

CPAT Report No. 1435

Garth Quarry, Minffordd, Gwynedd Heritage Impact Assessment



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Garth Quarry workings, from the east (Photo CPAT 4176-0003)



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Summary

An assessment has been conducted to determine the potential direct and indirect impacts on the cultural heritage of the determination of new conditions at the Garth Quarry, Minffordd, Gwynedd, on behalf of Tarmac Trading Ltd.

The assessment has identified 22 undesignated heritage assets within the Development Area, most of which are no longer extant. Of those assets which do survive all will be removed by quarrying operations under the existing permissions, although mitigation measures are proposed for an appropriate level of recording to ensure their preservation by record.

The assessment of both direct and indirect impacts has considered firstly the impact of the existing quarry and then the potential difference between this and the impact of the Full Quarry Design, which is already consented. It is clear that there will be no additional impacts resulting from the determination of new conditions over and above those resulting from the continued operation of the Quarry under the existing consents, while the final restoration at the end of the operational phase has the potential for minor beneficial effects, reducing the prominence of the Quarry in certain views.

1 Introduction

- 1.1. This report presents the results of a Heritage Impact Assessment undertaken in preparation for the Cultural Heritage section of an Environmental Statement (ES) in connection with the determination of new conditions at the Garth Quarry, Minffordd, near Porthmadog in Gwynedd. The assessment has been conducted for SLR Consulting Ltd, on behalf of Tarmac Trading Ltd. The location of the quarry and the extent of the site boundary is shown in Fig. 1.
- 1.2. The proposed full quarry development forms part of an existing permitted development. The assessment considers the direct effect that the quarry will have on the known cultural heritage and also examines the indirect effect on statutorily designated and registered cultural heritage assets beyond the boundary of the Site Boundary.
- 1.3. The assessment covers the life of the development, through operation to reinstatement. When all mineral extraction is complete (circa 2055), grassland and additional trees/woodland planting will be established around the peripheral areas, and the void allowed to gradually fill up with water until it has reached equilibrium level.
- 1.4. Where adverse cultural heritage effects are identified, the study also puts forward mitigation measures to prevent, reduce, or offset them and then re-assesses the residual effects remaining after mitigation. The effects of decommissioning are described in the construction phase as the latter generally includes a similar range of activities and potential effects.
- 1.5. Following the commissioning of the assessment in April 2016, the initial assessment was undertaken in May and June 2016, followed by a review of visual effects using the ZVI analysis undertaken as part of the landscape and visual impact assessment (as reported in Chapter 6.0 of the ES).
- 1.6. The baseline survey of the proposed development has been undertaken with reference to the Chartered Institute for Archaeologists (CIfA) Code of Conduct and their Standard Guidance for Archaeological Desk-Based Assessments ¹ and for Field Evaluation.²

2 Scoping and Guidance

Scope of the Assessment

- 2.1. Cultural heritage is a broad concept that embraces archaeological remains, the built heritage and historic landscapes. Cultural heritage is deemed to include the full range of man-made features that have been imposed on the landscape from the Palaeolithic, more than two hundred and fifty thousand years ago, to the 20th century.
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¹ The Chartered Institute for Archaeologists (2014). *Standard and Guidance for Historic Environment Desk-Based Assessment*.

² The Chartered Institute for Archaeologists (2014). *Standard and Guidance for Archaeological Field Evaluation*.

Some of these features will be visible as upstanding remains on the ground; others will be buried and only become apparent during ground disturbance. Some will have an archaeological interest and importance; others will be more historical in their origin. In addition, some natural features will be relevant because of the information they contain; peat bogs, for instance, hold pollen that can throw light on past human activity in the area. Individually all these features are known as heritage assets - as defined for instance, in the revised Highways Agency's Design Manual for Roads and Bridges (DMRB).³

- 2.2. Heritage assets include the following designated (statutorily protected) and registered (non-statutorily protected) sites: World Heritage Sites; Scheduled Ancient Monuments (SAMs); Listed Buildings (LBs); Conservation Areas; Registered Historic Landscapes; and Registered Historic Parks and Gardens.
- 2.3. A much larger number of heritage assets are undesignated. Undesignated sites include those already recorded in the Historic Environment Record (HER) for the region, and those previously unrecognised sites which have been identified during the preparatory work for this assessment.
- 2.4. For the landscape in its entirety LANDMAP is the formally adopted landscape assessment tool for Wales, and is consulted in order to inform the baseline assessment of the study area. LANDMAP comprises five evaluated Aspects, one of which - the Historic Landscape - is relevant to cultural heritage assessments, and a second - the Cultural Landscape - is partially relevant. All five aspects, the other three being Geological Landscape, Landscape Habitats and Visual & Sensory, are taken in conjunction (rather than individually) to assess the importance of a landscape under consideration.⁴
- 2.5. The assessment considers the likely effects of the ongoing quarry development and the Full Quarry Design (FQD) on all recognisable heritage assets. Desk-based assessment and field survey were undertaken to identify those heritage assets that might be affected. The potential for the Site Boundary to contain buried and as yet undetected archaeological remains is also considered.

Scoping Requests

- 2.6. In response to a request for a Scoping Opinion a reply was received from Dafydd Gareth Jones, Senior Minerals and Waste Planning Officer, on 18 January 2016. In respect to the heritage, the following comments were made regarding an archaeological assessment:
- 2.7. 'Paragraph 6 of Planning Policy Wales stresses the importance of addressing any potential conflict concerning archaeological matters at an early stage and that archaeological assessments commissioned by developers (sometimes as part of a wider Environmental Impact Assessment) can help to provide information on the
- 1.1. _____

³ Highways Agency (2007). *Design Manual for Roads and Bridges*, Volume 11 Section 3 Part 2, HA 208/07

⁴ Countryside Council for Wales (2012). *LANDMAP: Guidance for Wales. Overview to LANDMAP*. Bangor: Countryside Council for Wales (now Natural Resources Wales)

archaeological sensitivity of a site as part of the review application. In this respect, I would advise that you contact Gwynedd Archaeological Planning Service with respect to the requirement for archaeological investigation of any industrial or archaeological remains that are scheduled for demolition/removal with the advancement of the extractive operations, e.g. disused loading chutes and retaining wall located adjacent to the existing hopper. The archaeological assessment should include a programme of archaeological mitigation to be agreed with the mineral planning authority.'

- 2.8. Additional comments were made with respect to the Landscape and Visual Impact Assessment, following comments by Natural Resources Wales (NRW) regarding the potential need for an ASIDOHL2 to assess the potential impact on the Aberglaslyn Landscape of Outstanding/Special Historic Interest. However, in subsequent discussions between SLR Consulting and NRW it was agreed that an ASIDOHL2 would not be required.
- 2.9. The scope and methodology for undertaking the Cultural Heritage Assessment, which forms the basis for this chapter, were agreed following discussions between CPAT and the Gwynedd Archaeological Planning Service (GAPS) and formalised in a Written Scheme of Investigation (CPAT WSI 1664) prepared by CPAT and approved by GAPS.

Guidance

- 2.10. The revised DMRB provides a framework for cultural heritage assessments, whether these are for ES reports or for smaller developments that do not require Environmental Impact Assessments (EIA). The approach to the cultural heritage which it promotes, though designed primarily for road developments, is more generally relevant as a methodology for other types of development, and as such has been adopted here. The value of each heritage asset has been determined following the DMRB guidance, further information on which is provided in Table 1.

Significance Criteria

- 2.11. A judgement on the likely significance of the effect or impact on each heritage asset identified during the baseline assessment is a function of the value (or importance) of that asset in conjunction with the magnitude of change likely to arise from the development.
- 2.12. The value of individual heritage assets may be determined on the basis of their designated or registered status, or where undesignated, by their perceived significance. Where designated or registered, the value is pre-determined by existing guidance as in the DMRB Volume 11 Section 3 Part 2, Annex 5/13, 2007. Where undesignated, the assessor draws on his/her own expertise and on knowledge of the regional and national historic environment in which the development is planned, and uses what is generally termed professional judgement.
- 2.13. Table 1 summarises the relative value (importance) of heritage assets within or immediately adjacent to the Site Boundary relevant to this assessment, based on the classification given in DMRB 2007. In a departure from the DMRB guidelines it includes lower grade Listed Buildings (Grade II) with their higher grade counterparts, to reflect more accurately Welsh Government thinking on the importance of listed buildings. Table 2 defines the magnitude of the effect.

Table 1: Definition of Value of Heritage Assets

Very High	<ul style="list-style-type: none"> World Heritage Sites (including those nominated) Assets of acknowledged international importance Assets that can contribute significantly to acknowledged international research objectives.
High	<ul style="list-style-type: none"> Scheduled Ancient Monuments (including those proposed) Undesignated monuments which could potentially be worthy of scheduling Listed Buildings – Grade I, II* and II Registered Historic Landscapes, Parks and Gardens Undesignated assets that can contribute significantly to acknowledged national research objectives.
Medium	<ul style="list-style-type: none"> Conservation Areas Undesignated assets that contribute to regional research objectives.
Low	<ul style="list-style-type: none"> Undesignated assets of local importance Assets compromised by poor preservation and/or poor survival of contextual associations Assets of limited value, but with the potential to contribute to local research objectives.
Negligible	<ul style="list-style-type: none"> Assets with very little or no surviving cultural heritage interest.
Unknown	<ul style="list-style-type: none"> Importance of the asset not ascertained.

Table 2: Definition of Magnitude of Effect

Major	<ul style="list-style-type: none"> Changes to most or all of the key cultural heritage elements such that the asset is totally altered Comprehensive changes to setting Extreme visual effects
Moderate	<ul style="list-style-type: none"> Changes to many key cultural heritage elements such that the asset is clearly modified Considerable changes to setting which affect the character of the asset Visual changes to many key elements
Minor	<ul style="list-style-type: none"> Changes to key cultural heritage elements such that the asset is slightly altered or different Sight changes to setting Slight visual changes to a few key elements
Negligible	<ul style="list-style-type: none"> Very minor changes to cultural heritage elements, or setting Virtually unchanged visual effects
No Change	<ul style="list-style-type: none"> No change

2.14. A part of the EIA process is to extrapolate the degree of significance from the predictions of impact. No formal guidance from Welsh Government currently exists for the assessment of significance of effects on heritage assets, but the DMRB does provide an alternative. The severity of the effect on heritage assets depends on both the magnitude of effect and the value or importance of the asset, as exemplified in the two tables above. Table 3 illustrates how information on the value of the asset and the magnitude of effect can be combined to arrive at an assessment of the significance of effect. This process ensures consistency in assessing the significance of effect, and serves as a check to ensure that judgements regarding value, magnitude

and significance of effect are balanced. While the correlation of these two sets of criteria is a mechanical process, professional judgement provides the explanation of the rationale behind the conclusions that are drawn. For example, a highly valued heritage asset may require only a limited amount of change to result in an effect that is assessed as moderate or major, whereas a greater magnitude of change is likely to be required to result in equivalent effects on a less sensitive asset.

- 2.15. Table 3: Matrix for assessing significance of direct and indirect impacts on heritage assets

Magnitude of effect	Value of Heritage Asset				
	Very High	High	Medium	Low	Negligible
Major	Very Large	Large/V Large	Mod/Large	Slight/Mod	Slight
Moderate	Large/V large	Mod/Large	Mod	Slight	Neutral/ Slight
Minor	Mod/Large	Mod/Slight	Slight	Neutral/Slight	Neutral
Negligible	Slight	Slight	Neutral/Slight	Neutral/Slight	Neutral
No change	Neutral	Neutral	Neutral	Neutral	Neutral

- 2.16. In the context of the EIA Regulations an impact judged to be moderate/large or greater is deemed to be 'significant'. Any effect which is considered significant in the context of the EIA Regulations, is shown in bold text in Table 3, and is flagged as such in the text of the main report.
- 2.17. The issue of the setting of a heritage asset is not one that has as yet been addressed in Wales through the provision of national guidance. Guidance has been published by Historic Scotland for Scotland⁵ and by Historic England for England,⁶ but neither has been or is likely to be endorsed by Cadw on behalf of Welsh Government for use in Wales, since similar guidance is currently being developed for Wales, although this is currently only available in draft form for consultation⁷. It is left therefore to the individual environmental impact assessor to draw on these guidance notes as appropriate and determine the most suitable mechanism for describing and defining 'setting' in relation to assets in a specific context in Wales. All three documents, however, have important and useful points to make, and have been consulted during preparation of this assessment, though as Historic Scotland point out in their guidance 'defining the setting of a historic asset or place will ultimately rely on professional judgement ...'

The Setting of Heritage Assets

- 2.18. In draft guidance published in July 2016, Welsh Government have defined 'Setting' as 'the surroundings in which an historic asset is understood, experienced and appreciated, embracing present and past relationships to the adjacent landscape. It often extends beyond the property boundary or curtilage and into the surrounding

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⁵ Historic Scotland (2010). *Managing Change in the Historic Environment*, Edinburgh: Historic Scotland

⁶ Historic England (2015). *The Setting of Heritage Assets*, London: Historic England

⁷ Cadw (2016). *Setting of Historic Assets in Wales*, consultation draft, Cardiff: Welsh Government. The consultation closes in October 2016 and it is anticipated that the final version will be published by the end of the year.

landscape or townscape.¹⁸ Historic Scotland states that 'Setting should be thought of as the way in which the surroundings of a historic asset or place contribute to how it is experienced, understood and appreciated'. They also go on to state that 'defining that setting will ultimately rely on professional judgement based on a range of considerations'.

- 2.19. The methodology adopted here also utilises the Guide to Good Practice for Assessing Landscapes of Historic Interest (ASIDOHL2) produced by Cadw and the Countryside Council for Wales (CCW, now Natural Resources Wales, NRW) in conjunction with ICOMOS UK.⁹ These guidelines were developed to promote good practice in the use of the two volumes of the Register of Landscapes of Historic Interest in Wales published by Cadw in 1998 and 2001. The guidelines are concerned primarily with historic landscapes rather than specific heritage assets, which will generally represent elements of those landscapes. Nevertheless, some aspects of the ASIDOHL2 process can be usefully adopted. In particular, the section on the assessment of indirect visual impacts¹⁰ offers helpful guidance in the assessment of impacts on historic features that are on, or at some distance from, the development site.

3 Administration of the Cultural Heritage

- 3.1. At a national level, it is Cadw, the historic environment service within Welsh Government, which holds the remit for the cultural heritage resource. Another national body, Natural Resources Wales (NRW), has a particular interest in historic landscapes.
- 3.2. At a regional level, the cultural heritage resource is monitored by the Heritage Sections of the regional archaeological trusts. The Gwynedd Archaeological Planning Service (GAPS), part of the Gwynedd Archaeological Trust (GAT), act as archaeological advisers to Gwynedd Council.
- 3.3. While the broad concern of all these bodies is with the preservation of the cultural heritage, there are inevitably differences in emphasis between regional and national organisations, and in the laws and regulations that govern the ways in which they operate.

Categorisation of the Cultural Heritage

- 3.4. The cultural heritage resource is not a single body of equally important assets, but an infinitely complex set of individual assets, the number of which increases and may change in its perceived level of significance on a continuous basis. They range in importance from internationally significant sites to features of minor and even negligible value. Those recognised to be of more importance are categorised by

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⁸ Cadw (2016). *Setting of Historic Assets in Wales*, consultation draft, Cardiff: Welsh Government

⁹ Cadw (2003). *Guide to good practice on using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process*. Cadw: Cardiff

¹⁰ Cadw (2003). *Guide to good practice on using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process*. Cadw: Cardiff, 21

designation (statutory) and registration (non-statutory), the categories for which are detailed below.

- 3.5. **World Heritage Sites.** This is the only statutorily recognised category of international importance.
- 3.6. **Scheduled Ancient Monuments (SAMs).** SAMs are designated features of national importance. They are protected under the Ancient Monuments and Areas of Archaeological Importance Act, 1979, and their settings are also protected. Setting is not defined within the Act, but is typically taken to refer to the immediate area around a protected site, for example the curtilage of a building. As a concept, it is covered in Planning Policy Wales (8th edition; 2016), and in more detail in a supporting Welsh Office Circular on Planning and the Historic Environment: Archaeology (60/96). However, in England, setting has been scrutinised in detail recently (2015),¹¹ and guidance has been issued by Historic England which offers a much wider geographical definition of setting than previously. SAMs are designated features of national importance. Guidance on setting has yet to be published for Wales.
- 3.7. **Listed Buildings (LB).** These are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990, and are usually classed in diminishing importance as Grade I, II* or II. Grade I and Grade II* listed buildings are consistently considered to be of national importance, but commentators' views on Grade II buildings have varied between nationally and regionally significant, though the recent consultation document on a Welsh Heritage Bill has steered thinking towards them all being of national significance (in contrast to the DMRB). The Act requires local planning authorities to have special regard to the desirability of preserving the setting of a listed building regardless of its grade, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from a listed building. Further guidance comes in Welsh Office Circular on Planning and the Historic Environment: Historic Buildings and Conservation Areas (61/96).
- 3.8. **Conservation Areas.** These are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. This Act requires local planning authorities to have special regard to the desirability of preserving the setting of a conservation area, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from such an area. The setting of a conservation area is also an issue for consideration, as with listed buildings and scheduled ancient monuments. Conservation Areas are normally considered to be of regional significance, but in some circumstances might be considered to be of national importance, as for instance when they contain Grade I or II* listed buildings.
- 3.9. **Parks and Gardens.** In Wales parks and gardens of significance appear in the non-statutory Register of Landscapes, Parks and Gardens of Special Historic Interest in

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¹¹ Historic England (2015). *The Setting of Heritage Assets*, London. Historic Environmental Good Practice Advice in Planning 3: Historic England

Wales, the register covering Gwynedd, appearing in 1998.¹² Parks and gardens are graded using the same categories as listed buildings (i.e. I, II*, II). Being non-statutory, parks and gardens are thus classed as registered rather than designated assets, though for practical purposes this distinction appears to be of little significance. Planning Policy Wales (2016) states that local authorities should protect registered parks and gardens and their settings, and that Cadw should be consulted on developments affecting grade I and II* sites.

- 3.10. **Historic Landscapes.** In Wales significant landscapes are catalogued in the two-volume non-statutory Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales.¹³ Unlike parks and gardens, registered landscapes are not graded, but are classified as either 'outstanding' or 'special'. Though registered rather than designated, historic landscapes are treated in the same way as parks and gardens, as indicated in Planning Policy Wales (2016). All the larger registered landscapes have been the subject of detailed analyses in recent years known as historic landscape characterisation.
- 3.11. **Battlefields.** England has a Battlefields Register, but there is at present nothing comparable for Wales. A Welsh register is currently in preparation, but its form and composition is not known, nor when it will be made available.
- 3.12. **Undesignated assets.** There are a large number of undesignated (also known as non-designated) cultural heritage assets in the landscape, both above ground where they are still visible and buried beneath the surface. These range in date from the prehistoric era through to the 20th century. Planning Policy Wales (2016, para 6.5.1) asserts that an undesignated asset is a material consideration in the planning process, and further guidance is provided in the Welsh Office Circular on Planning and the Historic Environment: Archaeology (60/96). Undesignated assets are normally considered in detail at the Environmental Impact Assessment stage of a project.

4 Legislative and Planning Policy

National Policies

- 4.1. The only statutorily recognised category of international importance is the World Heritage Site.
- 4.2. The principal legislation relating to the archaeological heritage is the Ancient Monuments and Archaeological Areas Act (1979), amended by the Historic Environment (Wales) Act 2016, which provides statutory protection to monuments of national importance, otherwise known as SAMs. Their settings are also protected. Setting is not defined within either Act but as a concept, it is covered in Planning Policy Wales (2016), and in Technical Advice Note 24 (2016), which defines setting as: 'the surroundings in which it is experienced. Its extent is not fixed and may

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¹² Cadw/ICOMOS (1998). *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, Conwy, Gwynedd and the Isle of Anglesey*. Cardiff.

¹³ Cadw (1998). *Register of Landscapes of Outstanding Historic Interest in Wales*. Cardiff.

Cadw (2001). *Register of Landscapes of Special Historic Interest in Wales*. Cardiff.

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- change as the asset and its surroundings evolve’ (1.21). Guidance is being prepared by Cadw, but is only available as a consultation draft. However the wording in PPW and TAN 24 closely follows that of English legislation and guidance, and so it is expected that guidance for Wales will echo that prepared by Historic England (2015).
- 4.3. Buildings of cultural heritage interest are protected under the Planning (Listed Building and Conservation Areas) Act (1990), as amended by the Historic Environment (Wales) Act 2016. All listed buildings are nationally important, but are graded in order of significance as Grade I, II* or II. Grade I buildings are considered to be of equal status to Scheduled Ancient Monuments. Local planning authorities must have special regard to the desirability of preserving the setting of a listed building regardless of its grade, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from a listed building. Planning Policy Wales (8th edition, 2016) requires a ‘general presumption in favour of the preservation of a listed building and its setting, which might extend beyond its curtilage’ (6.5.10).
- 4.4. Conservation Areas are protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. This Act requires local planning authorities to have special regard to the desirability of preserving the setting of a conservation area, and it also requires planning proposals to meet the test of determining the extent to which a development affects views to and from such an area. The setting of a conservation area is covered in the same set of publications as those for SAMs, above. Planning Policy Wales (8th edition, 2016) states that there ‘will be a strong presumption against the granting of planning permission for developments ... which damage the character of appearance of a conservation area or its setting to an unacceptable level’ (6.5.19).
- 4.5. A survey of historic parks and gardens in Wales was initiated by Cadw in 1992 and was completed in 2002. Those considered to be of exceptional (Grade I), great (Grade II*) and special interest (Grade II) were published in six volumes, that for Conwy, Gwynedd and the Isle of Anglesey appearing in 1998,¹⁴ and together they form Part 1 of the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales. The Historic Environment (Wales) Act 2016 provides for the creation of a statutory Register which will supersede that which currently exists. Parks and gardens are therefore ‘registered’ rather than ‘designated’ assets, though for practical purposes this distinction appears to be of little significance. Planning Policy Wales (8th edition, 2016) states that local authorities should ‘protect and conserve’ registered parks and gardens and their settings, and that Cadw must be consulted on any development which is ‘likely to affect the site of a registered historic park or garden or its setting’ (6.5.24). Similarly, the inclusion of an area on the (non-statutory) Register of Historic Landscapes is a planning consideration, and again Cadw should be consulted on any development ‘within a registered historic landscape area that requires an Environmental Impact Assessment’ (6.5.25).
- 4.6. Some historic landscapes in Wales are considered to be particularly significant and/or well preserved. These have been recorded in a Register of Landscapes of
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¹⁴ Cadw/ICOMOS (1998). *Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales, Conwy, Gwynedd and the Isle of Anglesey*. Cardiff.

Historic Interest in Wales. Classed as either outstanding or special interest, these have been published in two volumes which form Part 2 of the Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales published in 1998 and 2001. Again this part of the Register is advisory but non-statutory.

