new cost estimates to the contractor.**
- **This design does not include a methodology or cost for examination of, conservation of, or archiving of finds discovered during the watching brief, nor**

of any radiocarbon dates required, nor of examination of palaeoenvironmental samples. The need for these will be identified in the post-fieldwork programme (if required), and a new design will be issued for approval by the GAPS Archaeologist.

5.0 ENVIRONMENTAL SAMPLES

If necessary, relevant archaeological deposits will be sampled by taking bulk samples (a minimum of 10.0 litres and maximum of 30.0 litres) for flotation of charred plant remains. Bulk samples will be taken from waterlogged deposits for macroscopic plant remains. Other bulk samples, for example from middens, may be taken for small animal bones and small artefacts.

6.0 HUMAN REMAINS

Any finds of human remains will be left *in-situ*, covered and protected, and both the coroner and the GAPS Archaeologist informed. If removal is necessary it will take place under appropriate regulations and with due regard for health and safety issues.

7.0 SMALL FINDS

The vast majority of finds recovered from archaeological excavations comprise pottery fragments, bone, environmental and charcoal samples, and non-valuable metal items such as nails. Often many of these finds become unstable (i.e. they begin to disintegrate) when removed from the ground. All finds are the property of the landowner, however, it is Trust policy to recommend that all finds are donated to an appropriate museum where they can receive specialist treatment and study. Access to finds must be granted to the Trust for a reasonable period to allow for analysis and for study and publication as necessary. All finds would be treated according to advice provided within *First Aid for Finds* (Rescue 1999). Trust staff will undertake initial identification, but any additional advice would be sought from a wide range of consultants used by the Trust, including National Museums and Galleries of Wales at Cardiff.

8.0 PROCESSING DATA, ILLUSTRATION, REPORT AND ARCHIVING

Following completion of the watching brief as outlined above, a report will be produced incorporating the following:

- Non-technical summary
- Introduction
- Specification and Project Design

- Methods and techniques
- Archaeological Background
- Description of the results of the watching brief
- Summary and conclusions
- Bibliography of sources consulted.

Illustrations, including plans and photographs, will be incorporated within the report.

A full archive including plans, photographs, written material and any other material resulting from the project will be prepared. All plans, photographs and descriptions will be labelled and cross-referenced, and lodged in an appropriate place (to be decided in consultation with the regional Historic Environment Record) within six months of the completion of the project. All digital data will be written to CD-ROM and stored with the paper archive.

- one or more copies (as required) will be sent to the client
- one or more copies (as required) will be sent to GAPS
- one or two copies (as required) sent to the Historic Environment Record Archaeologist for the area (HER, Gwynedd Archaeological Trust, Craig Beuno, Bangor, Gwynedd LL57 2RT);
- copies of all key digital files on optical media should be provided to GAPS and the Regional HER, including report, photographs, scans of maps etc.
- a copy of the report and/or digital files on optical media should be provided to the National Monument Record (Royal Commission on the Ancient and Historic Monuments of Wales, Aberystwyth, SY23 1NJ) dependant upon their requirements.

The report will be submitted to client/GAPS in April 2013 and to the HER once approved by GAPS.

9.0 STAFF

The project will be supervised by a Senior Archaeologist at GAT Contracts Section. 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).

10.0 HEALTH & 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** (1999).

11.0 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 21/06/13

Professional Indemnity Insurance – RSA Insurance Plc P8531NAECE/1028

- Limit of Indemnity £5,000,000 any one claim

The current period expires 22/07/13

12.0 SOURCES CONSULTED

Client drawings: *Welsh Slate Limited* Drawing No. **WPENG2012**

GAT 2009 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Assessment*, GAT unpub report # 837

GAT 2010a *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Survey*, GAT unpub report # 880

GAT 2010b *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Archaeological Evaluation*, GAT unpub report # 899

GAT 2012 *Proposed Quarry Realignment, Penrhyn Quarry, Bethesda: Excavation of suspected Bronze Age Cairn (Feature 15)*, GAT unpub report #1105