- 4.7. Historic hedgerows are protected under the Hedgerow Regulations (1997). A hedgerow is deemed historic if it marks a parish or township boundary which pre-dates A.D. 1850, incorporates an archaeological feature, is part of or incorporates an archaeological site, marks the boundary of (or is associated with) an estate or manor which pre-dates A.D. 1600, or forms an integrated part of a pre-parliamentary enclosure.
- 4.8. The cultural heritage and archaeological resource is a material consideration in the determination of planning applications. It is explicitly stated in Planning Policy Wales (8th edition, 2016) that 'It is important that the historic environment - encompassing archaeology and ancient monuments, listed buildings, conservation areas and historic parks, gardens and landscapes - is protected' (Paragraph 6.1.1). More specifically it states that 'the desirability of preserving an ancient monument and its setting is a material consideration in determining a planning application, whether that monument is scheduled or unscheduled. Where nationally important archaeological remains, whether scheduled or not, and their settings are likely to be affected by proposed development, there should be a presumption in favour of their physical preservation in situ. In cases involving lesser archaeological remains, local planning authorities will need to weigh the relative importance of archaeology against other factors, including the need for the proposed development' (Paragraph 6.5.1). Detailed guidance is given in Welsh Office circulars 60/96 and 61/96.

Local Policies

- 4.9. Cultural heritage assets without statutory protection are curated by the archaeological advisors to the local planning authorities and afforded protection through Local Development Plan policies.
- 4.10. The Gwynedd Development Plan (UDP) was adopted on 16 July 2009, from which the following policies specific to the protection of the cultural heritage assets can be cited:

Policy B1 Demolition of Listed Buildings

- 4.11. Proposals for the total or significant demolition of Listed Buildings will be refused unless there are exceptional circumstances. Such proposals will be assessed against the following criteria:
1. the condition of the building, repair and maintenance costs;
 2. that every effort has been made to retain the current use or seek a new viable use and that these efforts have failed;
 3. that either every effort has been made over a reasonable period to dispose of the property at a fair price and that this has been unsuccessful, or that such disposal would be inappropriate;
 4. that it is not possible or appropriate to retain the building under charitable or community ownership;

5. that there is a detailed plan for redevelopment of the site and that redeveloping the site would offer significant benefits to the local community and override the need to retain the building.

Policy B2 Alterations to Listed Buildings or buildings in their curtilage

- 4.12. Proposals for external or internal alterations, additions, or changes of use of Listed Buildings or cartilage buildings (which have formed part of the land since before 1 July 1948) will only be approved provided that the proposal will not cause significant harm to the special architectural or historic character of the Listed Building

Policy B3 Development affecting the setting of Listed Buildings

- 4.13. Proposals on sites affecting the setting of Listed Buildings will only be approved provided that all the following criteria can be met:
 1. that the design of the development enhances the special quality of the main building as well as the positive qualities of the local environment;
 2. that it does not lead to the loss of features such as walls, railings, ancillary buildings, landscaping, hedges, trees, associated objects, surfaces or archaeological remains that contribute to the special character of the Listed Building;
 3. that it does not cause significant harm to important views of and from the building.

Policy B4 Developments in or affecting the setting of Conservation Areas

- 4.14. Proposals in or near conservation areas will be refused unless they preserve or enhance the character or appearance of the conservation area and its setting. All proposals should:
 1. retain the historic street pattern and the character of individual streets or public spaces;
 2. ensure that the scale, mass, form, use of materials and building techniques harmonise with the buildings and features that contribute positively to the character of the conservation area;
 3. ensure that important views across, into or out of the conservation area are retained.

Policy B5 Demolition of buildings in Conservation Areas

- 4.15. Proposals to demolish buildings that make a positive contribution to the character and appearance of the conservation area will be refused unless there are exceptional reasons for granting permission. In such cases the following matters will be considered:
 1. the condition of the building and the possibility of renovation or alternative use;
 2. the contribution the building makes to the special architectural and historical quality of the conservation area;
 3. the effect of demolition on the surrounding area and on the character or appearance of the whole conservation area;

4. the reasons for the demolition and whether those reasons override the importance of the building to the character and appearance of the conservation area;
5. the existence of a detailed plan for redevelopment of the site, and that redevelopment of the site would offer significant benefits to the local community and override the need to retain the building.

Policy B6 Caernarfon Castle and Town walls world Heritage Site

- 4.16. Proposals that would cause significant harm to the monuments within the boundaries of the Caernarfon Castle and Town Walls World Heritage Site or within the identified buffer zones, or which would restrict existing or proposed safe public access to the Site will be refused. Planning applications will be assessed against the World Heritage Site Management Plan published by Cadw.

Policy B7 Sites of Archaeological Importance

- 4.17. Proposals that will damage or destroy archaeological remains of national importance (whether scheduled or not) or their setting will be refused.
- 4.18. A development which affects other archaeological remains will be permitted only if the need for the development overrides the significance of the archaeological remains.
- 4.19. In areas where there are likely to be archaeological remains, the developer will be required to commission either an Archaeological Assessment and/or field evaluation in order to determine the archaeological impact of the proposed development before the Planning Authority determines the application. The assessment/evaluation results must be submitted with the planning application, in addition to a plan showing how the impact of the proposal on the archaeological remains will be mitigated.
- 4.20. If a proposed development would affect nationally important archaeological remains, then the developer should prepare sympathetic plans, which retain the remains in situ. Where preservation in situ is not feasible planning conditions or agreements will be used in appropriate cases to ensure that the work of excavating and recording the remains takes place prior to commencement of the development. Schemes that will facilitate the appropriate management and interpretation of archaeological sites for educational or tourism purposes will be supported.

Policy B10 Protecting and Enhancing Landscape Conservation Areas

- 4.21. Proposals for development in Landscape Conservation Areas will be assessed against the following criteria:
 - 1 the impact of the proposed development on the positive features in the landscape and those elements of it that contribute to the distinctive character of the local landscape;
 - 2 the proposed location, design and materials of the proposed development and its ability to integrate with the landscape;

-
- 3 the economic and social benefits of the proposed development in relation to criterion 1 and 2 above.
- 4.22. All developments will have to be designed and landscaped to a good standard, ensuring that appropriate landscape elements that function as either mitigation measures or are important to ensure integration are included. Consideration will be given to the information provided by the LANDMAP information system about the character and quality of the landscape in each area.

Policy B12 Protecting Historic Landscapes, Parks and Gardens

- 4.23. Proposals that are within or on sites visible from a park and garden identified and described in Part 1 of the Register of Historic Landscapes, Parks and Gardens of Special Interest in Wales will be refused if they cause significant harm to their character, appearance or setting. Consideration will be given to the information about the historic landscapes identified in Part 2 of the same Register when assessing the impact of proposals that are of such a scale and magnitude as to have more than a local impact.

Policy B14 Protecting the Landscape Character of Snowdonia National Park

- 4.24. Development and land use changes will not be permitted where these would adversely affect the qualities and special character of the Snowdonia National Park by:
- 1 causing significant visual intrusion, and/or
 - 2 being insensitively and unsympathetically sited within the landscape

5 Methodology

Desk-based Assessment

- 5.1. The desk-based study, which forms the basis for the assessment of the area, involved the examination of readily available written, cartographic, and aerial photographic sources held in the following repositories:
- The National Monuments Record, Aberystwyth and their Coflein website (note that the NMR was closed for an extended period at the time of the study - the relevant data was obtained from the Gwynedd HER with permission from the NMR).
 - The National Library of Wales, Aberystwyth.
 - The Meirionethshire Archives in Dolgellau
 - The Caernarfonshire Archives in Caernarfon
 - The Historic Environment Record held by GAT in Bangor.
 - The online images of the Central Register for Aerial Photography in Wales, Cardiff.
 - Electronic map archives.
- 5.2. Consideration of the visual impact of the Quarry on nearby protected (designated and registered) heritage assets was undertaken as a final stage of assessment.

Protected assets within 5 km of the Quarry have been considered to assess the potential indirect visual effects of the FQD upon their settings.

Walkover Survey

- 5.3. Sites found during the field visit were located to the national grid using hand-held global positioning system (GPS) equipment, with minor corrections by comparison to the available GIS project data.

Assessment of the Source Material

Historic Environment Record (HER)

- 5.4. The HER contained only two records for assets within the Site Boundary: one for the granite quarry itself and the second for its associated landscape. Information from the National Monument Record, held by the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW), was provided by the HER with permission; the only additional information which may relate to the Site Boundary concerned some unsuccessful mining trials but these were not accurately located and could not be found within the boundary of the area to be quarried.

Historic Maps

- 5.5. The standard range of 19th-century maps – derived from surveys by the Ordnance Survey and the Tithe Commission - have been consulted, together with a 19th-century estate map held by the National Library of Wales.

Aerial photography

- 5.6. Vertical aerial photography from the 1969 has been examined, showing the quarry at an intermediate stage between the present day and the Ordnance Survey mapping of the 1920s. No heritage assets were identified from this source. One oblique image of the quarry was available online via the NMRs Coflein website, under NPRN 405432, but no additional assets were identified from this source. Both images predate the Porthmadog bypass, which now runs past the quarry alongside the mainline railway.

Written sources

- 5.7. Professional experience suggests that where an HER is low in geographically pinpointed heritage assets, it is extremely unlikely that printed sources such as county histories or specifically themed articles will provide any new information that can be geographically located; any such information will already have been extracted by the HER.

Previous Cultural Heritage Studies

- 5.8. The locality has already been subject to various studies of the cultural heritage in the past. These include a desk-based assessment of quarrying landscapes in Gwynedd, undertaken by the Gwynedd Archaeological Trust (GAT) in 1994, and assessments conducted in association with the A487 Porthmadog Bypass.¹⁵

- 1.1. _____

¹⁵ Gruffydd, A (1992). *Minerals: An Archaeological Assessment of Mineral Extraction Sites and Resources within the Snowdonia National Park*. GAT Report 23.

Assessment of Effects

- 5.9. Effects of the FQD on heritage assets can be assessed in the following categories:
- Direct - where there would be a physical effect on a heritage asset caused by the ongoing quarry development, usually although not exclusively at the construction or decommissioning stage.
 - Indirect - where a heritage asset or its setting may be affected visually, or the setting is affected physically.
 - Cumulative - where incremental effects arise or may arise owing to the presence of other actual or proposed schemes. Cumulative effects are typically indirect visual effects.
 - Uncertain - where there is a risk that the works may affect a heritage asset, as for example when it is unclear where the location or boundaries of a site lie, or where the baseline condition of a site cannot be established satisfactorily.
- 5.10. Effects may be assessed in terms of their nature (beneficial/neutral/adverse), their longevity and their reversibility.
- Beneficial effects are those which could contribute to the value of a heritage asset through enhancement of existing features or introduction of new positive features.
 - Neutral effects occur where a development neither contributes to nor detracts from the value of a heritage asset.
 - Adverse effects are those that detract from the value of a heritage asset through a reduction in or disruption of its components, or through the introduction of new and inappropriate characteristics.
- 5.11. The effects described in this assessment are considered adverse unless otherwise stated.

6 Cultural Heritage History of the Area

Prehistoric

- 6.1. The search for known assets in the vicinity of the quarry revealed no evidence for prehistoric activity. Cadw have records of designated prehistoric settlements approximately 3 km away, both to the east-north-east and the west-south-west.

Roman

- 6.2. On a shelf about 350m to the east-north-east of the quarry there is an enclosed homestead (PRN 1192) comprising four circular rooms opening onto a central courtyard, which has been ascribed a Roman or immediately post-Roman date. That there was Roman activity in the locality was already known owing to the presence of a bath-house at Penmorfa, approximately 4.5km to the west-north-west of the quarry, and was confirmed by the discovery of a Roman lime kiln during the construction of

1.1. _____

Roberts, R (1995). *A487 Porthmadog/Minffordd and Tremadog Bypasses: Archaeological Assessment*. GAT Report 155.

the Porthmadog Bypass. The postulated line of a Roman road crosses the estuary of the Afon Glaslyn just to the south-west of the quarry.

Medieval

- 6.3. A medieval enclosure (PRN 935) is recorded only some 25m to the east of the quarry boundary, but it is difficult to confirm the period attribution from the description and this may well be a later feature. Rather more certainty can be ascribed to a medieval road (PRN 58447), which passed just over 200m to the south of the quarry along the line of what is now a minor road, heading to a crossing of the Afon Glaslyn estuary. One of the more significant sites in the locality during the medieval period was the motte known as 'Castell Gwain Goch', apparently built by Gruffydd ap Cynan in the 12th century, and located on the ridge separating the Glaslyn and Dwyryd estuaries, some 2 km to the south of the quarry.
- 6.4. Although the farms and buildings in the vicinity of the quarry are all dated to the 16th century and later, it is inconceivable that there would not have been earlier settlements in this locality, some perhaps on the same sites as the post-medieval dwellings. Significant in this regard is 'Graig Rhos' (PRN 6498), which is dated to 1572, but considered in the HER to be of probable earlier origin.



The quarry from the north-east, with the 'Cob' embankment in the background
(CPAT 4176-0002)

Post-Medieval

- 6.5. As already noted, the locality contains a number of dwellings and other buildings of post-medieval date. These demonstrate that the main land-use here was pastoral farming, and certainly by the 19th century the quarry area fell within land forming part of 'Plas Newydd'. Closely related was an embankment (PRN 58446) designed to

protect the low-lying land to the south of Plas Newydd from inundation by high tides, but this probably became redundant when the 'Cob' embankment was built further out in the estuary of the Afon Glaslyn in the early years of the 19th century.

- 6.6. The construction of the 'Cob' was notable in improving local communications by allowing traffic to cross the estuary without danger and restrictions caused by tides. It was followed in 1867 by the Cambrian Railway (PRN 21175), and access to the railway from about 1870, as evidenced by the sidings (PRN 61671) on the first edition Ordnance Survey map of 1889, allowed what were until then small-scale workings on Y Garth to expand into a commercial activity. Two other workings of an industrial nature are known in the locality, a slate quarry recorded in the HER about 200m to the east-north-east of the quarry boundary, and some poorly located mine trials recorded in the NMR which are believed to have been excavated in the slopes of Y Garth; these were apparently unsuccessful in finding any ore.

The Quarry Area

- 6.7. There do not seem to be any surviving heritage assets predating the quarry within the study area. It is known from the 1st edition Ordnance Survey mapping that there was a sheep fold (PRN 61680) in the north-eastern part of the area, but this has since been lost to quarrying. Similarly, there was what seems to have been a junction box alongside the railway in the late 19th century which has also been lost to subsequent activity.
- 6.8. A range of evidence relating to the earlier phases of the quarry can be identified from the Ordnance Survey mapping of the late 19th and early 20th centuries. Buildings, perhaps used for stone dressing, can be seen in the main quarry area on these maps, but there are also transport features, such as a complex network of tramways for moving the stone, and both an inclined plane and a stone chute, both used to transport stone down from what was then the quarry level to the railway. In total, some seventeen discrete heritage assets which were once part of the quarrying activity were identified from the mapping; five of these remain, all in a damaged condition.

7 Baseline Assessment

Heritage Assets within the Site Boundary

- 7.1. There are no designated or registered (i.e. statutorily and non-statutorily protected) assets within the Development Area.
- 7.2. The assessment identified 22 heritage assets within the Site Boundary (Fig. 1), of which 15 have already been lost to quarrying operations. These are listed in Table 4 together with their perceived value/importance. Of the surviving assets six are considered to be of low value, including the quarry itself (PRN 20510), while one is poorly located and may lie outside the Site Boundary. Each asset is identified by either its Primary Record Number (PRN) recorded in the regional HER or by its record number (NPRN) in the NMR, where it is solely identified in the latter.
- 7.3. It should be noted that there remains the possibility that further heritage assets may be present within the Site Boundary, which were not revealed by the survey owing to the presence of dense woodland which prevented access to sections of the Site

Boundary on the east and north sides of the quarry. The slopes of these areas are fairly steep so they are not particularly favourable locations for heritage assets.

7.4. Table 4: Heritage Assets either within or possibly within the Site Boundary

PRN (NPRN)	Name	Type	Period	Value	NGR
20510	Granite Quarry, Y Garth, Minffordd	Granite quarry	Modern	Low	SH 5940 3910
61667	Garth Quarry magazine	Magazine	Post-Medieval	Destroyed	SH 59205 39106
61668	Garth Quarry tramways II	Tramway	Post-Medieval	Destroyed	SH 59402 39015
61669	Garth Quarry inclined plane	Inclined plane	Post-Medieval	Low	SH 59358 39000
61670	Garth Quarry stone chute	Stone chute	Post-Medieval	Low	SH 59380 38987
61671	Garth Quarry railway sidings	Railway siding	Post-Medieval	Destroyed	SH 59345 38972
61672	Garth Quarry tramways I	Tramway	Post-Medieval	Destroyed	SH 59474 39017
61673	Garth Quarry building I	Industrial building	Post-Medieval	Destroyed	SH 59335 39045
61674	Garth Quarry building II	Smithy	Post-Medieval	Low	SH 59332 39012
61675	Garth Quarry building III	Industrial building	Post-Medieval	Destroyed	SH 59399 39009
61676	Garth Quarry building IV	Industrial building	Post-Medieval	Destroyed	SH 59393 39014
61677	Garth Quarry drum house	Drum house	Post-Medieval	Destroyed	SH 59386 39018
61678	Garth Quarry building V	Industrial building	Post-Medieval	Low	SH 59345 38980
61679	Garth Quarry junction box	Railway junction box	Post-Medieval	Destroyed	SH 59184 38998
61680	Garth sheepfold	Sheep fold	Post-Medieval	Destroyed	SH 59642 39149
61681	Garth Quarry building VI	Building	Post-Medieval	Destroyed	SH 59264 39012

61682	Garth Quarry building VII	Industrial building	Post-Medieval	Destroyed	SH 59321 39054
61683	Garth Quarry building VIII	Industrial building	Post-Medieval	Destroyed	SH 59325 38989
61684	Garth Quarry building IX	Industrial building	Post-Medieval	Destroyed	SH 59439 39012
61685	Garth Quarry building X	Industrial building	Post-Medieval	Destroyed	SH 59379 38998
61686	Garth Quarry building XI	Industrial building	Post-Medieval	Low	SH 59345 39005
NPRN 33977	Gwaith Dafydd-y-miner	Trial mine	Unknown	Unknown	SH 5939



The current quarry workings, from the east-north-east (CPAT 4176-0001)

PRN 20510 Granite Quarry, Y Garth, Minffordd, SH59403910

- 7.5. Garth quarry, also known as the Minffordd sett quarry, was first operated on a small scale from c.1856, though only officially opened in 1870. The quarry was worked by three different companies between 1870 and 1890, making use of the newly opened

Cambrian Railway¹⁶. The quarry is still active and contains a number of historic quarry-related structures which are detailed separately below.

PRN 61667 Garth Quarry magazine, SH5920539106

- 7.6. Quarry magazine named on 1st edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61668 Garth Quarry tramways II, SH5940239015

- 7.7. Quarry tramways depicted on the 2nd edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61669 Garth Quarry inclined plane, SH5935839000

- 7.8. Inclined plane first depicted on the 1st edition Ordnance Survey 25" map. The top and bottom sections have been lost to later activity at the quarry but the central section survives and is approximately 4m wide; its upper end is defined by well-dressed stone walls. At about SH 59360 38996 there is a stone revetment wall, facing south.



Dressed stone wall on the north-west side of the incline PRN 61669, at its upper end
(CPAT 4176-0004)

1.1. _____

¹⁶ Roberts, R. (1995). *A487 Porthmadog/Minffordd and Tremadog Bypasses: Archaeological Assessment*. GAT Report 155.

PRN 61670 Garth Quarry stone chute, SH5938038987

- 7.9. Stone chute first depicted on the 2nd edition Ordnance Survey 25" map. Probably survives beneath a later accumulation of stone debris. Building PRN 61678 includes a series of slots that were probably placed at the lower end to allow stone to be fed to machinery within.



The lower end of the stone chute PRN 61670 (CPAT 4176-0019)

PRN 61671 Garth Quarry railway sidings, SH5934538972

- 7.10. Former railway sidings depicted on 1st edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61672 Garth Quarry tramways I, SH5947439017

- 7.11. Quarry tramways depicted on the 1st edition Ordnance Survey 25" mapping. Destroyed by quarrying operations.

PRN 61673 Garth Quarry building I, SH5933539045

- 7.12. Quarry building depicted on 1st edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61674 Garth Quarry building II, SH5933239012

- 7.13. Former smithy for the quarry, first depicted on the 1st edition Ordnance Survey 25" map. Area is now heavily overgrown but much of the walls seem to survive beneath

a collapsed wooden roof. It has a surviving chimney standing to c.7m high. At least one machine is *in situ*.



The ruinous smithy PRN 61674 with the surviving machine in the foreground and the intact chimney to the rear (CPAT 4176-0009)

PRN 61675 Garth Quarry building III, SH5939939009

- 7.14. Quarry building first depicted on the 1st edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61676 Garth Quarry building IV, SH5939339014

- 7.15. Quarry building first depicted on the 1st edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61677 Garth Quarry drum house, SH5938639018

- 7.16. Drum house at the top of the quarry incline on the first edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61678 Garth Quarry building V, SH5934538980

- 7.17. Long building depicted on the first edition Ordnance Survey 25" map and later modified. Its northern wall survives and contains evidence in the form of slots that probably linked it to the stone chute above.



The northern wall of building PRN 61678 and the slots which probably linked it to the stone chute (CPAT 4176-0016)

PRN 61679 Garth Quarry junction box, SH5918438998

- 7.18. The site of site of a former junction box, presumably for quarry traffic. Depicted on the 1st and 2nd edition Ordnance Survey 25" maps, but no longer extant.

PRN 61680 Garth sheepfold, SH5964239149

- 7.19. Sheepfold depicted on the 1st and 2nd edition Ordnance Survey 25" maps. Destroyed by quarrying operations.

PRN 61681 Garth Quarry building VI, SH5926439012

- 7.20. Large building only depicted on the 3rd edition Ordnance Survey 25" mapping. Some sections of revetment wall in this locality may define the uphill side of the structure, but the rest lies on the main access route into the quarry and has been removed.



Section of revetment wall possibly associated with building PRN 61681
(CPAT 4176-0014)

PRN 61682 Garth Quarry building VII, SH5932139054

- 7.21. Small building depicted on 2nd and 3rd edition Ordnance Survey 25" maps. Destroyed by quarrying operations.

PRN 61683 Garth Quarry building VIII, SH5932538989

- 7.22. Building at the base of the incline on the 2nd and 3rd edition Ordnance Survey 25" mapping. This is now the route of the main access road to the quarry and seemingly removed, although sections of revetment wall nearby may be related.

PRN 61684 Garth Quarry building IX, SH5943939012

- 7.23. Small building only depicted on the 2nd edition Ordnance Survey 25" map. Destroyed by quarrying operations.

PRN 61685 Garth Quarry building X, SH5937938998

- 7.24. Building at the top of the stone chute on the 2nd and 3rd edition Ordnance Survey 25" maps. Destroyed by quarrying operations.

PRN 61686 Garth Quarry building XI, SH5934539005

- 7.25. Building first depicted on the 3rd edition Ordnance Survey 25" mapping. Survives as a rock-cut terrace with stone walls on the edges and top.



The rock-cut terrace denoting the position of building PRN 61686 (CPAT 4176-0007)

NPRN 33977

Gwaith Dafydd-y-Miner, SH5939

- 7.26. There are several mine holes along 'Tyddyn Isaf' 'Hafodwern' and 'Plasnewydd' and the land is known as 'Gwaith Dafydd y Miner' after an elderly local man who failed to find any mineral resources. The mine trials are poorly located and may lie outside the Site Boundary.

LANDMAP

- 7.27. The nature of the quarry area is reinforced by LANDMAP, the Welsh methodology employed in landscape assessment. This indicates that the Quarry lies within a landscape (Historic Landscape Aspect Area GWNDDHL557) classed as being of moderate value, as an area of quarrying which is now rare in a region which is known for mineral extraction. LANDMAP is considered in detail in Chapter 6.0, Landscape and Visual Impacts.

Palaeoenvironmental Potential

- 7.28. The palaeoenvironmental potential of the quarry area itself is very low. Even prior to the commencement of quarrying, there are not likely to have been any significant peat deposits on the hill itself. On the periphery of the hill to the south-west and south-east, but just within the Site Boundary, the land was formerly part of the estuary of the Afon Glaslyn and as such the deposits there may be of interest as a former salt marsh but were protected from the sea only as recently as the beginning of the 19th century (on the south-west) and perhaps the 18th century (on the south-east). These modifications to the local intertidal zone may have led to the burial of material beneath later deposits but the potential cannot be determined with current knowledge.

8 Designated and Registered Heritage Assets within 5 km of the Site Boundary

- 8.1. The study includes designated and registered heritage assets within 5 km of the Site Boundary, shown in Fig. 2, in order to assess potential visual impacts. It should be noted that the distance given in the following tables are for the shortest distance between the boundary of an asset and the boundary of the Development Area. It should also be noted that potential visibility has been derived through using a ZTV model (Figs 3-4) developed as part of the assessment of Landscape and Visual Impacts. The computer model links the potential visual impact to the vertical angle subtended at the viewpoint by the top and bottom extremities of the area being viewed, thus giving a measure of how much of a given field of view is occupied by the area. It automatically takes account of distance since an object closer to the viewer occupies a far greater vertical angle. The ZTV has been subdivided into six zones of theoretical visibility based upon the angle of view, with 'zone 1' representing the highest magnitude of impact and 'zone 6' representing the lowest magnitude of impact. These areas are shown on the ZTV plans accompanying the LVIA study and comprise:

Zone 1: angle of view $>3.0^{\circ}$

Zone 2: angle of view $1.0 - 3.0^{\circ}$

Zone 3: angle of view $0.3 - 1.0^{\circ}$

Zone 4: angle of view $0.2 - 0.3^{\circ}$

Zone 5: angle of view $0.1 - 0.2^{\circ}$

Zone 6: angle of view $0.0 - 0.1^{\circ}$.

- 8.2. The study of designated heritage assets is based on a dataset provided by Cadw in August 2015.

- 8.3. Table 5: Designated and Registered Heritage Assets within 5 km of the Site Boundary: Summary (It should be noted that the figures are cumulative)

Designated Asset	Within Site Boundary	Within 1 km	Within 2 km	Within 5 km
World Heritage Site	0	0	0	0
Scheduled Ancient Monument	0	1	1	18
Listed buildings	0	12	115	427
Registered historic parks and gardens	0	0	1	5
Registered historic landscapes	1	2	2	2
Conservation areas	0	1	2	3

World Heritage Sites

- 8.4. There are no World Heritage Sites within 5 km of the Site Boundary.

Scheduled Ancient Monuments

- 8.5. There is one scheduled ancient monument within 1 km of the Site Boundary and 18 within 5 km, of which seven will have no views of the FQD (as determined by the ZTV). All SAMs within 5 km of the Quarry are listed in Table 6.

- 8.6. Table 6: Scheduled Ancient Monuments within 5 km of the Site Boundary

SAM No.	SAM Name	Site Type	Distance and direction	ZTV zone
CN059	Moel y Gest Camp	Hillfort	3.8km W	none and 1-5
CN118	Cist Cerrig Burial Chamber & Cup Marked Rock	Chambered tomb	4.6km W	none
CN174	Roman Bath-House, Tremadoc	Bath-house	3.4km NW	3
CN237	Hut Circles near Craig y Gesail	Unenclosed hut circle	4.7km NW	none and 1-4
CN239	Hut Group West of Cwm Mawr	Hut circle settlement	4.6km NW	none
CN270	Enclosed Hut Group in Parc-y-Borth	Enclosed hut circle	2.9km SW	none
CN386	Fach-goch, standing stone to SSE of	Standing stone	3.0km NW	4
ME050	Inscribed Stone in Llanfihangel Traethau Churchyard	Inscribed stone	3.5km S	3
ME096	Ty'n y Berllan Settlement	Enclosed hut circle	0.4km E	1
ME108	Cei Tyddyn Isa	Quarry	3.1km E	none
ME109	Coety Bach Homestead	Enclosed hut circle	4.3km SE	none
ME110	Coety Mawr Round Hut and Enclosure	Unenclosed hut circle	4.4km SE	4
ME117	Maes y Caerau Homestead	Concentric enclosed hut circle	4.6km SE	4
ME143	Settlement E of Eisingrug	Hut circle settlement	4.9km SE	4
ME149	Coed Cae Fali Hut Circle Settlement	Enclosed hut circle	3.4km NE	none

ME178	Unenclosed Hut Circle Settlement at Bryn Derw	Hut circle settlement	4.3km NE	1
ME184	Enclosed Hut Circle Settlement North of Coed Gwlyb	Enclosed hut circle	4.7km W	none
ME265	Defended Settlement 150m NW of Plas Ynysfor	Enclosure - Defensive	3.4km N	1

Listed Buildings

- 8.7. There are 427 listed buildings within 5 km of the Site Boundary, although the topography is such that only 130 would have no direct views of the FQD (as determined by the use of the ZTV). The listed buildings are too numerous to present in a tabulated form in this chapter, but are listed in full in Appendix 1.
- 8.8. Three of the buildings are listed at grade I, including Capel Peniel (No 4442), Portmeirion Town Hall (No 4777) and the Church of St Brothen at Llanfrothen (No 48704), while 20 are grade II* and the remaining 404 are listed at grade II.

Registered Parks and Gardens

- 8.9. The assessment has identified five Registered Parks and Gardens within 5 km of the Site Boundary, of which one, Portmeirion, will have no visibility of the FQD. These are listed in Table 7.

Table 7: Registered Parks and Gardens within 5 km of the Site Boundary

Ref No.	Name	Grade	Distance and direction	ZTV zone
GD18	Tan-yr-Allt	II	2.3km NW	1-4
GD19	Wern	II*	4.3km W	1-4
GD28	Glyn Cywarch	II*	4.6km SSE	none and 1-4
GD29	Portmeirion	II*	1.5km S	none
GD30	Plas Brondanw	I	3.2km NE	1

Registered Historic Landscapes

- 8.10. There are two Registered Historic Landscapes within 5 km of the Site Boundary, which are listed in Table 8.

Table 8: Registered Historic Landscapes within 5 km of the Site Boundary

Ref No.	Name	Distance and direction	ZTV zone
HLW GW 7	Aberglaslyn	0.0km	1-6
HLW GW 2	Ardudwy	1.0km S	3-6

Conservation Areas

- 8.11. There are three Conservation Areas within 5 km of the Site Boundary, which are listed in Table 9.

Table 9: Conservation Areas within 5 km of the Site Boundary

Name	Distance and direction	ZTV zone
Porthmadog	1.8km W	none and 1-5
Portmeirion	0.5km S	none and 1-6
Tremadog	2.8km W	none and 1-4

9 Assessment of Effects/Impacts

- 9.1. The effects of a development on the cultural heritage may manifest themselves at any stage in the life-cycle of that development, and in this instance can be broadly grouped under the headings of i) Operation and ii) Reinstatement. It can be assumed that in practice the potential effects are likely to be reasonably similar and these are therefore considered together. For the purposes of this assessment, the terminology adopted is as laid out in the Design Manual for Roads and Bridges (DMRB), Volume 11 Section 3 Part 2, HA 208/07, page 4/2, in the absence of any more recent official Welsh guidance on the subject. Short-term temporary impacts are those associated with the construction and decommissioning periods of a development and are reversible. Long-term temporary impacts are those lasting more than 15 years but are still reversible, and are normally associated with the operational life of a development. Permanent impacts are not reversible.
- 9.2. Direct impacts on heritage assets are normally permanent and irreversible. Indirect impacts may be temporary or permanent depending on their nature.

10 Direct Impacts

- 10.1. The potential direct impacts of the development on all heritage assets within the Site Boundary are listed in Table 10. This identifies the number, name and type of each asset, its value or sensitivity, and the predicted magnitude of any direct impact before mitigation. The potential for impacts are based on information provided by the client regarding the phasing of extraction from the quarry; most of the surviving heritage assets in the Site Boundary lie within an area which survives into the 15 year plan for extraction but is removed in the proposal for the 30 year plan.
- 10.2. Of the 22 assets within the Development Area, the 15 have already been destroyed are excluded from Table 10.

Table 10 Direct impacts on heritage assets within the Site Boundary

PRN (NPRN)	Name	Type	Value	Magnitude of impact	Significance
20510	Granite Quarry, Y Garth, Minffordd	Granite quarry	Low	Moderate	Slight
61669	Garth Quarry inclined plane	Inclined plane	Low	Major	Slight/moderate
61670	Garth Quarry stone chute	Stone chute	Low	Major	Slight/moderate
61674	Garth Quarry building II	Smithy	Low	Major	Slight/moderate
61678	Garth Quarry building V	Industrial building	Low	Moderate	Slight
61686	Garth Quarry building XI	Industrial building	Low	Major	Slight/moderate
NPRN 33977	Gwaith Dafydd-y-miner	Trial mine	Unknown	Unknown	Unknown

- 10.3. The assessment has determined that of the seven assets where direct impacts are predicted, in two cases the significance of the impact is considered to be slight and in four cases it will be slight/moderate, neither of which are significant impacts in terms of the ES. It is worth noting, however, that all seven assets would be subject to the same impacts under the existing permissions as they will as part of the FQD and that there is thus no change in the magnitude of the impacts which will result from the revisions.

11 Indirect Impacts

- 11.1. The assessment of predicted long-term, indirect impacts, has been conducted for all designated assets within 5 km of the quarry. Indirect impacts are usually taken to refer to the visual effects of a development, although other effects can also be viewed as being indirect. For example, a development could affect the groundwater in a wider area, adversely affecting important waterlogged deposits nearby. In the case of Garth Quarry, however, the assessment has not identified any assets which might be subject to an indirect impact which is anything other than a visual impact.
- 11.2. The assessment of visual impacts has been conducted primarily through the use of ZTVs, these are illustrated on drawings number M14.112e.d.104 and 105 for the current extent of the quarry and the FQD (Figs 3-4). Targetted fieldwork was also undertaken to support the assessment, although this was necessarily restricted to viewpoints with public access.
- 11.3. It should be noted that only those assets with visibility of the FQD are included in the following assessment. The locations of the assets are shown on Fig. 2. The consideration of the registered historic parks and gardens includes any listed buildings within their boundaries. Similarly, listed buildings within the settlements

of Porthmadog, Portmeirion and Tremadog are considered under the umbrella of the respective conservation areas.

- 11.4. The distance given in the following tables are from the closest point along the boundary of an asset to the nearest point along the Site Boundary. It should also be noted that potential visibility has been derived through using a ZTV model which does not incorporate the screening effects from hedges, buildings and trees. The study is based on a dataset provided by Cadw in August 2015.
- 11.5. The assessment considers the visual impact of the existing quarry and compares this with the FQD to determine the magnitude of any changes in impact between this and the FQD and thus the significance of those changes. The principal difference between the two, in terms of the physical appearance of the quarry, will be the removal of the central ridge along the southern edge of the quarry, which will open up views to the quarry interior for any receptor viewing the site from the south. As noted above, this change will also occur as part of the implementation of the currently approved quarry development scheme. The comparative ZTVs in Figs 3-4 demonstrate that there will be little change in the overall visibility of the quarry and thus no designated assets will experience views of the quarry which do not currently have views. However, for assets to the south the nature of that view may well change, and the assessment considers whether this effect of this change will be significant. The restoration of the quarry at the end of its working life has the potential for beneficial impacts, through the gradual greening of exposed quarry faces and tree planting.
- 11.6. In determining whether there is a visual impact it is not sufficient to identify solely whether there is intervisibility between the asset and the quarry since other factors must be considered. For example, most listed buildings tend to have localised settings and are only appreciated from viewpoints nearby. Registered Parks and Gardens on the other hand generally have principal views which are defined and can extend for a considerable distance across the landscape. In this respect it is important to consider whether the wider visibility of the asset, or the views from it, were important factors at the time of construction and also whether they are important in the present when appreciating the asset.
- 11.7. Indirect impacts are considered to be adverse unless stated otherwise.

World Heritage Sites

- 11.8. There are no World Heritage Sites within 5 km of the Site Boundary.

Scheduled Ancient Monuments

- 11.9. There are 18 Scheduled Ancient Monuments within 5 km of the Site Boundary, seven of which will have no visibility of the quarry.

11.10. Table 11: Potential indirect impacts on Scheduled Ancient Monuments within 5 km of the Site Boundary

SAM No.	Dist. and direction	Magnitude of existing effect	Magnitude of effect for FQD	Significance of change between the two
CN059	3.8km W	minor	minor	Neutral
CN174	3.4km NW	No change	No change	Neutral
CN237	4.7km NW	No change	No change	Neutral
CN386	3.0km NW	Negligible	Negligible	Neutral
ME050	3.5km S	No change	No change	Neutral
ME096	0.4km E	No change	No change	Neutral
ME110	4.4km SE	No change	No change	Neutral
ME117	4.6km SE	No change	No change	Neutral
ME143	4.9km SE	No change	No change	Neutral
ME178	4.3km NE	No change	No change	Neutral
ME265	3.4km N	No change	No change	Neutral

CN059 Moel y Gest Camp, SH549389

- 11.11. The stone-walled Iron Age enclosure is set on a craggy summit west of Porthmadog and 3.8 km west of the quarry. The site occupies a prominent location and was sited thus for its commanding views and imposing position. Its setting comprises the lower slopes of the hill, but could arguably be extended as far as the present coastline to the south and the edge of the reclaimed land around Porthmadog, which would have been the contemporary coastal margin. The quarry does not affect the appreciation of the site and only appears in distant views towards it from the east. As noted above views from the site would have been important during its occupation, including those towards the quarry. However, the ZTVs indicate that for the majority of the site there would be either no intervisibility, or only limited views. It is only the extreme eastern side which falls into ZTV zone 2, though only just. The views towards the Quarry are showing in Viewpoint 16. Taken as a whole the visual impact is currently at most **minor** and this will remain unchanged with the QFD so that the significance of the change is **neutral**. The final restoration of the quarry has the potential for minor beneficial effects, reducing its prominence in the landscape.

CN174 Roman Bath-House, Tremadoc, SH557401

- 11.12. Roman remains were uncovered at Tremadog in the late 19th century and the bathhouse was excavated in 1908, uncovering a building measuring 20m by 9m and producing finds of 2nd to 4th century date. The setting is very localised and the quarry does not affect the appreciation of the site. The ZTVs indicate that the asset is in ZTV

zone 4 and as such the current and FQD will have no visual impacts, the magnitude being **no change**.

CN237 Hut Circles near Craig y Gesail, SH547413

- 11.13. The group of Iron Age or Romano British huts lie on the lower north-east-facing slopes of Craig y Gesail, north-west of Tremadog and 4.7 km north-west of the quarry. Only one of the three discrete scheduled areas lies within ZTV zone 3, representing middle to long distance views of the Quarry, the others having little or no intervisibility. The setting is fairly localised, comprising the hillslope and the valley immediately below which the huts overlook. Neither the existing quarry or the FQD will affect views to or from the asset and the magnitude of the impact is therefore **no change**.

CN386 Fach-goch, standing stone, SH568411

- 11.14. The 2.2m-high standing stone lies in enclosed pasture to the north-east of Tremadog and 3 km north-west of the quarry. The setting comprises the pasture field in which it lies, while the appreciation of the asset is not affected by the current or FQD. It could be argued that more distant views were an important consideration in the siting of standing stones, as well as intervisibility between other similar monuments and in this respect one might consider views to the south-east, in which the quarry is visible in the distance (see Viewpoint 14, which lies 0.67 km from the monument), although it is not considered to constitute more than a **negligible** visual impact, while the final restoration of the quarry has the potential for minor beneficial effects, reducing its prominence in the landscape.

ME050 Inscribed Stone, Llanfihangel Traethau Churchyard, SH595353

- 11.15. The medieval pillar stone is located within the churchyard at Llanfihangel Traethau, 3.5 km south of the quarry, on the south side of the Afon Dwyryd estuary. It bears a Latin inscription which translates as 'here is the tomb of Wleder, the mother of Odeleu, who first built the church in the time of King Owain. The churchyard provides the setting for the stone and the location from which it is viewed. Although there is some intervisibility with the quarry there is not considered to be any visual impact on the asset or its setting and this situation will remain unchanged through to the FQD, the magnitude therefore being **no change**.

ME096 Ty'n y Berllan Settlement, SH600393

- 11.16. The enclosed homestead, which is thought to be of Roman or immediately post-Roman date, is the closest designated asset to the quarry, lying only 0.4 km east of the site boundary towards the eastern end, at near the base of the hill which the quarry exploits. The walls are clearly visible and define at least four circular rooms opening onto a central courtyard. The asset lies in a pasture field, which provides its setting, there being no current evidence to suggest an associated field system.
- 11.17. Despite its close proximity to the quarry the topography is such that neither the existing quarry workings of the FQD will have any effect on the site or its setting and views in that direction are very limited (see Viewpoint 17). The magnitude the visual impact is therefore considered to be **no change**.

ME110 Coety Mawr Round Hut and Enclosure, SH631360
ME117 Maes y Caerau Homestead, SH635362

- 11.18. The Iron Age roundhut and adjoining enclosure (ME110) lie in improved pasture on a north-west-facing slope overlooking the Afon Dwyryhyd estuary, some 4.4 km south-east of the quarry. The homestead (ME117), which is of likely prehistoric date, lies 500m east-north-east of ME110 and has a similar location and aspect, although sited within less improved pasture.
- 11.19. The setting for both assets is relatively local, consisting of the immediate surroundings. The elevated location gives good views towards the Quarry and it is this elevation which has resulted in the assets falling into ZTV zone 3, representing middle to long distance views of the Quarry. A similar view is depicted in Viewpoint 18, taken from a point 1.5km to the south-east. The location of the assets is such that in the FQD the Quarry might be more obvious when viewed from the site, although at this distance it is not a prominent feature. However, this does not in itself constitute a visual impact on the assets or their setting since the appreciation of the monuments remains unaffected and it seems likely that the assets were sited in these locations for reasons of shelter rather than for the views, the magnitude of the impact is therefore considered to be **no change**.

ME143 Settlement E of Eisingrug, SH620345

- 11.20. The settlement lies 4.9 km south-east of the Quarry and consists of at least two roundhuts positioned on a natural shelf, which provides its setting. The asset is best appreciated from the adjacent minor road. While the ZTVs place this location in zone 3 the topography is such that the Quarry would be only just visible above the rising ground to the north-west, although direct views are obscured by intervening trees. The view towards the Quarry from a point 400m to the north of the monument is shown in Viewpoint 18. This and the localised setting mean that there are no visual impacts and the magnitude being **no change**.

ME178 Unenclosed Hut Circle Settlement at Bryn Derw, SH622428

- 11.21. The group of roundhuts lies 4.3 km north-east of the Quarry, occupying a sheltered site on the lower south-eastern slopes of a low ridge. The area is generally wooded and there are no direct views of the Quarry so that there are no visual impacts and the magnitude is therefore **no change**.

ME265 Defended Settlement 150m NW of Plas Ynysfor, SH599427

- 11.22. The small defended enclosure lies some 3.4 km north of the quarry, occupying the summit of a small outcrop which would have been an island in the Glaslyn estuary during the Iron Age and Romano-British periods. The setting is formed by the former island, which is now surrounded by reclaimed farmland, and the enclosure may be appreciated from nearby Ynysfor, or from further afield across the former estuary. The Quarry is only just visible in distant views to the south and has no visual impact on the asset or its setting, the magnitude being **no change**.

Listed Buildings

- 11.23. There are 427 listed buildings within 5 km of the Site Boundary, including three listed at grade I: Capel Peniel, Tremadog (No 4442); Portmeirion Town Hall (No 4777); and the Church of St Brothen at Llanfrothen (No 48704).
- 11.24. The majority of listed buildings are within settlements where the streetscape is significant in terms of their setting, but this does not extend further. There are also a significant number of farmhouses and farm buildings, but again their setting is inevitably localised. In this respect the Quarry has no visual impact on the buildings or their settings.
- 11.25. It is perhaps only the larger country houses where the wider views become more important and their setting more extensive. They are likely to have been built as a statement, with the intention of being seen. Those within the study area are almost all associated with one of the Registered Parks and Gardens and views from these buildings, and perhaps others within the registered boundary, are amongst the principal views from the garden as a whole and are dealt with under that section. There are 114 listed buildings within the five Registered Parks and Gardens.
- 11.26. A significant number lie within one of the three Conservation Areas: Portmadog contains 69 listed buildings, all of which are listed at grade II; Portmeirion contains 69 listed buildings, including two listed at grade I and three at II*, although none have any views of the Quarry; and Tremadog contains 76 listed buildings, including four listed at grade II*. There are a further 21 listed buildings in the village of Garreg, including five listed at grade II*, although none have more than very limited views of the Quarry.
- 11.27. The closest listed building to the Quarry is the grade II listed Rhos House (5205), which lies 0.2 km to the south, while the closest higher grade listed building is the grade II* listed Plas Penrhyn (4852), which lies 1 km to the south. Table 12 summarises the listed buildings by grade within each of the ZTV zones of visual influence.