Standard and Guidance for Archaeological Watching Brief (Institute for Archaeologists, 1994, rev. 2001 & 2008)

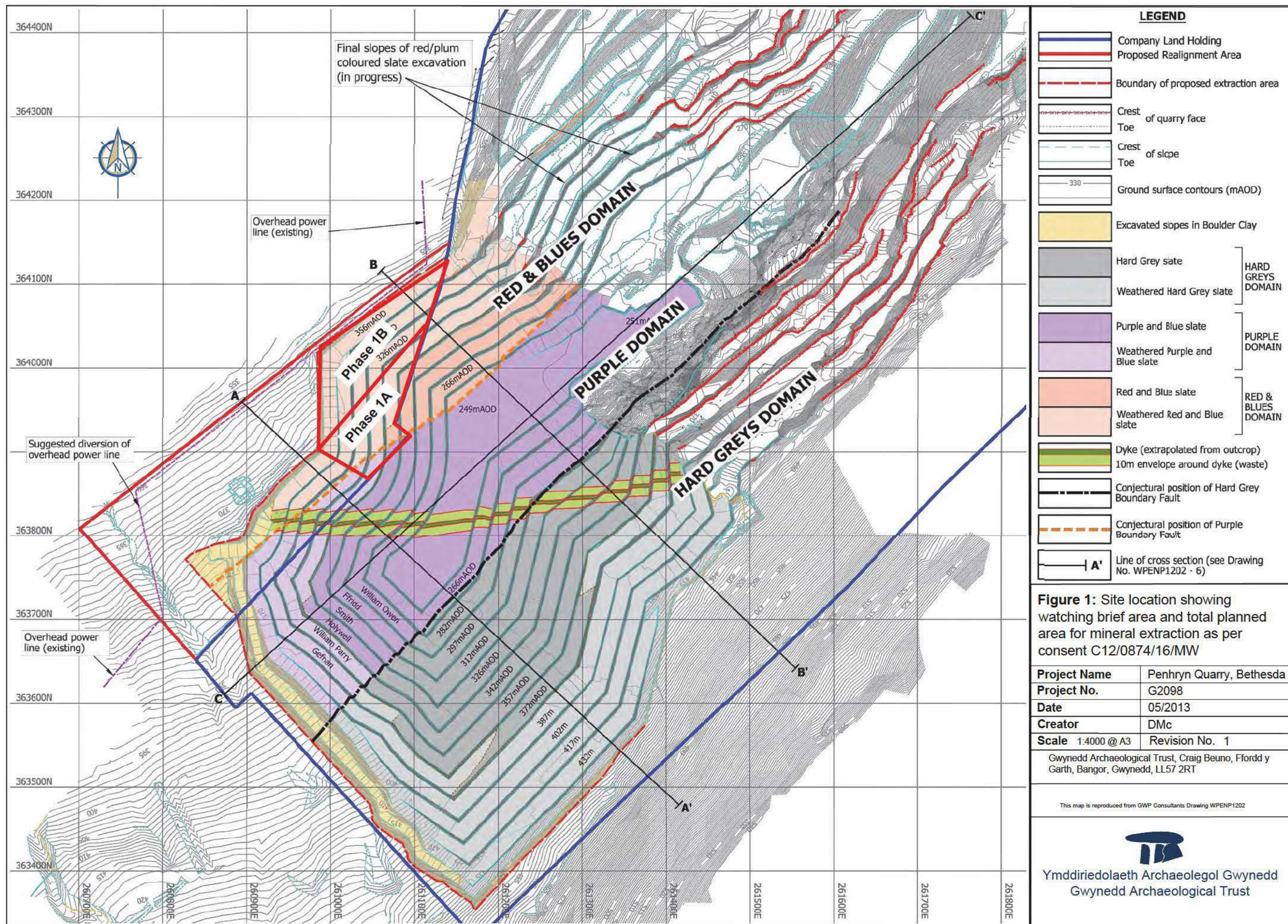




Plate 01: Topsoil Stripping, view from southeast



Plate 02: Topsoil Stripping, view from northwest



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