Table 12 Summary of Listed Buildings within 5 km of the Site Boundary with respect to the ZTV zones of visual influence

Listing Grade	Zone 1	Zone 2	Zone 3	Zones 4-6	No visibility	Total
I	0	0	0	1	2	3
II*	1	2	4	8	5	20
II	4	72	67	138	123	404
Total	5	74	71	147	130	427

- 11.28. An examination of the potential visual effects predicted by the ZTVs suggests that for those listed buildings not within a Registered Park and Garden or a Conservation Area the settings are too localised for the Quarry to have a visual impact which affects

the asset or its setting. The only possible exceptions are those within ZTV zone 1 and these are assessed below.

11.29. Table 13 Potential indirect impacts on Listed Buildings within 5 km of the Site Boundary

Name	Dist. and direction	Magnitude of existing effect	Magnitude of effect for FQD	Significance of change between the two
Plas Penrhyn	1.0km S	moderate	moderate	neutral
Rhos House	0.2km S	major	major	neutral
Railway lodge at the Ffestiniog Railway Crossing	0.4km S	no change	no change	neutral
Plas Penrhyn Lodge	0.5km S	no change	no change	neutral
Entrance piers at the Minffordd approach to Portmeirion	0.5km S	no change	no change	neutral

4852 Plas Penrhyn, SH59063791

- 11.30. The early to mid 19th-century house lies 1 km south of the Quarry. It may originally have had a parkland setting and the position of the lodge (28860) suggests that the setting could extend as far north as the A497. The principal views from the house are to the north-west and south-east, both facing away from the house, while any views of the Quarry from the house are completely obscured by a small adjacent wood. There would, however, be intervisibility from the setting (see Viewpoint 2) and in views towards the mountains of Snowdonia the Quarry is a dominant feature. Thus, although there is no visual impact on the house itself, the magnitude of the impact on its setting could be seen to be as high as **moderate**. The FQD will result in this view being different, but no change in the magnitude of the impact. Following restoration of the quarry, however, there is the potential for a **minor** beneficial visual impact.

5205 Rhos House, SH59523871

- 11.31. Rhos House, also known as Graig Rhos, is a 17th-century building which is said to be the oldest house in the area and formerly belonged to the Wyn family of Gwydir Castle. It was both a house and an inn. It lies on the former entrance road to the Quarry and in some views towards the building the Quarry is prominent in the background and is considered to have a **major** visual impact on the setting. In the FQD the view will be different, with the removal of the quarry buildings and plant which are currently the dominant features of the quarry when viewed from the building, to be replaced by more open views of the quarry interior. However, it is considered that the magnitude of the visual impact will remain unchanged.

Following restoration of the quarry, however, there is the potential for a **minor** beneficial visual impact.

5211 Railway lodge at the Ffestiniog Railway Crossing, SH59533850

- 11.32. The railway lodge lies 0.4 km south of the Quarry, on the southern side of the railway. It was built in the 1830s as a weigh house for the Ffestiniog Railway, but was later used as the keeper's lodge for the level crossing. Its setting is provided by the adjacent road, railway and level crossing which it served and it is best appreciated in views from the north, away from the Quarry. The Quarry is clearly visible in views from the building (see Viewpoint 4) and the FQD will result in this being more prominent owing to the removal of the central ridge, opening views to the interior workings. However, this will not affect the appreciation of the building or its setting and the magnitude of the visual impact is considered to be **no change**.

28860 Plas Penrhyn Lodge, SH59423833

- 11.33. The former lodge for Plas Penrhyn lies on the south side of the A497, 0.5 km south of the Quarry. Its setting is localised, taking in the adjacent road sections, while it is best appreciated in views from the north, away from the Quarry. The Quarry is clearly visible in views from the building (see Viewpoint 1) and the FQD will result in this being more prominent owing to the removal of the central ridge, opening views to the interior workings. However, this will not affect the appreciation of the building or its setting and the magnitude of the visual impact is considered to be **no change**.

26888 Entrance piers at the Minffordd approach to Portmeirion, SH59603846

- 11.34. The pair of piers flank the road leading to Portmeirion, lying 0.5 km south of the Quarry. They were intended to be viewed from the north, looking towards Portmeirion and away from the Quarry. Any views towards the Quarry are masked by intervening buildings and there is no intervisibility so that the magnitude of the visual impact is **no change**.

Registered Parks and Gardens

- 11.35. The assessment has identified five Registered Parks and Gardens within 5 km of the Site Boundary, of which one, Portmeirion, will have no visibility of the FQD, although the associated Portmeirion Conservation Area will have limited views (see below). The four Registered Parks and Gardens within 5 km which will have visibility are listed in Table 14, while the following details are derived from the Register.¹⁷

1.1.

¹⁷ Cadw/ICOMOS (1998). *Conwy, Gwynedd and the Isle of Anglesey. Register of Landscapes, Parks and Gardens of Special Historic Interest in Wales. Part 1: Parks and Gardens.*

Table 14 Potential indirect impacts on Registered Parks and Gardens within 5km of the Site Boundary

Number	Dist. and direction	Magnitude of existing effect	Magnitude of effect for FQD	Significance of change between the two
GD18	2.3km NW	negligible	negligible	neutral
GD19	4.3km W	negligible	negligible	neutral
GD28	4.6km SSE	negligible	negligible	neutral
GD30	3.2km NE	negligible	negligible	neutral

GD18 Tan-yr-Allt, SH5685640513

- 11.36. The house and grounds are located at Tremadog, 2.3 km north-west of the quarry, and were designed by William Madocks around 1800 as his own home. The gardens were laid out in the Romantic style and include a woodland park, an ornamental garden and a kitchen garden. The garden contains four listed buildings, one of which, Plas Tan-yr-Allt (4432), is grade II* listed.
- 11.37. The principal views are to the south-west, south and south-east, the latter in the direction of the quarry. The ZTVs indicate that the gardens lie in zone 3, which is associated with receptors that gain middle to long distance views of the Quarry. Viewpoint 13, which is taken from a point 0.9km south of the garden, but at a slightly closer distance, gives an indication of the limited extent to which the quarry features in the view. The effects are mitigated by distance and the wooded nature of the northern side of the hill occupied by the quarry, with the views in this direction remaining unaltered by the FQD. The magnitude of the visual impact for the current and FQD are both considered to be **negligible** and the significance of any change **neutral**. The final restoration of the quarry has the potential for minor beneficial effects to views in that direction.

GD19 Wern, SH5428439965

- 11.38. Wern lies to the west of Porthmadog, 4.3 km west of the quarry. The house was built for the Wynn family but it is included in the Register as grade II* owing to its association with Thomas Mawson, it being one of the few gardens in Wales where his design influence can still be discerned. There are fine terraces, a formal pool, an informal water garden and a circular garden. The garden contains eight listed buildings, including Wern Manor, which is listed at grade II*.
- 11.39. The principal views are to the east-south-east, towards the quarry, although at this distance the mitigating effects of intervening trees means that the magnitude of the visual impact for the current and FQD are both considered to be **negligible** and the significance of any change **neutral**. The final restoration of the quarry has the potential for minor beneficial effects to views in that direction.

GD28 Glyn Cywarch, SH6067533944

- 11.40. Glyn Cywarch is a fine, early 17th-century manor house with a contemporary gatehouse and a terraced garden, while an adjacent walled garden may also be contemporary in part. The garden lies on the edge of the hills to the west of the Morfa Harlech plain, some 4.6 km south-east of the Site Boundary. The situation of the house and surrounding parkland takes full advantage of the natural scenery, which is enhanced by ornamental planting and can be enjoyed from a 19th-century lookout. The gardens contain six listed buildings which are within 5 km of the Site Boundary, including two listed at grade II*: Glyn Cywarch (4778) and its gatehouse (4844).
- 11.41. The principal views from the house are to the north-east and south-south east, while those from the lookout tower are to the north-east, east-south-east and south-west, none of which are in the direction of the Quarry. While the existing quarry is visible from within the registered boundary it does not therefore figure significantly in any views and the magnitude of the effect is considered to be **negligible**. Given the garden's location, to the south of the quarry, the views of the FQD will be different from those which currently exist, but are not considered to be any more visually intrusive and the significance of the change is thus **neutral**. The final restoration of the quarry has the potential for minor beneficial effects to views in that direction.

GD30 Plas Brondanw, SH6162342267

- 11.42. Plas Brondanw is an exceptional and very well preserved architectural garden which was designed mainly in the 1920s and 1930s by Clough Williams-Ellis, who was also responsible for creating Portmeirion. It is probably the best and most complete example of his work as a garden designer and is registered as grade I. The garden lies just north of the village of Garreg, 3.2 km north-east of the quarry and comprises a formal garden, a park and a woodland walk with viewpoints. The garden encompasses 29 listed buildings, including three listed at grade II*: Plas Brondanw (4808), the New Lodge (5248) and the Orangery (19816).
- 11.43. The principal views are to the north-west, north and north-east, away from the quarry, while the ZTVs indicate that in any views to the south-west the quarry will not be a significant feature. The magnitude of the visual impact for the current and FQD are both considered to be **negligible** and the significance of any change **neutral**. The final restoration of the quarry has the potential for minor beneficial effects to views in that direction.

Registered Historic Landscapes

- 11.44. The Site Boundary falls within the Aberglaslyn Registered Historic Landscape (HLW GW 7), while the Ardudwy Registered Historic Landscape (HLW GW 2) lies 1 km to the south (Fig. 5).
- 11.45. Through discussions between SLR Consulting and Natural Resources Wales it was determined that an Assessment of the Impact of Development on the Historic Landscape, a process known as ASIDOHL2, would not be required as part of this Environmental Statement. The following section therefore provides a summary of the two historic landscapes and their interaction with the Quarry.

- 11.46. Historic landscape characteristics are defined as the tangible evidence of the activities and habits of the people who occupied, developed, used and shaped the land to serve human needs in the past; they reflect the beliefs, attitudes, traditions and values of these people. They include the physical remains of all aspects of human activities and the exploitation of the land in the past (above and below ground, known and potential), and incorporate our understanding, interpretation and even perception of those remains. Such characteristics might focus on a variety of activities occurring at a single time, but in other instances might reflect evolving functions during different periods of time.
- 11.47. The *Guide to Good Practice*¹⁸ states that 'the characterisation process divides each landscape area on the Register into a number of smaller, more discrete, geographical areas of broadly consistent historic character called 'Historic [Landscape] Character Areas' (HLCA). These areas are defined according to their key historic elements and characteristics; for example, an area might be physically characterised by a particular form of historic settlement or land use pattern, or it might have distinctive historic buildings, archaeological sites or traditional field boundaries, or it might contain important ancient habitats, and so on. Alternatively, an area might not have any strongly definitive physical characteristics, but instead it might have significant historic documentary evidence relating to it, or have important historic associations.
- 11.48. The contribution of each HLCA to the wider historic landscape of which it forms a part is variable. Some are key elements, whilst others are of only incidental or minor importance.
- 11.49. The landscape impacts on the Registered Historic Landscapes are dealt with under Landscape and Visual Impacts, while the following section focuses on the historic character of the landscapes. It should be noted that in line with the assessment of Landscape and Visual Impacts only those HLCAs which fall partly within ZTV zones 1-3 are considered below.
- 11.50. The historic nature of the Quarry and its recognition as a separate HLCA mean that it is very much a part of the character of the historic landscape and any influence it may have on the surrounding character areas should be seen in these terms since it is not a new development intruding into an historic landscape. As noted previously any changes in the appearance of the Quarry from its existing form to the FQD will not affect unduly the extent of its visibility from the surrounding area. The views from the south will change, but the Quarry will not become a more prominent feature. When looking at the visual influence on the landscape there will be some change over the working life of the Quarry, but no material changes to the currently approved quarry development scheme, and indeed the final restoration has the potential for a beneficial effect which would reduce slightly the prominence of the Quarry.

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¹⁸ Cadw (2007). *Guide to good practice on using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process*. 2nd (revised) Edition. Cadw: Cardiff

HLW GW 2 Ardudwy Registered Historic Landscape

- 11.51. The area includes the Rhinog Mountains and extends westwards to Morfa Harlech and the coast and north to the estuary of the Afon Dwyryd. This large area is exceptionally rich in archaeological remains and contains extensive relict evidence of recurrent landuse and settlement from prehistoric to recent times. The area includes: Morfa Dyffryn submerged forest coastline; Neolithic chambered tombs; Bronze Age funerary and ritual monuments; prehistoric trackways; Iron Age hillforts, hut settlements and field systems; Harlech town and Castle; post-medieval gentry estates; Parliamentary enclosures; recent mines and quarries; and historic legendary and literary associations.

Table 15 Historic Landscape Character Areas¹⁹ in the Ardudwy Registered Historic Landscape within 5 km of the Site Boundary

HLCA	Name	ZTV zones
05	Coed Fenlinrhyd & Moel Tecwyn	3-6
19	Ynys Llanfihangel-y-traethau	3-6
21	Talsarnau	3
22	Wooded valleys around Bryn Bwbach	3-6
30	Morfa Harlech – fieldscapes	3-6
31	Glyn Cywarch	4-6
32	Morfa Harlech – dunes	5-6
33	Fieldscape – Upper Mountain Slopes	3-6

05 Coed Fenlinrhyd & Moel Tecwyn

- 11.52. The area contains little in the way of historical character, the only notable features being six listed buildings, all lying alongside the A496, and a series of drystone walls. At distances in excess of 2 km east of the Site Boundary, while there is intervisibility with the Quarry, this does not affect the appreciation of the HLCA.

19 Ynys Llanfihangel-y-traethau

- 11.53. The name betrays its origin as an island off the north-west coast of Meirionnydd, since linked to the mainland by the enclosure and reclamation of the morfa after 1798. The main historic characteristics are the medieval church and the adjacent nucleated settlement, together with the unenclosed nature of the higher ground and late enclosure field patterns elsewhere. The area contains six listed buildings, one of which is also a scheduled ancient monument (ME050), although only one of the listed buildings lies within zone 3. Much of the area has little or no intervisibility with the Quarry and it is only the north-eastern which falls within zone 3 and even here views

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¹⁹ Gwynedd Archaeological Trust (2003). *Historic landscape characterisation of Ardudwy*. GAT Report 473.

are mitigated by intervening trees such that the Quarry has no effect on the appreciation of the HLCA.

21 Talsarnau

- 11.54. The small settlement of Talsarnau appears to be a 19th-century ribbon development centred around an earlier core focused on the church. The key characteristic is provided by the 19th-century terraced housing in the centre and the cluster of earlier stone-built houses in the upper part of the village, although none of the buildings are listed. In this sense it is more akin to a conservation area, focusing on the housing stock, and the Quarry does not affect the appreciation of this. Although it is visible in the distance for certain viewpoints, intervisibility is on the whole mitigated by intervening buildings. Viewpoint 15 shows the view from just north of Talsarnau village.

22 Wooded valleys around Bryn Bwbach

- 11.55. The area is characterised by its wooded hillslopes and stone-built farmhouses, although there are virtually no historic sites recorded other than 26 listed buildings, the majority of which have little or new view of the Quarry and one scheduled ancient monument (ME143), which has no intervisibility. The wooded nature of the area and sparsity of historic assess means that there is little potential for visual impacts on the HLCA.

30 Morfa Harlech – fieldscapes

- 11.56. The area remained tidal during the medieval period but subsequently silted and was reclaimed for agriculture, largely during the late 18th and 19th centuries. It is characterised by a regular field pattern, defined mostly by drainage ditches and/or earthen banks, and contains no designated or registered heritage assets. The low-lying nature of the land means that direct views towards the Quarry are restricted by the intervening topography and it is only the area between the villages of Ynys and Talsarnau that falls into ZTV zone 3. The majority of the HLCA, which extends to the south of Harlech, has no intervisibility with the Quarry and the potential for any visual impacts to heritage assets within it is extremely limited, while there is no impact on the appreciation of the historic character.

31 Glyn Cywarch

- 11.57. The HLCA is focused on the Registered Park and Garden of the same name (GD28) which developed around house built by William Wynn in 1616. As noted above, none of the principal views from the garden are towards the Quarry, while the wooden nature of much of the area preclude any intervisibility.

32 Morfa Harlech – dunes

- 11.58. The area is characterised by the sand dunes and contains little in the way of historic character, with no designated or registered heritage assets. While the northern tip of the area extends into ZTV zone 3, the majority of the area, which extends to the south of Harlech, has little or new intervisibility with the Quarry.

33 Fieldscape – Upper Mountain Slopes

- 11.59. The area comprises a large extent of upland which contains a vast wealth of relict archaeological remains, including a significant number of scheduled ancient monuments. The majority of the HLCA, however, lies in excess of 5 km from the Site Boundary and it is only the north-western edge which falls within ZTV zone 3, including two of the scheduled sites (ME110 and ME117). The historic character is largely provided by the numerous upstanding archaeological sites which include Bronze Age funerary and ritual monuments, with later prehistoric defended and unenclosed settlements, as well as relict, contemporary field systems. Occupation in the medieval period is also evident, while there are few post-medieval farms. Where the area has been divided into fields these tend to be small and irregular, perhaps originating in the prehistoric period. The elevated nature of the landscape provides greater intervisibility with the Quarry than is evident for other HLCAs within Ardudwy, although at distance in excess of 4.5km the Quarry is not too prominent in the landscape and does not affect the appreciation of the HLCA's character or the individual heritage assets within it.

HLW GW 7 Aberglaslyn Registered Historic Landscape

- 11.60. The area is a man-made landscape occupying the reclaimed river estuary of Traeth Mawr, the whole conceived as one man's grand scheme, probably the most ambitious of its kind in 19th-century Britain. The person responsible was William Madocks, MP for Boston in Lincolnshire, whose vision for improving this part of south Caernarfonshire included land reclamation, road building, the introduction of rural industry and the founding of the settlement of Tremadog. The whole of the registered landscape lies within 5 km of the Quarry, with the exception of the northernmost tip.
- 11.61. The area includes: the reclaimed marshes and Porthmadog Cob embankment; Tremadog planned town and Porthmadog town; Portmeirion, the architecturally exotic, planted, Italianate village designed by Clough Williams-Ellis; and Plas Brondanw, the home of Clough Williams-Ellis.

Table 16 Landscape Character Areas²⁰ in the Aberglaslyn Registered Historic Landscape within 5 km of the Site Boundary

HLCA	Name	ZTV zones
3	Ffestiniog Railway	1-6
4	Tan yr Allt	3
6	Plas Brondanw	6
7	Portmeirion	none
8	Wem	3-4
9	Porthmadog harbour	2
10	Porthmadog	2-3

1.1. _____

²⁰ Gwynedd Archaeological Trust (2003). *Historic landscape characterisation – Vale of Ffestiniog*. GAT Report 422

14	Glaslyn estuary - reclaimed land	1-6
15	Woodland around Hafod Garegog	6
19	Garreg	6
20	Tremadoc	3-6
23	Prenteg	5-6
25	Coed Llyn y Garnedd	6
26	Intermediate slopes of the Moelwyn range	6
27	Penrhyn-Garth	1-6
29	Dwryrd valley floor	6
30	Brondanw slopes	6
31	Minffordd quarry	1-2
32	Penrhyndeudraeth	1-6
33	Llidiart Yspytty	3-6

3 Ffestiniog Railway

The Ffestiniog Railway opened as a 2ft-gauge, horse-drawn and gravity-worked line in 1836 to transport slate from Blaenau Ffestiniog to the sea at Porthmadog. It was converted to steam between 1863 and 1872 and closed in 1946, being revived by enthusiasts in 1954 and gradually reopened as a tourist attraction. The HLCA forms a narrow corridor through the landscape and while there are views of the Quarry, such as Viewpoint 10 from the Cob, it does not affect the appreciation of the railway and its setting, the Quarry itself being a recognised part of the historic landscape.

4 Tan yr Allt

- 11.62. The HLCA is based on the Registered Park and Garden (GD18) of the same name, although the boundaries differ slightly, and this has already been described above. One of the principal views from the garden is in the direction of the Quarry, although the assessment has concluded that the visual impact is no more than negligible at present and will not change during the operational life of the quarry.

8 Wem

- 11.63. The HLCA is based on the Registered Park and Garden (GD19) of the same name, and this has already been described above. The principal views are to the east-south-east, towards the quarry, although the assessment concluded that at this distance the mitigating effects of intervening trees means that the magnitude of the visual impact is considered to be negligible.

9 Porthmadog harbour

- 11.64. A deep-water harbour was created as an unintended consequence of the building of the Cob in 1808-13 and this came to be used for the transshipment of slate from river boats to ocean-going vessels from 1824. The HLCA is characterised by the series of stone-built quays and harbour-side buildings and includes 13 listed buildings. The low-lying nature of the area means that in virtually all views in the direction of the Quarry the topography or more often intervening buildings precludes any intervisibility. The only uninterrupted views are those across the deep-water channel from the adjacent carpark to the west. The various elements of the built heritage mostly have no views of the Quarry, or at most very restricted views.

10 Porthmadog

- 11.65. The town of Porthmadog came into being as a consequence of the draining of Traeth Mawr by William Alexander Madocks and the unintended creation of a deep-water harbour, formed by the newly-channelled Afon Glaslyn. As a newly-built, 19th-century port town it is characterised by broad streets set in a regular pattern, lined with commercial premises, large houses, terraces and large chapels. The HLCA covers a similar area to the Conservation Area, which is discussed in more detail below, but concludes that there is no more than a negligible visual impact.

14 Glaslyn estuary - reclaimed land

- 11.66. The area comprises land assigned to William Alexander Madocks as part of the Enclosure Act of 1803, which allowed the reclamation of the land for agriculture. The area contains 16 listed buildings and one scheduled ancient monument (ME265) and is characterised by its regular field pattern. The HLCA surrounds all but the eastern side of the Site Boundary and the Quarry is prominent in views both towards and from viewpoints within the area. Viewpoint 5 shows the view towards the Quarry, looking across the southern part of the HLCA to the west of Minffordd, while Viewpoint 8 shows the view towards the Quarry from the A487 Porthmadog Bypass, which crosses the HLCA. As noted previously, however, although the Quarry may figure prominently in such views it is itself a recognised part of the historic landscape.

20 Tremadoc

- 11.67. Tremadoc (Tremadog) is an outstanding example of a planned urban community which is again the work of William Alexander Madocks. The HLCA covers a similar area to the Conservation Area, which is discussed in more detail below, concluding that there is no more than a negligible visual impact.

27 Penrhyn-Garth

- 11.68. The area was a promontory until the draining of Traeth Mawr in 1813. It is characterised principally by the components of the 19th-century agricultural landscape, comprising small, irregular fields around Penrhyndeudraeth, with larger, reorganised fields facing the sea and estuary. The area contains one scheduled ancient monument (ME096), for which the visual impact has been assessed as no change, and 16 listed buildings, including Rhos House which is considered to have a

major visual impact during the operational life of the Quarry, and Plas Penrhyn, where the visual impact on its setting is considered to be moderate. In both cases the restoration of the Quarry is seen as having a minor beneficial effect. The area adjoins the eastern side of the Site Boundary and Viewpoints 1-4 and 6-7 show views towards the Quarry from within the HLCA and while it is a prominent feature in certain views it is mitigated by intervening buildings and trees in others. Despite the proximity of the Quarry it does not materially affect the appreciation of the historic character of the HLCA since it is itself part of the historic landscape.

31 Minffordd quarry

- 11.69. Minffordd Quarry forms its own Historic Landscape Character Area (HLCA) (No 31; PRN 18231) within the Aberglaslyn Registered Historic Landscape and the quarry is also recorded as an historic asset (PRN 20510). The granite quarry opened for the production of setts in the 1870s, following the opening of the Aberystwyth and Welch Coast line. The key historic landscape characteristics are the quarry and the industrial archaeology which it contains, details of which are provided under Direct Impacts. The quarry has been a continually evolving part of the landscape for almost 150 years during which time it has altered significantly the skyline of Garth, especially as viewed from the Cob and the area immediately to the south. By its very nature its extent, appearance and effect on the wider views has changed and will continue to do so. It is therefore considered inappropriate to assess the visual impacts of the Quarry on the HLCA.

32 Penrhyndeudraeth

- 11.70. The settlement may have been important during the medieval period, but had declined significantly by the 19th century. The HLCA is essentially an urban area focusing on the modern village, which is characterised by its 19th-century housing stock, the result of another deliberate creation by William Alexander Madocks, although without the finesse enjoyed by Porthmadog and Tremadog. It contains 11 listed buildings of which only one, the Railway lodge at the Ffestiniog Railway crossing, has any significant views of the Quarry, and the assessment has determined that there is no visual impact affecting the appreciation of the building or its setting. The HLCA is akin to a Conservation Area in that it is characterised by its urban nature and the appreciation of this is unaffected by the Quarry, while the majority of the area has limited views of the Quarry which are further mitigated by intervening buildings.

33 Llidiart Yspytty

- 11.71. This small area is a 'linking' transport corridor lying between the sheer cliffs above Tremadog and the drained marshes of Traeth Mawr. It contains no designated or registered heritage assets, the main characteristics being an ironstone mine and the site of the associated kilns, together with road and rail routes. The majority of the area has little or no views of the Quarry and it is only the extreme eastern end which extends into ZTV zone 3. The Quarry does not, however, affect the appreciation of the historic features within the HLCA or its material character, particularly since the area is now dominated by the recently-built Alltwn Hospital which has dramatically altered the character of the area.

Conservation Areas

- 11.72. Of the three Conservation Areas within 5 km of the Quarry, only two will have intervisibility with the existing and FQD. Portmeirion Conservation Area, which contains 69 listed buildings, will have no intervisibility.
- 11.73. Table 17: Potential indirect impacts on Conservation Areas within 5 km of the Site Boundary

Name	Dist. and direction from Development	Magnitude of existing effect	Magnitude of effect for FQD	Significance of change between the two
Porthmadog	1.8km W	negligible	negligible	neutral
Tremadog	2.8km W	negligible	negligible	neutral

Porthmadog Conservation Area

- 11.74. The eastern edge of Porthmadog Conservation Area lies 1.8 km west of the Quarry, across the low-lying land of the former Glaslyn estuary. The area contains 69 listed buildings, all of which are listed at grade II, and none of which have individual settings which extend beyond the Conservation Area. Views towards the Quarry are restricted from much of the area as a result of intervening buildings, but in more open areas, particularly the western end of the Cob and to the south of Porthmadog, there is greater intervisibility (see Viewpoint 11). However, the Quarry is sufficiently distant that it does not impact on views within the Conservation Area, or detract significant from any views away from it. The magnitude of the existing impact is therefore considered to be no more than **negligible** and this would not change for the FQD.

Tremadog Conservation Area

- 11.75. The eastern edge of Tremadog Conservation Area lies 2.8 km west of the Quarry, across the low-lying land of the former Glaslyn estuary. The area contains 76 listed buildings, including four listed at grade II*, none of which have individual settings which extend beyond the Conservation Area. Views towards the Quarry are restricted from much of the area as a result of intervening buildings and even from more open areas the views are mitigated by intervening woodland. The Conservation Area includes the hillslope north of the village from which it is possible to gain views across Tremadog with the Quarry in the distance, although even from this more elevated position the Quarry is not prominent at this distance and views are often mitigated by the numerous trees. Consequently the magnitude of the existing impact is considered to be no more than **negligible** and this would not change for the FQD.

13 Mitigation Measures

13.1. The last stage of the assessment process is the identification of detailed measures designed to mitigate any impacts on individual heritage assets, whether known or unknown. The mitigation measures detailed in the following table have been recommended following discussions with the Gwynedd Archaeological Planning Service, in their role as the archaeological curators for the area.

13.2. Table 18: Specific mitigation for assets within the Site Boundary

PRN (NPRN)	Name	Value	Magnitude of impact	Significance	Mitigation
20510	Granite Quarry, Y Garth, Minffordd	Low	Moderate	Slight	None
61669	Garth Quarry inclined plane	Low	Major	Slight/moderate	1/ Field visit following vegetation clearance 2/Survey of surviving remains to an appropriate level to be agreed with GAPS and approved by the Minerals Planning Authority
61670	Garth Quarry stone chute	Low	Major	Slight/moderate	
61674	Garth Quarry building II	Low	Major	Slight/moderate	
61678	Garth Quarry building V	Low	Moderate	Slight	
61686	Garth Quarry building XI	Low	Major	Slight/moderate	
NPRN33 977	Gwaith Dafydd-y-miner	Unknown	Unknown	Unknown	
	Previously unrecorded assets				

15 Residual Effects

- 15.1. The direct impacts on heritage assets within the quarry are such that all will be removed by the quarry operations during the lifetime of the quarry, although mitigation has been recommended which will ensure their preservation by record. Consequently the only residual effects will be visual, relating to the changes in the appearance of the quarry, and these will remain once working has ceased. The indirect visual impacts are variable in their significance and have already been discussed in detail above.
- 15.2. During the operational life of the quarry there will be visual impacts on two Scheduled Ancient Monuments, two Listed Buildings and four Registered Parks and Gardens. These will be largely minor or negligible and it is only for the two Listed Buildings that the impacts are considered to be moderate or major and thus significant in ES terms. These impacts are, however, those which already pertain under the existing permitted development. The final restoration of the quarry has the potential to offer a minor beneficial effect, mitigating the overall visibility and prominence of the quarry to some degree.
- 15.3. While the Quarry lies within the Registered Historic Landscape of Aberglaslyn, and is within 5 km of a second, Ardudwy, it has been recognised as a material part of the historic landscape and assigned its own Historic Landscape Character Area. As such the assessment considers the evolving nature of the Quarry to also be part of a wider landscape which is inevitably subject to change over time, such that the effect which the Quarry has on the historic landscapes should perhaps not be viewed so much as an impact, but as an accepted process of change. Ultimately, following its restoration, the Quarry will remain as an historic feature within the landscape as a part of the history of man exploiting natural resources. Its appearance will be different, but will still allow the interpretation and appreciation of its place within the historic landscape.

Planning Conditions

- 15.4. A series of recommendations for the mitigation of direct impacts have been proposed following consultation with Gwynedd Archaeological Planning Service (GAPS). These should be included as conditions as part of the ROMP updated schedule of planning conditions, with suggested wording as follows:

1 Prior to any ground disturbing works or site clearance of currently undisturbed area, as shown on the current situation plan, the applicant/developer shall submit to and receive written approval from the Minerals Planning Authority for an archaeological specification for a programme of works which must meet all relevant standards set out by the Chartered Institute for Archaeologists (CIfA). The work should include: a) a field visit following the clearance of vegetation to identify further the nature, significance and extent of historic quarry buildings and structures; and b) an appropriate level of recording to ensure the preservation by record of the surviving structures.

2 The development shall be carried out in strict accordance with the archaeological specification for a programme of works as approved in condition (1) above, unless otherwise agreed to in writing by the Minerals Planning Authority.

16 Conclusions

- 16.1. An assessment has been conducted to determine the potential direct and indirect impacts on the cultural heritage of the determination of new conditions at the Garth Quarry. In doing so it has taken cognisance of all relevant local and national policies relating to the cultural heritage (see Section 5), and has also employed best practice to produce the assessment of which this is the summary.
- 16.2. This has identified 22 undesignated heritage assets within the Development Area, most of which are no longer extant. Of those assets which do survive all will be removed by quarrying operations under the existing permissions, although mitigation measures are proposed for an appropriate level of recording to ensure their preservation by record. The timing of work in advance of the removal of these assets needs to be carefully considered, as they fall within an area for which extraction is presently planned in the period from 15 years to 30 years in the future.
- 16.3. The quarry falls within one of the character areas of the Aberglaslyn registered historic landscape, although it is relevant that the significant character trait of the area is related to the quarrying activity. If the post-extraction landscaping of the quarry is done in a way that retains visual clues of its industrial past, then the impact on the historic landscape should be negligible.
- 16.4. Of the 18 scheduled ancient monuments within 5 km of the Development Area, only 11 have any view of the Quarry. With respect to the existing quarry, for nine monuments the visual impact is no change, while in one case it is considered to be negligible and in another at most minor. There is considered to be no change in the magnitude of these impacts through to the Full Quarry Design so that the significance of the change between the two scenarios is neutral.
- 16.5. With regard to listed buildings the assessment has identified 427 within 5 km of the Development Area, of which only 297 will potentially have intervisibility with the Quarry, although this number would be reduced significantly when taking into account the mitigating effects of intervening buildings and trees. The majority of listed buildings are within settlements where the streetscape is significant in terms of their setting, but this does not extend further. There are also a significant number of farmhouses and farm buildings, but again their setting is inevitably localised. In this respect the Quarry has no visual impact on the buildings or their settings. There are also 114 listed buildings within the five Registered Parks and Gardens, under which they have been assessed. The assessment has determined that there are currently only visual impacts for two individual listed buildings, one of which has a moderate impact and the other major, although in neither case will this impact change through to the FQD.
- 16.6. Of the five registered historic parks and gardens within 5 km, Portmeirion has no intervisibility with the Quarry, while the remaining four are only subject to a negligible visual impact at present, which would not change under the FQD. With regard to the three Conservation Areas within 5 km, Portmeirion has no direct views of the Quarry, for both Porthmadog and Tremadog the existing visual impact is considered to be no more than negligible and this would not change for the FQD.

- 16.7. The assessment of both direct and indirect impacts has considered firstly the impact of the existing quarry and then the potential difference between this and the impact of the Full Quarry Design, which is already consented. It is clear that there will be no additional impacts resulting from the determination of new conditions over and above those resulting from the continued operation of the Quarry under the existing consents, while the final restoration at the end of the operational phase has the potential for minor beneficial effects, reducing the prominence of the Quarry in certain views.

17 Sources

The following historic cartography was consulted during the assessment.

1840. Tithe survey for- Llanfrothen

1819. Ordnance Surveyors drawing No 302

1855. Map of Crown waste lands in Llanfrothen, Bangor University Archives
PENRA/2916-2918

1889 Ordnance Survey 25" 1st edition, Meirioneth 11.09

1889 Ordnance Survey 25" 1st edition, Meirioneth 11.13

1901 Ordnance Survey 25" 2nd edition, Meirioneth 11.13

1901 Ordnance Survey 6" 2nd edition, Meirioneth 11SW

19th century. National Library of Wales Manuscript maps, Peniarth Deposit Vol. 7
028/6/2

Not dated. Surveys of Traeth Mawr Bangor University Archives AM/62, AM/63
and AM/64

Appendix 1: Gazetteer of Listed Buildings within 5km of the Site Boundary

Listing no	NAME	COMMUNITY	NGR	ZTV_ZONE
4285	Lychgate at the Church of St Beuno	Dolbenmaen	SH54144030	4
4286	Bryn-y-wern	Dolbenmaen	SH54204011	4
4404	Gelli Faia	Porthmadog	SH56643851	5
4405	Gatws	Porthmadog	SH56683880	5
4406	Pen-y-clogwyn, including attached farm building	Porthmadog	SH56563829	4
4407	Greaves Wharf and Oakleys Wharf	Porthmadog	SH57003842	4
4408	Snowdon Wharf	Porthmadog	SH57063835	5
4409	Slate Wharf	Porthmadog	SH56903812	5
4410	Brecon Place and Brecon House	Porthmadog	SH56813860	5
4411	Plas Ne Ne	Porthmadog	SH57193846	5
4412	Bridge Cottage	Porthmadog	SH57103849	1
4413	Harbour Side, including attached gate piers and wall	Porthmadog	SH56883828	5
4414		Porthmadog	SH56873831	5
4415	Ty Toronto	Porthmadog	SH56863834	5
4416	Grisiau Mawr (steps between Pencei (Cornhill) and Ffordd Garth)	Porthmadog	SH56843835	5
4417		Porthmadog	SH56863835	5
4418		Porthmadog	SH56853838	5
4419	Cornhill Cottage, including revetment walls and steps	Porthmadog	SH56833840	4
4420	Tafarn Pencei Cafe Bar	Porthmadog	SH56853842	3
4421		Porthmadog	SH56873842	1
4422	Madoc Yacht Club	Porthmadog	SH56893830	5

4423	Wharf House	Porthmadog	SH56893843	3
4424	Cwrt yr Harbwr	Porthmadog	SH56933846	1
4425	The Oakleys	Porthmadog	SH56963848	1
4426	Former slate warehouse on Oakleys Wharf	Porthmadog	SH56983844	3
4427	Pioden (Magpie)	Porthmadog	SH57013856	5
4428	Plas Ynys Tywyn	Porthmadog	SH57033856	5
4429	Former outbuilding of Plas Ynys Tywyn (attached to Co-op supermarket)	Porthmadog	SH57033859	5
4431	Snowdon Mill and Ty'r Felin	Porthmadog	SH57063895	5
4432	Plas Tan-yr-allt	Porthmadog	SH56634046	4
4433	Tan-yr-allt Lodge	Porthmadog	SH56924047	4
4434		Porthmadog	SH56214012	2
4435	Church of St Mary	Porthmadog	SH56264007	3
4437	Snowdon Lodge	Porthmadog	SH56303995	none
4438	1 Bodawen Lodge	Porthmadog	SH56683965	4
4439	Stiwdio Harddwch (One-to-One Beauty Studio)	Porthmadog	SH56184012	2
4440	Post Office and house	Porthmadog	SH56194010	3
4441	Ty Nanney, including forecourt walls, gate piers and gate	Porthmadog	SH56243996	none
4442	Capel Peniel	Porthmadog	SH56263989	none
4443		Porthmadog	SH56144015	2
4444	The Old Granary	Porthmadog	SH56094011	3
4445		Porthmadog	SH56134018	2
4446	Deseret	Porthmadog	SH56344028	4
4447	Ty Gwyn	Porthmadog	SH56364030	4
4448	Bronhaul	Porthmadog	SH56374031	4
4449	Tremadog Manufactory	Porthmadog	SH56384032	4
4450	Ty Felin (Mill House)	Porthmadog	SH56404035	4
4451	Royal Madoc Arms Hotel	Porthmadog	SH56154018	2

4452	Market Hall (Siola)	Porthmadog	SH56174019	3
4453		Porthmadog	SH56184019	3
4454	Gwynle, including steps to the L-hand	Porthmadog	SH56214020	3
4455	Bodlondeb	Porthmadog	SH56224020	4
4456		Porthmadog	SH56244021	4
4457		Porthmadog	SH56234019	3
4458		Porthmadog	SH56284021	4
4459	Tremadog War Memorial Institute	Porthmadog	SH56204018	2
4460	Steps and lamp post at centre of Market Square	Porthmadog	SH56184015	2
4461	Awelon	Porthmadog	SH56164016	2
4462		Porthmadog	SH56164014	2
4463	Y Sgwar (The Square Restaurant)	Porthmadog	SH56174012	2
4464	Ochr Heulog	Porthmadog	SH56074020	4
4465	Cynfal	Porthmadog	SH56044022	4
4466		Porthmadog	SH55994022	4
4467		Porthmadog	SH55964023	4
4623	Church of St Beuno	Dolbenmaen	SH54134029	4
4626	Wern Manor	Dolbenmaen	SH54273990	4
4627	Courtyard Ranges to the W of Wern Manor, including Stables, Coachhouse and Tower	Dolbenmaen	SH54273990	4
4628	Summer House at Wern Manor	Dolbenmaen	SH54413982	4
4629	Wern Lodge	Dolbenmaen	SH54123975	4
4770	Plas Llandecwyn	Talsarnau	SH63233738	none
4774	Plas Newydd Farmhouse	Llanfrothen	SH59863907	5
4777	Portmeirion Town Hall	Penrhyndeudraeth	SH58917713	none
4778	Glyn Cywarch	Talsarnau	SH60863427	none
4779	Maes-y-neuadd	Talsarnau	SH61703453	1

4791	Yr Ysgol	Talsarnau	SH61583452	none
4804	Church of St Brothen	Llanfrothen	SH62224119	1
4805	Mounting Block NE of Church of St Brothen	Llanfrothen	SH62234118	1
4806	Wern Farmhouse	Llanfrothen	SH62004210	1
4807	Former Stable Block at Wern	Llanfrothen	SO62004210	1
4808	Plas Brondanw	Llanfrothen	SH61644228	1
4809	No 1 Garreg Terrace	Llanfrothen	SH61234177	1
4810	No 1 Danw Deg	Llanfrothen	SH61304180	1
4811	No 1 Cyffin Terrace	Llanfrothen	SH61374189	1
4812	The Look Out including adjoining walls	Llanfrothen	SH61384191	1
4813	Ty Maen	Llanfrothen	SH61384204	1
4814	Old Ynysfor Farmhouse	Llanfrothen	SH60104265	none
4819	Ty Mawr Farmhouse	Llanfrothen	SH61414020	none
4841	Castell Deudraeth	Penrhyndeudraeth	SH59223772	none
4842	Church of St Michael	Talsarnau	SH59513538	none
4843	Capel Soar	Talsarnau	SH61653541	1
4844	Gatehouse at Glyn Cywarch	Talsarnau	SH60903426	none
4852	Plas Penrhyn	Penrhyndeudraeth	SH59063791	6
4853	Portmeirion Hotel Including Revetment, Balustrade and Sculptures to the Upper Terrace	Penrhyndeudraeth	SO37025893	none
4854	Anchor	Penrhyndeudraeth	SH58953709	none
4855	Fountain	Penrhyndeudraeth	SH58953711	none
4856	Angel	Penrhyndeudraeth	SH58933714	none
4857	Angel Gates (Hercules Gate)	Penrhyndeudraeth	SH58923713	none
4858	Neptune	Penrhyndeudraeth	SH58933715	none
4859	Trinity House Including Adjacent Petrol Pump	Penrhyndeudraeth	SH58923717	none
4860	Mermaid	Penrhyndeudraeth	SH58943716	none

4861	The Arches	Penrhyndeudraeth	SH58913717	none
4862	Gothick Pavilion	Penrhyndeudraeth	SH58973716	none
4864	Dolphin (Including Royal Dolphin)	Penrhyndeudraeth	SH58973713	none
4865	Government House	Penrhyndeudraeth	SH58983713	none
4866	Watch House	Penrhyndeudraeth	SH58983712	none
4867	Descending Steps From Watch House	Penrhyndeudraeth	SH58993712	none
4868	Campanile (Also Called The Bell Tower)	Penrhyndeudraeth	SH58993719	none
4869	Prior's Lodging	Penrhyndeudraeth	SH58903714	none
4870	Battery	Penrhyndeudraeth	SH59013714	none
4871	Toll House (Including Pilot House)	Penrhyndeudraeth	SH59023714	none
4872	Reception (Chantry Lodge)	Penrhyndeudraeth	SH59053724	none
4873	The Gate House	Penrhyndeudraeth	SH59083720	none
4874	The Belvedere, Including Associated Terraces	Penrhyndeudraeth	SH59043718	none
4875	The Bridge House	Penrhyndeudraeth	SH59033716	none
4876	Round House Including Adjoining Arch and Walkway	Penrhyndeudraeth	SH58993715	none
4877	Ladies Lodge (Siop Bach)	Penrhyndeudraeth	SH59003716	none
4878	The Colonnade	Penrhyndeudraeth	SH58983718	none
4879	The Pantheon Including Addition to the Rear	Penrhyndeudraeth	SH59013718	none
4880	Chantry Row	Penrhyndeudraeth	SH59003719	none
4881	Chantry	Penrhyndeudraeth	SH58993720	none
4882	The Unicorn	Penrhyndeudraeth	SH58963724	none
4883	Telford's Tower, Including Adjoining Walls and Arches	Penrhyndeudraeth	SH58953723	none
4884	Gloriette	Penrhyndeudraeth	SH58943721	none
4885	Central Piazza	Penrhyndeudraeth	SH58953719	none
4886	Salutation	Penrhyndeudraeth	SH58923722	none

4887	Triumphal Arch Including Adjoining Service Block to the NW	Penrhyndeudraeth	SH58913723	none
4888	The Piazza, Including Adjoining Playhouse Central Vase Monument	Penrhyndeudraeth	SH58903723	none
4889	Statue of Buddha	Penrhyndeudraeth	SH59003716	none
4890	Hercules Statue	Penrhyndeudraeth	SH58943715	none
4891	Astrolabe	Penrhyndeudraeth	SH58933715	none
4892	Chronometer Sundial	Penrhyndeudraeth	SH58983716	none
4893	Observatory Tower	Penrhyndeudraeth	SH58913688	none
4894	White Horses	Penrhyndeudraeth	SH58903687	none
4895	Statue of Nelson	Penrhyndeudraeth	SH58903689	none
4896	Rotunda or Grotto	Penrhyndeudraeth	SH59073717	none
5205	Rhos House	Penrhyndeudraeth	SH59523871	6
5211	Railway Lodge at the Ffestiniog Railway Crossing	Penrhyndeudraeth	SH59533850	6
5222	Bron-y-Garth Hospital	Penrhyndeudraeth	SH60323865	1
5223	Casual Ward at Bron-y-Garth Hospital	Penrhyndeudraeth	SH60263863	4
5224	No 1 Plas Brondanw Cottages	Llanfrothen	SH61654230	1
5225	Gatepiers and Overthrow linking Plas Brondanw with Brondanw Cottages	Llanfrothen	SH61644228	1
5234	The Cob	Penrhyndeudraeth	SH57203785	5
5235	Toll House at the E End of The Cob (Also Known as The Rebecca Tollgate)	Penrhyndeudraeth	SH58483792	5
5248	The New Lodge	Llanfrothen	SH61424240	1
14411	Former Erecting Shop at Boston Lodge	Penrhyndeudraeth	SH58403780	none
14412	Former Machine Shop at Boston Lodge	Penrhyndeudraeth	SH58403780	none
14413	Former Iron Foundry and Smithy at Boston Lodge	Penrhyndeudraeth	SH58403780	none

14414	Crane at S End of Boston Lodge Railway Works	Penrhyndeudraeth	SH58403780	5
14415	Locker Room Block at Boston Lodge	Penrhyndeudraeth	SH58403780	4
14416	Nos 1 & 2 Boston Lodge	Penrhyndeudraeth	SH58403780	none
14417	Former Brass Foundry at Boston Lodge Railway Works	Penrhyndeudraeth	SJ58403780	none
14418	Former Oil Store at Boston Lodge Railway Works	Penrhyndeudraeth	SH58403780	4
14419	Former Manager's Office at Boston Lodge Railway Works	Penrhyndeudraeth	SH85803790	5
14423	Former Weigh House at Boston Lodge Railway Works	Penrhyndeudraeth	SH58503800	5
14424	Locomotive Shed at Boston Lodge Railway Works	Penrhyndeudraeth	SH58503790	5
18964	Capel Salem, including attached Sunday School, forecourt gates and railings and hall to rear	Porthmadog	SH56863873	5
19785	No 2 Danw Deg	Llanfrothen	SH61364186	1
19786	No 2 Cyffin Terrace	Llanfrothen	SH61574189	1
19787	No 3 Cyffin Terrace	Llanfrothen	SH61574189	1
19788	No 4 Cyffin Terrace	Llanfrothen	SH61374189	1
19789	No 5 Cyffin Terrace	Llanfrothen	SH61374189	1
19790	No 6 Cyffin Terrace	Llanfrothen	SH61574189	1
19791	No 7 Cyffin Terrace	Llanfrothen	SH61374189	1
19792	War Memorial	Llanfrothen	SH61234173	1
19793	Brondanw Tower	Llanfrothen	SH61614194	1
19794	Arched Gate and adjoining Balustrade 200m NE of the New Lodge	Llanfrothen	SH61514212	1
19795	Flaming Urn Monument	Llanfrothen	SH65164210	1

19796	Gates and Gatepiers immediately S of the Flaming Urn Monument	Llanfrothen	SH61564208	1
19797	Arch and Gate at Ffynnon Gwyfil	Llanfrothen	SH61834246	1
19798	Cyffin House	Llanfrothen	SH61254175	1
19799	The Smithy	Llanfrothen	SH61244176	1
19800	Former Stable Range at Plas Newydd	Llanfrothen	SH59853905	5
19801	Ty Obry Farmhouse	Llanfrothen	SH60503967	1
19802	T-shaped Agricultural Range at Ty Obry	Llanfrothen	SH60453965	1
19803	No 2 Plas Brondanw Cottages	Llanfrothen	SH61654230	1
19804	No 3 Plas Brondanw Cottages	Llanfrothen	SH61654230	1
19805	Pont Garreg-Hylldrem	Llanfrothen	SH61534312	1
19806	Limekiln	Llanfrothen	SH61864327	1
19807	Gates and Gatepiers opposite the Coach-house including Curved Wall adjoining to NE.	Llanfrothen	SH61614222	1
19808	Main Gates and Gatepiers to Plas Brondanw including attached Enclosing Walls and Revettment to E	Llanfrothen	SH61634224	1
19809	Steps, Gates and Gatepiers to Upper Terrace at Plas Brondanw Gardens	Llanfrothen	SH61624225	1
19810	Coach-house and adjoining Entrance Arch to Plas Brondanw Gardens	Llanfrothen	SH61604224	1
19811	Aedicular Triple-arched Niche at Plas Brondanw Gardens including adjoining Wall and Gate to NE	Llanfrothen	SH61604222	1

19812	Gates and Gatepiers at SE corner of Plas Brondanw Gardens including Garden Wall to NE.	Llanfrothen	SH61584220	1
19813	Raised Terrace and Steps at SW end of Plas Brondanw Gardens including Exedra	Llanfrothen	SH61574221	1
19814	Ionic Column and associated Pond Basin at Plas Brondanw Gardens	Llanfrothen	SH61574222	1
19815	Classical Statue at Plas Brondanw Gardens	Llanfrothen	SH61564223	1
19816	The Orangery at Plas Brondanw Gardens	Llanfrothen	SH61574225	1
19817	Revetment Walls and Circular Steps to Wall Fountain at Plas Brondanw Gardens	Llanfrothen	SH61594225	1
19818	Gatepiers and Steps to W of Coach-house at Plas Brondanw Gardens	Llanfrothen	SH61604224	1
19819	Gates, Gatepiers and Steps 50m NE of the Orangery at Plas Brondanw Gardens	Llanfrothen	SH61594228	1
19820	Vista Screen and Gate to W of Plas Brondanw	Llanfrothen	SH61604230	1
19821	Raised Balustraded Terrace immediately W of Plas Brondanw	Llanfrothen	SH61624228	1
19822	Bust of Augustus and Column at Plas Brondanw Gardens	Llanfrothen	SH61624233	1
19823	Dolphin Gates and Gatepiers at Plas Brondanw including Railings to NW	Llanfrothen	SH61634233	1
19824	Circular Enclosing Walls and Fountain at the N end at Plas Brondanw Gardens	Llanfrothen	SH42356166	1

19825	Bust of Inigo Jones on Pedestal at Plas Brondanw Gardens	Llanfrothen	SH61674234	1
19826	No 2 Garreg Terrace	Llanfrothen	SH61234177	1
19827	No 3 Garreg Terrace	Llanfrothen	SH61234177	1
19828	No 4 Garreg Terrace	Llanfrothen	SH61234177	1
19829	No 5 Garreg Terrace	Llanfrothen	SH61234177	1
19830	Brondanw Arms PH	Llanfrothen	SH61234177	1
19831	Penstep	Llanfrothen	SH61644224	1
19832	Garreg Ganol	Llanfrothen	SH61444179	1
19833	Flight of Steps and adjoining Wall and Arched Gateway immediately N of Penstep	Llanfrothen	SH61654224	1
19834	Barn Range NE of Plas Brondanw	Llanfrothen	SH61724239	1
19835	Byre NE of Plas Brondanw.	Llanfrothen	SH61724239	1
19836	Gates and Gatepiers opposite Gattws	Llanfrothen	SH61684253	1
19840	Agricultural Range at Old Ynysfor	Llanfrothen	SH60104265	none
19841	Cart-shed at Ty Mawr	Llanfrothen	SH61454018	none
19848	Bronynys	Llanfrothen	SH59824199	1
19850	Statue of Fireman set within lily-pond at Plas Brondanw Gardens	Llanfrothen	SH61604220	1
21532	Chest Tomb in churchyard of the Church of St Beuno	Dolbenmaen	SH54144029	4
21533	Plas-isa	Dolbenmaen	SH54884061	2
21534	Bwlch-y-fedwen	Dolbenmaen	SH54764059	4
21537	Ty-newydd, with attached walls	Dolbenmaen	SH55784255	none
21550	Gorllwynuchaf	Dolbenmaen	SH57624266	3
21554	Front Terrace, Balustrade and Steps at Wern Manor	Dolbenmaen	SH54253987	4
21556	Mynediad Cae Chwarae	Dolbenmaen	SH54874085	2

21557	Tyn-Ilan	Dolbenmaen	SH54154030	4
21558	Erwsuran	Dolbenmaen	SH56154154	none
21559	Outbuildings at Erwsuran	Dolbenmaen	SH56164155	none
21567	Outbuilding in line with the house at Erwsuran	Dolbenmaen		none
21568	Gates to Wern Manor	Dolbenmaen	SH54123975	4
21569	Ornamental Garden Pool at Wern Manor	Dolbenmaen	SH54443988	4
21570	Milestone	Dolbenmaen	SH58974297	1
24011	Eglwys Bresbyteriaidd Cymru Y Garth, including forecourt wall, railings and steps	Porthmadog	SH56793864	5
26852	Parish Church of the Holy Trinity	Penrhyndeudraeth	SH61153883	none
26853	The Vicarage Including Adjoining Service Complex and Gates	Penrhyndeudraeth	SH61073877	none
26854	Former Coachhouse at the Vicarage, Including Associated Garden Walls	Penrhyndeudraeth	SH61028760	none
26855	Gorffwysfa Chapel Including Hall Adjoining to the Rear and Railed Forecourt Walls to the Front.	Penrhyndeudraeth	SH60983878	none
26856	Nazareth Chapel	Penrhyndeudraeth	SH60923925	1
26857	Penrhyndeudraeth Station, Ffestiniog Railway, Including Railed Railway Embankment Adjoining to the N	Penrhyndeudraeth	SH61303590	none
26858	Pont Briwet	Penrhyndeudraeth	SH61893835	1
26859	Minffordd Station	Penrhyndeudraeth	SH60003850	5
26860	Former Lodge to Plas Penrhyn	Penrhyndeudraeth	SH59423833	6

26861	Sea-front Terrace Incorporating the Casino and Amis Reunis	Penrhyndeudraeth	SH58963740	none
26862	Revetment Wall Immediately N of The Arches, Including Associated Columnar and Urn Monuments	Penrhyndeudraeth	SH58903717	none
26863	Monument Immediately E of Fountain	Penrhyndeudraeth	SH58963710	none
26864	Aedicular Niche to the N of the Swimming Pool	Penrhyndeudraeth	SH58983715	none
26865	Chinese Gateway, Steps and Railings to Anchor, Including Associated Wall with Enclosure to N	Penrhyndeudraeth	SH58943707	none
26866	Walls and Gateways Edging the Central Piazza to the NW	Penrhyndeudraeth	SH58913717	none
26867	Neo-Jacobean Gateway and Adjoining Walls to the NE of the Central Piazza	Penrhyndeudraeth	SH58933718	none
26868	Steps, Piers and Associated Cobbled Pavement Descending From Ladies Lodge to the Hercules Statue	Penrhyndeudraeth	SH58953714	none
26869	Bandstand and Adjoining Flight of Descending Steps (the Hercules Steps)	Penrhyndeudraeth	SH58943714	none
26870	Pond, Walls and Steps Immediately E of Trinity	Penrhyndeudraeth	SH58933717	none
26871	Villa Winch	Penrhyndeudraeth	SH58983722	none
26872	C19 Wall Adjoining Bridge House to the E	Penrhyndeudraeth	SH56033717	none
26873	Cliff House Including Annex	Penrhyndeudraeth	SH59073720	none
26874	Forecourt Walls and Balustrading at Cliff House	Penrhyndeudraeth	SH59073720	none
26875	Statue of Huntsman	Penrhyndeudraeth	SH59073721	none

26876	Former Tollhouse (Now Public Telephone Kiosk)	Penrhyndeudraeth	SH56073724	none
26877	Westminster Abbey Balustrade	Penrhyndeudraeth	SH58943728	none
26878	Corrugated Iron Shelter	Penrhyndeudraeth	SH58863728	none
26879	The Gazebo	Penrhyndeudraeth	SH58873717	none
26880	Dovecote Above Portmeirion Hotel	Penrhyndeudraeth	SH58923704	none
26881	The Lighthouse	Penrhyndeudraeth	SH58613665	none
26882	North Block at Bron-y-Garth Hospital	Penrhyndeudraeth	SH60323872	1
26883	Stone needle 500m SW of Plas Penrhyn	Penrhyndeudraeth	SH58883777	5
26884	Penrhyn Isaf	Penrhyndeudraeth	SH58643735	none
26885	Castellated Garden Walls and Towers at Castell Deudraeth	Penrhyndeudraeth	SH59153763	none
26886	Cae Canol Including Adjoining Garage Block to the NE	Penrhyndeudraeth	SH59383776	none
26887	Borthwen	Penrhyndeudraeth	SH59783773	none
26888	Entrance Piers at the Minffordd Approach to Portmeirion	Penrhyndeudraeth	SH59603846	6
26889	Columnar Monument Immediately S of Chantry	Penrhyndeudraeth	SH58983718	none
26890	Monument in Battery Square	Penrhyndeudraeth	SH59003715	none
83132	Gateway to the Church of Saint Mary	Porthmadog	SH56234007	3
83427	Agricultural range at Gelli Grin	Talsarnau	SH63913981	none
83428	Agricultural range at Plas Llandecwyn	Talsarnau		none
83429	Barn and hammel at Maes y Meillion	Talsarnau	SH61583467	none
83431	Bridge to SW of Rhosigor	Talsarnau	SH60733468	1

83432	Bryn y felin	Talsarnau	SH61403440	none
83433	Church of St Tecwyn	Talsarnau	SH63233762	4
83434	Cornbarn and stable ranges at Rhosigor	Talsarnau	SH60833477	3
83435	Cottage at Plas Llandecwyn	Talsarnau	SH63213735	none
83436	Cowhouse at Maes y Meillion	Talsarnau	SH61583468	none
83437	Eisingrug	Talsarnau	SH61433438	none
83438	Estate Yard Range (1) at Glyn Cywarch	Talsarnau	SH60863436	none
83439	Estate Yard Range (2) at Glyn Cywarch	Talsarnau	SH60853432	none
83440	Field barn at Plas Llandecwyn	Talsarnau	SH63083736	none
83441	Gateposts and flanking wall at Maes y Meillion	Talsarnau	SH61653470	1
83442	Gateposts and flanking walls at Maes-y-neuadd	Talsarnau	SH61673471	1
83443	Gateposts and gates at Gefail y Cwm	Talsarnau	SH61113448	none
83444	Gefail y Cwm	Talsarnau	SH61113449	none
83445	Gelli Grin	Talsarnau	SH63943982	none
83446	Glanllyn Cottage	Talsarnau	SH62773704	4
83447	Glanrafon	Talsarnau	SH62363577	none
83448	Glyn Cottage	Talsarnau	SH60703418	none
83451	Haybarn at Rhosigor	Talsarnau	SH60883472	3
83452	Inscribed stone pillar at Church of St Michael	Talsarnau	SH59493539	none
83454	Lofted cartshed at Tyddyn Eglwys	Talsarnau	SH59613525	none
83455	Lofted stable and cartshed at Plas Llandecwyn	Talsarnau	SH63203738	none
83456	Lychgate and churchyard walls, Church of St Tecwyn	Talsarnau	SH63223760	4

83457	Milepost to N of Llandecwyn	Talsarnau	SH62403793	none
83458	Milepost to N of Talsarnau	Talsarnau	SH69193666	1
83460	Milepost to NNE of Cei Newydd	Talsarnau	SH62763926	none
83461	Milepost to E of Gelli Grin	Talsarnau	SH64213959	none
83463	Pigsty and brewhouse range at Rhosigor	Talsarnau	SH60863475	4
83464	Pont Briwet (also in Penrhyndeudraeth)	Talsarnau	SH61893835	1
83465	Pont Dolorgan	Talsarnau	SH62153560	none
83467	Pont Ty-gwyn gamlas	Talsarnau	SH59863531	none
83468	Rhosigor	Talsarnau	SH60883479	4
83471	Ty Gwyn Mawr	Talsarnau	SH59963549	none
83472	Ty'n Llan	Talsarnau	SH63203760	4
83473	Tyddyn Eglwys	Talsarnau	SH59603523	none
83474	Walled garden at Glyn Cywarch	Talsarnau	SH60803420	none
83475	Walled gardens at Maes-y-neuadd	Talsarnau	SH61703450	none
83476	Wharf at Cei Newydd	Talsarnau	SH62703870	none
83972	1 Pen-trwyn-garnedd	Maentwrog	SH64273999	none
83978	2 Pen-trwyn-garnedd	Maentwrog	SH64283999	none
85296	Cadw Mei Ce and house	Porthmadog	SH56873843	1
85297	Y Pisgotwr (The Fisherman)	Porthmadog	SH56873869	5
85298	Shop and house	Porthmadog	SH56833863	5
85299	Caffi y Morwr Madog (The Mariner Caf�) and house	Porthmadog	SH56853837	5
85300		Porthmadog	SH56174012	2
85301		Porthmadog	SH55964024	4
85302		Porthmadog	SH56134015	2
85303		Porthmadog	SH56214020	4
85304		Porthmadog	SH56214014	2

85305	Shop and house	Porthmadog	SH56224010	3
85306		Porthmadog	SH56194009	3
85307		Porthmadog	SH56853838	5
85308	Bridge over drainage ditch at entrance to Tan-y- Marian	Porthmadog	SH56574030	4
85309		Porthmadog	SH56853839	5
85310		Porthmadog	SH56224020	4
85311	Crud yr Awel	Porthmadog	SH56194009	3
85312		Porthmadog	SH56843839	5
85313		Porthmadog	SH56224019	3
85314		Porthmadog	SH56224009	3
85315		Porthmadog	SH56843840	4
85316		Porthmadog	SH56134015	2
85317		Porthmadog	SH56204008	3
85318		Porthmadog	SH56124015	2
85319		Porthmadog	SH56234021	4
85320		Porthmadog	SH56863842	3
85321		Porthmadog	SH56124014	2
85322	Fellowship House	Porthmadog	SH56803855	5
85323		Porthmadog	SH55964024	4
85324	Awelfor	Porthmadog	SH56863844	1
85325		Porthmadog	SH55954024	4
85326		Porthmadog	SH56873842	1
85327		Porthmadog	SH56244021	4
85328		Porthmadog	SH55954024	4
85329		Porthmadog	SH56114014	2
85330		Porthmadog	SH56254022	4
85331		Porthmadog	SH56114014	2
85332		Porthmadog	SH56284021	4
85333		Porthmadog	SH56214012	2
85334		Porthmadog	SH56873832	5

85335	Harbour Restaurant and house	Porthmadog	SH57003857	5
85336		Porthmadog	SH56204016	2
85337	Jessie's Deli and house	Porthmadog	SH56883870	5
85338	Ty Pab, including attached garden wall and gate	Porthmadog	SH56184011	2
85339	Harbourside Clinic and apartments	Porthmadog	SH56863833	5
85340		Porthmadog	SH56034022	4
85341		Porthmadog	SH56214011	2
85342	Twb Lemon (Lemon Tub) and house/office	Porthmadog	SH56743883	5
85343	Tom Parry & Co	Porthmadog	SH56853846	4
85344		Porthmadog	SH56204016	2
85345		Porthmadog	SH56024022	4
85346	Plas Penbwl	Porthmadog	SH57203846	5
85347	House, including steps to R-hand	Porthmadog	SH56204019	3
85348	Union Inn	Porthmadog	SH56214015	2
85349		Porthmadog	SH55984022	4
85350		Porthmadog	SH56224010	2
85351	Y Cymro and house	Porthmadog	SH56833864	5
85352		Porthmadog	SH56863836	5
85353	The Golden Fleece	Porthmadog	SH56174013	2
85354		Porthmadog	SH55984022	4
85355		Porthmadog	SH56853837	5
85356		Porthmadog	SH56214015	2
85357	1 Belle Vue, including forecourt wall and railings	Porthmadog	SH56833821	5
85358	2 Belle Vue, including forecourt wall and railings	Porthmadog	SH56833820	5
85359	2 Bodawen Lodge	Porthmadog	SH56673965	4
85360	Carreg Wen, 2 Marine Terrace	Porthmadog	SH56833827	5

85361	3 Marine Terrace	Porthmadog	SH56833826	5
85362	Wenallt, 4 Marine Terrace	Porthmadog	SH56833825	5
85363	Afallon, 5 Marine Terrace	Porthmadog	SH56833824	5
85364	Garthowen, 6 Marine Terrace	Porthmadog	SH56833823	5
85365	Aberteg, 7 Marine Terrace	Porthmadog	SH56843822	5
85366	Bee-hive Establishment (Tom Parry & Co)	Porthmadog	SH56793855	5
85367	Britannia Bridge	Porthmadog	SH57083848	1
85368	Bron y Garth Lodge	Porthmadog	SH56743799	4
85369	Browsers Bookshop and house	Porthmadog	SH56843873	5
85370	Bwthyn Marda	Porthmadog	SH56124018	2
85371	Church of St John	Porthmadog	SH56533871	5
85372	Church of the Most Holy Redeemer	Porthmadog	SH56713852	5
85373	Croeswr Tramway Bridge over Y Cyt	Porthmadog	SH57043898	4
85374	Former church hall	Porthmadog	SH57033887	5
85375	Former stable at Bodawen Lodge	Porthmadog	SH56663966	4
85376	Former Tremadoc Tramway bridge over drainage ditch	Porthmadog	SH56173963	4
85377	Former Tremadog lock up (also known as Siop Crydd & Carchar)	Porthmadog	SH56074019	3
85378	Gate piers and gates at entrance to Brecon Place and Greenways	Porthmadog	SH56883865	5
85379	Gate piers, gates and wall at entrance to Bron-y-Garth	Porthmadog	SH56743801	5
85380	Gates, gate piers and flanking walls at S entrance to church of St John	Porthmadog	SH56533876	5

85381	Gelli	Porthmadog	SH56114014	2
85382	Greenways and The Mews, including forecourt walls and gate piers	Porthmadog	SH56823861	5
85383	Hafan	Porthmadog	SH56084020	4
85384	Harbour yard walls and gates to Greaves Wharf and Oakleys Wharf	Porthmadog	SH56923847	1
85385	Heddfa	Porthmadog	SH56134015	2
85386	HSBC Bank	Porthmadog	SH56873865	5
85387	Ivy Cottage	Porthmadog	SH56354029	4
85388	Kitchen garden walls and former coach house (The Studio) at Plas Tan-yr-allt	Porthmadog	SH56524040	4
85389	Limekiln Cottage, including revetment walls and steps	Porthmadog	SH56833841	4
85390	Llwyn Derw	Porthmadog	SH56373816	none
85391	Madocks memorial fountain in The Park	Porthmadog	SH56913862	5
85392	Masonic Hall, including forecourt railings and gates	Porthmadog	SH56793859	5
85393	Kerfoots	Porthmadog	SH56663885	5
85394	New Wharf	Porthmadog	SH57103828	5
85395	Cornhill Wharf	Porthmadog	SH56883835	5
85396	Porthmadog Telephone Exchange	Porthmadog	SH56683911	4
85397	Porthmadog war memorial, including steps, trilithon and monoliths forming its approach	Porthmadog	SH56673926	3
85398	Portmeirion Pottery and Gifts	Porthmadog	SH56993857	5
85399	Road bridge over Y Cyt beyond NE end of Chapel Street	Porthmadog	SH56943901	4

85400	Rockcliff, including forecourt railings and gate	Porthmadog	SH56833819	5
85401	Shelley memorial in garden at Plas Tan-yr-allt	Porthmadog	SH56674048	4
85402	Ship on Launch	Porthmadog	SH56863844	1
85403	Shop and Dunn & Ellis Accountants	Porthmadog	SH56993857	5
85404	Spar Shop and house	Porthmadog	SH56214013	2
85405	Taleifion	Porthmadog	SH56164015	2
85406	The Cob (partly in Penrhyndeudraeth)	Porthmadog	SH57503830	5
85407	The Sail Loft	Porthmadog	SH57173848	5
85408	Trefdy	Porthmadog	SH56194019	3
85409	Tregunter, including forecourt railings and gate	Porthmadog	SH56853846	4
85410	Y Bwthyn	Porthmadog	SH56354029	4
85411	Y Llong (The Ship) public house	Porthmadog	SH56833851	5
87607	Mardir	Penrhyndeudraeth		none

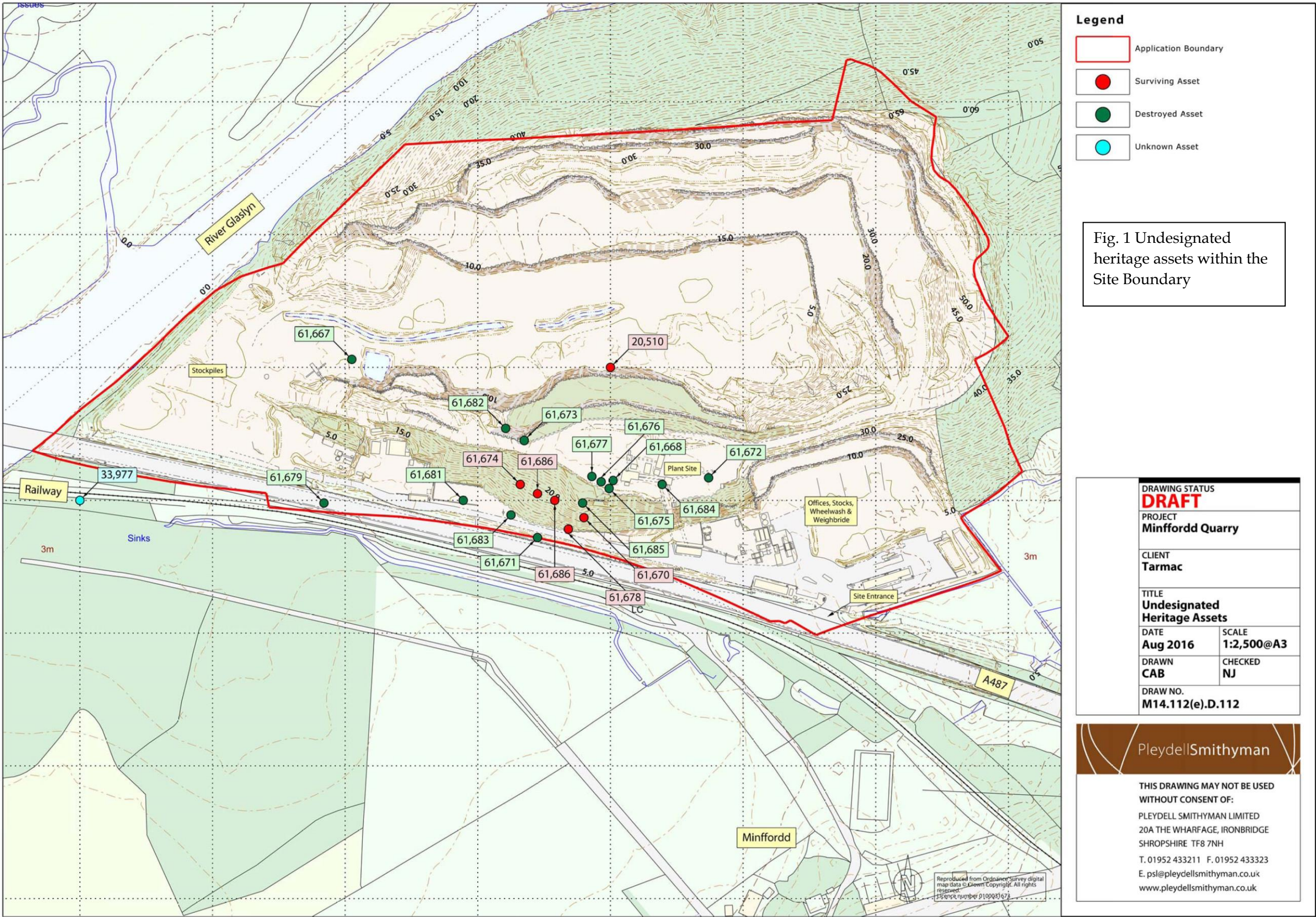


Fig. 2 Designated heritage assets within 5km of the Site Boundary

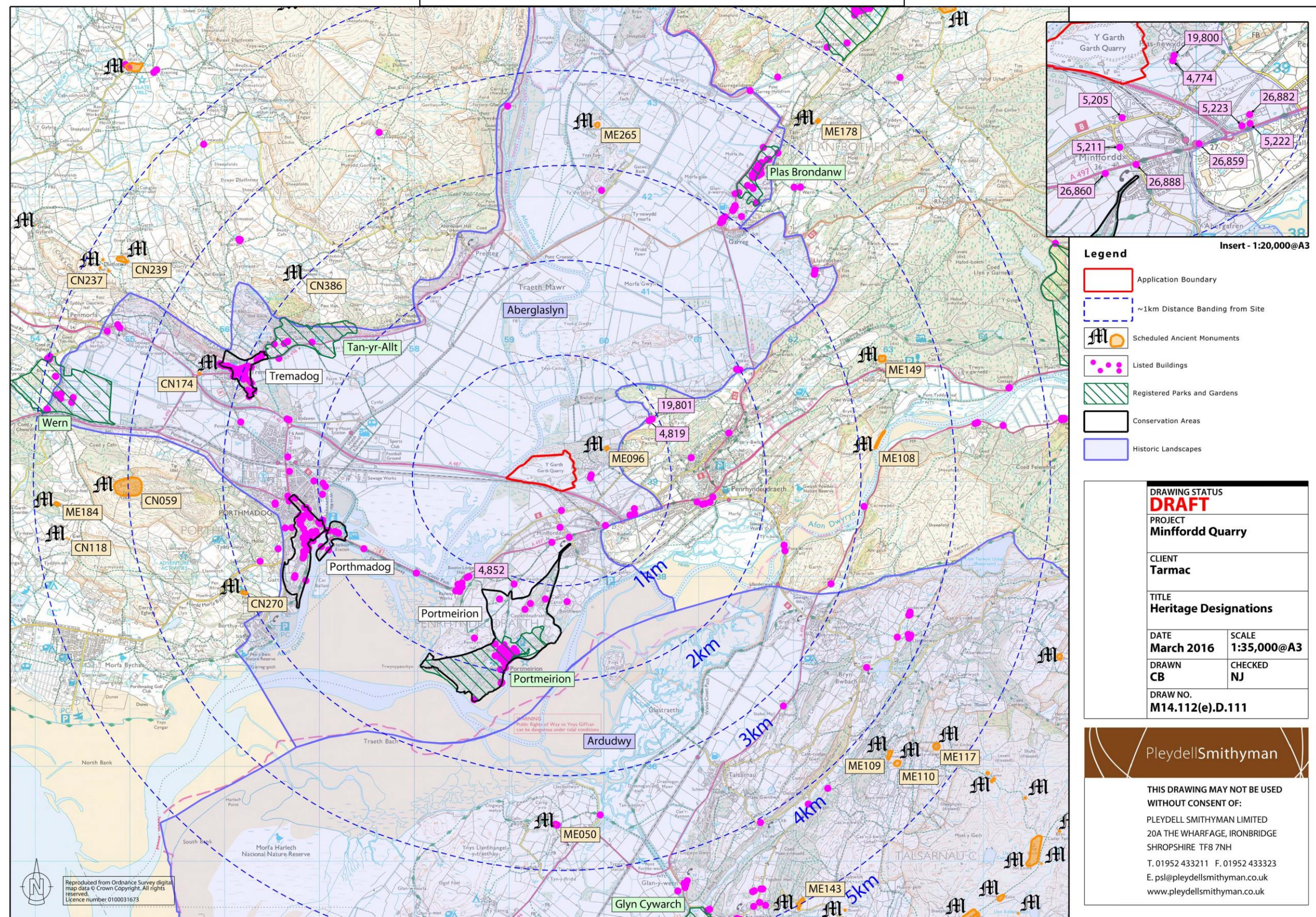


Fig. 3 ZTV for the current quarry layout

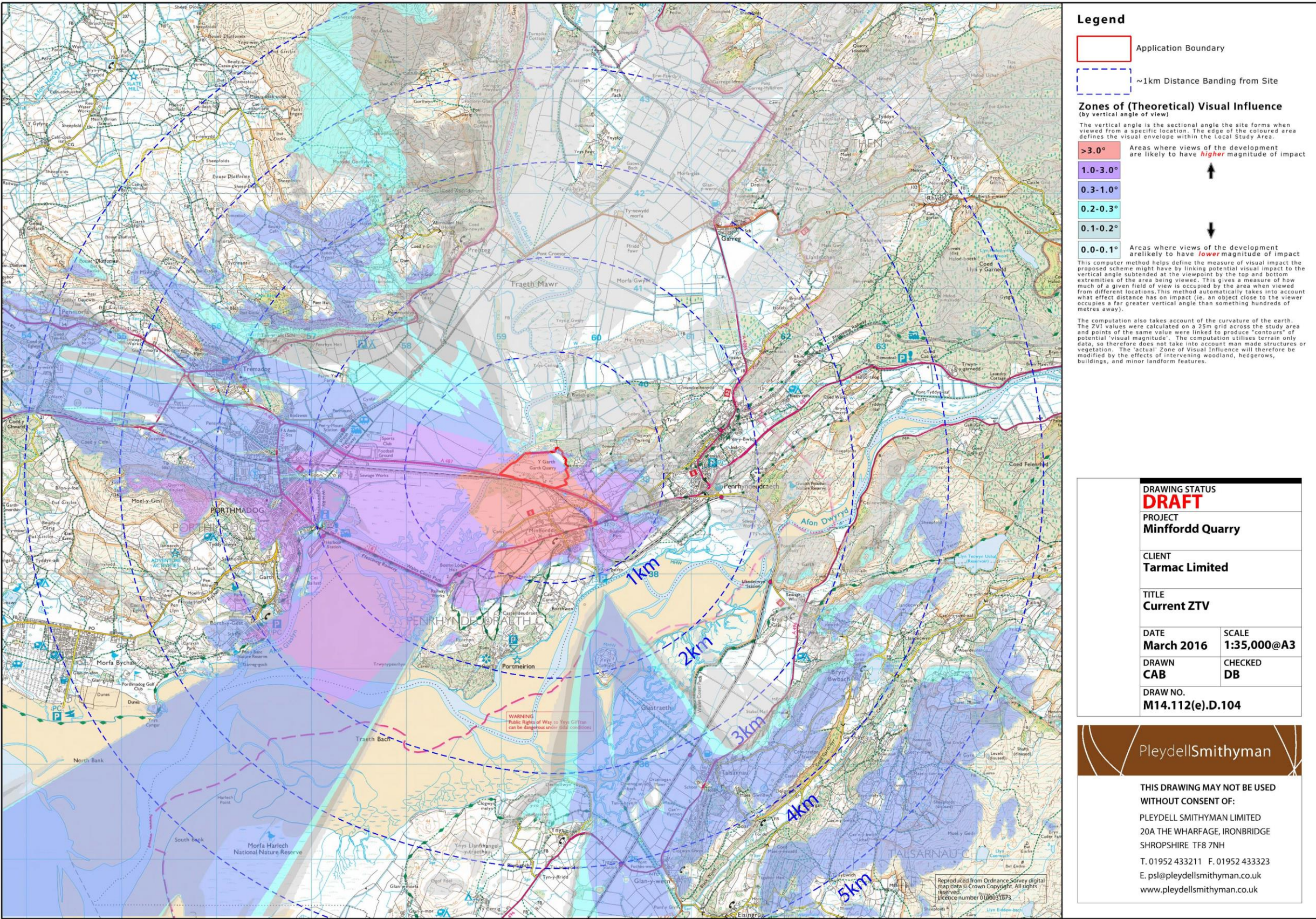


Fig. 4 ZTV for the Full Quarry Design

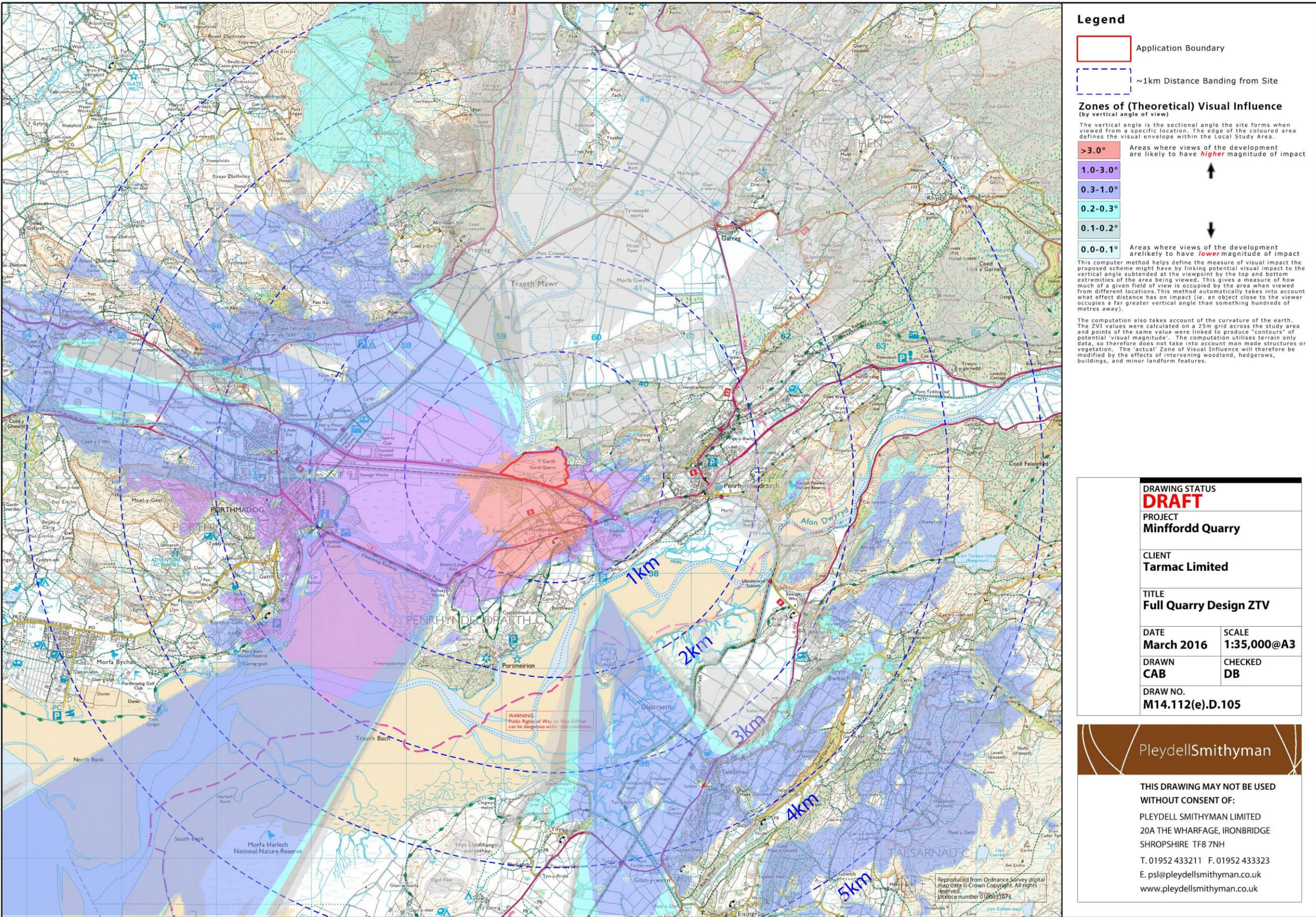


Fig. 5 Registered Historic Landscape Character Areas

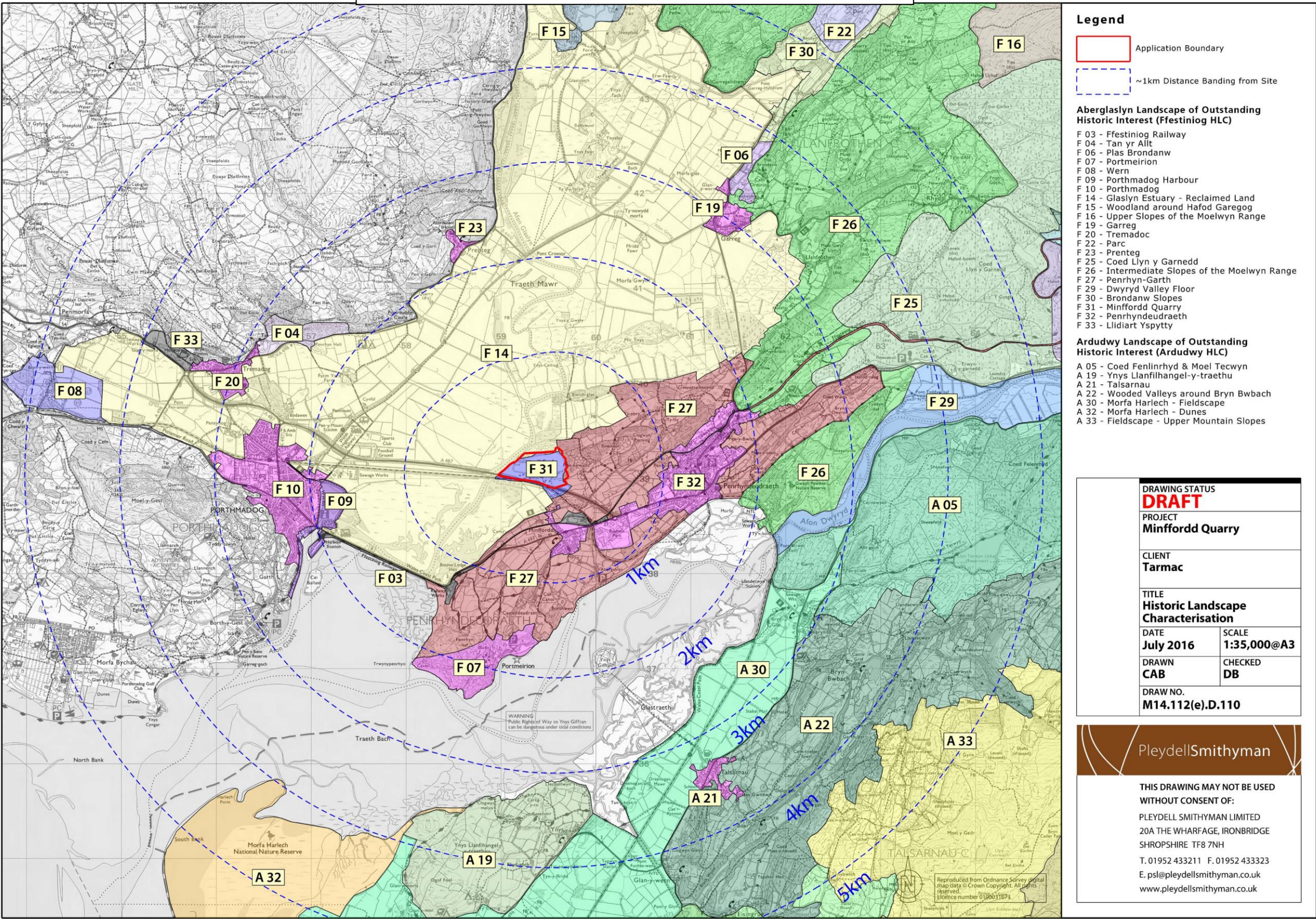
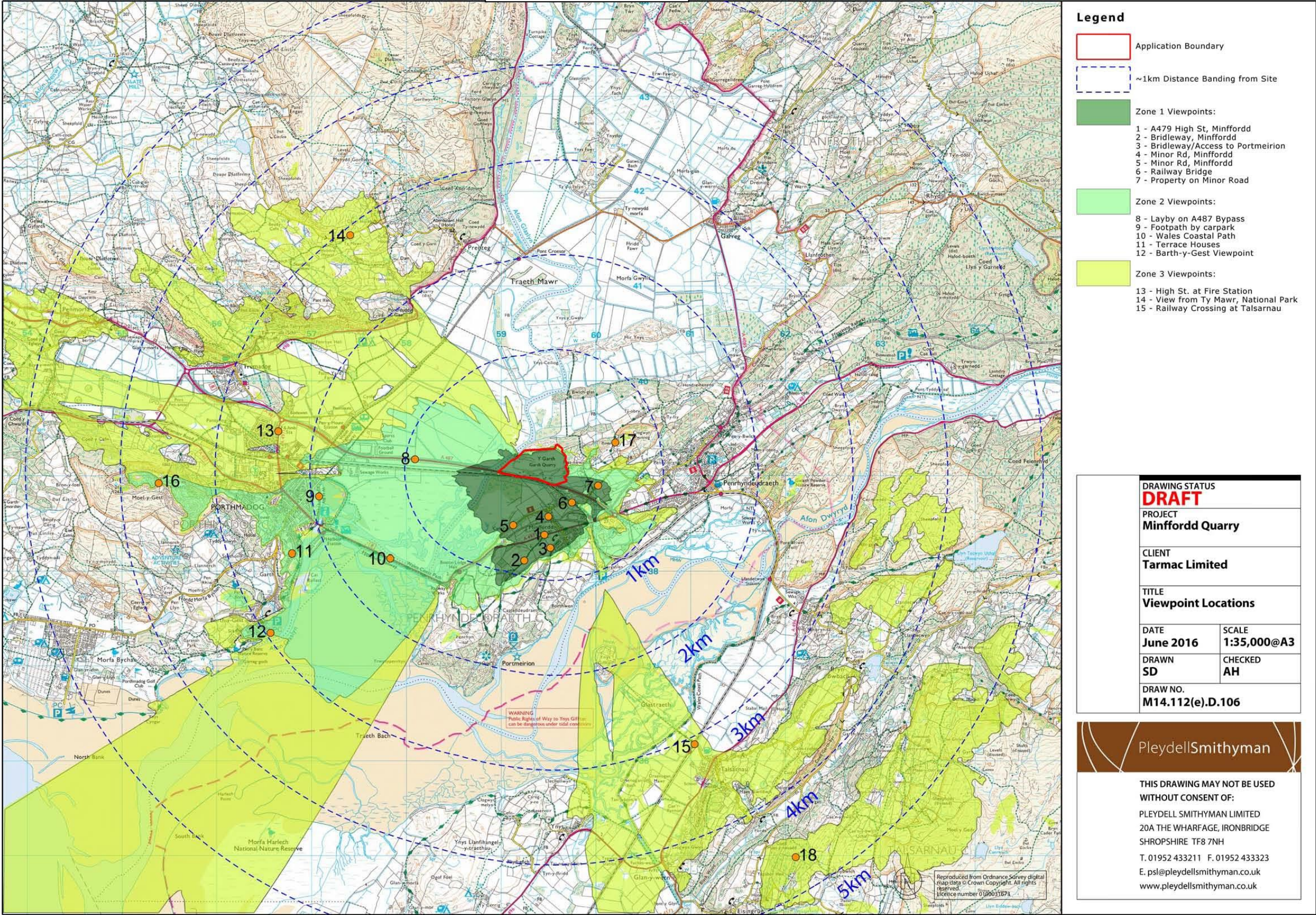


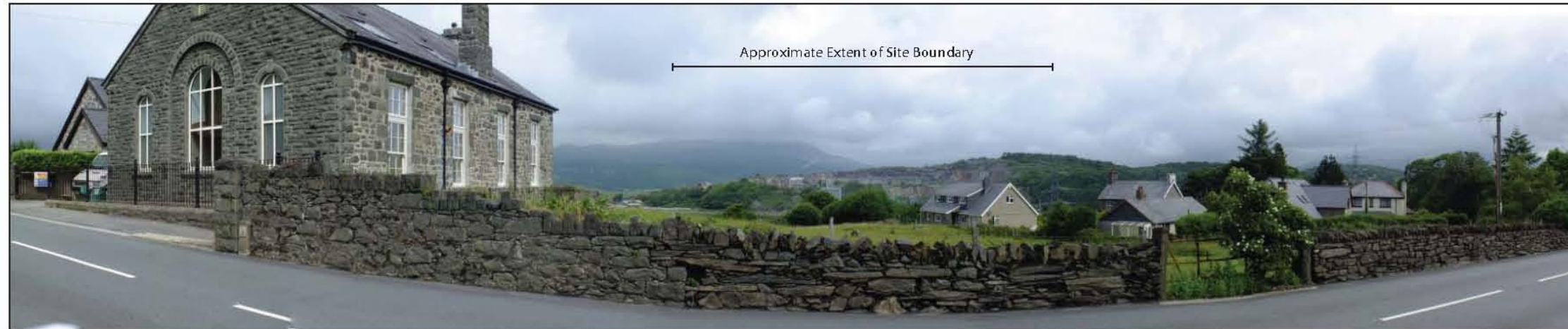
Fig. 6 Viewpoint locations



MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 1

Photographic Viewpoint 1.0 - Typical Existing View - View from A479 High Street, Minffordd.



Photographic Viewpoint 2.0 - Typical Existing View - View North from Bridleway, Minffordd.

MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 1



Photographic Viewpoint 3.0 - Typical Existing View - View North from Access Road to Port Merion/Bridleway

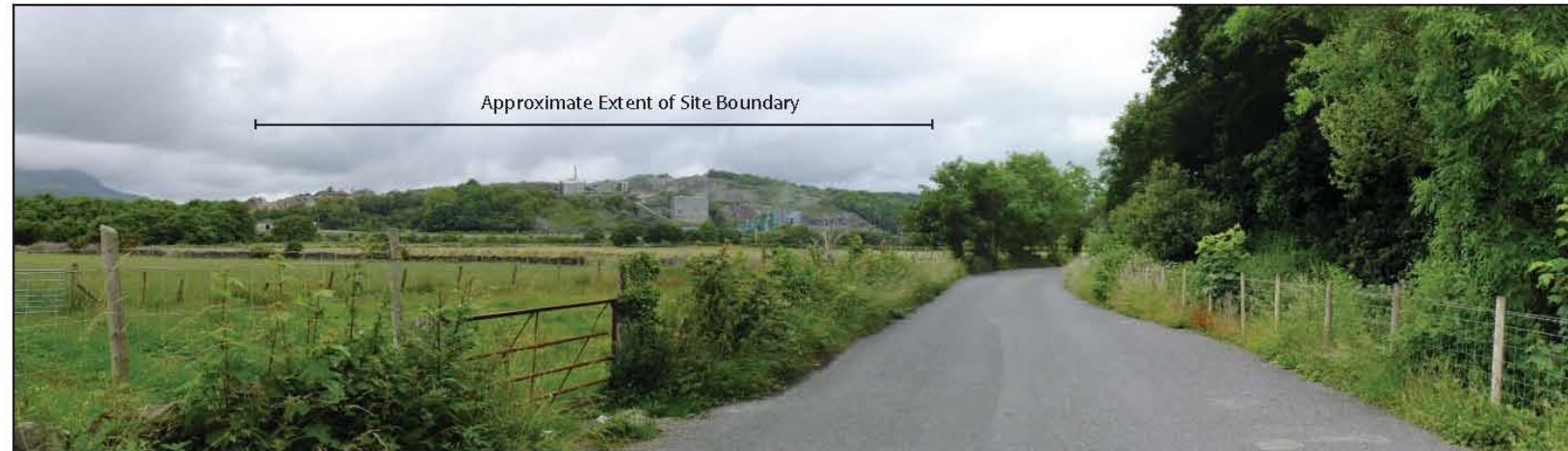


Photographic Viewpoint 4.0 - Typical Existing View - View North from bottom of slope, Minor Road, Minffordd.

MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 1

Photographic Viewpoint 5.0 - Typical Existing View - View North from Minor Road, Minffordd.

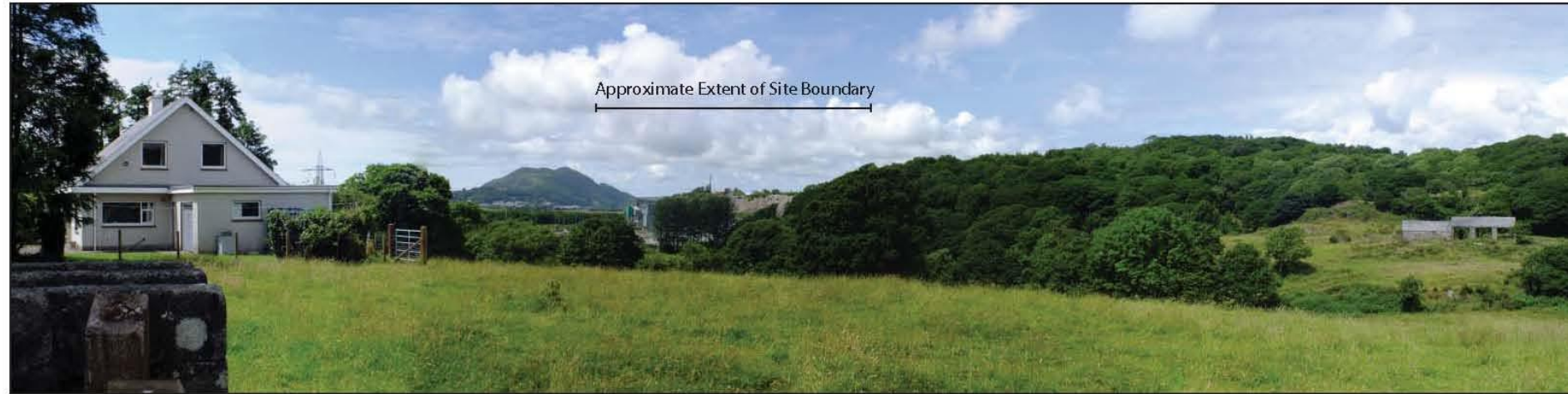


Photographic Viewpoint 6.0 - Typical Existing View - View North from Minor Road, Minffordd.

MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - *For locations of the viewpoints see drawing M14.112(e).D.106*

Zone 1

Photographic Viewpoint 7.0 - Typical Existing View - View West of Individual Property on Minor Road, Minffordd.

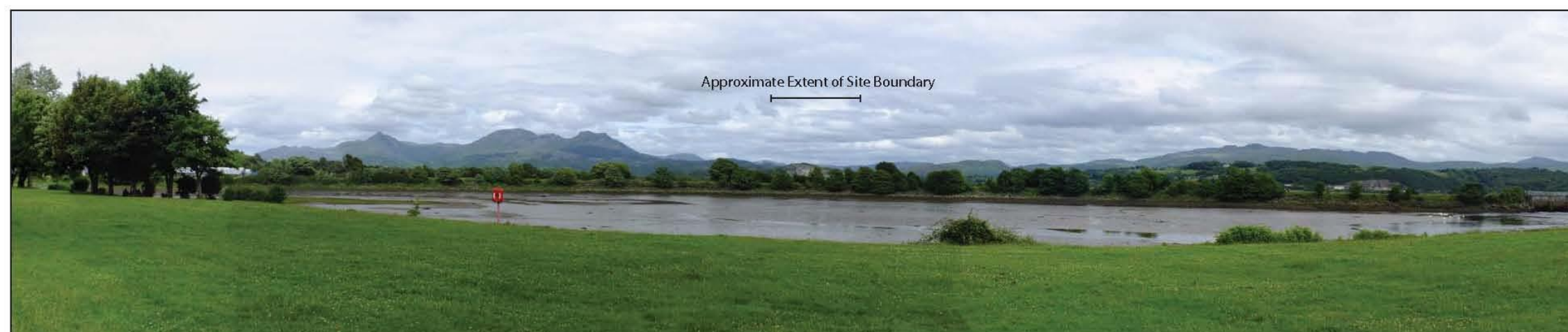
MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - *For locations of the viewpoints see drawing M14.112(e).D.106*

Zone 2

Photographic Viewpoint 8.0 - Typical Existing View - View East from Layby on A487 Porthmadog Bypass.

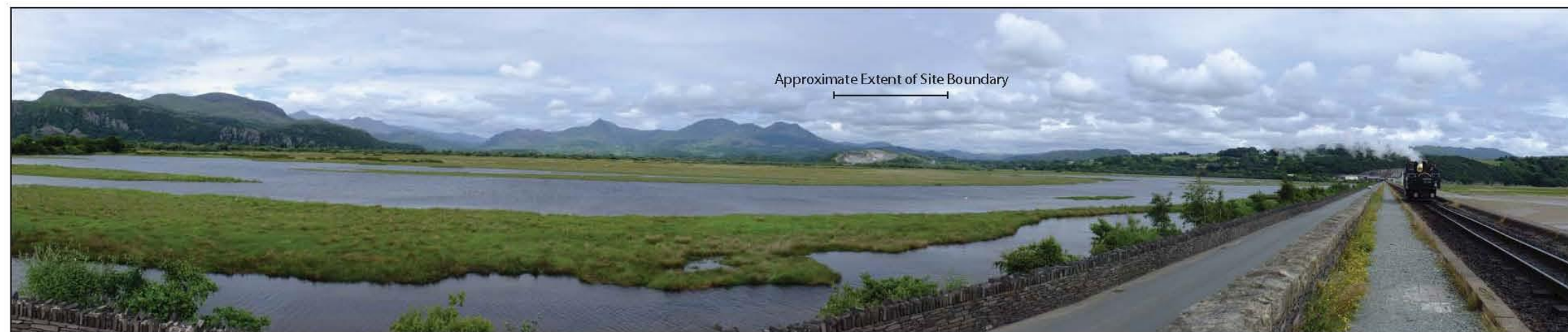


Photographic Viewpoint 9.0 - Typical Existing View - View East of Footpath adjacent to Car Park at Porthmadog.

MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - *For locations of the viewpoints see drawing M14.112(e).D.106*

Zone 2

Photographic Viewpoint 10.0 - Typical Existing View - View East from Wales Coast Path, adjacent to Ffestiniog Railway and the Britannia Terrace Main Road.

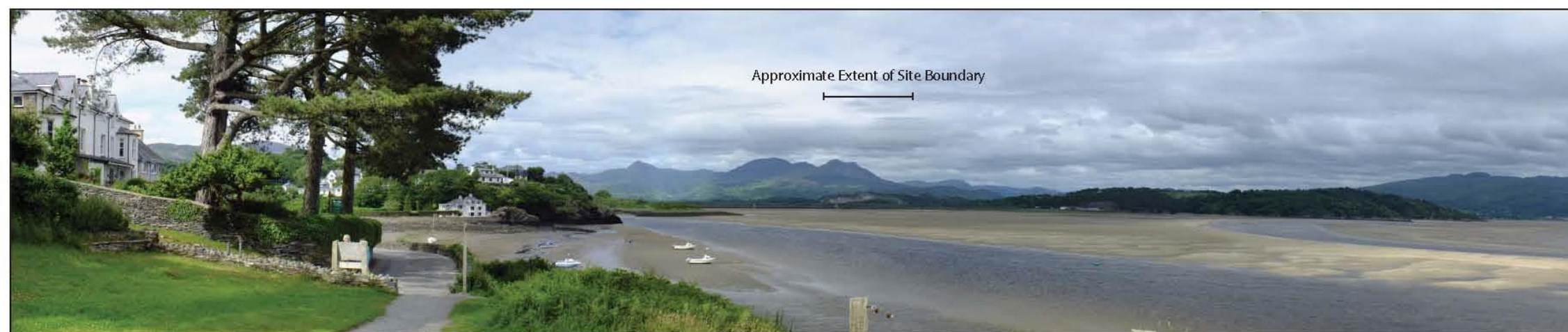
MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 2

Photographic Viewpoint 11.0 - Typical Existing View - View North-East from Car Park opposite Terraced Houses along Garth Road, Porthmadog.

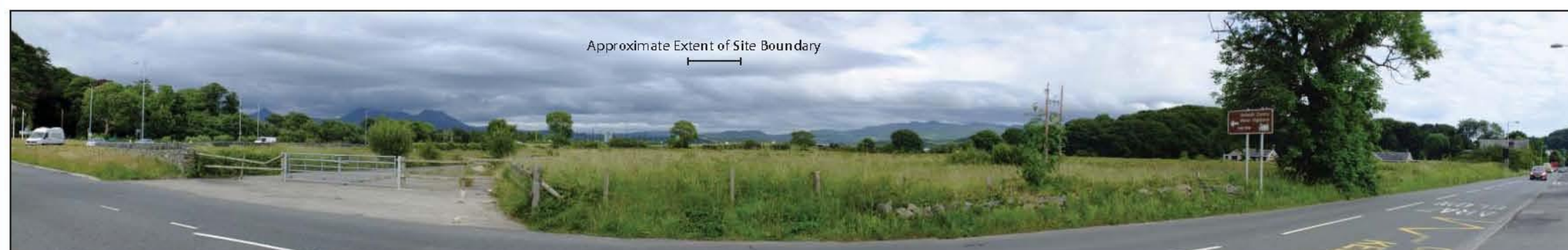


Photographic Viewpoint 12.0 - Typical Existing View - View North-East from Borth-y-Gest Viewpoint

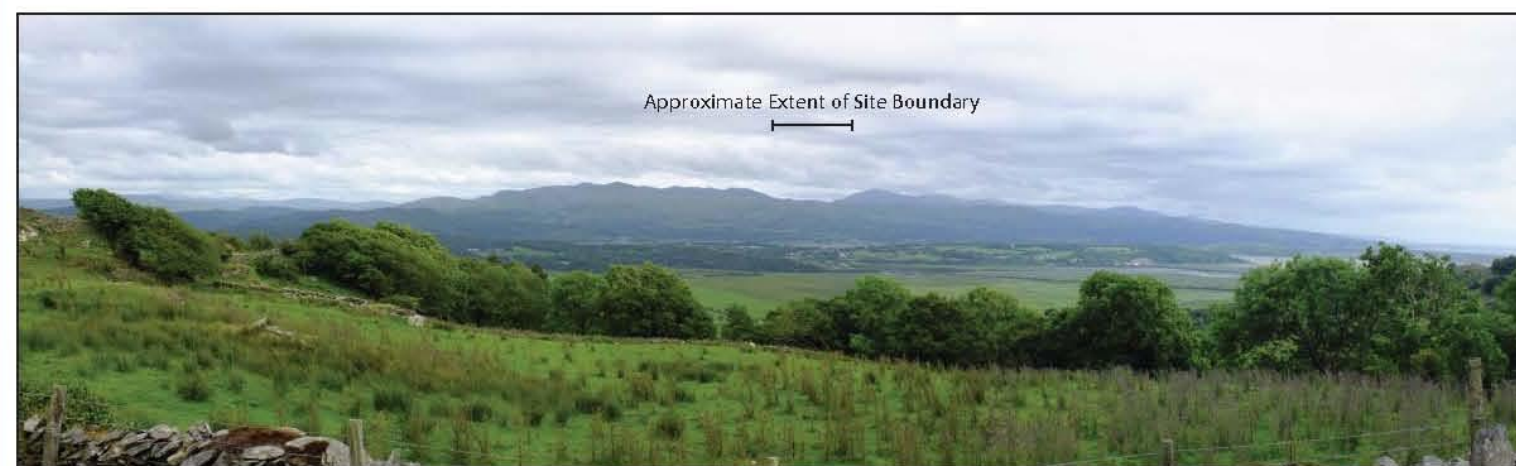
MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 3

Photographic Viewpoint 13.0 - Typical Existing View - View East from Fire Station, Porthmadog High Street.



Photographic Viewpoint 14.0 - Typical Existing View - View South-East from Ty Mawr Individual Property within the Snowdonia National Park.

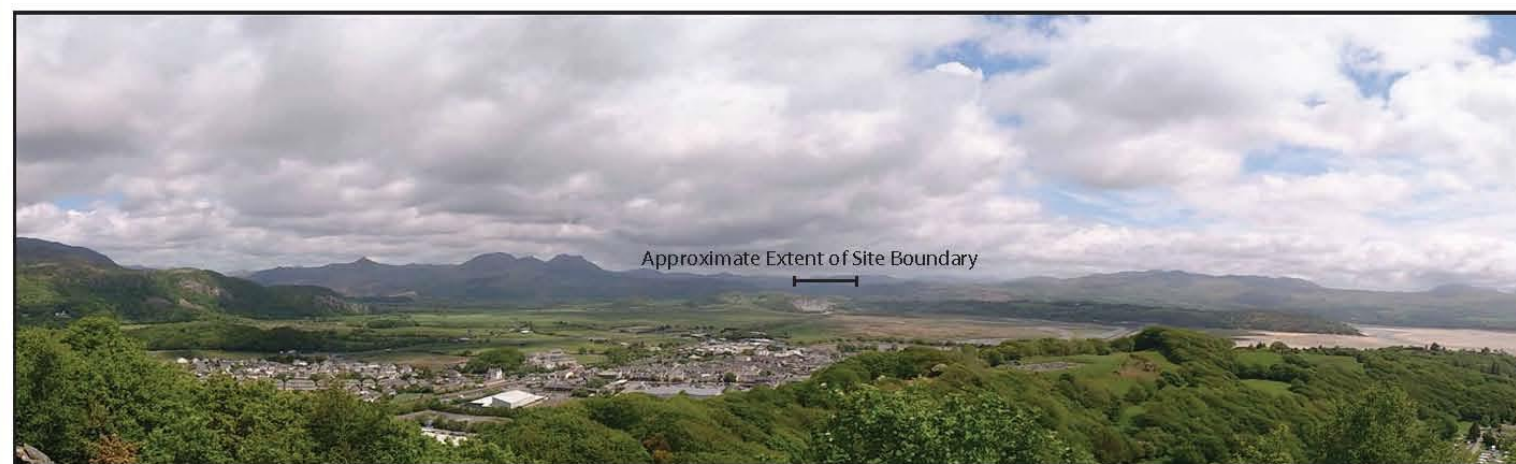
MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 3

Photographic Viewpoint 15.0 - Typical Existing View - View North-West from Railway Crossing at Talsarnau.

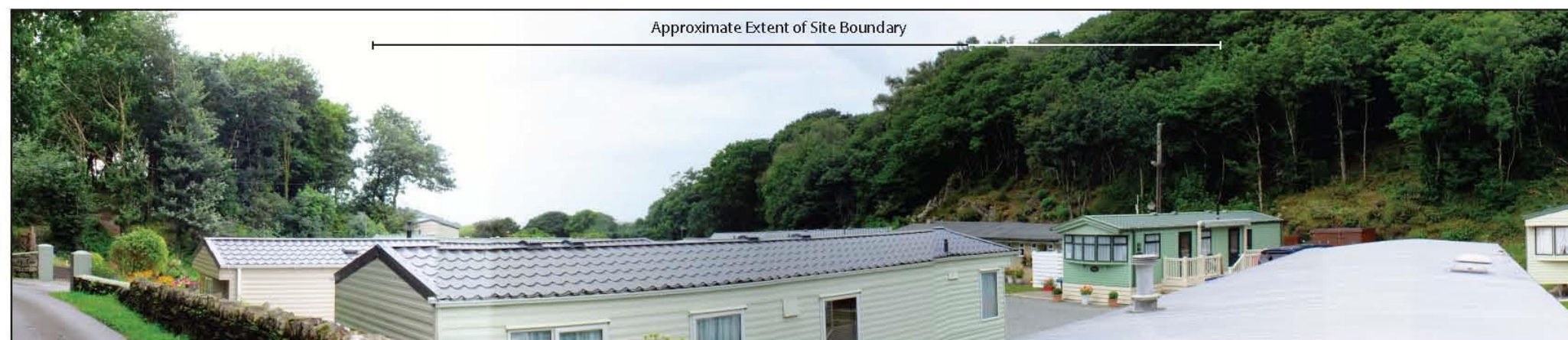


Photographic Viewpoint 16.0 - Typical Existing View - View East from Moel-y-gest (summit).

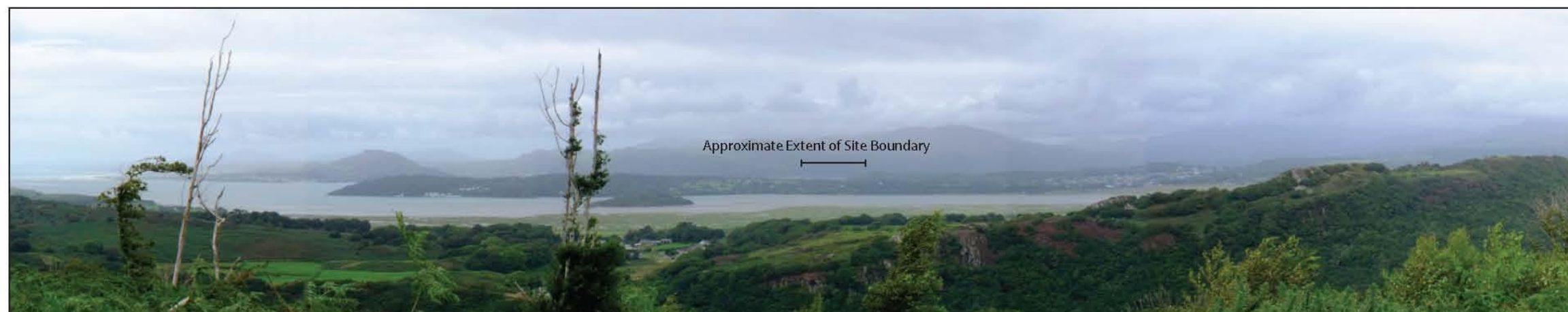
MINFFORDD QUARRY

Landscape and Visual Assessment

Photographic Record - For locations of the viewpoints see drawing M14.112(e).D.106

Zone 3

Photographic Viewpoint 17.0 - Typical Existing View - View West from minor road adjacent to Bwlch Bryn Caravan Park, below Clogwyn-Pwrsiog.



Photographic Viewpoint 18.0 - Typical Existing View - View North from Public Right of Way within Snowdonia National Park, north east of Eisingrug.